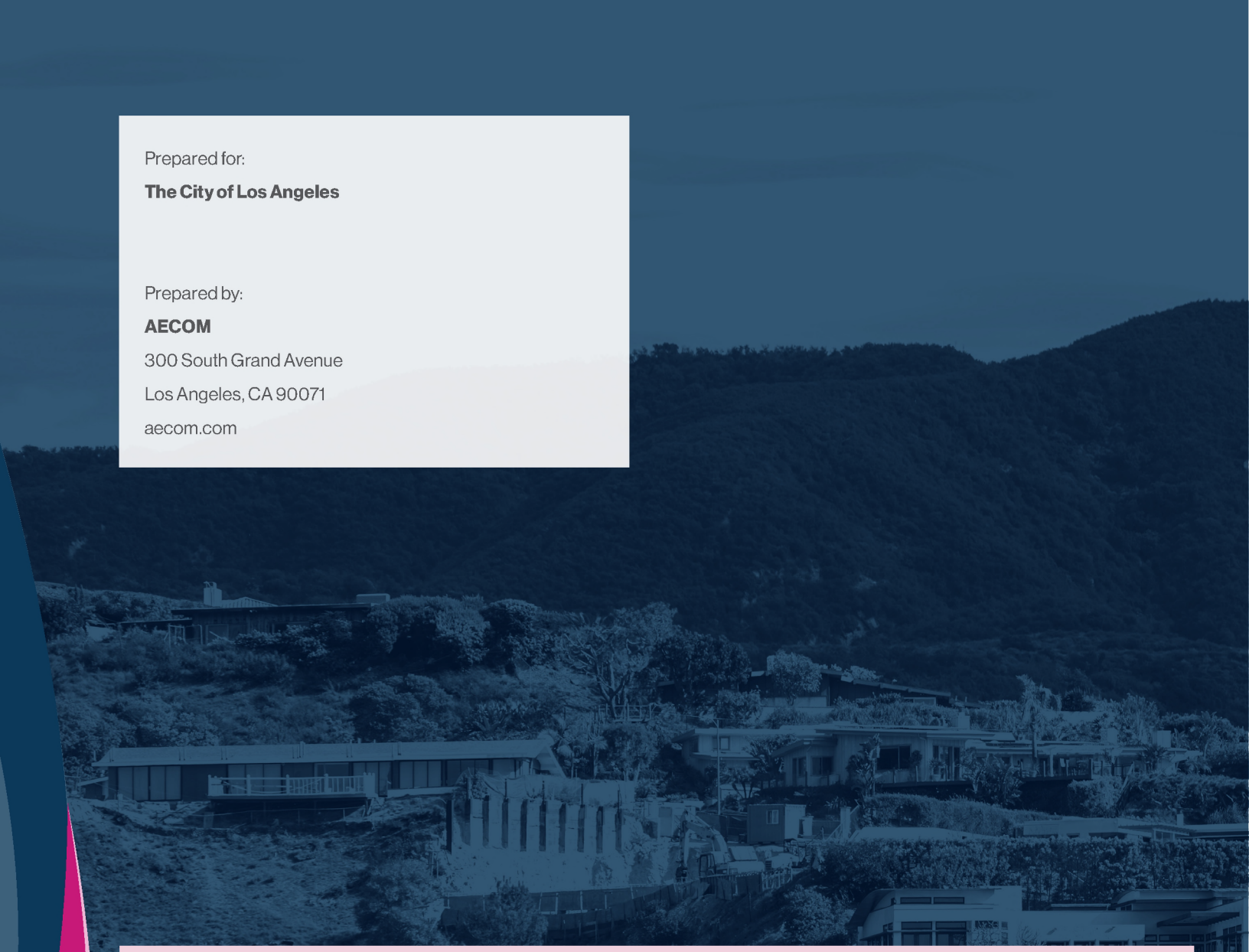


Workstream 4 | Pacific Palisades Wildfires Recovery

Logistics, Traffic, Parking and Communication Plan

City of Los Angeles | February 2026

AECOM



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Executive Summary

Executive Summary

The Logistics and Traffic Management Plan (Plan) provides a comprehensive framework for how the City of Los Angeles (City) can manage reconstruction activity in the Pacific Palisades community safely, efficiently, and transparently. It presents both an operational strategy and a governance model that links logistics, traffic, parking, and public communication under a unified structure to minimize disruption and maintain community trust during the Palisades Rebuild (Rebuild).

This Executive Summary offers a concise overview of the Plan's purpose, analytical foundation, and key recommendations. It highlights the core takeaways for decision-makers and stakeholders.

Purpose and Community-Centered Context

The Palisades Rebuild (Rebuild) represents one of the City's most complex and visible recovery efforts—an undertaking that must restore essential infrastructure while protecting the quality of life for the community it serves. In the aftermath of the wildfire, residents and local businesses continue to navigate constrained roadways, overlapping construction schedules, limited parking, and heightened safety concerns.

This Logistics and Traffic Management Plan (Plan) recommends an approach that the City can adopt to coordinate these interdependent activities in a way that keeps the community safe, informed, and connected throughout the reconstruction process. The Plan outlines a scalable and practical framework for managing logistics, traffic operations, curb access, and public communication through a unified governance structure.

Developed collaboratively with input from the Mayor's Office, Los Angeles Department of Public Works, Bureau of Engineering (BOE), and key partners—Los Angeles Department of Transportation (LADOT), Los Angeles Department of Building and Safety (LADBS), the Bureau of Street Services (StreetsLA), Department of Water and Power (DWP), and the Community—the Plan proposes a structure that would enable the City to oversee the human, operational, and fiscal dimensions of the rebuild through a single coordinated system.

At its core, the Logistics and Traffic Management Plan is community centered. It recognizes that residents experience the impacts of reconstruction first—through lane closures, construction noise, and access changes—and therefore positions transparency, predictability, and safety as guiding principles. Every recommended component, whether a scheduling platform, communication tool, or parking policy, serves one purpose: to reduce disruption and help residents return to normal life as quickly and safely as possible.

Logistics and Traffic Management:



Community-centered



Manages logistics of traffic operation



Modernizes recovery governance



Single coordinated system through key partnerships

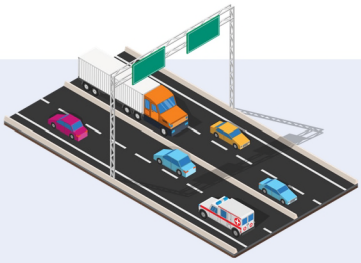
Finally, this offers an opportunity to demonstrate how the City can modernize its approach to recovery governance by integrating data, fiscal discipline, and two-way communication within one coordinated management framework. By doing so, the City can show that effective government can be both efficient and empathetic, setting a new precedent for infrastructure programs that deliver tangible community benefits while maintaining accountability to residents and fiscal responsibility to the general fund.

Analytical Foundation and Key Findings

The recommendations in this Plan are based on detailed analyses of field conditions and community impacts. Traffic, mobility, and logistics assessments were conducted to quantify the challenges of rebuilding in the Pacific Palisades and to inform the coordination strategies proposed later in this document.

Traffic and Mobility Analysis

The traffic study evaluated peak-hour conditions, corridor performance, and potential construction overlap across the Pacific Palisades network.



Traffic and Mobility Analysis

Key Findings of the traffic study are the following:

- **Severely constrained corridors:** Sunset Boulevard, Chautauqua Boulevard, and Temescal Canyon Road serve as the community's primary east–west and north–south connectors. Any uncoordinated closure on these routes could have significant regional impacts on mobility and emergency access.
- **Projected congestion increase:** Without intervention, overlapping construction and contractor staging were estimated to increase average travel delays during peak hours.
- **Regional Growth Context:** Post-rebuild traffic conditions are projected to experience ambient growth due to socioeconomic factors in the area, rather than as a result of the reconstruction project itself.
- **Emergency-access vulnerability:** The narrow hillside street grid lacks redundancy; the loss of even one travel lane could hinder response times or evacuation readiness.
- **Community burden:** Unscheduled truck activity and informal staging contribute to localized noise, air-quality degradation, and parking conflicts.

Logistics Modeling and Analysis

The analysis concluded that traditional permitting and lane-closure processes can be insufficient for the scale and intensity of this reconstruction effort. Given the limited ability to expand physical capacity in the corridor and the high costs of such expansion would entail, improved coordination, centralized communication, and managed logistics are the most practical and cost-effective means to maintain safety, access, and community liveability during the Rebuild.

To complement the traffic analysis, the planning team conducted a comprehensive logistics modeling assessment to evaluate how contractor deliveries, hauling, and staging activities could affect mobility during the Rebuild. The analysis simulated multiple construction-scheduling scenarios to understand how uncoordinated activity might contribute to congestion, delay, and community disruption.

The results of the modeling helped define the concept for the **Palisades Applied Logistics Management System (PALMS)**—a centralized logistics-coordination framework the City can consider developing to manage these activities.

Logistics Modeling and Analysis

Key Findings of the logistics modeling assessment are the following for real-time conflict avoidance and faster operational response.

These findings confirmed that **coordination—not capacity expansion—is the most practical and effective path** to maintaining community access and safety. Given the physical constraints of the Pacific Palisades corridor, steep topography, and the significant costs associated with expanding roadway capacity, traditional infrastructure solutions are largely unattainable.

As a result, the analyses point to coordinated logistics management as the **most viable and cost-effective alternative**. This finding provided the analytical foundation for **Logistics and Delivery Guidelines**—a coordination protocol designed to transform fragmented contractor activity into a predictable, transparent, and community-centered process.



Together, the traffic and logistics analyses establish the basis for this Plan's recommendations. They quantify the risks of inaction, validate the need for coordinated management, and demonstrate how coordinated frameworks like **Logistics Guidelines, Lane Closure Protocols, Contractor Parking Zones, and Community Notification Channels** can deliver measurable benefits to both the City and the community it serves.

Program Overview – How the City Will Deliver Value

The Palisades Rebuild can deliver meaningful results for residents only if it improves their daily experience—safer travel, fewer disruptions, and a faster return to normal life.

This Plan lays out a framework that the City can adopt to achieve those outcomes through coordinated management of the physical, logistical, and informational dimensions of reconstruction.

Rather than treating each department's responsibilities separately, the Plan recommends an integrated approach that turns coordination into a measurable public benefit. The Plan recommends establishing a **Special Implementation Group (SIG)** as a coordinated governance approach intended to support decision-making across **LADOT, BOE, and LADBS.**

If adopted, the SIG would support more coordinated, data-informed reconstruction management across individual projects. Supporting this leadership are four operational pillars—**Space, Access, Flow, and Trust**—that utilize established City tools to create a "connected-city" management ecosystem.

Together, these recommendations outline how the City can move from reactive coordination to proactive, data-enabled management that emphasizes transparency, fiscal neutrality, and community value.

If implemented, the framework would provide a model for how municipalities can manage complex infrastructure programs by linking policy, technology, and public trust into one cohesive system of service.

The Recovery Framework



A **coordination protocol** for delivery spreading, staging management, and **public/private deconfliction** to keep the community moving.

Logistics and Supply Chain Coordination
(The Flow Strategy)



Coordination utilizing the **Public Way Reservation System (PWRS)** and **Standard Traffic Control Plans** to streamline permitting and protect emergency routes.

Lane Closure Management
(The Access Strategy)



Designated zones for **Contractor Parking** and **Food Truck Staging** to preserve residential access and emergency clearance in narrow streets.

Parking and Curb Management
(The Space Strategy)



Unified, proactive alerts (email/text) serving as a **single source of truth** for residents regarding closures, ensuring predictability and transparency.

Community Notification Channels
(The Trust Strategy)

Governance: The Special Implementation Group (SIG)

Why It Is Needed



Large, multi-agency recovery programs often face the same coordination challenges: departments operate under separate mandates and data systems, private contractors work independently, and communication with the community can become fragmented. These conditions make it difficult to align schedules, budgets, and public expectations.

To overcome these challenges, the Plan recommends establishing a **SIG** to provide standing, cross-departmental coordination and unified oversight of the Palisades Rebuild. If adopted, the SIG would provide a forum for aligning executive policy, technical management, and community engagement, supporting more coordinated decision-making.

How It Functions



The SIG, if established, would operate with strategic guidance from the Mayor's Office to provide executive alignment and policy direction, while day-to-day coordination is anchored by **LADOT, BOE, and LADBS**. Membership includes senior representatives from StreetsLA, DWP, Information Technology Agency (ITA), Emergency Management Department (EMD), the City Administrative Officer (CAO), and Council District 11 (CD 11)—each responsible for integrating their specific functions into the shared **Recovery Framework**.

Key responsibilities can include:

- **Strategic Oversight:** Translate mayoral and council priorities into operational objectives and coordinate interdepartmental resources.
- **Program Integration:** Oversee the four operational frameworks—**Logistics Protocols, Lane Closure Management, Curb Allocations, and Community Notifications**—ensuring data flows consistently among them.
- **Fiscal Accountability:** Review cost-recovery reports from the CAO and Controller; link expenditures directly to measurable community outcomes.
- **Performance Tracking:** Use shared dashboards to monitor safety, mobility, and public-satisfaction indicators in real time.
- **Community Coordination:** Work with CD 11 and neighborhood organizations to review feedback, address issues, and maintain transparency through updates.

To formalize authority, the SIG's scope and responsibilities can be defined through an administrative directive or council resolution specific to the Palisades Rebuild, creating a clear mandate for interagency cooperation.

Outcomes



- **Provide a single leadership structure** to manage policy, operations, and community engagement.
- **Eliminate departmental silos** by ensuring that decisions are based on shared information (PWRS/Cloud Registries) and collective review.
- **Create a direct accountability chain** between the Mayor's Office, City departments, and the community.
- **Link fiscal transparency** and performance metrics, demonstrating that every action produces measurable public value.

If adopted, the SIG could serve as a coordination forum supporting transparent and data-informed management. It ensures that the City speaks and acts as one organization, guided by shared objectives and accountable to the residents it serves.

Logistics and Supply Chain Coordination (The Flow Strategy)

Why It Is Needed

To address this, the Plan recommends **Logistics and Delivery Guidelines**—a centralized coordination protocol for scheduling and routing construction traffic. Instead of managing hundreds of private contractors independently, this framework provides a single reference point for coordination using accessible digital tools already available to the City.

To ensure long-term resilience, the Plan also provides the architectural design for **PALMS** (see Section 7)—a scalable technology blueprint. PALMS provides a conceptual blueprint the City may use to evaluate future automated logistics management needs if construction volumes require it.

How It Functions

Utilizing a secure **cloud-based digital registry** (leveraging existing City tools), contractors could submit haul routes and delivery windows for review. This creates a unified schedule that allows the City to deconflict **Public Infrastructure Projects** (Workstream 2)—such as DWP undergrounding—against private home rebuild deliveries, ensuring that public works do not block private access.

Operational actions:

- **Delivery Spreading:** Encouraging off-peak delivery windows to avoid conflicts with school drop-off/pick-up times.
- **Active Deconfliction:** Identifying and resolving overlaps between utility trenching and large material deliveries before they occur.
- **Staging Management:** Identifying safe staging locations for heavy materials (lumber and concrete) before they enter the narrow hillside network.

Outcomes

- **Shorten rebuild timelines** by minimizing idle time and work-zone conflicts.
- **Improve safety and predictability** by keeping heavy trucks off narrow residential streets during peak hours.
- **Provide consistent reliability** for residents by preventing surprise blockages.

This framework serves as the logistical backbone of the Rebuild—creating capacity through coordination rather than physical expansion. It allows the City to manage hundreds of simultaneous movements with clarity, fairness, and transparency using accessible digital tools.

Lane Closure and ROW Management (The Access Strategy)

Why It Is Needed

The Pacific Palisades' narrow corridors and limited alternate routes make lane availability one of the most critical factors in maintaining safety and mobility during reconstruction. The Plan's traffic analysis showed that without centralized oversight, overlapping lane closures could reduce emergency-response times and cause severe congestion along key routes such as Sunset Boulevard, Chautauqua Boulevard, and Temescal Canyon Road.

To address this, the Plan recommends a **Lane Closure Coordination Protocol**—a management framework for monitoring right-of-way activity. By leveraging the City's existing **PWRS** and **Standard Traffic Control Plans**, this approach can support improved coordination using existing tools without requiring new software.

The Plan also outlines conceptual technical requirements for a future automated **Lane Closure Scheduling System (LCSS)**, providing a reference the City may use if construction volumes outpace manual workflows and funding becomes available.

How It Functions

Immediate Implementation: This framework prioritizes **process** over procurement. LADOT and BOE will utilize a **cloud-based digital registry** to track closure requests in real-time, syncing approved permits directly into **PWRS** to provide a centralized reference point.

Staffing Efficiency: To manage volume without new hires, the City will deploy a library of **Standard Traffic Control Plans**—pre-approved safety layouts that contractors can "grab and go" for routine work. This streamlines the permitting process, allowing engineers to focus their review time on complex, high-impact closures.

Outcomes

- **Maintain uninterrupted emergency access** by preventing conflicting closures on evacuation routes.
- **Reduce engineering bottlenecks** by using pre-approved Standard Plans for routine work.
- **Prevent gridlock** by ensuring utility cuts and crane lifts do not occur simultaneously on the same corridor.

This framework is intended to support more active **right-of-way coordination** during the Rebuild. By linking daily closure schedules with emergency access requirements, the City ensures that the street network remains safe and functional for residents throughout the Rebuild.

Parking and Curb Management (The Space Strategy)

Why It Is Needed

Community outreach and traffic analysis confirmed that parking availability is a critical component of this plan. On narrow hillside streets, unmanaged contractor parking creates immediate congestion and blocks emergency access.

To address this, the Plan recommends a **Parking and Curb Management Framework**—a structured approach to allocating street space. Instead of a free-for-all, this framework prioritizes residential access while creating designated zones for essential construction activity, ensuring safety and predictability for all users.

How It Functions

Strategic Allocation: Because parking on narrow streets directly impacts travel lanes, LADOT utilizes **Standard Traffic Control Plans** to legally designate specific curb uses. This would allow the City to designate **Contractor Parking Zones** using established traffic management processes.

Digital Integration: Active parking zones are logged in the **cloud-based digital registry** and synchronized with **Community Notification Channels**. This gives residents real-time visibility into permitted parking areas, reinforcing transparency.

Enabling Policy: To ensure long-term sustainability,the Plan identifies considerations for a potential **temporary ordinance** that the City may evaluate to support cost recovery fees for these zones, allowing the City to fund the necessary signage, monitoring, and technology without impacting the general fund.

Outcomes

- **Help protect residential access** by prioritizing permit parking on critical neighborhood streets.
- **Help preserve emergency clearance** by keeping narrow roadways free of fixed obstructions.
- **Help reduce conflict** by providing contractors with predictable, designated space for loading and staging.

This framework is intended to support a **community-first** approach to right-of-way coordination. By balancing fairness for residents with the operational realities of reconstruction, the City creates a scalable model for managing density without compromising safety.

Community Notification Channels (The Trust Strategy)

Why It Is Needed

Major reconstruction programs often suffer from a critical "information gap." Residents frequently receive conflicting or no updates from private contractors, utility crews, and City agencies, leading to confusion about daily access and eroding public confidence. When a resident cannot determine if a street will be open for their morning commute, the entire recovery process feels chaotic.

To address this, the Plan recommends **Community Notification Channels**—a recommended communication approach intended to provide a centralized, verified source of information. Instead of asking residents to navigate multiple websites or hotlines, this approach leverages the City's existing digital infrastructure to connect residents, contractors, and departments through real-time alerts and transparent data sharing.

How It Functions

Immediate Deployment: To deliver immediate transparency, the City could leverage its **existing Recovery Website** as a central information hub. This approach secures the core benefits of the vision—**predictability, clarity, and access**—without waiting for software development. It ensures residents receive consolidated, plain-English updates immediately.

Future Evolution: As the rebuild complexity grows, this web portal is designed to evolve into a fully integrated digital engagement hub. In future phases, the City may transition these functions into the **Palisades Community Communication Tool (PCCT)**—the communication platform described in Section 8. This future-state expansion could introduce advanced features such as real-time Geographic Information Systems (GIS) closure maps, depending on City priorities and funding availability.

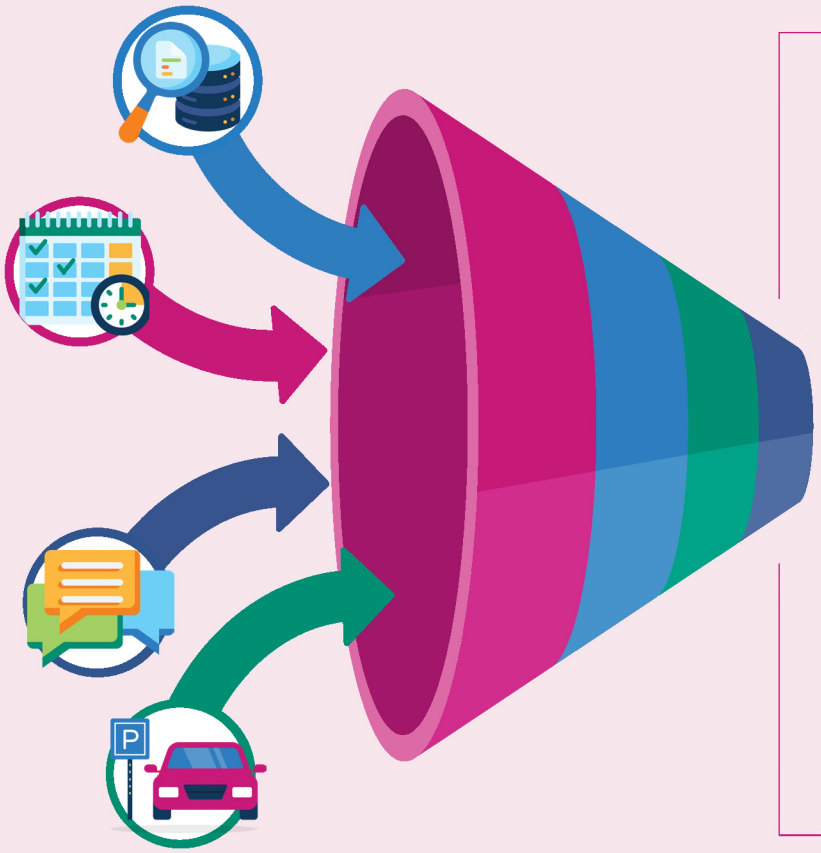
Communication Actions:

- **Unified Messaging:** Consolidates diverse updates from LADOT, BOE, and LADBS onto the central Recovery Website, creating a **single source of truth** that reduces contradictory reports.
- **Proactive Alerts:** Uses existing systems to warn of high-impact events (e.g., crane lifts) days in advance, empowering residents to **plan their daily travel with confidence**.
- **Responsive Feedback:** Establishes a verified reporting loop where resident input is routed to the appropriate City teams for review and response, ensuring the community **feels heard and supported**.

Outcomes

- **Deliver real-time updates** directly to residents by leveraging the digital infrastructure and devices they already use daily.
- **Provide a single, reliable location** for verified, City-approved information on traffic, parking, and construction schedules.
- **Enable contractors and City staff** to operate from a shared information baseline, significantly reducing scheduling conflicts.
- **Reinforce community trust** by demonstrating that feedback is heard and directly shapes City operational actions.

This framework transforms communication from a passive reporting task into an active management function. By starting with existing web tools today and scaling to advanced digital platforms as needs evolve, the City ensures that transparency is maintained at every stage of the recovery.



Management Ecosystem

Mobility

Fewer unplanned closures, reduced congestion, and faster project completion through proactive scheduling.

Safety

Continuous emergency access, safer work zones, and real-time oversight of lane and curb conditions.

Equity

Transparent and fair allocation of limited public space for residents, contractors, and service providers.

Transparency

Open data, real-time updates, and measurable responsiveness visible to the community.

Trust

A coordinated government structure that operates as one accountable organization rather than separate agencies.

Integrated Operational Impact

Each of these proposed frameworks responds to a specific coordination gap identified through analysis, but their true strength lies in how they function together.

The Plan recommends a **SIG** to support cross-departmental strategy and accountability; the recommended **Logistics and Delivery Guidelines** would support scheduling coordination; the proposed **Lane Closure Protocol** is intended to help maintain traffic flow and emergency access; **Parking and Curb Management** safeguards fairness and accessibility; and **Community Notification Channels** connect the entire system to the public through transparent, two-way communication.

Together, these recommendations outline a coordinated management approach of policies, protocols, and partnerships that can continuously learn and adapt. By integrating data, communication, and field operations, the City transforms reconstruction from a series of isolated headaches into a single, responsive recovery process.

Governance and Coordination

Effective governance will be essential to the success of the Palisades Rebuild. The scale and complexity of reconstruction—spanning multiple departments, contractors, and neighborhoods—require a structure that is both clearly defined and adaptable.

This Plan proposes a formal governance framework to oversee and coordinate all related activities. The intent is to propose a framework that could support more consistent coordination and toward a disciplined, data-informed management system that links decision-making, communication, and accountability across **LADOT, BOE, and LADBS**.

Under this approach, the decisions made during the Rebuild—whether approving a permit, scheduling a lane closure, or communicating with the community—are guided by common principles: safety, transparency, fiscal integrity, and community value.

The Plan envisions a governance model built around **three interconnected tiers of accountability**, each supported by shared information systems and unified reporting mechanisms. This structure would empower departments to act decisively within their areas of expertise while maintaining overall program consistency, fiscal discipline, and oversight at the Citywide level.

This integrated framework transforms the Palisades Rebuild into a proof of concept for community-centered governance. It demonstrates how coordinated management, supported by shared data and open communication, delivers not only efficient infrastructure but also renewed public confidence in City operations.

Executive Oversight – Mayor's Office

Why Executive Oversight Is Needed

Effective leadership and clear executive alignment are essential to coordinating a program of this scale. The Plan recommends that the **Mayor's Office** provide overarching policy direction and accountability for the governance structure. The Mayor's Office is best positioned to ensure that all participating departments, partners, and contractors operate in alignment with the City's broader mobility, resilience, and equity objectives.

What the Mayor's Office Can Do

If the proposed governance framework is adopted, the Mayor's Office can:

- Establish strategic objectives and performance expectations for the participating agencies.
- Chair periodic briefings of the SIG to review progress, fiscal performance, and key risks.
- Receive quarterly reports from lead departments such as BOE and the CAO summarizing outcomes and cost-recovery results.
- Serve as the City's liaison to regional, state, and federal partners on funding, emergency coordination, and policy alignment.
- Ensure that community-centered principles—safety, transparency, and accessibility—remain visible and measurable throughout implementation.

Why It Matters

Providing executive oversight through the Mayor's Office would strengthen accountability, unify interdepartmental priorities, and maintain public trust. It would also elevate the Palisades Rebuild as an opportunity to pilot modern, transparent governance practices that could inform how the City manages future infrastructure and recovery programs.

Cross-Departmental Leadership (The SIG)

Why Cross-Departmental Leadership Is Needed

Coordinating reconstruction activities across multiple City departments and private partners requires a structure that brings decision-makers together under a shared framework. Experience from large, multi-agency programs shows that without centralized coordination, even well-managed efforts face overlapping schedules, inconsistent communication, and delayed responses to community concerns.

SIG Operational Structure

Charter and Authority: If established, the SIG would operate with strategic guidance from the Mayor's Office to support alignment and policy direction, while day-to-day coordination is anchored by **LADOT** and **BOE**. Standing membership includes senior representatives from **LADBS, StreetsLA, DWP, ITA, EMD, the CAO, and Council District 11**.

Operational Cadence: The group meets weekly to review progress, evaluate performance metrics from the **Recovery Framework**, and adjust priorities in response to field conditions. This ensures that decisions are made collectively and informed by real-time data from the **PWRS** and **Community Notification Channels**.

Key Responsibilities:

- **Coordinate** project schedules, staging plans, and operational priorities across departments to prevent conflicts.
- **Review and align** traffic, logistics, and communication strategies to ensure consistency.
- **Resolve** cross-departmental issues through a shared escalation and documentation process.
- **Monitor** community feedback, response times, and satisfaction through the central dashboard.
- **Report quarterly** to the Mayor's Office on operational performance, fiscal compliance, and community outcomes.

Outcomes

Establishing the SIG replaces department-by-department coordination with shared accountability. It ensures that decisions are made collectively, supported by real-time data, and aligned with community needs. By establishing a single forum for collaboration and oversight, the City delivers a reconstruction effort that is transparent, efficient, and responsive, setting a precedent for how complex urban infrastructure programs are managed.

Departmental Execution and Operational Roles

The success of the proposed governance framework depends on clear departmental roles and active interagency coordination. Each participating bureau and department would maintain its technical authority while operating under the unified structure of the SIG. This Plan outlines how these agencies would work together as one coordinated team, supported by shared data standards, interoperable systems, and transparent performance reporting.

The Plan recommends that these roles be formally defined under the SIG to ensure accountability, reduce duplication, and strengthen collaboration throughout implementation.

The following table outlines the proposed roles that departments/bureaus could serve if the City elects to adopt the SIG governance model:

Table ES.1: Departmental Operational Roles

Department / Bureau	Role in Governance and Coordination
Los Angeles Department of Public Works, Bureau of Engineering (BOE)	Serves as the technical and engineering lead, ensuring that all temporary and permanent improvements meet design, Americans with Disabilities Act (ADA), and safety standards.
Los Angeles Department of Transportation (LADOT)	Leads field mobility coordination, traffic operations, and curb-management policies; performs field installation of all regulatory signage and curb markings.
Los Angeles Department of Building and Safety (LADBS)	Oversees permitting, contractor compliance, and inspection activities; integrates project data with PALMS to align schedules and staging.
Bureau of Street Services (StreetsLA)	Provides field implementation for civil permitting and pavement preservation; ensures that work zones maintain accessibility and adhere to safety standards.
Los Angeles Department of Water and Power (DWP)	Coordinates utilities, planned outages, and service restoration; ensures that reconstruction activity does not compromise essential infrastructure.
Los Angeles Fire Department (LAFD)	Validate emergency-access standards and integrate rebuild operations into broader City emergency protocols.
City Administrative Officer (CAO)/Controller	Provide fiscal oversight, verify cost-recovery compliance, and conduct quarterly audits to maintain transparency and accountability.
Information Technology Agency (ITA)	Manages cybersecurity, data-governance, and technical review for vendor-developed and integrated digital platforms.
Council District 11 (CD 11)	Serves as the community liaison—hosting briefings, coordinating engagement, and ensuring that resident feedback informs program refinements.

Why It Matters

Establishing these operational roles under the SIG would ensure that technical expertise, fiscal oversight, and community engagement remain connected through one governance structure. Departments would collaborate rather than operate in silos, using shared systems to maintain a single, verified source of information. This unified approach turns interdepartmental coordination into an accountable management process, improving both efficiency and public trust. The structure also creates a replicable framework that the City can adapt for future large-scale construction or emergency-recovery programs.

Accountability and Transparency Mechanisms

Transparent, two-way communication is the bedrock of this governance framework. Accountability is not just about internal reporting; it is about providing residents with visible, verifiable proof of progress.

To achieve this, the Plan integrates **Community Notification Channels** directly into the governance structure. Through this protocol, every major decision—from lane-closure adjustments to fiscal audits—is documented and shared via the **Recovery Website**, giving residents a direct line of sight into City operations.

To maintain public confidence, the SIG implements three core mechanisms to ensure operations remain transparent and responsive:



Quarterly Fiscal and Performance Reports

Prepared by the **CAO and Controller**, these reports are published publicly to validate cost-recovery compliance and demonstrate that permit fees are funding actual service improvements.



Responsive Feedback Cycles

Structured pathways collect resident input via the **Notification Channels**. The SIG reviews this feedback weekly to adjust operational tactics (e.g., changing a delivery window based on school traffic).



Public Progress Reporting

Replacing static PDFs with dynamic updates on the **Recovery Website**, displaying clear metrics on closure status, response times, and audit results.

Embedding these mechanisms into the daily workflow turns accountability from a concept into an operational reality. It ensures the community is an informed participant in recovery—not just a bystander to construction.

Governance in Action

This proposed governance framework is intended to function as service design rather than bureaucracy. It ensures that coordinated decisions made in City Hall directly improve daily life in the Palisades.

When the **SIG** aligns schedules, residents experience predictable travel. When **LADOT** and **BOE** coordinate permits via the cloud registry, emergency access is preserved. And when **Notification Channels** deliver accurate alerts, the community feels respected.

This approach demonstrates that transparent governance is itself a public service—one that measures success not only in efficiency and cost recovery but also in **trust restored**. By linking management, communication, and accountability, the Plan illustrates how good governance can be experienced as tangible community value.

Long-Term Governance Legacy

The governance structure recommended in this Plan is designed to be **scalable and replicable**. Once established for the Palisades Rebuild, it could serve as a template for other City initiatives that require cross-departmental coordination—such as infrastructure modernization, climate adaptation, or emergency response.

By demonstrating that unified oversight and transparent performance tracking can produce measurable community benefits, the model proposed here could provide the foundation for a broader transformation in how the City manages complex programs. It would enable Los Angeles, and other cities adopting similar practices, to handle complexity with **clarity**, **efficiency**, **and accountability**, creating a legacy of coordinated, community-focused governance.

Implementation and Next Steps

The Plan is designed not only to define a governance framework but also to serve as an actionable roadmap for implementation, once it is adopted. It provides a practical, scalable approach that the City could use to move from planning to measurable results while improving safety, mobility, transparency, and community experience during the Palisades Rebuild.

The Plan recognizes that implementation will be an **iterative process**, balancing early action with the time required to build durable policy, technology, and community partnerships.

Many activities, such as developing ordinances, refining interdepartmental procedures, and enhancing communication systems, will extend across multiple phases and improve continuously as lessons are learned.

Implementation is organized around three overlapping and reinforcing phases:

- **Phase 1 – Governance and Policy Setup** – Establish authority, roles, and policy mechanisms to enable coordinated operations.
- **Phase 2 –Operational Implementation & Integration** – Design, test, and refine the coordination systems that will manage reconstruction.
- **Phase 3 – Evaluation, Institutionalization, and Expansion** – Measure results, formalize successful practices, and scale the framework for broader City use.

Each phase is designed to strengthen the City's ability to coordinate, communicate, and deliver value to the community. As a result, the proposed framework will become a living management system that is transparent, efficient, and continuously improving.



Governance and Policy Setup

This initial phase would focus on building the leadership, policy, and administrative foundations necessary for coordinated reconstruction. Some actions, such as establishing ordinances and memorandums of understanding (MOUs), may take longer than six months and will continue to evolve through later phases.

Initial Priorities:

- **Form the SIG:** Develop and approve the SIG charter under the Mayor's Office through an administrative directive or City Council resolution. Roles and meeting cadence could be refined as systems mature.
- **Advance Policy and Ordinance Development:** Begin drafting the temporary ordinance and supporting policies authorizing coordination programs. Adoption may occur later in implementation, with interim administrative measures enabling early coordination.



Phase 1: Governance and Policy Setup
Establish authority, roles, and administrative protocols to enable coordinated operations immediately.



Phase 2: Operational Implementation
Deploy immediate coordination workflows using **existing City tools** (PWRS, Standard Plans, Cloud Registry) to manage active construction.



Phase 3: Technology Expansion and Scaling
Evaluate the deployment of **advanced technology** (sensors, custom software) to scale capacity as construction volume peaks.

- **Define Interdepartmental MOUs:** Develop agreements among key departments (BOE, LADOT, LADBS, DWP, CAO, and CD 11) defining responsibilities, data-sharing protocols, and performance expectations under the SIG.
- **Launch Foundational Community Outreach:** Engage residents, businesses, and contractors early to communicate benefits, collect input, and prepare for rollout of coordination tools.

This phase would establish the governance backbone for coordinated management while recognizing that policy development and public engagement are continuous, adaptive processes rather than one-time milestones.



Operational Implementation and Integration

Phase 2 focuses on executing the initial toolkit. Instead of waiting for new software development, departments will **integrate existing platforms** (such as cloud-based registries and PWRS) to establish a live operating picture immediately. This allows the City to manage lane closures and logistics proactively from the start of reconstruction, ensuring no gap in oversight.

Key Actions:

- **Deploy Standard Plans:** Implement the library of pre-approved traffic control plans to streamline permitting and reduce engineering bottlenecks.
- **Activate Digital Registries:** Launch the secure cloud-based logs for tracking lane closures and utility conflicts in real-time.
- **Launch Notification Channels:** Configure existing email/text alert systems to provide residents with verified updates.
- **Workflow Optimization:** Refine the interagency coordination protocols based on real-time field data and feedback.

This phase would demonstrate that coordinated governance and technology integration can deliver measurable benefits even as policy and administrative frameworks continue to evolve. Starting system development in parallel ensures that the City builds momentum early while maintaining flexibility to adjust design and policy based on real-world lessons.



Technology Expansion and Scaling

As reconstruction intensity grows, Phase 3 evaluates the need for **advanced technical solutions**. If the volume of activity exceeds the capacity of manual workflows, the City can trigger the deployment of automated systems and sensor networks using the architectural blueprints provided in this Plan.

Recommended Actions:

- **Technology Assessment:** Review operational data to determine if custom software procurement is required to handle density.
- **Advanced Sensor Deployment:** Install automated counting or monitoring devices at critical choke points if specific funding is secured.
- **Institutionalize Governance:** Transition the SIG from a rebuild-specific body into a standing model for future City resilience efforts.
- **Sustained Transparency:** Continue quarterly reporting to maintain accountability and trust.

This phase reinforces the Plan's central philosophy: coordination and transparency are **ongoing disciplines**. Even as immediate rebuild goals are achieved, the systems and governance structures would continue to evolve, ensuring the City remains agile, accountable, and community-focused well beyond this project.

Implementation Readiness and Support

The City already possesses the institutional experience, technical expertise, and community partnerships needed to implement this Plan. Many of the proposed elements—traffic protocols, permit databases, and public communication channels—**are already available within the City's toolkit**, minimizing development costs and accelerating readiness.

By leveraging existing capabilities and aligning them under a unified governance structure, the City can efficiently transition from planning to action. The success of this Plan will depend not only on technology but on leadership, transparency, and continued engagement with the community throughout its implementation.

Summary of Near-Term Priorities

In summary, this Plan positions the City to manage the Palisades Rebuild as a unified, transparent, and community-driven effort. By establishing the SIG, leveraging existing authority, and deploying immediate coordination protocols, the City moves quickly from planning to measurable results—setting a new standard for efficient, equitable, and trusted infrastructure recovery.

Table ES.2: Near Term Priorities Summary

Category	Immediate Focus	Outcome
Governance	Establish the SIG and operationalize the interagency Recovery Framework.	Clear leadership and decision-making authority.
Tools and Protocols	Deploy Standard Traffic Control Plans and activate Cloud-Based Registries (PWRS) for lane closures.	Immediate conflict tracking using existing City assets.
Community Engagement	Launch Community Notification Channels (Email/Text) and consolidate updates on the Recovery Website.	Public understanding and participation in the program.
Fiscal Oversight	Initiate cost-recovery framework and audit plan.	Fiscal neutrality and accountability from inception.

Readers of this report should be aware that the report recognizes that infrastructure project development is a dynamic process which is influenced by many factors, including the degree of importance, the operability of the assets which are addressed by the project, funding and funding sources, material and labor resource availability, demand for the service provided by the project or the assets, public and worker safety, the ability or inability to complete work concurrently with other work, and competition from other projects.

Information in this report about the City's ongoing and planned efforts was gathered from the City's Departments between July and October 2025, and reflects the City's planning efforts and understanding as of the date of the report.

This report does not consider the factors of funding and funding sources or the need of the City to maintain operations elsewhere in its discussion of project scheduling. This report considers all infrastructure within the Palisades, but readers should be aware that certain systems, including Natural Gas service and all forms of Telecommunications service (telephone, cable TV, and internet service), are provided by private, for-profit companies which operated under a license and maintain their systems according to their own operating standards. The City cannot make or require repairs or improvements to these privately owned systems.

This report is complementary to other documents published by the City about the recovery from the January 2025 wind and fire disaster, but serves its own unique purpose. As a result of this, information about infrastructure projects may be organized in ways that are similar, but not identical, to other documents, reflecting the differing purposes and audiences for these documents.



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Acronyms and Other Abbreviations

The Acronyms and Other Abbreviations list is a singular list that contains entries that appear in one or more of the planning documents. Note that entries shown in this list may not appear in the current document.

° °F	degrees Fahrenheit
AB (California)	Assembly Bill
ABS	Acrylonitrile Butadiene Styrene
ACS	Alliance for Community Solutions; American Community Survey
ACSR	Aluminum Conductor Steel Reinforced
ADA	Americans with Disabilities Act of 1990
ADU	Accessory Dwelling Unit
AI	Artificial Intelligence
aka	also known as
ALERT	Automated Local Evaluation in Real Time
AMI	Advanced Metering Infrastructure
API	Application Programming Interface
ATSAC	Automated Traffic Surveillance and Control
BC	British Columbia
BCA	Los Angeles Department of Public Works, Bureau of Contract Administration
BIA	Business Impact Analysis
BMP	Best Management Practice
BOE	Bureau of Engineering; Los Angeles Department of Public Works, Bureau of Engineering
BOF	Board of Forestry and Fire Protection
BPA	Bonneville Power Administration
CA	California
CAL FIRE	California Department of Forestry and Fire Protection
CalEPA	California Environmental Protection Agency
Caltrans	California Department of Transportation
CalVTP	California Vegetation Treatment Program
CAN-SPAM	Controlling the Assault of Non-Solicited Pornography And Marketing Act of 2003
CAO	City Administrative Officer
CBD	Canopy Bulk Density
CBH	Canopy Base Height
CC	Canopy Cover
CCCPFD	Contra Costa County Fire Protection District
CCCWMP	Contra Costa County Wildfire Mitigation Program
CCPA	California Consumer Privacy Act
CCR	California Code of Regulations
CD 11	Council District 11
CDFW	California Department of Fish and Wildlife
CDOT	Colorado Department of Transportation
CDP	Coastal Development Permit
CEOC	County Emergency Operations Center
CEQA	California Environmental Quality Act
CERT	Community Emergency Response Team
CGC	California Government Code
CGS	California Geological Survey
CH	Canopy Height
ch/h	chains per hour
CHP	California Highway Patrol
CIP	Capital Improvement Program
CIPR	Cold in Place Recycling
City	City of Los Angeles Government
CIWQS	California Integrated Water Quality System
CNRA	California Natural Resources Agency
County	Los Angeles County
COW	Cell on Wheels
CPA (Brentwood-Pacific Palisades)	Community Plan Area
CPUC	California Public Utilities Commission
CREAT	Climate Resilience Evaluation and Awareness Tool
CRZ	Critical Root Zone
CTPZ	Community-Based Temporary Parking Zone
CWNCD	Clean Water North Collection Division
CWS	Community Water Systems
CWSCD	Clean Water North Collection Division
DA	Distribution Automation
DAFN	Disability, Access, and Functional Needs
DBH	Diameter at Breast Height

DCU	Data Collector Units
DEM	Digital Elevation Model
DER	Distributed Energy Resource
DERMS	Distributed Energy Resource Management System
DFOS	Distributed Fiber-Optic Sensing
DIMP	Distribution Integrity Management Program
DOC	Department Operations Center
DOE	U.S. Department of Energy
DPH	Los Angeles County Department of Public Health
DS	Distributing Station
DSD	Distribution System Development
DTSC	Department of Toxic Substances Control
DWP	Department of Water and Power
DWR	California Department of Water Resources
EAS	Emergency Alert System
EBL	Eastbound Left
EBR	Eastbound Right
EFWS	Emergency Firefighting Water System
EMAC	Emergency Management Assistance Compact
EMD	Emergency Management Department
EO	Executive Order
EOC	Emergency Operations Center
EOP	Emergency Operations Plan
EPA	Environmental Protection Agency
EPP	Environmental Protection Plan
EPRI	Electric Power Research Institute
ERDIP	Earthquake Resistant Ductile Iron Pipe
ERDIP	Earthquake-Resilient Distribution Pipe
EV	Electric Vehicle
EVC	Existing Vegetation Cover
EVH	Existing Vegetation Height
EVT	Existing Vegetation Type
EWMP	Enhanced Watershed Management Program
FBFM40	LANDFIRE Fire Behavior Fuel Model
FCC	Federal Communications Commission
FCD	Fire Control District
FDR	Full Depth Reclamation
FEMA	Federal Emergency Management Agency
FHSZ	Fire Hazard Severity Zone
Fire	Palisades Fire
First Step	First Step: Developing an Urban Forest
FLISR	Fault Location, Isolation, and Service Restoration
FP	Fire Plan
FR	Fire Road
Frames	Fire Research and Management Exchange System
FRP	Fiberglass-Reinforced Pipe
FS	Fire Station
ft	foot, feet
FTTH	Fiber to the Home
FY	Fiscal Year
g/c	green per cycle
GB	Gigabytes
GEER	Geotechnical Extreme Event Reconnaissance Association
GEO	Geostationary
GIS	Geographic Information System
GLDS	Ground Level Distribution System
GO	General Order
GPM	Gallons per Minute
GR	Grass
GS	Grass-Shrub
GSA	Groundwater Sustainability Agency
HDPE	High-Density Polyethylene
HFC	Hybrid Fiber-Coaxial
HHW	Household Hazardous Waste
HIZEP	Home Ignition Zone Evaluation Program
HOA	Homeowners Association
HRDIP	Hazard Resistant Ductile Iron Pipe
HSC	California Health and Safety Code
HUC	Hydrologic Unit Code
IBC®	International Building Code®

IC	Incident Command
ICC	International Code Council
ICP	Incident Command Post
ICS	Incident Command System
IDE	Initial Damage Estimate
IPAWS	Integrated Public Alert and Warning System
IROC	Interagency Resource Ordering Capability
IRP	Infrastructure Restoration Plan
IRU	Indefeasible Right of Use
ISP	Internet Service Provider
IT	information Technology
ITA	Information Technology Agency
JADU	Junior Accessory Dwelling Units
KPI	Key Performance Indicator
kV	Kilovolt
LA	Los Angeles
LAA	Los Angeles Aqueduct
LABOE	Los Angeles Bureau of Engineering
LACDPW	Los Angeles County Department of Public Works
LACoFD	Los Angeles County Fire Department
LACP	Los Angeles City Planning
LADBS	City of Los Angeles Department of Building and Safety; Los Angeles Department of Building and Safety
LADOT	Los Angeles Department of Transportation
LADRP	Los Angeles Department of Regional Planning
LADWP	Los Angeles Department of Water and Power
LAFD	Los Angeles Fire Department
LAMC	Los Angeles Municipal Code
LANDFIRE	Landscape Fire and Resource Management Planning Tools
LAPD	Los Angeles Police Department
LASAN	Bureau of Sanitation; Los Angeles Department of Public Works, Bureau of Sanitation; Los Angeles Sanitation and Environment
LASD	Los Angeles County Sheriff's Department
LAUSD	Los Angeles Unified School District
LCP	Local Coastal Program
LCS	Lane Closure System
LCSS	Lane Closure Scheduling System
LEO	Low-Earth Orbit
LFD	Low-Flow Diversion
LIDAR	Light Detection and Ranging
LOS	Level of Service
LRA	Local Responsibility Area; Local Responsibility Areas
MAF	Million Acre-Feet
MFSZ	Mobile Food Service Zone
MG	Megagallons
ML	Machine Learning
MOU	Memorandum of Understanding
mph	miles per hour
MRCA	Mountains Recreation and Conservation Authority
MRT	Mountains Restoration Trust
MSMU	Mount Saint Mary's University
MTA	Metropolitan Transportation Authority
MTBS	Monitoring Trends in Burn Severity
MTTR	Mean Time to Restore
MVA	Megavolt-Ampere
MWD	Metropolitan Water District
n.d.	no date
NBT	Northbound Through
NDA	Non-Disclosure Agreement
NEMA	National Emergency Management Association
NERC	North American Electric Reliability Corporation
NFPA	National Fire Protection Association
NIFC	National Interagency Fire Center
NOAA	National Oceanic and Atmospheric Administration
NotifyLA	The City's Emergency System
NPDES	National Pollutant Discharge Elimination System
NSOA	Non-State-of-the-Art
NWS	National Weather Service

OA	Operational Area
OAEOC	Operational Area Emergency Operations Center
OES	Office of Emergency Services
OFM	Office of Forest Management
OH	Overhead
OR	Oregon
OWTS	On-Site Wastewater Treatment System
PA	Public Assistance (Program)
PALMS	Palisades Applied Logistics Management System
PCC	Portland Cement Concrete
PCCT	Palisades Community Communication Tool
PCH	Pacific Coast Highway
PE	Polyethylene
PG&E	Pacific Gas and Electric; Pacfic Gas and Electric Company
PII	Personally Identifiable Information
PIO	Public Information Officer
Plan	Logistics and Traffic Management Plan
PPCC	Pacific Palisades Community Council
PROW	Public Right of Way
PSA	Public Service Announcement
PSEP	Pipeline Safety Enhancement Plan
PSPS	Public Safety Power Shutoff
PSPS	Public Safety Power Shutoffs
PTDS	Pole-Top Distributing Stations
PVC	Polyvinyl Chloride
PWRS	Public Way Reservation System
RAP	Recreation and Parks
RCP	Reinforced Concrete Pipe
Rebuild	Palisades Rebuild
RPZ	Root Protection Zone
RS	Receiving Station
RSS	Recovery Support Strategy
RYLAN	Ready My LA Neighborhood
SAIDI	System Average Interruption Duration Index
SAIFI	System Average Interruption Frequency Index
SatCOLTs	Satellite Cell On Light Trucks
SB	Senate Bill
SBL	Southbound Left
SBR	Southbound Right
SBS	Soil Burn Severity
SBT	Southbound Through
SCAG	Southern California Association of Governments
SCE	Southern California Edison
SCG	Southern California Gas Company
SCWP	Safe, Clean Water Program
SDG&E	San Diego Gas & Electric
SEMS	Standardized Emergency Management System
SFPUC	San Francisco Public Utilities Commission
SGMA	Sustainable Groundwater Management Act
SIG	Special Implementation Group
SLA	Service-Level Agreement
SMC	Service to Main Connection
SOTL	Scattergood-Olympic Transmission Line
SPF	Seismic Steel Pipe
SPOT	Satellite Picocell on a Trailer
SRA	State Responsibility Area
SRF	Self-Realization Fellowship
SSMP	Sewer System Management Plan
StreetsLA	Bureau of Street Services; Los Angeles Departmentof Public Works, Bureau of Street Services
SWP	State Water Project
SWRCB	State Water Resources Control Board
SZ	Service Zone
T&D	Transmission and Distribution
TAS	Thermally-Activated Shutoff Valves
TAZ	Traffic Analysis Zone; Transportation Analysis Zone
TCO	Traffic Control Officer
TL	Timber Litter
TMPZ	Temporary Managed Parking Zones
TU	Timber Understory

TWLTL	Two-Way Left-Turn Lane
UCLA	University of California, Los Angeles
UFD	Urban Forestry Division
UFMP	Urban Fire Management Plan
UG	Underground
ULI	Urban Land Institute
USACE	U.S. Army Corps of Engineers
USBR	U.S. Bureau of Reclamation
USC	University of Southern California
USGS	U.S. Geological Survey
UUAD	Utility Undergrounding Assessment Districts
UUROC	Unified Utilities Rebuild Operations Center
UV	Ultraviolet
UWMP	Urban Water Management Plan
VGB	Vegetated Green Buffer
VHFHSZ	Very High Fire Hazard Severity Zone
VMP	Vegetation Management Program
vph	vehicles per hour
VPP	Virtual Power Plant
VSAT	Very Small Aperture Terminal
WA	Washington
WARN	Water and Wastewater Agency Response Network
WBL	Westbound Left
WBR	Westbound Right
WEA	Wireless Emergency Alert
WECC	Wireless Emergency Communication Center
WERT	Watershed Emergency Response Team
WPG	Wildfire Prevention Grant
WRF	Water Research Foundation
WRP	Wildfire Resilience Planning
WS	Workstream
WUI	Wildland-Urban Interface
ZIMAS	Zoning Information and Map Access System



1. Project Overview and Context

This section establishes the context, intent, and scope of the **Workstream 4 – Logistics and Traffic Management Plan**, outlining how it supports the City's broader Palisades Rebuild initiative. It explains the operating environment, defines what this Plan delivers, and describes how it was developed through collaboration among City departments and community partners.

This Logistics and Traffic Management Plan provides the City of Los Angeles (City) with a unified operational framework to manage mobility, access, and logistics during reconstruction. The Plan integrates traffic coordination, construction logistics, parking and curb management, and public communication into a single, data-driven framework. Its purpose is to maintain safety, accessibility, and transparency throughout the Rebuild while ensuring that decisions across agencies, contractors, and community stakeholders are guided by consistent information and shared priorities.

Together with the Infrastructure Restoration Plan and the Fire Mitigation Planning Document, this Plan forms a critical part of the City's comprehensive recovery strategy by linking policy, engineering, and field operations to keep the Pacific Palisades functioning safely and efficiently as the community rebuilds.

1.1. Background and Context

The Palisades Rebuild unfolds within one of the most constrained mobility environments in Los Angeles. The community's steep hillside terrain, narrow rights-of-way, and limited arterial connections, combined with the simultaneous rebuilding of thousands of properties, create a level of operational complexity rarely encountered in urban reconstruction. Each block must accommodate contractors, inspectors, deliveries, residents, and emergency responders, all competing for limited roadway and curb space.

Recognizing these challenges, the City engaged AECOM to develop a Logistics and Traffic Management Plan that integrates a framework to manage the flow of people, vehicles, and information during reconstruction. The objective is not simply to mitigate congestion but to coordinate activity across departments, contractors, and community stakeholders through shared data, standardized protocols, and clear lines of accountability.

This framework brings together the City's core operational partners— Los Angeles Department of Transportation (LADOT), Los Angeles Department of Building and Safety (LADBS), StreetsLA (Bureau of Street Services), Emergency Management Department (EMD), Los Angeles Fire Department (LAFD), Department of Water and Power (DWP), and Council District 11 (CD 11)—under the oversight of the Los Angeles Department of Public Works, Bureau of Engineering (BOE) and the Mayor's Office. It enables these departments to function as a single network to ensure that lane closures, logistics staging, and community notifications occur with consistency and transparency.

Workstream 4 also operates in direct coordination with the companion workstreams of the Palisades Rebuild program:

Workstream 1 – Program Management and Governance, which establishes reporting cadence, fiscal oversight, and performance metrics.

Workstream 2 – Infrastructure Restoration, which delivers public infrastructure rebuild phasing that influences roadway and utility access.

Workstream 3 – Emergency Access and Fire Safety, which defines the framework and strategies related to future fire mitigation and standards (as implemented in other communities and use of best management practices) for evacuation routes, emergency clearances, and life-safety operations.

Together, these workstreams form a unified structure to safely, efficiently, and equitably rebuild the community. Within that structure, the **Logistics and Traffic Management Plan** serves as the operational backbone to translate the City's recovery policies into coordinated field action and ensure that mobility in the Pacific Palisades remains safe, reliable, and predictable as reconstruction advances.

1.2. Purpose of the Plan

The purpose of the **Logistics and Traffic Management Plan** is to provide the City with a coordinated, data-driven framework to manage mobility and access during the Palisades Rebuild. The Plan establishes how roadway operations, logistics scheduling, curbside activity, and public communication function together under a unified system, ensuring the coexistence of construction progress, community access, and safety throughout the reconstruction period.

At its core, the Plan is designed to maintain **safety, accessibility, and predictability**. It achieves this by defining the systems, tools, and inter-departmental processes that allow the City to proactively coordinate activities rather than respond to conflicts after they occur. By integrating the management of lane closures, curb regulations, logistics staging, and real-time communication, the Plan transforms what would otherwise be a fragmented series of departmental efforts into a single operational program guided by shared priorities and consistent information.

This Plan also serves as a framework for **transparency and accountability**. Through standardized procedures, technology-enabled monitoring, and unified communication channels, residents, contractors, and City staff will rely on the same verified information. This "one source of truth" approach supports faster decision-making, clearer communication, and greater trust between the City and the community it serves.

The Plan's objectives are to:

Enable Safe Mobility: Preserve emergency access and traffic circulation as reconstruction intensifies.

Coordinate Construction and Logistics Activity: Manage delivery scheduling, lane usage, and curbside demand across multiple concurrent projects.

Promote Fiscal Neutrality: Operate through cost-recovery mechanisms that ensure program sustainability without burdening the City's general fund.

Advance Equity and Accessibility: Ensure that mobility and access are preserved for all residents, including vulnerable populations and those with limited off-street parking or digital access.

Provide Transparent, Real-Time Communication: Keep the community informed of closures, detours, and progress through the use of consistent and reliable messaging.

Support Adaptive Management: Allow City departments to learn, adjust, and improve operations as conditions evolve.

Through these objectives, the Logistics and Traffic Management Plan acts as the operational link between the City's policy commitments and day-to-day field management. It ensures that permits, closure, delivery, and communication align with the overarching goal of safely, efficiently, and equitably rebuilding the Pacific Palisades while preserving the community's quality of life during the recovery process.

1.3. Logistics and Traffic Management Plan Scope

The **Logistics and Traffic Management Plan** defines the systems, coordination processes, and management tools that the City will use to oversee mobility and access throughout the Palisades Rebuild. Its scope encompasses the operational functions necessary to manage how construction, logistics, and community activity interact across a constrained and continuously changing network.

The Plan is organized around five interconnected components that together create a unified operational framework:

1. **Lane Closure and Right-of-Way Management**
   This framework establishes a strict coordination protocol for scheduling, reviewing, and deconflicting all roadway closures. Leveraging the existing Los Angeles Public Way Reservation System (PWRS) and Standard Traffic Control Plans, it provides immediate oversight to prevent gridlock. The protocol links LADOT, BOE, and LADBS workflows so that closures—whether for utility trenching or crane lifts—are evaluated against common safety criteria to protect emergency access.
2. **Parking and Curb Management**
   This framework defines temporary curb uses that balance construction efficiency with residential livability. It introduces specific designations, including Contractor Parking Zones, Food Truck Staging Areas, and Residential Access Zones. Each zone type is designed to preserve emergency lane clearance and support orderly staging, managed through clear signage and complaint-driven enforcement.
3. **Logistics and Supply Chain Coordination**
   This framework establishes Logistics and Delivery Guidelines to flatten the peak of construction traffic. It includes protocols for spreading delivery times, managing staging off-street, and proactively deconflicting Public Infrastructure Projects (Workstream 2) against private rebuild deliveries to ensure continuous flow.
4. **Community Communication and Transparency**
   This framework activates Community Notification Channels to serve as the single source of truth for residents. It consolidates data from the logistics and lane closure protocols into unified, proactive alerts (email/text) and web updates, ensuring the community has predictable information regarding daily impacts.
5. **Governance and Fiscal Oversight**
   All systems operate under a shared governance model led by the Special Implementation Group (SIG). The SIG provides policy direction, cross-department alignment, and fiscal management to maintain program neutrality and accountability. Quarterly reporting, performance metrics, and audit reviews ensure that operational decisions remain transparent and financially sound.

Collectively, these components fulfill the Workstream 4 mission: to provide an integrated, scalable framework that manages construction-related mobility demands while protecting community access and safety. Working in coordination with the Logistics and Traffic Management Plan (WS 4), the Program Management (WS 1), Infrastructure Restoration (WS 2), and Fire Mitigation Planning (WS 3) elements are designed to operate collaboratively with the companion workstreams so that the City's recovery program functions as a single, coordinated system.

The development of these frameworks was informed by a detailed **Traffic Operational Analysis**, which examined existing conditions and modeled future roadway performance across 17 key intersections and corridors within the Pacific Palisades. The analysis evaluated intersection delays, queue lengths, and overall levels of service under pre-fire, active-construction, and rebuilt scenarios. Its findings directly shaped the configuration of the Lane Closure Protocol, the prioritization logic for Logistics Guidelines, and the design of temporary curb measures. The results of this analysis and associated performance metrics are presented in the **Traffic Operational Analysis Section**.

1.4. Methodology and Inputs

The **Logistics and Traffic Management Plan** was developed through a structured, data-driven, and collaborative process that combined quantitative analysis, logistics modeling, and extensive engagement with City departments, contractors, and community stakeholders. This methodology ensures that every recommendation in the Plan is grounded in measurable data, verified field conditions, and real-world insight from those directly affected by reconstruction activity.

1.4.1. Analytical Foundation

The analytical foundation of the Plan is the **Traffic Operational Analysis** completed by AECOM to evaluate how reconstruction activity will influence mobility and access throughout the Pacific Palisades. The analysis modelled **pre-fire, active-rebuild, and built-out** conditions to understand how traffic volumes, intersection performance, and curb demands would evolve as construction intensifies.

Using industry-standard methodologies consistent with the Highway Capacity Manual, 6th Edition (TRB,2016), the team analyzed **17 key intersections and corridors** representing the primary access routes serving the community—Sunset Boulevard, Temescal Canyon Road, Pacific Coast Highway (PCH), and Chautauqua Boulevard among them. The resulting performance metrics—intersection delay, queue length, and level of service (LOS)—established baseline operating conditions and informed the development of targeted management strategies within the Lane Closure System (LCS), the Palisades Applied Logistics Management System (PALMS), and the Parking and Curb Management Framework.

1.4.2. Data Sources and Inputs

The analysis and operational frameworks were informed by multiple verified datasets and field observations assembled by AECOM from City, regional, and project-specific sources:

- **LADOT Traffic and Signal Data**: Turning-movement counts, signal timing plans, and baseline traffic volumes used to calibrate and validate network models.
- **City of Los Angeles Replica Traffic Data**: High-resolution, real-time and historical traffic datasets that captured travel speeds, congestion patterns, and mobility trends across the study area.
- **Logistics Plan Data**: Rebuild schedules, the number and distribution of homes, neighborhood clusters, and estimated worker and delivery trips derived from the project's logistics planning framework.
- **LADBS Permit Records**: Active and anticipated building permits and inspection schedules used to forecast the phasing and density of construction activity.
- **Agency Records and Geographic Information Systems (GIS) Data**: Roadway classifications, right-of-way geometry, utility corridors, and infrastructure inventories from BOE, StreetsLA, DWP, and Information Technology Agency (ITA).
- **Field Surveys and Site Assessments**: On-site verification and emergency-access clearances to validate analytical assumptions.
- **Community and Contractor Engagement**: Participation in community meetings within the Pacific Palisades and direct discussions with both small and large contractors to understand daily operational challenges, delivery patterns, and field coordination needs. Insights from these engagements informed assumptions on construction intensity, staging requirements, and realistic access patterns.

1.4.3. Collaborative Development Process

The Plan was shaped through an iterative process of technical analysis, agency coordination, and stakeholder review:

1. **Scoping and Data Alignment**: Defined analytical boundaries, modeling parameters, and data-integration protocols.
2. **Scenario Evaluation**: Modeled existing, active-rebuild, and built-out conditions to identify congestion points, safety concerns, and areas of operational sensitivity.
3. **Framework Design**: Translated analytical findings into operational systems—the LCS, PALMS, and curb-management frameworks.
4. **Community and Industry Feedback**: Incorporated feedback from community groups (residents), contractors, and field operators gathered during outreach meetings to ensure the Plan's operational measures were both practical and equitable.

1.4.4. Outcome

This methodology ensures that the **Logistics and Traffic Management Plan** is both data-driven and grounded in field realities. By combining quantitative analysis with community insight, verified datasets, and direct contractor engagement, the Plan provides the City with a defensible, adaptable framework for managing mobility, safety, and access throughout the Palisades Rebuild.



2. Traffic Operational Analysis

This section provides the analytical backbone of the Plan. It quantifies traffic performance across three scenarios—Pre-Fire, Construction, and Built-Out—using intersection level-of-service, delay, and 95th percentile queue lengths. The purpose of the traffic operational analysis is to identify bottlenecks, evaluate the effects of active construction and lane closures, and develop data-driven mitigation measures and strategies. Its goals are to forecast how construction activities will affect mobility, inform lane-closure priorities, guide truck-route planning, and provide measurable benchmarks for monitoring and adaptive management.

The extent of the study intersections was determined by identifying key locations along major arterial roads where traffic operating conditions reflect overall network performance. For the purposes of the intersection LOS analysis, 17 intersections have been designated for analysis.

The study intersections, shown in Figure 2.1, are:

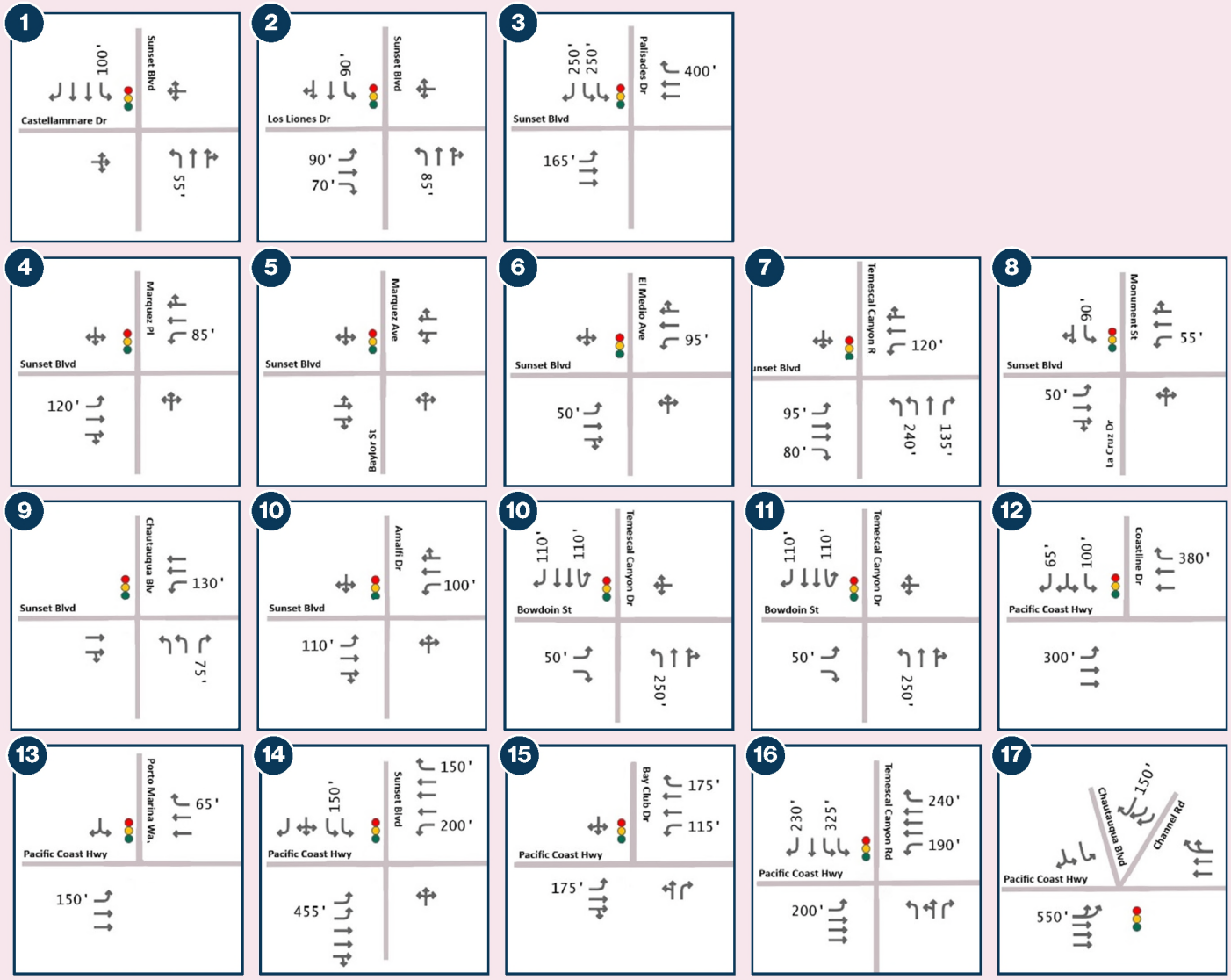
1. W Sunset Boulevard and Castellammare Drive
2. W Sunset Boulevard and Los Liones Drive
3. W Sunset Boulevard and N Palisades Drive
4. W Sunset Boulevard and Marquez Place
5. W Sunset Boulevard and N Baylor Street
6. W Sunset Boulevard and El Medio Avenue
7. W Sunset Boulevard and Temescal Canyon Road
8. W Sunset Boulevard and La Cruz Drive/Monument Street
9. W Sunset Boulevard and Chautauqua Boulevard
10. W Sunset Boulevard and Amalfi Drive
11. Temescal Canyon Road and Bowdoin Street
12. PCH and W Coastline Drive
13. PCH and Porto Marina Way
14. PCH and W Sunset Boulevard
15. PCH and Bay Club Drive
16. PCH and Temescal Canyon Road
17. PCH and Chautauqua Boulevard/W Channel Road

Figure 2.1: Study intersections



Sources: Bing Maps; AECOM 2025

Figure 2.2: Study intersection lane geometry



Sources: Bing Maps; AECOM 2025

Figure 2.2 illustrates the intersection lane geometry.

The existing roadway system within the study area is detailed below, providing an overview of the primary arterial roads and their functional classifications, lane configurations, and traffic control features.

Palisades Drive: Palisades Drive is a north-south minor arterial connecting Chastain Parkway to Sunset Boulevard. It is a four-lane divided/undivided street with a speed limit of 45 miles per hour (mph). Within approximately half a mile of Sunset Boulevard, the roadway is divided with street parking available on both sides. Beyond this segment, it becomes undivided and street parking is not permitted.

Temescal Canyon Road: Temescal Canyon Road is a north-south minor arterial that extends between Sunset Boulevard and PCH. It is a four-lane divided roadway with a posted speed limit of 45 mph and street parking available on both sides. At the time of this study, Temescal Canyon Road is temporarily closed.

Channel Road: Channel Road functions as a north-south partially local street and major collector, connecting PCH to nearby residential neighborhoods. It is a two-lane undivided roadway with a posted speed limit of 25 mph. Street parking is available on both sides.

Chautauqua Boulevard: Chautauqua Boulevard is a north-south local street extending between Sunset Boulevard and PCH. It is a two-lane undivided roadway with a posted speed limit of 35 mph. Street parking is limited and primarily available on the east side.

Sunset Boulevard: Sunset Boulevard is an east-west major arterial traversing the study area between Chautauqua Boulevard and PCH. It is a four-lane roadway with a posted speed limit of 35 **mph. Street parking is generally not available.**

Bienveneda Avenue: Bienveneda Avenue is a north-south local street connecting Via Floresta to Sunset Boulevard. It is a two-lane undivided roadway with a posted speed limit of 25 mph. Residential street parking is available on both sides.

PCH: PCH is a north-south major arterial extending between Sunset Boulevard and Chautauqua Boulevard within the study area. It is a six-lane divided highway with a posted speed limit of 45 mph. Street parking is not permitted.

Marquez Avenue: Marquez Avenue is a major collector that loops and connects to Sunset Boulevard at two points. It is a two-lane undivided roadway with a posted speed limit of 25 mph. Street parking is available along most of the corridor.

Lachman Lane: Lachman Lane is a north-south major collector that connects Marquez Avenue to Via Floresta. It is a two-lane undivided street with a posted speed limit of 25 mph and street parking is available along most of the street.

Via Floresta: Via Floresta is an east-west major collector extending between Lachman Lane and Bienveneda Avenue. It is a two-lane undivided street with a posted speed limit of 25 mph. Street parking is available along most of the corridor.



Los Liones Drive: Los Liones Drive is an east-west major collector that connects local points of interest ,- such as schools, churches, and parking lots, to Sunset Boulevard. It is a two-lane undivided roadway with a posted speed limit of 25 mph. Street parking is available along certain segments on both sides.

Baylor Street: Baylor Street is a north-south local street that connects residential areas south of Las Casa Avenue to Sunset Boulevard. It is a two-lane undivided roadway with a posted speed limit of 25 mph. Street parking is available in certain segments on both sides.

El Medio Avenue: El Medio Avenue is a north-south major collector providing access from residential areas to Sunset Boulevard. It is a two-lane undivided roadway with a posted speed limit of 25 mph. Street parking is available along both sides.

Bowdoin Street: Bowdoin Street is an east-west major collector serving residential neighborhoods and providing access to the Palisades High School. It is a two-lane partial divided/undivided roadway with a posted speed limit of 25 mph. Street parking is available in select segments on both sides.

Monument Street/La Cruz Drive: Monument Street/La Cruz Drive forms a north-south major collector that connects residential areas to Sunset Boulevard. This two-lane undivided roadway has a posted speed limit of 25 mph, with street parking available on both sides.

Amalfi Drive: Amalfi Drive is a north-south major collector that connects nearby residential areas to Sunset Boulevard. It is a two-lane undivided street with a posted speed limit of 25 mph, and street parking is available on both sides.

Coastline Drive: Coastline Drive functions as both a north-south and east-west major collector, linking northern residential areas to PCH. It is a two-lane undivided roadway with a posted speed limit of 25 mph. Street parking is available along both sides.

Porto Marina Way: Porto Marina Way is an east-west major collector connecting northern residential neighborhoods to PCH. It is a two-lane undivided roadway with a posted speed limit of 25 mph. Street parking is available on both sides.

Bay Club Drive: Bay Club Drive is a local street providing access from a private club to PCH. It is a two-lane undivided street with a posted speed limit of 25 mph. Street parking is not provided.





2.1. Pedestrian Facilities

Pedestrian facilities within the Pacific Palisades area vary based on roadway classification and adjacent land uses. Along major arterials such as Sunset Boulevard, Palisades Drive, Temescal Canyon Road, Marquez Avenue, Entrada Drive and Chautauqua Boulevard, continuous sidewalks and marked crosswalks are provided at key intersections, facilitating pedestrian access to commercial areas, schools, and parks.

Sidewalk coverage is also present along many residential streets, including, but not limited to, Lachman Lane, Via Floresta, and portions of Bienveneda Avenue; however, the extent of coverage varies. Along PCH, pedestrian infrastructure is more limited, particularly on the inland side of the roadway, where sidewalks and crossings are generally only available near signalized intersections.

Crosswalks are provided at multiple intersections along Sunset Boulevard, Temescal Canyon Road, Marquez Avenue, Entrada Drive and PCH, enhancing pedestrian connectivity in these areas. However, crosswalks are limited within residential neighborhoods. Existing pedestrian facilities in the vicinity of the project area are shown in Figure 2.3.

2.2. Bicycle Facilities

Bicycle facilities in the Pacific Palisades area are limited, consisting primarily of shared roadways rather than dedicated bicycle infrastructure. Designated bike lanes are generally not provided along most of the studied corridors, including, but not limited to, Palisades Drive and Bienveneda Avenue.

Cyclists typically share travel lanes with vehicles on local and collector streets such as Marquez Avenue, Lachman Lane, Via Floresta, and Channel Road, which may impact rider comfort and safety, especially during peak travel periods.

Along PCH, bicycle use is permitted within the shoulder, as follows, though conditions vary:

- From Temescal Canyon Road to the west, cyclists may use the northern shoulder.
- From Temescal Canyon Road to Chautauqua Boulevard, bicycle access is allowed on both the northern and southern shoulders.

A Class II bike lane (striped bike lane) is provided on both sides of Temescal Canyon Road, between Sunset Boulevard and PCH, representing one of the few dedicated bicycle facilities in the study area.

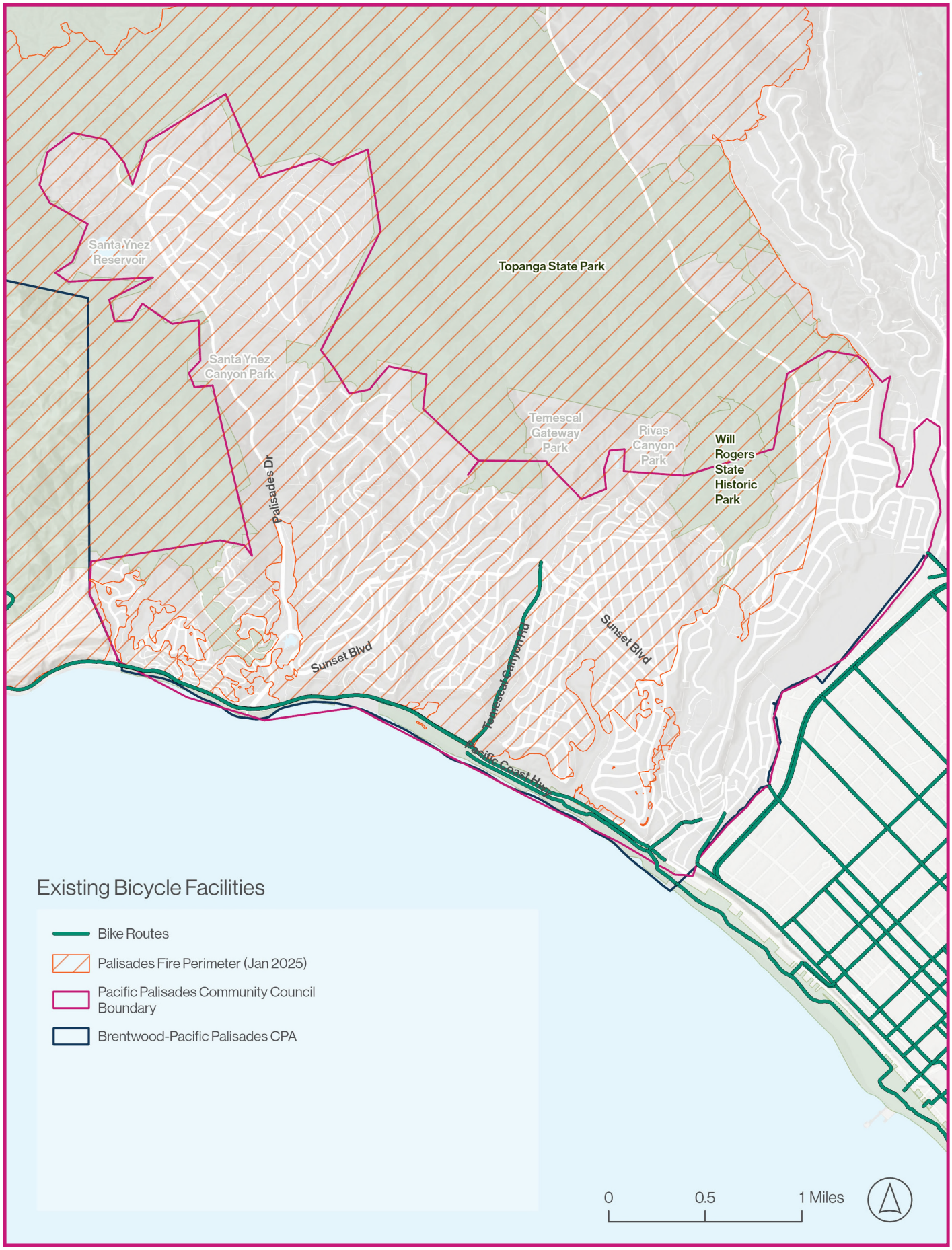
Existing bicycle facilities in the vicinity of the project area are illustrated in Figure 2.4.

Figure 2.3: Existing pedestrian facilities



Sources: City of LA; AECOM 2025

Figure 2.4: Existing bicycle facilities



Sources: City of LA; AECOM 2025

2.3. Transit Facilities

The area is served by public transit through both Santa Monica Big Blue Bus and LA Metro Transit, providing connectivity to surrounding communities, schools, and major destinations. A summary of the available routes is provided below.

Santa Monica Big Blue Bus:

- **Route 9**: Provides service between Santa Monica (Main Street and Olympic Drive) and Pacific Palisades (Sunset Boulevard and Marquez Avenue) via Chautauqua Boulevard and Sunset Boulevard. Route 9 operates daily with headways approximately every 35 minutes.

LA Metro Transit:

- **Route 602**: Provides service between Westwood/ University of California, Los Angeles, and Pacific Palisades along Sunset Boulevard. Key nearby stops include Paul Revere Charter Middle School and Temescal Canyon. Route 602 operates daily with headways approximately every 20 to 40 minutes.
- **Route 134**: Connects Santa Monica and Malibu along PCH with stops located within Pacific Palisades. Route 134 operates daily with headways approximately every 30 to 60 minutes on weekdays, and approximately every 45 minutes on weekends.

Existing transit service routes in the area are shown in Figure 2.5.



Figure 2.5: Existing transit facilities



Sources: City of LA, Metro, City of Santa Monica; AECOM 2025

2.4. Analysis Scenarios

To facilitate a clear understanding of the before, current, and after conditions of Palisades Rebuild Project, three scenarios have been analyzed for comparative purposes. The following scenarios apply for the traffic operational analysis:

- **Pre-Fire Conditions**: AM/PM peak-hour baseline operations prior to the Palisades Wildfire.
- **Construction Conditions**: Current and near-term traffic operations during the Rebuild, accounting for active sites, lane closures, parking controls, and logistics zones.
  - » May include multiple sub-phases based on the number of active construction sites and rebuild progression.
- **Build-Out / Future Conditions**: Horizon Year (5-years) Build conditions after full rebuild and planned development completion.



2.5. Input Data and Assumptions

Based on existing conditions data and the construction logistics detailed in Section 7, the following peak-hour assumptions regarding construction activities have been incorporated into the traffic volume forecasts derived from Replica data for the Palisades Rebuild. Although five to ten construction trips per lot are anticipated, five trips per lot have been assumed for peak-hour volume estimates. The post-processed construction condition volumes reflect this assumption, along with a 45% background traffic reduction to account for destroyed residential properties and businesses, as well as the currently approved 50 construction permits and future scenarios involving 500 and 1,000 permits.

The following are the construction activity data and traffic inputs:

- **Construction Activity Data**:
  - Parcel list of wildfire-impacted properties.
  - Active construction sites with addresses.
  - Phasing schedule and duration.
  - Operating hours and days per week.
  - Estimated number of workers and daily truck trips (average/peak).
  - Soil haul origins/destinations.
  - Equipment types and daily operating hours.
  - On-site/off-site staging locations.
  - Truck routes and haul paths.
- **Traffic Inputs**:
  - Intersection turning movement counts.
  - Signal timing plans.
  - Truck percentages.
  - Baseline volumes (from pre-fire data or City archives).
  - Adjusted demand factors (construction workers, delivery vehicles, vendors, residents).

2.6. Methodology

The Highway Capacity Manual (HCM), an industry-standard reference, was used to evaluate intersection LOS and identify where the project could adversely affect traffic operations (TRB, 2016). Under the HCM 6th Edition methodology, LOS thresholds are based on the average delay experienced by vehicles at an intersection. Delay is influenced by several factors, including signal cycle length (accounting for pedestrian crossings), roadway capacity (such as the number of travel lanes at each approach), and traffic demand.

An intersection queue length analysis was conducted to determine whether sufficient space exists to accommodate traffic volumes. This analysis evaluated vehicle queues for all approaches at the study intersections. Approaches where queues exceed available storage capacity indicate potential spillover conditions, which may contribute to congestion, weaving, and safety concerns.

Outlined below are the analytical tools and analyses conducted, along with considerations for scenario development:

- **Analytical tools and standards**:
  - Synchro/SimTraffic or HCS for traffic operations modeling.
  - LOS analysis per the HCM, (6th Edition) Methodology.
  - 95th percentile queue length analysis.
  - Comparison of scenarios for AM/PM peak-hour conditions.
- **Scenario development**:
  - Peak hour identification and calibration.
  - Integration of construction traffic (PALMS + Temporary Managed Parking Zone (TMPZ) trip estimates).
  - Application of lane closure and staging impacts.

2.7. Results and Findings

An operational analysis of the study intersections was conducted to determine LOS and 95th-percentile queue lengths for Pre-fire, Construction, and Build-out conditions. The analysis utilized Synchro traffic modeling software, which applies HCM methodologies to evaluate intersection performance and reports results in terms of LOS and vehicle delay.

Tables 2.1, 2.2, and 2.3 present intersection delays (in seconds per vehicle) and associated LOS for AM and PM peak periods under Pre-Fire, Construction, and Build-out scenarios. LOS classifications range from **A (optimal)** to **F (severe)**, reflecting operational performance and congestion severity. The acceptable level of service for intersections is LOS D or better.

Table 2.1: Intersection LOS Summary - Pre-Fire Conditions

ID	Intersections	Traffic Control	AM Peak Hour		PM Peak Hour	
			Delay[2] (sec/veh)	LOS	Delay[2] (sec/veh)	LOS
1	W Sunset Boulevard and Castellammare Drive	Signal	17.8	B	19.8	B
2	W Sunset Boulevard and Los Liones Drive	Signal	21.8	C	26.4	C
3	W Sunset Boulevard and N Palisades Drive	Signal	30.1	C	41.4	D
4	W Sunset Boulevard and Marquez Place	Signal	6.7	A	4.7	A
5	W Sunset Boulevard and N Baylor Street	Signal	12.6	B	53.8	D
6	W Sunset Boulevard and El Medio Avenue	Signal	7.8	A	16.1	B
7	W Sunset Boulevard and Temescal Canyon Road	Signal	69.4	**E**	55.2	**E**
8	W Sunset Boulevard and La Cruz Drive/Monument Street	Signal	133.1	**F**[1]	187.0	**F**[1]
9	W Sunset Boulevard and Chautauqua Boulevard	Signal	28.5	C	33.3	C
10	W Sunset Boulevard and Amalfi Drive	Signal	15.2	B	17.3	B
11	Temescal Canyon Road and Bowdoin Street	Signal	25.1	C[1]	37.8	D[1]
12	PCH and W Coastline Drive	Signal	18.3	C	162.6	**F**
13	PCH and Porto Marina Way	Signal	14.9	B	185.5	**F**
14	PCH and W Sunset Boulevard	Signal	34.9	C[1]	185.5	**F**[1]
15	PCH and Bay Club Drive	Signal	96.4	**F**	407.1	**F**
16	PCH and Temescal Canyon Road	Signal	128.9	**F**[1]	252.7	**F**[1]
17	PCH and Chautauqua Boulevard/W Channel Road	Signal	417.1	**F**[1]	748.6	**F**[1]

Notes:
[1] HCM 2000 Analysis, since HCM 7th is not applicable
[2] Average control delay, in seconds per vehicle; **BOLD** indicates unsatisfactory LOS
Source: AECOM 2025

Table 2.2: Intersection LOS Summary - Construction Conditions

ID	Intersections	Traffic Control	50 - Permits				500 - Permits				1000 - Permits			
			AM Peak Hour		PM Peak Hour		AM Peak Hour		PM Peak Hour		AM Peak Hour		PM Peak Hour	
			Delay[2] (sec/veh)	LOS	Delay[2] (sec/veh)	LOS	Delay[2] (sec/veh)	LOS	Delay[2] (sec/veh)	LOS	Delay[2] (sec/veh)	LOS	Delay[2] (sec/veh)	LOS
1	W Sunset Boulevard and Castellammare Drive	Signal	17.6	B	17.4	B	19.4	B	17.5	B	20.5	C	19.0	B
2	W Sunset Boulevard and Los Liones Drive	Signal	17.3	B	18.5	B	16.1	B	20.4	C	15.2	B	21.6	C
3	W Sunset Boulevard and N Palisades Drive	Signal	21.9	C	18.6	B	21.3	C	18.5	B	25.0	C	19.1	B
4	W Sunset Boulevard and Marquez Place	Signal	3.7	A	2.7	A	3.7	A	2.7	A	3.7	A	2.7	A
5	W Sunset Boulevard and N Baylor Street	Signal	6.5	A	6.9	A	6.3	A	6.8	A	7.4	A	8.3	A
6	W Sunset Boulevard and El Medio Avenue	Signal	4.1	A	5.6	A	4.4	A	12.1	B	4.9	A	79.2	**E**
7	W Sunset Boulevard and Temescal Canyon Road	Signal	15.1	B	11.8	B	35.5	D	63.5	**E**	108.7	**F**	212.8	**F**
8	W Sunset Boulevard and La Cruz Drive/Monument Street	Signal	10.6	B[1]	13.0	B[1]	97.2	**F**[1]	43.1	D[1]	329.0	**F**[1]	139.5	**F**[1]
9	W Sunset Boulevard and Chautauqua Boulevard	Signal	17.5	B	17.1	B	33.7	C	40.5	D	147.8	**F**	40.3	D
10	W Sunset Boulevard and Amalfi Drive	Signal	6.3	A	6.5	A	6.3	A	6.5	A	6.3	A	6.5	A
11	Temescal Canyon Road and Bowdoin Street	Signal	10.3	B[1]	11.0	B[1]	11.0	B[1]	18.8	B[1]	22.7	C[1]	53.3	D[1]
12	PCH and W Coastline Drive	Signal	7.9	A	16.3	B	7.8	A	27.3	C	7.8	A	44.1	D
13	PCH and Porto Marina Way	Signal	5.9	A	17.2	B	6.2	A	22.4	C	6.1	A	31.8	C
14	PCH and W Sunset Boulevard	Signal	16.5	B[1]	25.3	C[1]	16.8	B[1]	32.9	C[1]	17.8	B[1]	49.5	D[1]
15	PCH and Bay Club Drive	Signal	7.3	A	88.2	**F**	7.5	A	133.6	F	9.2	A	187.2	**F**
16	PCH and Temescal Canyon Road	Signal	22.1	C[1]	39.4	D[1]	63.1	**E**[1]	154.7	**F**[1]	215.4	**F**[1]	310.2	**F**[1]
17	PCH and Chautauqua Boulevard/W Channel Road	Signal	86.5	**F**[1]	205.2	**F**[1]	352.7	**F**[1]	525.0	**F**[1]	859.9	**F**[1]	1116.8	**F**[1]

Notes:
[1] HCM 2000 Analysis, since HCM 7th is not applicable
[2] Average control delay, in seconds per vehicle; **BOLD** indicates unsatisfactory LOS

Source: AECOM 2025

Table 2.3: Intersection LOS Summary - Build-out Conditions

ID	Intersections	Traffic Control	AM Peak Hour		PM Peak Hour	
			Delay[2] (sec/veh)	LOS	Delay[2] (sec/veh)	LOS
1	W Sunset Boulevard and Castellammare Drive	Signal	17.9	B	20.9	C
2	W Sunset Boulevard and Los Liones Drive	Signal	22.3	C	26.6	C
3	W Sunset Boulevard and N Palisades Drive	Signal	31.3	C	44.7	D
4	W Sunset Boulevard and Marquez Place	Signal	7.1	A	4.8	A
5	W Sunset Boulevard and N Baylor Street	Signal	13.3	B	73.4	**E**
6	W Sunset Boulevard and El Medio Avenue	Signal	8.1	A	17.7	B
7	W Sunset Boulevard and Temescal Canyon Road	Signal	75.7	**E**	58.8	**E**
8	W Sunset Boulevard and La Cruz Drive/Monument Street	Signal	156.3	**F**[1]	204.9	**F**[1]
9	W Sunset Boulevard and Chautauqua Boulevard	Signal	31.5	C	36.1	D
10	W Sunset Boulevard and Amalfi Drive	Signal	16.1	B	19.1	B
11	Temescal Canyon Road and Bowdoin Street	Signal	26.4	C[1]	40.7	D[1]
12	PCH and W Coastline Drive	Signal	20.9	C	177.4	**F**
13	PCH and Porto Marina Way	Signal	18.4	B	201.3	**F**
14	PCH and W Sunset Boulevard	Signal	36.1	D[1]	206.3	**F**[1]
15	PCH and Bay Club Drive	Signal	110.9	**F**	435.0	**F**
16	PCH and Temescal Canyon Road	Signal	141.5	**F**[1]	269.1	**F**[1]
17	PCH and Chautauqua Boulevard/W Channel Road	Signal	438.4	**F**[1]	778.0	**F**[1]

Notes:
[1] HCM 2000 Analysis, since HCM 7th is not applicable
[2] Average control delay, in seconds per vehicle; **BOLD** indicates unsatisfactory LOS
Source: AECOM 2025

2.8. Mitigation Measures and Recommendations

The mitigation analysis was conducted under three construction scenarios (50, 500 and 1,000 construction permits), representing varying levels of construction activity and construction trip generation associated with the Palisades Rebuild. The following summarizes the findings and recommended temporary mitigation measures:

Construction Conditions with 50 Permits

The intersection LOS analysis was conducted to evaluate intersection operations under construction conditions with 50 permits during weekday AM and PM peak hours. Under these conditions, all intersections operate at LOS D or better, except:

- Pacific Coast Highway and Bay Club Drive during the PM peak hour (Int. No. 15)
- Pacific Coast Highway and Chautauqua Boulevard/W Channel Road during both AM and PM peak hours (Int. No. 17)

No feasible mitigation measures were identified that would bring the above intersections to an acceptable LOS.

Construction Conditions with 500 Permits

The intersection LOS analysis was conducted to evaluate intersection operations under construction conditions with 500 permits during weekday AM and PM peak hours. Under these conditions, all intersections operate at LOS D or better, except:

- W Sunset Boulevard and Temescal Canyon Road during the PM peak hour (Int. No. 7)
- W Sunset Boulevard and La Cruz Drive/Monument Street during the AM peak hour (Int. No. 8)
- Pacific Coast Highway and Bay Club Drive during the PM peak hour (Int. No. 15)
- Pacific Coast Highway and Temescal Canyon Road during both AM and PM peak hours (Int. No. 16)
- Pacific Coast Highway and Chautauqua Boulevard/W Channel Road during both AM and PM peak hours (Int No. 17)

Many projects identified in this document are currently in preliminary stages of the project development process, and may still be pending funding, final approvals, and/or permitting. All projects are subject to change in scope, schedule, and cost until they are fully approved. Some of the projects, strategies, and efforts described in this report may not be possible for the City to complete without additional funding from the Federal and State governments as well as philanthropy, which may or may not be forthcoming.

With the recommended mitigations listed below, all intersections, except 15 through 17, are expected to operate at LOS D or better. The effectiveness of these improvement strategies in addressing traffic operational deficiencies is summarized below.

- W Sunset Boulevard and Temescal Canyon Road (Int. No. 7) would operate at LOS D during both AM and PM peak hours by extending the signal cycle length to at least 110 seconds and optimizing signal splits.
- W Sunset Boulevard and La Cruz Drive/Monument Street (Int. No. 8) would operate at LOS C in the AM peak hour and LOS D in the PM peak hour by restriping a westbound through lane as a westbound left turn lane and adding an additional receiving lane on the south leg of the intersection by temporary prohibiting street parking spaces.

Construction Conditions with 1,000 Permits

The intersection LOS analysis was conducted to evaluate intersection operations under construction conditions with 1,000 permits during weekday AM and PM peak hours. Under these conditions, all intersections operate at LOS D or better, except:

- W Sunset Boulevard and El Medio Avenue during the PM peak hour (Int. No. 6)
- W Sunset Boulevard and Temescal Canyon Road during both AM and PM peak hours (Int. No. 7)
- W Sunset Boulevard and La Cruz Drive/Monument Street during both AM and PM peak hours (Int. No. 8)
- W Sunset Boulevard and Chautauqua Boulevard during the AM peak hour (Int. No. 9)
- Pacific Coast Highway and Bay Club Drive during the PM peak hour (Int. No. 15)
- Pacific Coast Highway and Temescal Canyon Road during both AM and PM peak hours (Int. No. 16)
- Pacific Coast Highway and Chautauqua Boulevard/W Channel Road during both AM and PM peak hours (Int. No. 17)

No feasible mitigation measures were identified that would bring the above intersections to an acceptable LOS.

The results consistently show that as the number of construction permits increases to 500 and 1,000, short-term or localized mitigation measures at the intersection level become increasingly inadequate to address the high-demand volumes and saturated roadway capacity along PCH and W Sunset Boulevard.

While well-designed mitigation improvements can deliver meaningful benefits and enhance traffic flow at key locations, the overall network remains heavily constrained in the Palisades Rebuild project area. Most intersections continue to experience high delays and overcapacity issues, indicating that short-term, intersection-level mitigation measures alone are insufficient to fundamentally improve corridor performance. Therefore, the exploration of a comprehensive range of mitigation strategies during construction conditions is recommended, such as:

- Signal timing or phasing adjustments to optimize intersection performance.
- Temporary lane-use changes or flagging to improve traffic flow during peak construction periods.
- Dedicated construction truck routes, including the use of service roads to minimize impacts on general traffic.
- Staging relocations or schedule offsets to reduce peak-hour construction-related congestion.
- Enhanced enforcement or access restrictions to manage traffic volumes and improve safety.
- Infrastructure or technology improvements that provide long term operational benefits.
- Time-of-day traffic-management practices based on future field observations including, but not limited, to peak-hour traffic restrictions to alleviate congestion.
- Transportation Demand Management strategies such as encouraging mode shifts, reducing single-occupancy vehicle trips, implementing staggered work hours, and promoting alternative travel options.
- Ongoing monitoring and coordination with the City to evaluate construction and post-construction traffic conditions and identify opportunities for further improvements, if warranted.
- Effective management and control of construction permit issuance, based on prevailing construction conditions, to maintain acceptable traffic operations during the Palisades Rebuild Project.

2.9. Integration and Application

Below are additional frameworks that could help improve traffic operations during construction and build-out scenarios, given that not all deficient intersections and roadway segments can be fully mitigated.

- Feed results directly into:
  - **Section 5 (Traffic and Lane Closure Management)** – prioritization and scheduling logic.
  - **Section 6 (Parking and Curb Management Framework)** – demand management calibration.
  - **Section 7 (PALMS Logistics)** – truck routing and staging strategy.
  - **Phasing and Scheduling** – construction-phase modeling inputs.
- Use findings to define key performance indicators (KPIs) for ongoing monitoring and post-phase evaluation.



3. Stakeholders, Roles, and Responsibilities

This section defines who is responsible for each function, ensuring clarity in coordination and accountability. It delineates roles across LADOT, LADBS, LAFD, Los Angeles Police Department (LAPD), EMD, StreetsLA, DWP, and CD 11, as well as contractors and community organizations. The goal is to eliminate overlaps and gaps in authority, align decision-making processes, and embed the program within the City's existing incident-command and inter-agency communication structures.



3.1. Context and Purpose

The Palisades Rebuild represents one of the most complex, multi-agency coordination efforts ever undertaken by the City. It brings together departments responsible for permitting, utilities, enforcement, logistics, and public communication—all operating within a constrained geography and under heightened public visibility. The success of this program depends not only on sound engineering or financial discipline, but on **clear**, **accountable collaboration** among every entity involved.

This section defines how that collaboration is structured: who is responsible, how information flows, and how decisions are made and communicated. It establishes a shared governance framework that replaces departmental silos with a unified, data-driven approach to decision-making. By clearly delineating roles, responsibilities, and reporting relationships, the City ensures that every participant—from LADOT and LADBS to community institutions and contractors—understands their function within a single, coordinated system of management.

The need for clarity in governance is especially critical in the Palisades. The area's physical constraints, wildfire recovery context, and simultaneous construction activities create a dynamic environment where overlapping authority can lead to inefficiencies, safety risks, or community frustration if not managed precisely. This framework eliminates duplication, defines lines of accountability, and embeds communication protocols into daily operations, ensuring that decisions made by one department are visible, verifiable, and complementary to the work of others.

The Palisades Rebuild operates within a **tiered coordination model** that mirrors the City's emergency and infrastructure governance frameworks. At the top, the**SIG** provides strategic oversight, ensuring policy alignment and accountability to the Mayor's Office and City Council. Operational departments—such as LADOT, LADBS, StreetsLA, DWP, LAFD, LAPD, and EMD—manage day-to-day activities within their areas of expertise, while community and private-sector partners play a formalized role in supporting communication, compliance, and outreach. Together, these tiers function as an integrated network rather than a hierarchy, unified by shared data systems and real-time information exchange.

Clarity of responsibility also underpins **transparency and public trust**. When residents can see how decisions are coordinated—and which agency is accountable for each element of the program—it reduces confusion and strengthens confidence in the City's management.

In essence, this section formalizes how Los Angeles governs collaboration: through structure, communication, and accountability. Each department and partner organization is not just a participant in the Rebuild, but a steward of its success, responsible for ensuring that actions align with the City's broader commitments to safety, equity, transparency, and fiscal neutrality.

Purpose of this Section:

- Define the roles, authorities, and communication channels that govern coordination during the Palisades Rebuild.
- Eliminate duplication, clarify responsibilities, and ensure all agencies operate under a unified chain of accountability.
- Establish the foundation for transparent decision-making, shared data management, and community-facing communication.
- Embed collaboration into daily operations so that the stakeholders, including City staff, contractors, and residents, understand how their contributions fit into the overall program framework.

Key Takeaway:

The Palisades Rebuild will succeed when every agency and partner acts as part of a single, coordinated system wherein data is shared, actions are aligned, and continuous communication is maintained. This section provides the structural clarity and governance discipline that make that coordination possible, ensuring that the City operates with efficiency, accountability, and public confidence throughout the reconstruction process.

Governance and Coordination Framework:

The Palisades Rebuild operates under a governance structure designed for complexity—one that balances clear lines of authority with the flexibility required to manage changing field conditions, public expectations, and technical interdependencies. This framework defines how agencies coordinate across disciplines, share data, and make collective decisions in real time. It transforms what could be a patchwork of overlapping responsibilities into a **cohesive**, **accountable system of management**.

Framework:

At its core, the governance model reflects a "**One City**" **operating philosophy**: every department, partner, and contractor works from the same information, is guided by the same priorities, and is accountable to the same public outcomes. The structure mirrors proven emergency-operations frameworks used Citywide; it integrates principles from the **Incident Command System** and the **National Incident Management System** while adapting them for long-term, multi-agency infrastructure management.

The framework is built around **three interconnected tiers** that together ensure strategic alignment, operational control, and community engagement. The three tiers are described in the following subsections.

3.1.1. Tier 1: Strategic Oversight – SIG

The **SIG** serves as the executive and coordination body for the Palisades Rebuild. It is composed of senior representatives from key City departments and entities including LADOT, LADBS, BOE/StreetsLA, DWP, EMD, ITA, City Administrative Officer (CAO), and CD 11 and provides unified leadership, accountability, and cross-departmental alignment.

Key Functions:

- Establish program-wide policies, priorities, and performance standards.
- Resolve interdepartmental conflicts and elevate critical decisions to City leadership when required.
- Review fiscal performance, audit findings, and risk assessments on a quarterly basis.
- Ensure that public communication remains consistent and transparent.
- Approve major operational adjustments, system changes, or emergency-response activations.

The SIG's strength lies in its ability to break down silos. By maintaining a common decision table, it ensures that issues related to traffic, logistics, and community engagement are addressed collectively rather than sequentially, saving time and preventing inconsistent actions.

3.1.2. Tier 2: Operational Coordination – Departments and Delivery Partners

The second tier encompasses the **City departments**, **field teams**, **and contractors** responsible for day-to-day implementation. Each department retains its subject-matter authority (for example, LADOT manages traffic and curb operations, LADBS oversees permits and contractor compliance), but the individual departments operate through a shared coordination and data-sharing model.

Operational departments also participate in **weekly coordination briefings** led by the SIG Operations Chair. During these briefings, emerging issues are reviewed, risks are flagged, and upcoming field activities are synchronized. This routine creates predictability across agencies and ensures that decision-making remains informed and transparent.

3.1.3. Tier 3: Community and Partner Engagement

The third tier expands coordination beyond City departments to **include residents, neighborhood organizations, institutions, and private-sector partners**.

Community partners which include Homeowners Associations (HOAs), schools, business groups, and nonprofits, play an active role in surfacing issues, verifying field conditions, and disseminating accurate information to their constituencies. Contractors and vendors are held to the same communication standards, and are required to report field status, planned work, and potential disruptions. This collaborative model ensures that information flows **in both directions**: from the City to the public, and from the public back to City leadership.

3.1.3.1. Information Flow and Decision Pathways

The information and decision-making process in the Palisades Rebuild flows through a clearly defined escalation structure:

- **Operational Issues (Level 1)**: Resolved at the departmental or contractor level within 24–48 hours.
- **Cross-Department Conflicts or Coordination Gaps (Level 2)**: Elevated to the SIG Operations Chair for joint review.
- **Critical Risks or Policy Implications (Level 3)**: Referred to the SIG Executive Committee and, when necessary, the Mayor's Office or City Council for final action.

At every level, documentation and traceability are mandatory. Decisions, approvals, and responses are logged digitally, forming an auditable record that supports transparency and long-term institutional learning.

Many projects identified in this document are currently in preliminary stages of the project development process, and may still be pending funding, final approvals, and/or permitting. All projects are subject to change in scope, schedule, and cost until they are fully approved. Some of the projects, strategies, and efforts described in this report may not be possible for the City to complete without additional funding from the Federal and State governments as well as philanthropy, which may or may not be forthcoming.

3.1.3.2. Integration with Broader City Governance

The Palisades Rebuild's coordination framework aligns fully with Citywide governance initiatives, including:

- **Resilient Los Angeles** (for integrated risk management and climate adaptation) (Mayor's Office 2018);
- **Vision Zero** (for safety performance metrics) (City of Los Angeles 2017, 2018); and
- **Mobility Plan 2035** (for multimodal access and equity) (Los Angeles Department of City Planning 2016).

This alignment ensures that the program does not operate as an isolated pilot but as part of Los Angeles's broader modernization of infrastructure delivery and community engagement.

Key Takeaway:

- The governance framework translates complexity into clarity. It aligns policy, operations, and community engagement under one unified system.
- The three-tier model ensures accountability: SIG sets direction, departments execute, and the community participates.
- Real-time data sharing and structured communication replace silos with collaboration, reducing cost, risk, and confusion.
- Transparent escalation and reporting processes create a culture of trust, both inside government and across the community.

3.2. Lead Departments and Primary Roles

The Palisades Rebuild succeeds only when the City's departments operate as a coordinated system, each fulfilling its core mandate while supporting the shared priorities of safety, transparency, and community service. The agencies discussed in the following subsections comprise the leadership structure of the program, working collaboratively through the **SIG** to align policy, resources, and communication.

Each department retains its professional expertise and statutory authority, but through the Rebuild, those authorities are exercised within a unified, data-driven framework. Decision-making is collective, information is shared in real time, and accountability is mutual. This approach ensures that every department's contribution strengthens both operational performance and public confidence.



3.3. Supporting Agencies and Partners

The Palisades Rebuild relies on a broad network of supporting agencies, community organizations, and private-sector partners whose participation transforms coordination into collaboration. While lead departments manage day-to-day operations, these supporting entities extend the program's capacity, enhancing communication, field execution, technical integration, and community responsiveness.

Together, they form the connective layer between government operations and the lived experience of residents, ensuring that every improvement on paper translates into meaningful progress on the ground. Their roles are not peripheral; they are integral to maintaining the Palisades Rebuild's commitments to **transparency**, **accountability**, **and shared community value**.

3.3.1. Neighborhood Councils, Homeowners Associations, and Community Organizations

Local organizations provide critical situational awareness and social reach within the Pacific Palisades. Neighborhood councils, HOAs, and community nonprofits act as **trusted communication multipliers**, helping to distribute verified City updates, gather feedback, and flag emerging access or safety issues early.

These groups participate in regular coordination calls hosted by CD 11 and the SIG Community Engagement Team. Their observations often serve as the "early warning system" for mobility conflicts, noise concerns, or quality-of-life issues that may not surface through traditional reporting channels. This collaboration ensures that the City's operational visibility extends beyond sensors and dashboards to include the community's lived experience.

3.3.2. Contractors, Builders, and Developers

Contractors and builders are essential delivery partners in the Palisades Rebuild. Their compliance, communication, and field performance directly affect both safety and public confidence. All participating contractors are required to obtain proper **LADBS permits**, and adhere to established lane-closure rules.

In addition to compliance, contractors are also expected to contribute to the program's transparency goals, providing real-time schedule updates and maintaining active communication with LADBS, LADOT, and CD 11. This structured participation replaces the traditional fragmented approach with a unified, accountable model that benefits both the City and the community by reducing disruptions and ensuring predictability.

3.3.3. Community Institutions (Schools, Churches, and Local Businesses)

Community institutions serve as both stakeholders and active partners in the Rebuild. Schools, religious centers, and local businesses play dual roles: they rely on safe and predictable access for their daily operations, and they often assist the City by hosting community meetings, temporary parking zones, or staging areas during reconstruction.

Through coordination with CD 11 and LADOT, these institutions receive prioritized updates about field activity and provide feedback through the Palisades Community Communication Tool (PCCT) on access conditions or impacts to daily operations. Their involvement ensures that reconstruction activity supports, rather than disrupts, the rhythm of community life.

3.3.4. Private-Sector and Technology Partners

Private-sector partners extend the City's operational and technical capacity. Vendors supporting systems and related monitoring tools operate under City oversight to ensure performance, security, and data transparency.

These partners include software developers, logistics-service providers, and infrastructure vendors responsible for maintaining the hardware and data connections that underpin the Rebuild's digital ecosystem. Each vendor operates within defined service-level agreements (SLAs) managed by the **ITA**, ensuring that technology remains reliable, secure, and publicly accountable.

In addition to vendors, private-sector stakeholders such as utilities, delivery companies, and shared-mobility operators coordinate directly with LADOT and LADBS to align activities with lane and curb availability. Their participation helps to reduce congestion, optimize logistics timing, and sustain economic continuity for residents and local businesses alike.

3.3.5. Regional and Intergovernmental Partners

Although the Palisades Rebuild is a City-led initiative, it operates within a larger regional ecosystem of transportation, emergency management, and infrastructure coordination. The City maintains regular communication with **California Department of Transportation (Caltrans)**, **Metro**, **County Public Works**, and regional emergency-management agencies to align detours, signal timing, and evacuation readiness plans.

This intergovernmental coordination ensures that the Rebuild's impacts and benefits are managed at the regional level, maintaining consistency across jurisdictional boundaries and safeguarding the mobility and safety of all travelers through the Pacific Palisades corridor.

3.3.6. Collective Accountability

Every supporting agency and partner operate under the same guiding principle: **shared accountability through shared information**. By participating in unified systems, these partners contribute to the City's "One Source of Truth" model to ensure that all decisions, updates, and public communications are based on verified, consistent data.

This approach transforms collaboration from an informal practice into a structured governance function. It allows Los Angeles to manage a complex, multi-stakeholder recovery with transparency, agility, and efficiency—this sets a new standard for how public and private partners can work together toward a common civic goal.

Key Takeaway:

- Supporting agencies and partners expand the City's capacity to communicate, coordinate, and deliver.
- CD 11 anchors community partnership, ensuring resident and institutional voices directly shape operations.
- Neighborhood councils, HOAs, and institutions provide localized intelligence that improves safety and responsiveness.
- Contractors and vendors are not just implementers—they are accountability partners operating within City data and reporting frameworks.
- Regional collaboration ensures that the Palisades Rebuild functions as part of a cohesive, region-wide mobility and safety network.
- Together, these partnerships transform recovery from a government program into a **shared civic enterprise**.

3.4. Summary and Key Takeaways

The Palisades Rebuild's success depends on people and partnerships as much as it does on plans and technology. Each department, bureau, and partner organization plays a distinct role within a single coordinated system, unified through shared data, communication, and accountability under the leadership of the Mayor's Office and the SIG.

This structure transforms coordination into a strategic advantage. It ensures that actions taken by one agency strengthen, rather than complicate, the work of others, and that community and contractor participation directly enhance program delivery. Transparency and collaboration are not just values—they are operating standards embedded in every role and responsibility.

The framework established in this section provides the foundation for the **Goals and Guiding Principles** that follow. Together, they define how Los Angeles manages complexity with clarity, balances speed with accountability, and transforms a challenging recovery into a model of modern, equitable governance.

Key Takeaway:

- The Rebuild's governance is structured for clarity, accountability, and collaboration.
- The Mayor's Office sets direction; the SIG ensures daily alignment; departments deliver through shared systems and data.
- Community and private partners extend the City's capacity and strengthen transparency.

This coordinated foundation enables the program to operate safely, efficiently, and equitably as a unified civic enterprise.







4. Goals and Guiding Principles

4.1. Context and Purpose

The Palisades Rebuild is more than an infrastructure project—it is a model for how Los Angeles can govern, invest, and deliver under complex, high-impact conditions. In the aftermath of the wildfire, the City faces a dual mission: to restore mobility, safety, and access while rebuilding confidence in how public institutions respond to crisis. The Rebuild therefore operates not only as a recovery initiative but as a demonstration of **balanced, community-centered governance**—where every decision advances both public value and fiscal responsibility.

This effort unites multiple City departments, private contractors, and community partners around a single operating principle: **the best outcomes occur when civic investments pay social dividends**. Each dollar committed to improved coordination, smarter logistics, and better communication shortens disruption, reduces risk, and gets residents back to their daily lives sooner—while maintaining a cost-neutral position for the City. The Palisades Rebuild shows that public works can be simultaneously self-sustaining and profoundly people-focused.

The **Goals and Guiding Principles** in this section define that balance. They translate the City's commitments—safety, equity, transparency, time-tested professional engineering standards of care, fiscal neutrality, adaptability, and collaboration—into practical rules for action. These goals ensure that every permit, system, and ordinance reflects the same values of accountability and shared benefit. They also establish a consistent decision-making framework that links technical design to human outcomes, aligning departmental priorities with the lived experience of residents and businesses.

Each principle within this framework represents a contract between the City and the community. Fiscal neutrality demonstrates stewardship; safety and accessibility protect lives; transparency builds trust; and data-driven management ensures that progress is measurable. Together, they form a governance model that not only manages today's reconstruction efficiently but also lays the foundation for future programs that deliver both economic discipline and public value.

Purpose of this Section

- Define the overarching goals and values that guide every technical, fiscal, and policy decision within the Palisades Rebuild.
- Establish a framework for balancing operational efficiency, financial sustainability, and community well-being.
- Reinforce accountability by linking City actions to measurable benefits—safer streets, shorter disruptions, lower costs, and restored confidence.

Key Takeaway:

The principles that follow embody a modern public-service philosophy: rebuilding smarter, faster, and more equitably while remaining fiscally neutral. They ensure that every investment made under the Palisades Rebuild yields both immediate recovery and lasting community value.

4.2. Safety, Accessibility, and Equity

Safety is the City's first commitment and the foundation of every decision made under the Palisades Rebuild. In an active reconstruction environment—where hundreds of residents, contractors, and public agencies operate within narrow corridors and steep terrain—protecting people and preserving access are inseparable from rebuilding infrastructure itself. Safety is not simply a compliance requirement; it is the most direct form of community value. Every avoided incident, clear evacuation route, and accessible sidewalk represents time saved, risk reduced, and confidence restored for the people who live and work in the Pacific Palisades.

Accessibility and equity extend this principle. True recovery means that all residents, regardless of their physical ability, income level, or digital access, can move through their community safely, access essential services, and participate fully in the rebuilding process. The program's systems and tools, from lane-closure coordination to digital notifications, are designed to make information and infrastructure equally available to everyone. In this way, accessibility becomes both a safety measure and an expression of fairness.

The geography of the Pacific Palisades magnifies the stakes. Steep grades, limited off-street parking, and constrained evacuation routes require precision in planning and coordination. The City's integrated approach enables active monitoring of conditions and intervention when risks arise. This level of coordination not only saves lives but also minimizes inconvenience, reduces travel delays, and helps residents resume normal routines sooner.

Equity anchors these efforts in justice. Rebuilding after disaster can unintentionally favor those with greater means or flexibility. The Palisades Rebuild reverses that trend by prioritizing populations that are often most impacted—renters, seniors, and residents with mobility or access limitations. Outreach, parking accommodation, and permit processes are structured to ensure that the benefits of recovery reach the entire community, not just the most vocal or visible.

Core Principles:

- **Life Safety and Continuous Access:** Maintain emergency-response access at all times, verified by LAFD, and ensure that residents can safely navigate active construction zones.
- **Universal Design and Inclusion:** Apply Americans with Disabilities Act (ADA) and prevailing, time-tested, professional design standards to temporary and permanent facilities, signage, and digital interfaces.
- **Proactive Risk Reduction:** Use monitoring to anticipate hazards, coordinate response, and avoid preventable incidents.
- **Equitable Implementation:** Identify and mitigate disproportionate impacts on hillside and lower-income areas, ensuring fair treatment and targeted support.
- **Community Partnership in Safety:** Empower residents to report issues and participate in co-monitoring efforts, linking local awareness to rapid City response.

Why It Matters:

Safety, accessibility, and equity are investments that yield measurable returns. Every improvement in safety reduces liability and future cost; every accessible route saves residents time; and every equitable policy strengthens trust in City leadership. Embedding these values into daily operations makes the Palisades Rebuild not only safer and more just, but also more efficient and sustainable, protecting both people and progress for the long term.

4.3. Fiscal Neutrality and Community Value

Fiscal neutrality within the Palisades Rebuild is not a constraint—it is a value proposition. The City's goal is to operate a recovery program that sustains itself financially while delivering measurable, long-term benefits to residents, businesses, and the broader community. This is a **win–win model**: costs are managed responsibly and transparently, while the efficiencies and protections created by those investments save residents time, reduce disruption, and accelerate their return to normal daily life.

In traditional public works, cost recovery is often viewed narrowly and is perceived as a mechanism to ensure that the City's general fund is protected. In the Palisades Rebuild, it represents something broader: a strategy for shared value creation. Every dollar invested in coordinated logistics, data-driven management, and transparent communication yields multiple dividends resulting in fewer delays, reduced congestion, safer streets, and less economic loss from wasted time and inefficiency. These benefits are tangible; they restore predictability for residents, enable businesses to function more smoothly, and minimize the financial and emotional toll of prolonged reconstruction.

The program's fiscal framework is built around three core commitments: **neutrality**, **transparency**, **and community return**. Neutrality ensures that the program pays for itself through fair, user-based cost-recovery mechanisms rather than general taxation. Transparency ensures that all fees and expenditures are visible to the public through quarterly CAO audits and dashboard reporting. The community return anchors every expenditure to an outcome that improves safety, livability, or efficiency for those directly affected.

This approach aligns financial prudence with civic progress. It transforms the conversation from "Who pays for it?" to "What value does it deliver?" Residents and contractors contribute to a system that actively reduces future risks and costs; this prevents the kind of uncoordinated disruptions that historically drive both frustration and fiscal loss. For the City, it demonstrates how disciplined, performance-linked spending can deliver meaningful results without compromising budget stability.

Core Principles

- **Balanced Investment and Benefit:** Structure program funding so that operational costs are recovered from those generating activity while benefits, such as safer travel, shorter delays, and improved communication, flow directly back to the community.
- **Transparency and Accountability:** Maintain a restricted program account managed by LADBS, CAO, and Controller, with quarterly public reporting.
- **Outcome-Linked Spending:** Tie every expenditure to measurable improvements in safety, coordination, and quality of life.
- **Efficiency Through Coordination:** Use integrated systems to reduce redundant spending, prevent delays, and convert operational efficiency into savings for the residents.
- **Fiscal Neutrality with Civic Return:** Achieve a net-zero impact on City finances while creating long-term value in the form of reduced disruption, faster reconstruction, and restored community confidence.

Why It Matters:

Fiscal neutrality and community value are not opposing goals—they are mutually reinforcing. When recovery programs are managed as self-sustaining systems that deliver visible public benefit, residents see their fees as investments rather than costs. The result is a financially sound, long-term, operationally efficient, and socially responsible model of governance—one that accelerates recovery, preserves public trust, and demonstrates how disciplined management can also be profoundly community-centered.

4.4. Data-Driven and Technology-Enabled Management

Data and technology provide essential connections in the Palisades Rebuild. They transform a complex, multi-agency recovery effort into a coordinated, transparent, and continuously improving system. Through data-driven management, the City ensures that decisions are based on facts rather than assumptions—and that every improvement in coordination, safety, or efficiency directly benefits the people who live and work in Pacific Palisades.

A data-driven approach also strengthens fiscal responsibility. When outcomes are measured in real time, inefficiencies are visible, and waste is reduced. Technology becomes a "force multiplier"—doing more with the same resources—while ensuring that funds are directed toward actions that yield measurable community benefit. Transparency is built into the system: residents can see the same verified information that City staff use to make decisions, reinforcing accountability and trust.

In a broader sense, the Palisades Rebuild establishes a **digital governance model** that can be replicated across the City. The integration of field sensors, cloud-based analytics, and open dashboards demonstrates how data can unify public works, fiscal oversight, and community communication under a single framework of shared visibility and purpose.

Core Principles

- **Evidence-Based Decision-Making:** Use validated data to guide lane closures, logistics routing, parking management, and public notifications, effectively replacing reactive decisions with predictive management.
- **Transparency and Public Access:** Provide open dashboards where residents can track construction activity, lane status, and performance metrics in clear, user-friendly formats.
- **Operational Efficiency and Fiscal Value:** Link technology investments to measurable outcomes—shorter delays, fewer conflicts, reduced emissions, and lower program costs.
- **Continuous Learning Through Data:** Treat every dataset as an opportunity to learn, adapt, and refine City policies for future infrastructure or recovery programs.

Why It Matters:

Data and technology give the Palisades Rebuild its intelligence. They allow the City to anticipate problems before they become crises, to coordinate dozens of moving parts without waste, and to provide residents with real-time confidence in what the City is doing and why. Every digital tool—from traffic sensors to public dashboards—saves time, reduces uncertainty, and builds trust. By embedding technology into daily management, Los Angeles is not only rebuilding smarter; it is creating a lasting foundation for transparent, data-driven governance that delivers measurable value to both the community and the City itself.

4.5. Temporary and Reversible Interventions

The Palisades Rebuild is designed to move quickly without compromising quality, cost control, or community well-being. To achieve that balance, the City relies **on temporary and reversible interventions**—flexible solutions that meet immediate reconstruction needs while preserving the ability to adapt, remove, or repurpose as conditions change.

This principle reflects a new philosophy of civic design: *build what is needed now, learn from its performance, and refine it for the future.* Rather than installing permanent traffic management infrastructure that may outlast its usefulness, the City deploys modular, low-impact systems that deliver function and visibility today while protecting future budgets and community character. Every temporary installation—whether a solar-powered sign, a managed parking zone, or a logistics-routing sensor—acts as both an operational asset and a live pilot for smarter, long-term practices.

Temporary interventions also serve as an equity and efficiency tool. They allow the City to rapidly respond to emerging community needs, test alternative approaches, and minimize disruption to residents' daily lives. When a configuration works, it can be scaled or formalized; when it doesn't, it can be removed without waste. This adaptive approach saves residents time, reduces cumulative construction impacts, and ensures that every dollar spent yields measurable public value. For the City, it means lower sunk costs, faster deployment, and the agility to evolve with new information or technology.

Core Principles

- **Flexibility by Design:** Use modular, wireless, and self-powered systems that can be installed, relocated, or decommissioned with minimal cost or environmental impact.
- **Pilot-Driven Innovation:** Treat each temporary deployment as a test bed; collect data on performance, safety, and community response before pursuing long-term adoption.
- **Low-Impact Implementation:** Favor materials and methods that minimize noise, emissions, and construction footprint, preserving quality of life for nearby residents.
- **Fiscal Responsibility:** Invest only in assets that provide immediate function and potential long-term reuse, ensuring that expenditures remain recoverable and sustainable.
- **Community Feedback Loop:** Gather resident input through a community engagement portal and engagement sessions to evaluate what works, what doesn't, and how temporary measures can be refined.

Why It Matters:

Temporary and reversible solutions turn flexibility into fiscal and social value. They give the City the agility to act decisively today while protecting the ability to adapt tomorrow. For residents, that means faster improvements, fewer long-term disruptions, and visible progress can take place throughout the Rebuild. For the City, it means innovation can be undertaken without excess risk—proof that public investment can be both responsive and responsible. By embracing reversible design, Los Angeles ensures that the Palisades Rebuild remains dynamic, efficient, and community-centered from start to finish.

4.6. Transparency and Public Trust

Transparency is the cornerstone of the Palisades Rebuild. In an environment where the pace of activity is high, public visibility and understanding are critical to maintaining trust and cooperation. Residents deserve to know what is happening around them, how decisions are made, and how their input influences outcomes. For the City, transparency is not a communications function—it is a management discipline that ensures every department operates with integrity, consistency, and accountability.

The Palisades Rebuild introduces a "**One City, One Source of Truth**" model for public information. This principle ensures that data, notifications, and updates—whether about lane closures, parking rules, or financial audits—originate from verified City systems. By unifying communication under a single digital platform, the City reduces confusion, prevents conflicting messages, and creates a shared record of actions, outcomes, and commitments accessible to both staff and the public.

Transparency also provides measurable community value. When information is clear and predictable, residents can plan their days, avoid unnecessary delays, and feel confident that the City is managing reconstruction responsibly. Contractors and field teams benefit from the same clarity, reducing errors and rework. The result is a smoother recovery process that saves time and resources while reinforcing fairness and mutual respect.

Fiscal transparency is equally vital. Through quarterly CAO and Controller audits and public-facing financial dashboards, residents can see exactly how program revenues are collected, allocated, and reinvested. This openness transforms cost recovery into visible accountability, demonstrating that every dollar spent under the program serves a clear public purpose.

Transparency is also the foundation for responsiveness. Through a community engagement portal, residents can report issues, ask questions, and receive direct follow-up, effectively closing the loop between public feedback and City action. This two-way exchange converts transparency from one-way disclosure into a living partnership, where the community not only observes but participates in the City's decision-making process.

Core Principles

- **Unified Communication:** Operate under a single, verified source of information for all public updates, ensuring consistency and accuracy across departments.
- **Open Financial Reporting:** Publish quarterly fiscal and performance summaries accessible through public dashboards, aligning spending with visible community outcomes.
- **Predictability and Clarity:** Provide timely notice for closures, permit changes, and public meetings, allowing residents and contractors to plan ahead.
- **Two-Way Accountability:** Maintain direct feedback channels where residents can report issues and track responses in real time.
- **Trust Through Consistency:** Deliver the same message across every platform, reaffirming reliability and building long-term public confidence.

Why It Matters:

Transparency is the bridge between performance and public confidence. It turns data into understanding and understanding into trust. When residents see that the City is clear about its actions, honest about its challenges, and responsive to feedback, confidence in government grows. For the City, transparency strengthens coordination, enforces accountability, and converts good management into shared civic pride. The Palisades Rebuild demonstrates that open information and effective communication are not ancillary tasks—they are the very engines of a credible, community-centered recovery.

4.7. Adaptive Governance and Continuous Improvement

The Palisades Rebuild is a living program, not a fixed plan. Its success depends on the City's ability to learn, adapt, and refine practices in real time as conditions, technologies, and community needs evolve. Adaptive governance transforms management from a set of procedures into an ongoing conversation between performance data, policy direction, and public experience. It ensures that progress is continuous, not episodic and that the City improves every day it operates.

At its core, adaptive governance is about **responsiveness and accountability**. The City acknowledges that complex recovery work cannot be perfectly predicted; what matters is how effectively it responds. Through the monitoring and evaluation framework described later in this Plan, every system feeds measurable results back to leadership. These insights allow departments to see what is working, identify emerging risks, and make informed corrections quickly and transparently.

This continuous-improvement cycle also creates direct value for residents. When the City refines traffic-control plans based on real-world congestion data or adjusts curb-management rules in response to community feedback, it reduces wasted time, frustration, and cost. Learning becomes a form of service that ensures that each day of reconstruction is safer, more efficient, and less disruptive than the one before. For staff, it creates a culture of pride and ownership; for residents, it builds trust that the City is listening and improving.

Adaptive governance aligns seamlessly with fiscal neutrality and community value. By measuring outcomes and adjusting early, the City avoids expensive inefficiencies and extends the return on its investments. Every improvement in coordination or communication reduces operational waste and shortens the road to normalcy, thereby turning responsiveness itself into a financial and social benefit.

Core Principles

- **Learning as Standard Practice:** Treat performance measurement and reflection as routine components of daily management, not occasional audits.
- **Data-Informed Adjustment:** Use real-time analytics to refine operations, policies, and communication strategies.
- **Cross-Department Collaboration:** Encourage joint problem-solving within the SIG, ensuring lessons learned in one area inform the others.
- **Transparent Adaptation:** Publicly document changes in procedures or priorities so residents can see how feedback and results translate into action.
- **Culture of Improvement:** Reward innovation, initiative, and constructive feedback across City teams, reinforcing that adaptability is a collective responsibility.

Why It Matters:

Adaptability is the difference between a good plan and a resilient one. The Palisades Rebuild proves that continuous learning is not a luxury—it is the City's most reliable safeguard against risk, cost escalation, and public frustration. By institutionalizing improvement, Los Angeles demonstrates that effective government is not defined by perfection on day one, but by its ability to evolve, correct, and advance toward better outcomes every day. Adaptive governance turns accountability into progress and progress into trust and ultimately ensures that the Palisades Rebuild remains both efficient and enduring.

4.8. Collaboration and Community Partnership

The Palisades Rebuild depends on more than coordination—it depends on collaboration. True success requires a shared sense of ownership among the City, its partners, and the community it serves. Rebuilding safely and efficiently in an active, densely populated area cannot be achieved by any single department or contractor working in isolation. It is a **collective effort**, grounded in trust, communication, and mutual accountability.

Collaboration transforms the Rebuild from a technical program into a civic partnership. It connects the expertise of City departments with the lived experience of residents and the capabilities of private-sector partners. Every permit, closure plan, and logistics schedule gains strength when informed by multiple perspectives from those managing the work, to those affected by it, and those ensuring compliance. Through collaboration, operational efficiency and public empathy move in tandem, producing outcomes that are both technically sound and socially durable.

The program's structure makes collaboration intentional, not incidental. The **SIG** provides the formal framework for cross-departmental decision-making, bringing together LADOT, LADBS, BOE/StreetsLA, DWP, EMD, CD 11, and the CAO to align priorities and share information. The community engagement portal extends that framework outward to residents, institutions, and businesses, allowing the public to participate in feedback loops, planning discussions, and data-sharing processes that keep everyone informed and connected.

Partnership also amplifies fiscal and social value. When departments share resources and coordinate investments, the City avoids duplication and accelerates results. When contractors and residents communicate directly through structured channels, misunderstandings and rework decline. The collective impact is measurable, resulting in fewer delays, lower costs, and a stronger sense of public trust. Collaboration, in this context, is not just about cooperation; it is about co-creation—building solutions together that work for everyone.

Core Principles

- **Unified Purpose:** Align all departments, partners, and contractors under shared goals of safety, equity, and transparency, guided by the SIG's leadership.
- **Active Community Partnership:** Engage residents, HOAs, schools, and local institutions as collaborators—not passive observers—in design, reporting, and feedback.
- **Open Communication:** Use public forums to maintain continuous dialogue between City teams, field personnel, and the public.
- **Mutual Accountability:** Ensure that each partner, public or private, is responsible for upholding the program's principles and performance standards.
- **Collective Benefit:** Prioritize decisions that yield shared value—reducing cost and disruption for the City while improving safety, clarity, and convenience for residents.

Why It Matters:

Collaboration is the foundation of resilience. When agencies, partners, and residents work together with transparency and respect, it results in more than coordinated operations—it fosters a community that rebuilds itself stronger and faster. This shared approach turns recovery from a series of projects into a collective achievement, where every participant contributes to progress and every success is shared. By institutionalizing partnership as a core principle, Los Angeles reaffirms that good governance is not something done to the community, but *with* it.





5. Traffic and Lane Closure Management

This operational section translates the traffic analysis into practical management tools for roadway access. It introduces the **Lane Closure Scheduling System (LCSS)** and defines standardized scenario-based responses for major corridors. The LCSS is a scheduling and coordination platform that prevents conflicting closures and prioritizes emergency access. Its goal is to maintain circulation and safety during construction through data-driven permitting, coordinated lane closure scheduling, consistent signage, and clear communication with the public, first responders, and contractors.



5.1. Purpose and Context

5.1.1. Overview

Managing the right-of-way during the Palisades Rebuild requires a system that can adapt to changing construction intensities. The Lane Closure and Right-of-Way Management Framework establishes the protocols necessary to deconflict road closures, maintain emergency access, and minimize gridlock across the constrained hillside network.

To guarantee immediate operational control without requiring lengthy software procurement, this Framework employs a **"Two-Phase" Implementation Strategy**. This approach prioritizes the use of existing City infrastructure to secure safety, while preserving the advanced LCS architecture as a scalable option that can be activated based on operational needs and resource availability.

Phase 1: Immediate Protocol Activation (Existing Tools)

The primary objective of Phase 1 is to deconflict road closures and preserve emergency access using established municipal tools and manual coordination.

- **Mechanism:** Strict enforcement of the **Lane Closure Protocol** utilizing **Standard Traffic Control Plans** (pre-approved templates). This allows contractors to permit routine closures efficiently without requiring custom engineering review for every site.
- **Tracking:** Utilization of the existing **PWRS** as the central system of record. Closures are logged by the Coordination Team to identify spatial conflicts in real-time.
- **Coordination:** Weekly **SIG Coordination Meetings** serve as the "deconfliction engine," where upcoming PWRS requests are manually reviewed against LAFD emergency access requirements.
- **Enforcement:** Field verification of closure limits and hours is conducted by LADOT Field Operations and Street Services investigators based on the daily PWRS log.

Many projects identified in this document are currently in preliminary stages of the project development process, and may still be pending funding, final approvals, and/or permitting. All projects are subject to change in scope, schedule, and cost until they are fully approved. Some of the projects, strategies, and efforts described in this report may not be possible for the City to complete without additional funding from the Federal and State governments as well as philanthropy, which may or may not be forthcoming.

Phase 2: Automated Lane Closure System (Future State)

The transition to Phase 2 is conditional, designed to be triggered only if construction density exceeds the capacity of manual coordination and specific funding becomes available.

- **Triggers for Activation:** The City may elect to procure the advanced software described in this section if:
  1. Permit volumes surpass manual conflict-checking thresholds;
  2. Grant funding or cost-recovery revenues are secured to cover development costs; or
  3. Specific operational complexities require automated modeling.
- **Tools:** Deployment of the custom **LCS** dashboard to automate conflict detection and mapping.
- **Integration:** Implementation of real-time GIS mapping and full application programming interface(API) linkage between LADBS permitting and the public-facing Recovery Website.
- **Scale:** Enables the automated management of hundreds of simultaneous closures with "self-healing" schedules that adjust dynamically to delays.

Blueprint for Activation

The operational requirements, user interfaces, and technical specifications detailed in the remainder of this section serve as the **future-state blueprint**. They ensure that if the City identifies a critical need based on demand or safety metrics, the operational architecture is ready to be activated without further planning delays.

Current Assessment

Understanding the current lane-closure management environment is essential to designing effective strategies. At present, with Federal Emergency Management Agency (FEMA) cleanup completed and rebuilding already underway with more than 500+ permits issued, lane closure and/or circulation pressures remain moderate. However, this is a temporary condition — construction activity is expected to increase sharply in the coming months, bringing far greater contractor demand, diverse lane usage, curbside loading, and staging needs. By assessing today's baseline and anticipating the pressures ahead, this section establishes the foundation for proactive scheduling and management.

Currently, lane closures and circulation in the Pacific Palisades are manageable, but this reflects the end of cleanup activity rather than the realities of active rebuilding. Overall, current lane management conditions and community concerns are generally stable. However, once construction activity and rebuilding accelerates post-December 2025, it is anticipated that there will be significant increases in contractor vehicles, deliveries, staging demand, as well as in the demand for diverse lane usage and/or closures. These impacts will be most visible in congested corridors and residential areas. This results in more permits to issue and the challenging task of ensuring conflict-free construction staging and associated lane closures. Preparing for this shift now will help mitigate overlapping street work within the public right-of-way, prevent future disruption, and preserve traffic mobility and safety.

5.1.2. Stakeholder Insights

Direct input from LABOE, LADOT, LADBS, DWP, and the community underscores a shared concern: lane closures are primary drivers of congestion and risk. Stakeholders emphasize the need for structured solutions, contractor-specific strategies, utility coordination, balanced schedules, and incentives to leverage private supply. The items identified per below highlight some key concerns that each Stakeholder would like to see addressed:

- **BOE:** Ensure that the permitting process balances schedules for all construction-related lane closures that occur within the public right-of-way.
- **LADOT:** Emphasize lane staging and congestion management; highlight the need for further coordination with permitting processes and parking/curb management resources.
- **LADBS:** Employ the use of contractor solutions, designated staging areas, potential use of private lots with incentives, and others, to minimize work zone footprint.
- **DWP:** Coordinate utility staging, vehicle access, and work zones to minimize conflicts.
- **Contractors:** Improve access to roadways in order to make connections between buildings and utilities (water, gas, electrical, sewer).
- **Utilities:** Ensure the ability to schedule activities in a timely, coordinated manner.
- **Community:** Strike a coordinated balance regarding neighborhood congestion and safety, equitable access, and evacuation readiness.

5.1.3. Permitting and Regulatory Framework

Currently, the City prioritizes permits for construction projects that increase housing density, provide affordable units, and improve existing structures to be safer and more sustainable. This is primarily handled through LADBS and City Planning. StreetsLA's role is limited to temporary traffic control permits and postings—not building or structural permits. Further, work in the public right-of-way and public works (such as street excavation or sidewalk work) require permits from BOE, while private property work is handled by LADBS.

For the Palisades Rebuild, the focus is on the permitting process and/or priorities ONLY when a route, roadway segment, and/or lane(s) must be closed. Any traffic control activity, regardless of duration, requires a permit from BOE or StreetsLA; long-term closures over 72 hours additionally require WTCPP review by LADOT and/or BOE. Additionally, work during peak traffic hours (6:00–9:00 am and 3:30–7:00 pm) is restricted unless a specific exemption is obtained.

The following sources contain online information for permits, plans, and GIS data:

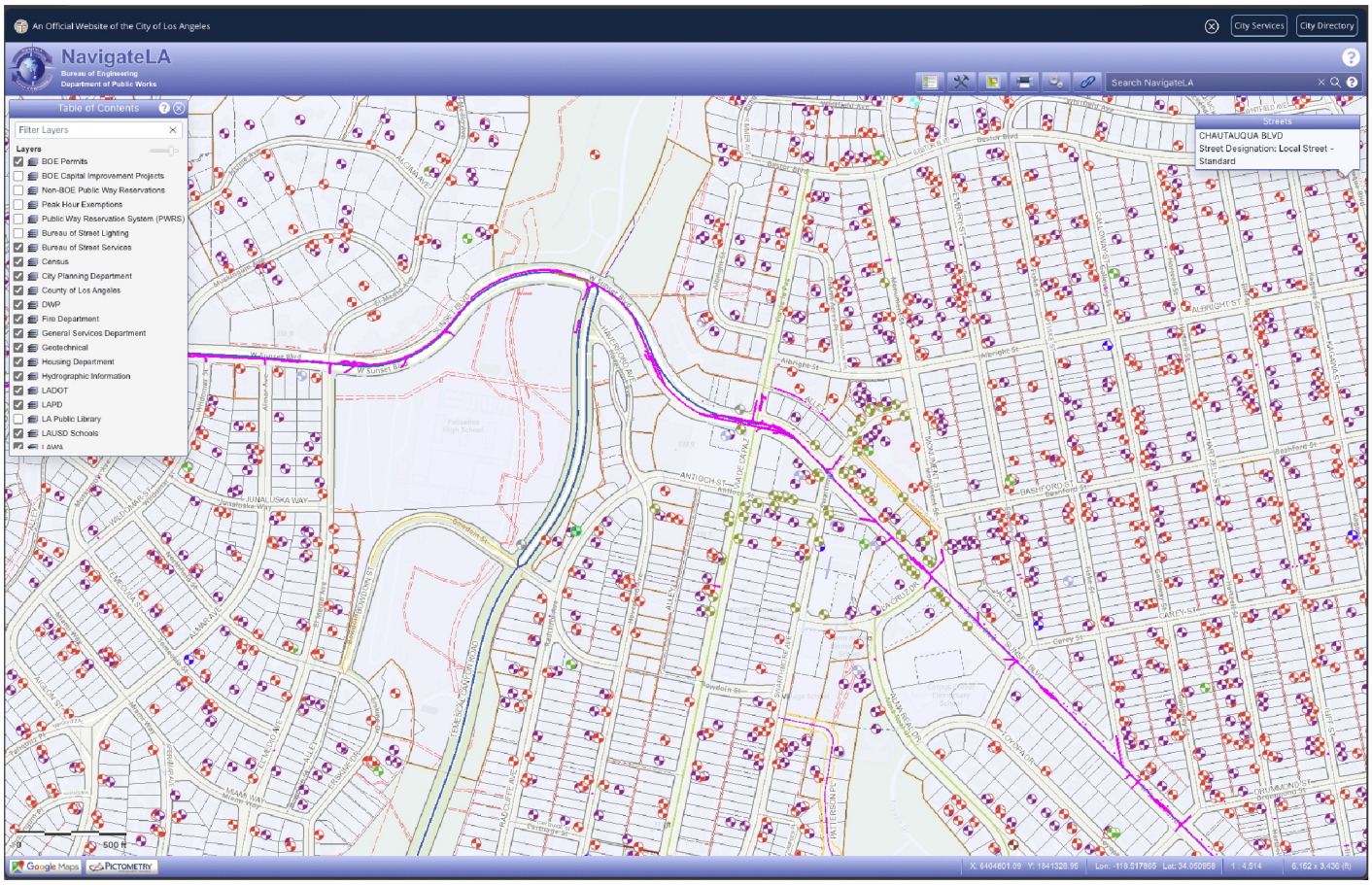
PermitLA: In Los Angeles, PermitLA is the online portal for self-issued permits for simple residential construction projects that do not require an extensive plan review by LADBS. The PermitLA portal is operated by LADBS and can be accessed at: permitla.lacitydbs.org/Login/login.html.

ePlanLA: For projects that require a formal plan check, the ePlanLA portal must be used. This includes new construction, major renovations, and other projects that need a more extensive review process. The ePlanLA portal can be accessed at: ePlanLA.

For more complex projects, including building and business permits, additional online services and procedures are typically required. Access to all City of Los Angeles online permitting services, including PermitLA and ePlanLA, can be made through a single Angeleno Account.

NavigateLA: NavigateLA is the official web-based mapping application for the City, developed in-house and operated by the BOE. It delivers maps and reports and provides the public with a wealth of GIS information, including data from various City departments, Los Angeles County, and Thomas Bros. Maps. NavigateLA can be accessed at: NavigateLA - City of Los Angeles. Figure 5.1 provides a screenshot depicting example features of NavigateLA.

Figure 5.1: NavigateLA screenshot



NavigateLA facilitates the exploration of different types of information by turning on and off map layers. Some examples of key features and available data include the following:

- **Permit information:** Viewpoints, lines, and polygons for permits issued by the BOE.
- **Public way reservations:** Locate reservations in public spaces managed by the City.
- **Parks and trees:** The Department of Recreation and Parks uses NavigateLA for its tree inventory program.
- **Property and zoning information:** While NavigateLA includes extensive map data, a related system called ZIMAS (Zoning Information and Map Access System) is also available for detailed planning and zoning information.
- **Advanced options:** An "Advanced Options" panel gives users additional capabilities, such as the "Show Me" tab for quickly viewing popular map layers and the "Extract Data" tab for downloading specific GIS data.
- **Print maps:** Users can create custom, printable maps in different formats, with options to include a legend and overview map, and set a specific scale.
- **Save preferences:** Regular NavigateLA users can create a "MyNavigateLA" account to save personalized settings, bookmarks, themes, and projects.

5.2. Goals and Objectives

Moving forward in the Pacific Palisades, the City will need to actively coordinate, prioritize, and schedule permit approvals associated with projects that require roadway and/or lane closures.

5.2.1. Goals and Objectives

The Pacific Palisades Rebuild will place new and evolving demands on lane closure scheduling, management, and permitting policies. Establishing clear goals and objectives now will provide a guiding framework to ensure that the City and Project Stakeholders can respond effectively as conditions evolve. These goals focus on preparing for construction-related pressures, maintaining safe and efficient circulation, protecting neighborhood quality of life, and embedding disaster readiness into all aspects of lane closure scheduling and management.

The objectives are to:

- **Strategically schedule lane closures, detour routes, and work zones** for prioritized, authorized construction-related activities, utility staging, and relief operations.
- **Understand, coordinate, and prioritize the permitting approval process** and associated lane closure scheduling.
- **Proactively prepare** for increased lane closures and detour routes associated with construction activity.
- **Ensure safe and efficient circulation** for residents, contractors, emergency vehicles, and visitors.
- **Protect neighborhoods** by reducing spillover impacts through contractor and construction lane closures, detour routes, and/or work zone programs.
- **Preserve evacuation route integrity and embed disaster readiness** into planning for earthquakes, tsunamis, landslides, and wildfires.
- **Enable lane closure transparency and** management through a data-driven scheduling and monitoring system that reflects agreed-upon policies.
- **Provide information via dashboards, maps, graphical displays, and/or outputs** that ensure the City, contractors, and the community at-large know when, where, why, and for how long a lane closure will occur.

Together, these goals provide a foundation for the strategies presented in the following sections, ensuring that the actions taken during the Rebuild support both community mobility and resilience.

5.3. Lane Closure Needs and Improvements

The Palisades Rebuild will introduce a high volume of construction, utility activity, and residential access demands across a constrained street network. To maintain safe and predictable mobility during this period, the City must strengthen its **near-term, Phase 1 lane closure management processes** using tools and standards already familiar to LADOT, BOE, LADBS, and contractors.

Stakeholder input emphasized that before any advanced tools or automated systems are considered, the City must establish **clear, practical, and immediately deployable procedures** that enable coordinated decision-making and reduce permitting delays. These improvements should enhance transparency, protect emergency access, and help manage the cumulative effects of overlapping work zones.

Key Phase 1 needs identified by City departments include:

- **Clear and consistent requirements** for common lane closure types, especially those near evacuation routes, schools, or other sensitive locations.
- **Predictable guidance to contractors** regarding allowable hours, closure restrictions, and the use of existing LADOT Standard Plans to streamline early permitting.
- **Improved visibility into approved and pending closures** to minimize conflicts and support balanced roadway access across concurrent projects.
- **Better alignment with mobility and safety needs**, including managing closures around peak travel periods and ensuring continuous access for emergency responders.
- **Enhanced interdepartmental coordination using existing tools**, including digitized permit inputs, manual tracking procedures, and structured workflows that do not require new technology.
- **A unified view of closure schedules and durations** to support consistent evaluations by LADOT, BOE, LADBS, and DWP reviewers.

Addressing these operational needs enables the City to manage early construction pressures effectively and establishes a strong foundation for later phases of the Lane Closure Scheduling System (LCSS). The following subsections outline the Phase 1 standards and procedures that will guide lane closure management during the Rebuild, beginning with the use of LADOT Standard Plans.

5.3.1. Use of LADOT Standard Plans for Lane Closures

A core directive raised by LADOT during review is the need to clearly establish how **LADOT Standard Plans** can and should be utilized during Phase 1. These pre-approved plans form the backbone of the City's current traffic control practice and significantly reduce the burden on both contractors and City permitting staff.

Purpose of Standard Plans in Phase 1

LADOT Standard Plans allow contractors to select from pre-engineered, pre-approved traffic control layouts that can be used without requiring additional engineering design, provided field conditions match the plan. This delivers several Phase 1 benefits:

- **Faster permit reviews** by eliminating the need to evaluate custom traffic control drawings
- **Consistency across contractors**, producing predictable work zone layouts
- **Alignment with City field operations**, ensuring inspectors and LADOT staff recognize each configuration
- **Reduced staff workload**, a key concern identified by LADOT during stakeholder discussions

Types of Pre-Approved Lane Closure Layouts

LADOT provides standard plans for a wide variety of work zone conditions, including:

- Local Street Work Zones (full and partial closures)
- Left-, center-, and right-lane closures
- Closures with and without bike lanes
- Shoulder and edge-of-pavement work
- Multi-lane closures and lane shifts
- Curb, gutter, and curb ramp replacement areas

These plans collectively cover the majority of anticipated conditions within the Palisades Rebuild area, particularly given the residential nature and local street context of much of the work.

The LADOT Standard Plan library is accessible here:

https://ladot.lacity.gov/sites/default/files/documents/standard-plans-guide_2.pdf

Many projects identified in this document are currently in preliminary stages of the project development process, and may still be pending funding, final approvals, and/or permitting. All projects are subject to change in scope, schedule, and cost until they are fully approved. Some of the projects, strategies, and efforts described in this report may not be possible for the City to complete without additional funding from the Federal and State governments as well as philanthropy, which may or may not be forthcoming.

Conditions Required for Standard Plan Use

To utilize a Standard Plan without modification, the contractor must confirm that field conditions match the plan **exactly**, including:

- Number of travel lanes
- Lane reduction patterns
- Presence of bike lanes
- Two-way left-turn lane presence
- Median or curb island configurations
- Edge line and shoulder conditions
- Left- and right-turn channelization
- Signalization or lack thereof

If any of these conditions differ, the Standard Plan cannot be used as-is.

When Custom Traffic Control Plans Must Be Prepared

If conditions do not align with LADOT Standard Plans, the contractor must prepare a custom **Temporary Traffic Control Plan (TTCP)** using:

- The Work Area Traffic Control Handbook (WATCH)
- The California MUTCD (latest revision)
- Caltrans Standard Plans
- Any additional BOE or LADOT engineering requirements

Because custom TTCPs require more review time and coordination, contractors should be encouraged to use LADOT Standard Plans whenever feasible.

Why This Matters for the Rebuild

Given the scale of reconstruction—hundreds of simultaneous home rebuilds, utility upgrades, and staging activities—LADOT stressed the importance of establishing a **clear, operationally realistic Phase 1 system** that leverages existing tools. By grounding Phase 1 in LADOT Standard Plans, the City can:

- Accelerate permit approvals
- Preserve staff bandwidth
- Maintain consistent and safe work zones
- Avoid introducing new processes prematurely

This directly addresses the concerns raised during review.

5.3.2. Supplementary Work Zone Best Practices and Reference Standards

While LADOT Standard Plans will be the primary reference for Phase 1 lane closures, additional standardized guidance from CA Manual on Uniform Traffic Control Devices and Caltrans should be used to support scenarios where a Standard Plan may not fully apply.

The following table compiles typical work zone configurations referenced by LADOT and industry practice. These serve as supplemental guides and reinforce consistency with State-level standards.

Table 5.1: Supplementary LADOT Work Zone Design Best Practices

Source	Section	Figure/ Standard	Description	Caltrans Equivalent
CAMUTCD	6	6H-1	Work Beyond the Shoulder	N/A
CAMUTCD	6	6H-3	Work on the Shoulder	N/A
CAMUTCD	6	6H-6	Shoulder Work with Minor Encroachment	N/A
CAMUTCD	6	6H-8	Road Closure with Off-Site Detour	N/A
CAMUTCD	6	6H-10(CA) / 6H-10A(CA)	Two-Lane Road with Flaggers	T13 / T13A / T13B
CAMUTCD	6	6H-14(CA)	Haul Road Crossing	N/A
CAMUTCD	6	6H-15	Center-of-Road Work, Low Volumes	N/A
CAMUTCD	6	6H-19	One-Direction Detour	N/A
CAMUTCD	6	6H-20	Street Closure Detour	N/A
CAMUTCD	6	6H-21	Near-Side Intersection Closure	N/A
CAMUTCD	6	6H-22	Far-Side Intersection Closure	N/A
CAMUTCD	6	6H-24	Half-Road Closure (Far Side)	N/A
CAMUTCD	6	6H-27	Side-of-Intersection Closure	N/A
CAMUTCD	6	6H-28	Sidewalk Detour Diversion	T30 / T31 / T32
CAMUTCD	6	6H-32(CA)	Half-Road Closure on Multilane High-Speed Roadway	N/A

This collection is not exhaustive but provides a standardized toolkit for designing safe closures that fit conditions beyond LADOT's Standard Plans.

5.3.3. Phase 1 Manual Lane Closure Scheduling Procedure

Before the implementation of an automated LCSS, Phase 1 will utilize a **manual, Excel-based coordination process** to track, review, and approve lane closure requests. This approach is simple, transparent, and quickly deployable, requiring no new technology while still supporting multi-agency coordination.

Overview of the Manual Process

The manual approach uses two linked Excel workbooks:

A. Employee-Facing Workbook

Contains three primary components:

1. **Data Entry Sheet**
   - Location (from/to)
   - Type of work and agency
   - Route and direction
   - Number of existing lanes and proposed closures
   - Duration and schedule
   - Required permitting agency
2. **Filtered Visual Schedule**
   - Auto-updating calendar view of all approved closures
   - Filters based on time, location, or roadway segment
   - Reveals potential conflicts at a glance
3. **Closure Lookup Tab**
   - Allows staff to search historical and active requests
   - Provides status tracking and closure details

Automatic Flagging of High-Risk Conditions

Entries are flagged for supervisory review when they involve:

- Full roadway closures
- Closures on evacuation routes
- Peak-hour impacts
- Conflicts with existing permitted closures

B. Master Database Workbook

Stores:

- Approved closures
- Archived requests
- Historical conflicts
- Cross-agency visibility

This reduces data corruption and allows simultaneous access.

Review and Approval Process

1. Contractor submits a closure request via the Data Entry Sheet.
2. System flags conflicts or sensitive conditions.
3. Reviewer evaluates the request using the **priority, scenario, and feasibility** framework described later in Section 5.
4. If approved, closure is added to the database and manually posted in NavigateLA.
5. If denied, reviewer provides alternative allowable windows.

Benefits of the Manual Phase 1 Workflow

- Immediate implementability
- Preserves LADOT and BOE staff capacity
- Improves coordination without new software
- Provides a structured precursor for future automated LCSS integration

This model directly responds to City concerns regarding staffing constraints and operational feasibility.

5.3.4. Foundation for Scheduling Logic

Phase 1 establishes a clear and immediately actionable approach for managing lane closures during the Palisades Rebuild. By relying on LADOT Standard Plans, established CAMUTCD/Caltrans practices, and a structured manual scheduling workflow, the City can manage the early surge of construction activity while maintaining safety, mobility, and emergency access. This approach allows lane closures to be coordinated effectively using existing tools and staffing, ensuring work can proceed without delay.

The next section introduces the logical framework that supports these operations—including priority setting, feasibility considerations, and conflict-resolution criteria. Together, these elements create a scalable system that can evolve from the initial manual process into more advanced scheduling and coordination capabilities as the Rebuild progresses.

5.4. Lane Closure Scheduling System

The recommended computerized Pacific Palisades LCSS can be used to facilitate the implementation of the City's lane closure policies (associated with permits already approved or under review) by enabling more easy and effective coordination, scheduling, tracking, and communication of lane closures both within various City agencies as well as for the public, media, emergency responders, and other stakeholders.

The following sections lay out the core strategies that will shape how the Palisades LCSS can be used to manage roadway and/or lane closures throughout the Palisades Rebuild. It combines regulatory adjustments, contractor-focused solutions, structured lane closure and utility staging policies, technology-enabled monitoring, and direct integration with safety and evacuation planning. Together, these elements form a comprehensive approach designed to balance construction logistics with community mobility and resilience.

5.4.1. Historic Uses of Lane Closure Systems

The use of a LCS is a proven concept. Several agencies across the country have already developed lane closure policies and systems to aid in the scheduling of roadway/lane closures and work zones. Lane closure policies and systems can help an agency improve mobility by restricting lane closure hours to align with peak travel times and coordinating lane closures to manage the combined impacts of scheduled construction activities.

Currently, Caltrans uses a web-based LCS to coordinate lane closure activities across California. The LCS allows Caltrans to review the details of a lane closure request, check for potential conflicts, approve or mitigate requests, ensure that the closure is consistent with corridor transportation management plans, and monitor closure progress. The Caltrans LCS feeds data into California's freeway performance measurement system (PeMS), a real-time data management system that provides the status of all lane closures. The Caltrans LCS supports Employee User Interfaces that allow for the input of requests as well as the ability to search existing approved lane closure requests.

Currently, the Colorado Department of Transportation (CDOT) publishes route-specific lane closure charts that include the following information:

- Highway type
- Direction
- Annual Average Daily Traffic
- Count of directional lanes
- Closure windows (for both weekday and weekend one-lane closures)

Region-specific analysis methods are also published to provide clear and precise expectations for contractors, shortening the review period. These regional lane closure policies have enabled CDOT to plan more effective lane closures based on the specific needs of each region and route.

5.4.2. Palisades LCSS – Concept-of-Operations

The proposed Palisades LCSS would build upon the proven results used by both Caltrans and CDOT. It would be tailored to fit and integrate with the existing City permitting systems (BOE, LADBS, PermitLA, and ePlanLA), it would take into account the various needs and priorities of the Pacific Palisades reconstruction effort, and would work seamlessly with other existing (NavigateLA) or proposed systems (PALMS).

Figure 5.2 provides a high-level overview of the decision-making process in the proposed Palisades LCSS. It depicts a logical flow of considerations that need to be undertaken to realistically schedule a lane closure in a coordinated manner. Care has been taken to strike a balance between automated system actions and actions that require input from City employees. In addition, Figure 5.2 shows the additional interfaces and integrations that the Palisades LCSS may link to depending on final composition and complexity.

Many projects identified in this document are currently in preliminary stages of the project development process, and may still be pending funding, final approvals, and/or permitting. All projects are subject to change in scope, schedule, and cost until they are fully approved. Some of the projects, strategies, and efforts described in this report may not be possible for the City to complete without additional funding from the Federal and State governments as well as philanthropy, which may or may not be forthcoming.

Figure 5.2: Palisades LCSS flow chart

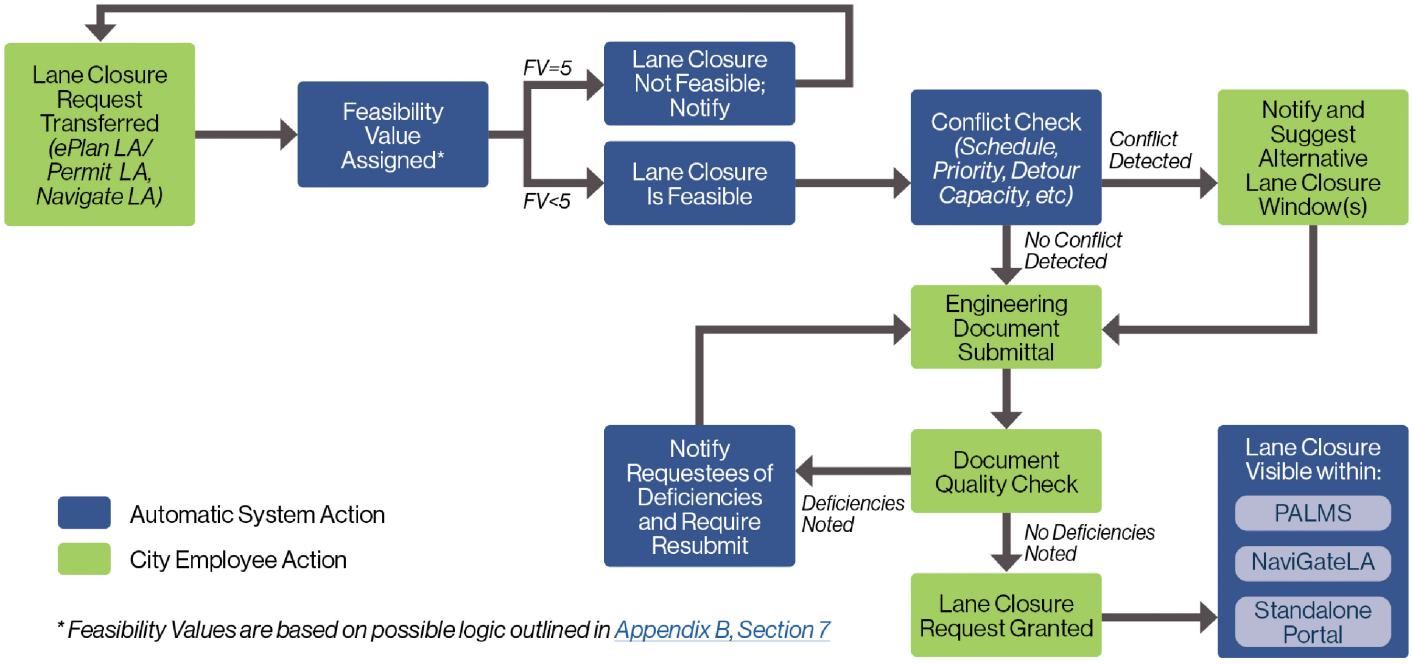
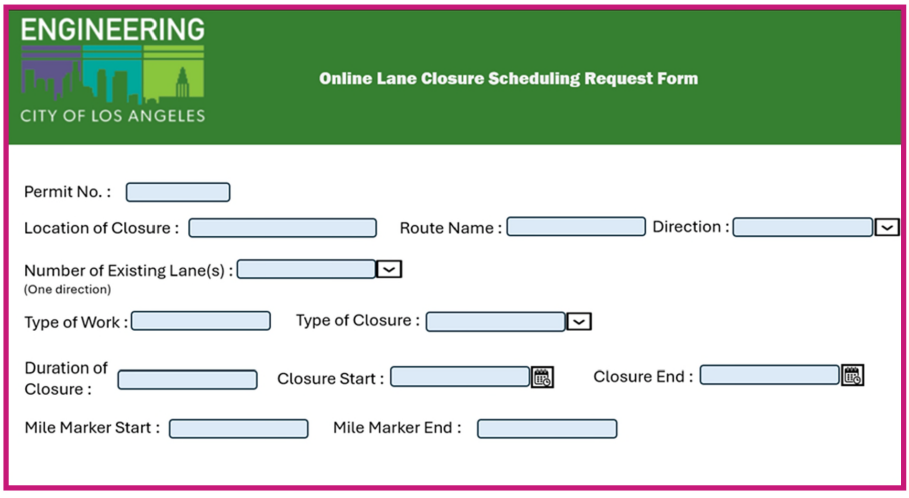


Figure 5.3: City of Los Angeles Online Lane Closure Schedule Request Form



Currently, it is envisioned that the Palisades LCSS will incorporate and/or support the following operations:

- Integrate with the existing and proposed City of LA Permitting Systems – BOE, LADBS, PermitLA, and ePlanLA
- Gather existing permit records from the permitting systems' databases
- Ensure that only permits that have associated roadway and/ or lane closures are taken into consideration
- Parse roadway and/or lane closure information into datasets for analysis

- Generate new lane closure requests through an online Contractor and/or Agency filled request form similar to Figure 5.3.
  - This request must be reviewed by City staff prior to proceeding to request consideration
- Incorporate and/or tailor proven logic already used by Caltrans and CDOT
  - Use basic scheduling conflict logic (from Caltrans LCS)
  - Use logic inspired by CDOT's Region-Specific Lane closure charts

Introduce a permitting priority that ranks what type of work or construction (that requires a lane closure) should be approved or accommodated before other types of work begin (see Section 5.5)

- Priority
- Type of Work
- Responsible Party
- Responsible Permitting Agency

Similarly, define permitting priorities based on the size of the project (see Section 5.5)

- Priority
- Length of Work
- Number of Lanes Closed

Then, each Priority listed will be assigned a weighted scale factor (per the example below).

- Type of Work Priorities: (Priority) x 0.75
- Size of Project Priorities: (Priority) x 0.25

The weighted summation of these two (2) priorities should determine the priority value which is used to compare lane closure requests. The lower value request should be granted if a conflict is detected.

Use the concept of a "Feasibility Value" to provide a ranking regarding what route and/or lane closures can realistically be undertaken

- Each route and/or lane closure combination within the Pacific Palisades will be assigned a "Feasibility Value" ranging from 1 to 5 (with 1 being the most feasible and 5 being not feasible)
- This pre-determined value will consider the route classification and the number of lanes potentially requested for closure
- Section 5.6 includes a preliminary indication regarding route classifications.

After a Lane Closure Request has been submitted to the responsible permitting Agency it receives a "Feasibility Value"

If the Feasibility Value is 5 (not feasible)

- The request will be "flagged" and City staff would be notified that the lane closure request should be removed from consideration
- The requester would also be notified (including the rationale as to why the request cannot be granted)
- If the Feasibility Value is less than 5
- The lane closure request begins the process of a conflict check.
- The conflict check would undertake additional logic checks that consider previously granted lane closure requests as follows:
  - » Lane closure schedules that detail available lane closure windows for each segment of roadway
- Co-construction capabilities
  - » Route-specific closure requirements
  - » Note that residential routes must still meet all established parking and access requirements; therefore, certain lane-closure requests on residential streets may need to be redirected to the City's parking and access review process for further evaluation.

The Palisades LCSS would specify when and how roadways and/or lanes can or cannot be closed for a given stretch of roadway where such lane closure authorizations or restrictions will be impacted by the following considerations:

- Scenario #1 – Full Closure; No Real Detour Available
- Scenario #2 – Multiple Lane Closure; Same Route or Segment with Overlapping Detours
- Scenario #3 – Adverse Weather and Possible Emergency Evacuation
- Scenario #4 – Activity Centers
- Scenario #5 – High Construction Activity (along Residential Routes)
- If a lane closure conflict is detected
- New lane closure windows would be generated to facilitate quick decision-making regarding scheduling
- Once a lane closure window is agreed upon, if the closure will exceed a 72-hour period, proper engineering documents would be required to grant lane closure (Traffic Management Plan, Traffic Modeling/Analysis)
- Additional consideration and/or coordination may be needed for routes outside of the City's jurisdiction (Section 5.7 provides information for connecting roadways outside of the City's jurisdiction)

The Palisades LCSS would contain dashboards, maps, graphical displays, and/or outputs that provide the following information to the City and the community at-large:

- Location where a permit has been approved (that contains a roadway and/or lane closure)
- Type of work being performed
- Route name and direction of lane closure
- How many lanes will be closed (type of closure)
- How many lanes will be open
- Geographical end points denoting where the closure starts and ends (mile-markers)
- Planned start/end date and time (how long the lane closure will be in effect - duration in number of days)
- Allowable lane closure times
- Color-coding to easily identify the lanes closures in-place on each roadway segment (so that staff can plan accordingly)
- Track and display lane closure status (active, planned, other)
- Closure ID #
- The Palisades LCSS's maps, dashboards, and graphical displays may develop into a stand-alone scheme or be integrated into existing infrastructure such as NavigateLA or other App-based public information systems
- The Palisades LCSS's outputs (what, where, when, who) would be integrated with the proposed PALMS system to help that system make its decisions and to increase visibility to a wider audience (Please refer to Section 7)
- The Palisades LCSS would filter and transfer neighborhood requests to the recommended Parking and Curb Management System for further analysis (Please refer to Section 6)

Similarly, when there is high-construction activity along a Residential Route, the Palisades LCSS would filter and transfer these requests to the recommended Parking and Curb Management System for further analysis (Please refer to Section 6)

The Palisades LCSS will coordinate with the suite of integrated, public-facing communication tools to be implemented through the PCCT: a text and email alert system, a web-based construction dashboard, and an interactive, mobile-accessible GIS map (Please refer to Section 8).

The Palisades LCSS will act as the "operating system" for lane closure coordination during the Palisades Rebuild and reconstruction. Perhaps some or all elements could be incorporated into the existing PermitLA, ePlanLA, and/or NavigateLA rather than acting as a stand-alone system, depending on the final requirements and specifications of the scheme. This may make the overall scheme easier to implement, with the Palisades LCSS requirements building upon existing permitting processes and mapping systems.

5.5. Palisades LCSS – Type of Priorities

The Palisades LCSS will provide one point of coordination to ensure that no conflicting construction, lane closures, and/or detours occur. It will specify when and how roadways and/or lanes can or cannot be closed for a given stretch of roadway. These lane closure authorizations or restrictions will be determined in part by the type of work priorities identified in Table 5.2 as well as the size of the project as defined in Table 5.3. Each Priority listed will be assigned a weighted scale factor.

For example:

- Type of Work Priorities: (Priority) x 0.75
- Size of Project Priorities: (Priority) x 0.25

The weighted summation of these two priorities should determine the priority value which is used to compare lane closure requests. The lower value request should be granted if a conflict is detected. These priorities (and the additional considerations identified in Section 5.6) serve as the logical framework of elements that will guide the decision-making process in the Palisades LCSS. Overall, the scheduling logic of the Palisades LCSS will ensure that the higher priority work type items will more readily achieve their associated roadway and/or lane closures.

Table 5.2: Type of Work Priorities

Priority	Type of Work	Responsible Party	Responsible Permitting Agency
1	Emergency Repairs	Various (DWP, BOE, SoCal Gas, LASAN, Private Utilities)	Various (Based on type of facility and location)
2	Electrical Power Distribution and Underground Construction	DWP	BOE – Developmental Services and Permits
3	Water Mainline and Sewer Construction	DWP / LASAN / BOE	BOE – Developmental Services and Permits
4	Utility Construction (Gas, Telecom)	SoCal Gas / Verizon / Spectrum / Frontier	BOE – Developmental Services and LADBS (for private utilities)
5	Roadway Resurfacing and Paving	StreetsLA	BOE – Developmental Services and Permits
6	Communication Construction (Private)	Verizon, Spectrum, Frontier	LADBS
7	Business Building Construction	Contractor	LADBS
8	Priority Residential Housing Construction	Contractor	LADBS
9	Manhole Repairs (Sanitary / Stormwater)	LASAN / BOE	BOE – Developmental Services and Permits
10	Tree Trimming	StreetsLA – Urban Forestry Division	StreetsLA
11	Side-of-the-Road Clean-Up	StreetsLA / LASAN	StreetsLA / LASAN

Table 5.3: Size of Prcject

Priority	Length of Work	Lane(s) Closed
1	2+ Miles	Full Closure
2	1-2 Miles	Full Closure
3	<1 Mile	Full Closure

Priority	Length of Work	Lane(s) Closed
4	2+ Miles	2+ Lanes
5	1-2 Miles	2+ Lanes
6	<1 Mile	2+ Lanes

Priority	Length of Work	Lane(s) Closed
7	2+ Miles	1 Lane
8	1-2 Miles	1 Lane
9	<1 Mile	1 Lane

5.6. Recommended Palisades LCSS Considerations

The Palisades LCSS would use predetermined work type priorities and route-specific lane closure charts to determine when and how roadways and/or lanes can or cannot be closed. Lane closure authorizations or restrictions will be impacted by the following considerations:

- Type of roadway (Major, Primary, and Residential)
- Scenario in-effect (Full Closure, Multiple Lane Closure, Single Lane Closure)
- Places that may require special handling due to their location in high-priority areas and/or sensitive zones (Schools, Fire Stations, Parks)

These considerations are described in more detail in the following sections.

5.6.1. Roadway Type Considerations

The following routes and/or segments (as applicable) have been identified as the key roadways that will serve the Palisades Rebuild and, therefore, will provide the focal point for the Palisades LCSS's operations. Please refer to Figure 5.4 for a map showing these roadway locations and classification type.

Major Routes

- Sunset Boulevard (including segments)*

Primary Routes

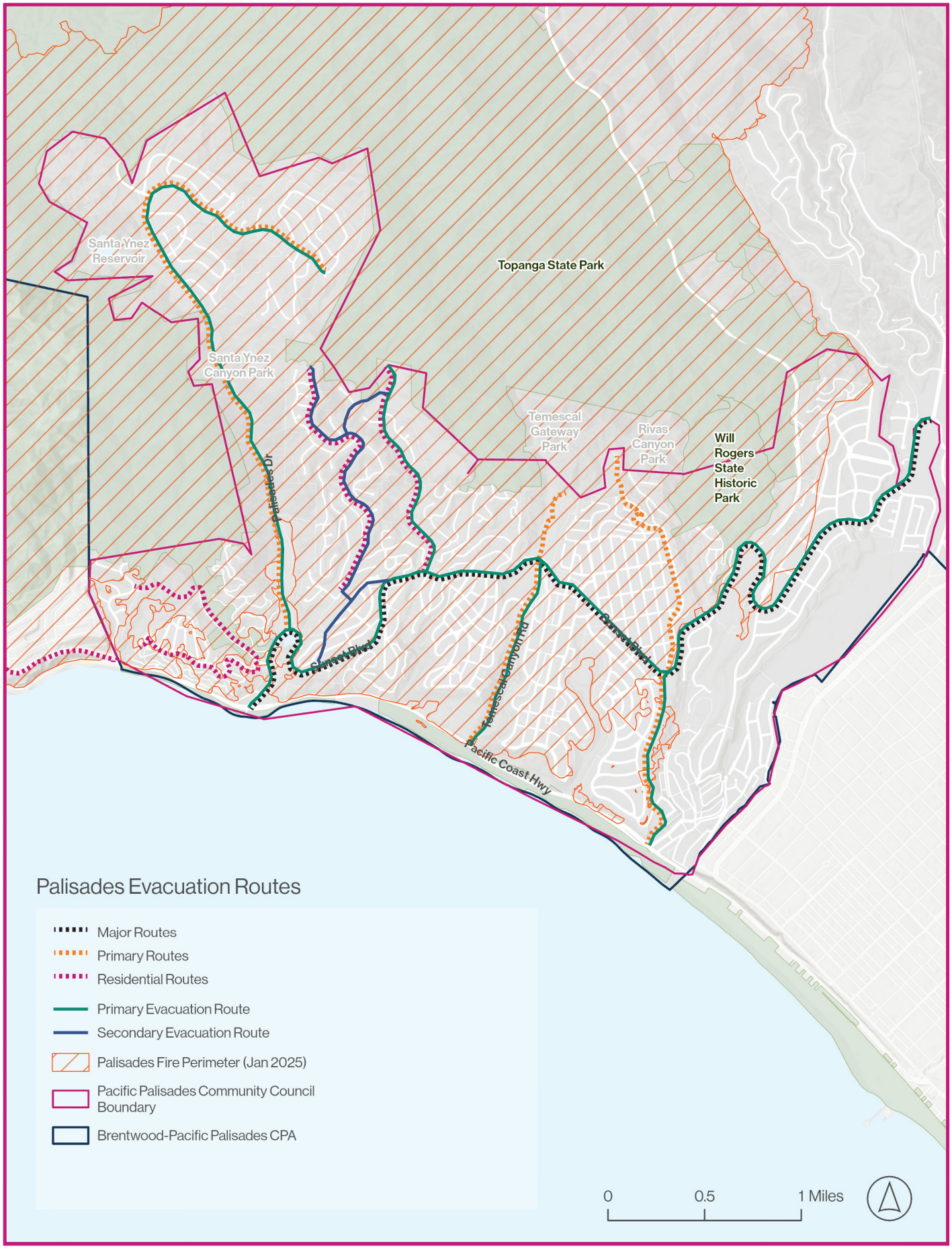
- Chautauqua Road*
- Palisades Drive*
- Temescal Canyon Road*

Residential Routes

- Bienveneda Avenue*
- Lachman Lane*
- Los Liones Drive/Tramonto Drive
- W Coastline Drive

*Palisades Evacuation Route

Figure 5.4: Palisades evacuation routes



Sources: City of LA; AECOM 2025

5.6.2. Anticipated Scenarios

A primary concept of the Palisades LCSS's decision-making process is to consider the typical scenarios that will most likely occur during the Palisades Rebuild, including the following:

- **Scenario #1** – Full Closure; No Real Detour Available
- **Scenario #2** – Multiple Lane Closure; Same Route or Segment with Overlapping Detours
- **Scenario #3** – Adverse Weather and Possible Emergency Evacuation
- **Scenario #4** – Activity Centers
  - Places that may require special handling due to their location in high-priority areas and/or sensitive zones, such as schools, fire stations, parks
- **Scenario #5** – High Construction Activity (along Residential Routes)

5.6.2.1. Scenarios # 1 and 2 – Roadway or Lane Closures

As part of the Palisades LCSS's scheduling logic, Scenarios # 1 and 2 are overlain onto the routes and/or segments (as applicable) that serve the Rebuild. For Scenarios # 1 and 2, these lane closures are presented in tabular form so that Stakeholders can use them when it makes sense. It is important to note that these tables are preliminary and will be further refined upon greater input and coordination with the City. Scenarios # 3 through 5 are further considered for potential impacts as applicable.

In most instances when a full closure is necessary and requested (Scenario #1), a detailed Traffic Study, Traffic Analysis, and/or full-blown Traffic Management Plan will need to be developed.

5.6.2.2. Scenario #3 – Adverse Weather Conditions

In instances when there is the need for a road closure during extreme adverse weather or if there is an increased possibility of an emergency evacuation, it is recommended that the following guidelines be enacted:

- Evacuation Routes
  - No work allowed (Major, Primary, and Significant Other Routes Nearby)
- Residential Routes
  - Work allowed

5.6.2.3. Scenario #4 – Activity Centers

In the Pacific Palisades, there are places that may require special handling due to their location in high-priority areas and/or sensitive zones (refer to Figure 5.5). To the extent possible, there are some additional considerations to consider regarding these various activity centers as follows:

- Schools
  - Coordinate and/or avoid school drop-off and pick-up times
  - Schools within the Pacific Palisades are as follows:
    - Palisades Charter High School
    - Palisades Charter Elementary School
    - Palisades Middle School
    - Corpus Christi School
    - Westside Waldorf School
    - Marquez Charter School
    - Calvary Christian School
    - St. Matthew's Parish School
- Parks
  - Coordinate and/or ensure access to park entrance/exit
  - Parks within the Pacific Palisades are as follows:
    - Temescal Canyon Park
    - Temescal Gateway Park
    - Rustic Canyon Park
    - Bluff Park
    - Pacific Palisades Park

- Fire Stations
  - Ensure First Responder access to station entrance/ exit
  - Fire Stations within the Pacific Palisades are as follows:
    - LA City Fire Dept. Station 23
    - LA City Fire Dept. Station 69
- Major Signalized Intersections
  - Not allowed to close right-turn lane
  - Not allowed to close left-turn lane
  - Add Police Officer on-site to direct traffic (as necessary)
  - Major signalized intersections within the Pacific Palisades are as follows:
    - Sunset Boulevard. and Los Liones Drive
    - Sunset Boulevard. and Palisades Drive
    - Sunset Boulevard. and Temescal Canyon Road
    - Sunset Boulevard. and Chautauqua Boulevard
    - Sunset Boulevard. and Bienveneda Avenue
    - Sunset Boulevard. and Lachman Lane

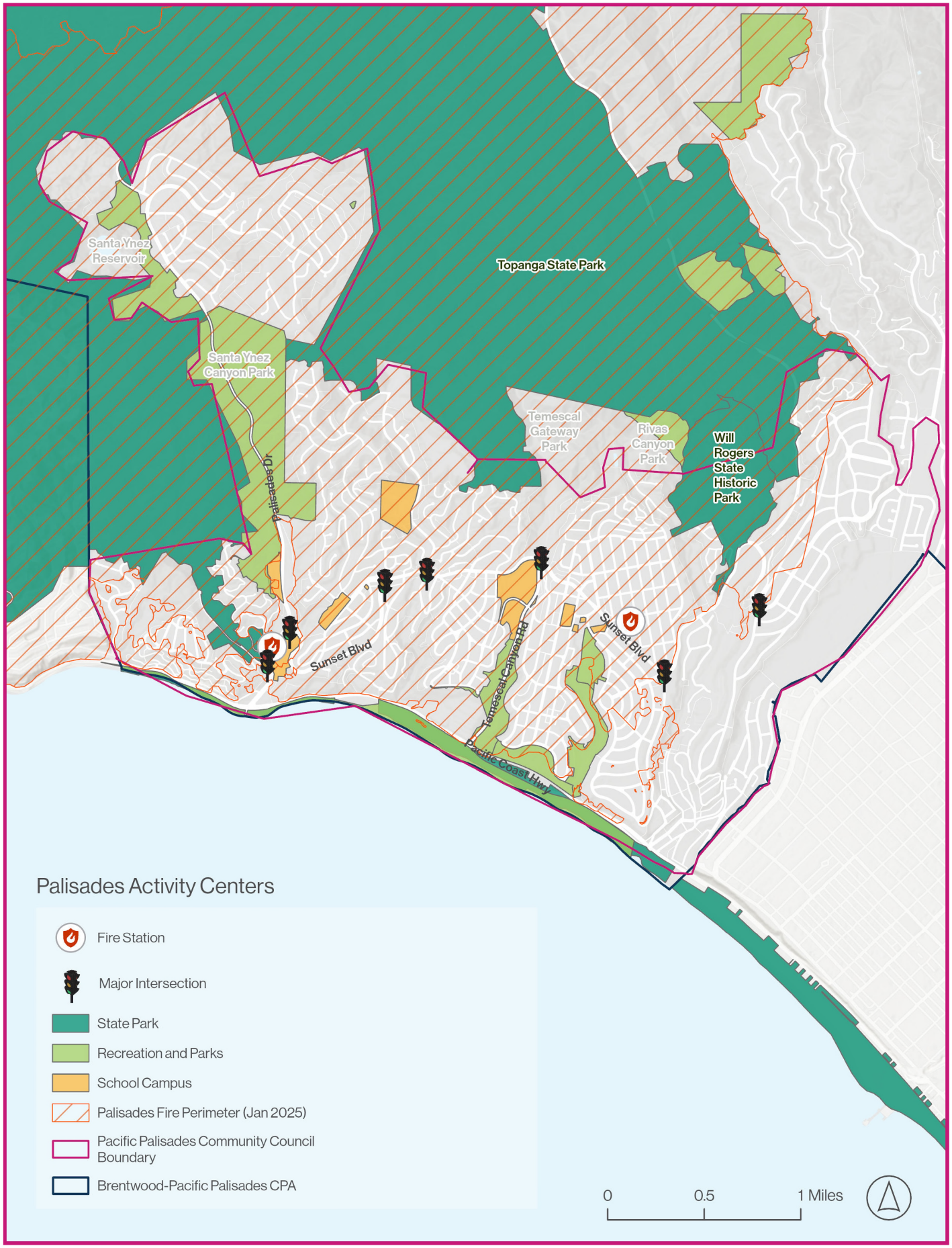
5.6.2.4. Scenario #5 – High Construction Activity (along Residential Routes)

When high construction activity along a Residential Route exists, there are further considerations to analyze as follows:

- Reserve parking
- Remove parking
- One-way conversion (with detours)

When these situations are encountered, the Palisades LCSS would filter and transfer these Residential Route requests to the recommended Parking and Curb Management System for further analysis (see Section 6).

Figure 5.5: Pacific Palisades activity centers



Sources: City of LA; AECOM 2025

5.7. Significant Other Routes Nearby

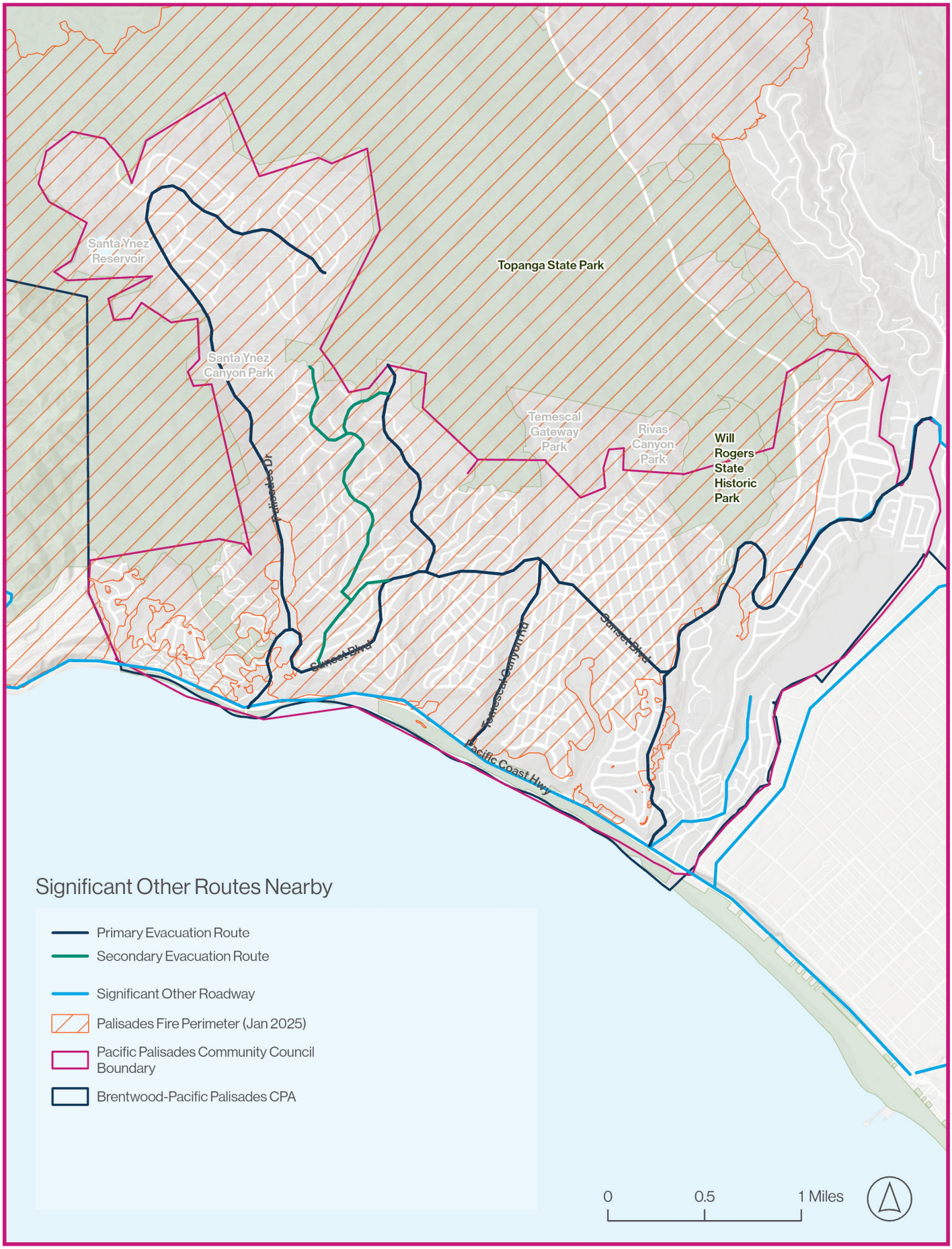
Lane closures, detours, and/or construction along the following nearby significant routes (Figure 5.6) will likely have an impact on decisions made by the Palisades LCSS and, therefore, will need to be closely coordinated:

- Channel Road (Los Angeles)/San Vincente (Santa Monica)
- I-10 (California [CA] State)
- Pacific Coast Highway (CA State)*
- Sunset Boulevard (I-405 to Amalfi Drive)*
- Topanga Canyon Boulevard (CA State)

*Palisades Evacuation Route



Figure 5.6: Significant other routes nearby



Sources: City of LA; AECOM 2025

5.8. Other Considerations

Close coordination between the involved Stakeholders should be maintained as permitting and associated lane closures get underway and before any lane closures, detours, and/or construction is allowed to start. Some key points and associated elements for consideration include the following:

- Coordination with Permitting Process, PALMS, and Parking/Curb Management Systems
  - Share construction staging areas
  - Dedicated equipment parking
  - Parking enforcement
  - Temporary no parking zones
  - Offsite parking with shuttle service
- Trucks
  - Potential route and/or mapping restrictions
  - Vary by truck type/size



6. Parking and Curb Management Framework

The reconstruction of the Pacific Palisades following the wildfire will bring an extraordinary concentration of construction activity into a steep, highly constrained residential street network. Streets that previously served local residents, visitors, and service vehicles will, for several years, also need to accommodate large volumes of contractors, material deliveries, inspections, and temporary staging. Without proactive management, this overlap in demand would quickly overwhelm the limited curb supply, compromise emergency access, and erode community confidence in the City's ability to maintain safe and livable conditions.

To address this challenge, the **Parking and Curb Management Framework** establishes a coordinated, temporary program that allows the City to manage parking and right-of-way access during the Rebuild in a structured, transparent, and fiscally neutral manner. Developed in consultation with LADOT and LADBS, the framework creates a single operating system for how curb space is allocated, priced, monitored, and eventually restored to normal use. It combines existing municipal authorities with a narrowly scoped **temporary ordinance** that authorizes fee-based management of specific curb functions and ensures all costs are recovered from participating contractors and vendors rather than the City's general fund.

The program's design reflects five guiding principles:

- **Safety and Accessibility:** Maintain continuous 20-foot emergency-lane clearance and ADA compliance on all active streets.
- **Equity and Community Protection:** Preserve reasonable residential access and prevent displacement of vulnerable users.
- **Low-Impact Implementation:** Use solar-powered, wireless, and fully reversible technologies that can be deployed or removed within days.
- **Fiscal Neutrality:** Operate entirely through cost recovery, with quarterly CAO audits and no long-term fiscal obligation to the City.
- **Transparency and Accountability:** Provide real-time, public-facing information on zone locations, rules, and program performance.

Functionally, the framework introduces four complementary management tools that collectively balance contractor efficiency with neighborhood mobility. These tools are coordinated through shared data systems linking LADOT permitting, LADBS construction activity, and field-level monitoring, giving the City a live operational picture of parking and curb utilization across the Rebuild area.

By embedding technology-enabled monitoring, automated reporting, and adaptive enforcement within a clear governance structure, the Parking and Curb Management Framework transforms what would otherwise be a reactive enforcement problem into a **managed, data-driven mobility program**. It protects life-safety access, minimizes disruption to residents, and demonstrates a model of adaptive, self-funded curb management that can be replicated for future disaster-recovery or large-scale construction efforts elsewhere in Los Angeles.

Many projects identified in this document are currently in preliminary stages of the project development process, and may still be pending funding, final approvals, and/or permitting. All projects are subject to change in scope, schedule, and cost until they are fully approved. Some of the projects, strategies, and efforts described in this report may not be possible for the City to complete without additional funding from the Federal and State governments as well as philanthropy, which may or may not be forthcoming.

6.1. Program Purpose

The **Parking and Curb Management Program** provides the City with a unified, temporary framework to manage parking, loading, and curb access during the active reconstruction of the Pacific Palisades. It translates the complex policy, legal, and operational concepts into a practical field program that preserves mobility, supports reconstruction efficiency, and protects community livability.

The program responds directly to the physical and operational realities of the Palisades Rebuild—narrow hillside streets, limited off-street parking, steep grades, and high overlap between contractor, resident, and service-vehicle activity. Traditional parking-control tools such as short-term "No Parking" postings or Preferential Parking Districts are insufficient for a multi-year, neighborhood-scale rebuild. This framework therefore introduces **temporary, technology-enabled, and self-funded mechanisms** that extend LADOT's existing authority without creating new permanent obligations for City departments.

At its core, the program seeks to achieve **five interrelated objectives**:

- **Maintain Safe and Accessible Streets.** Ensure continuous emergency-vehicle access and ADA-compliant travel paths by managing curb occupancy and enforcing a minimum 20-foot clear lane width on all active streets.
- **Protect Residential Quality of Life.** Preserve reasonable access for residents, service providers, and visitors through time-limited loading and localized residential-priority zones that reduce congestion and curb displacement.
- **Support Efficient and Predictable Construction Operations.** Provide contractors, trades, and vendors with clearly defined, pre-approved parking and staging options to reduce double-parking, travel delays, and neighborhood disruption while improving project scheduling reliability.
- **Ensure Fiscal Neutrality and Accountability.** Operate as a fully cost-recovered program funded through participant fees, and other managed uses. Quarterly CAO audits and transparent dashboards verify fiscal balance and compliance.
- **Promote Transparency, Equity, and Community Engagement.** Provide residents and stakeholders with clear, multilingual communication; 7-day advance notice of new restrictions; and access to a public online map displaying all active managed zones.

Each of these objectives aligns with City policy frameworks, including **Mobility Plan 2035, Vision Zero Los Angeles, LA's Green New Deal**, and the **Resilient Los Angeles Strategy**, and reinforces the Plan's broader mission to maintain safe mobility, equitable access, and fiscal neutrality during reconstruction (City of Los Angeles 2017, 2018, 2019; Los Angeles Department of City Planning 2016; Mayor's Office 2018). Together, they establish the purpose of the program: to manage curb space as a shared community asset, ensuring that the Palisades Rebuild proceeds safely, efficiently, and transparently while leaving no permanent footprint once recovery is complete.



To balance immediate operational needs with the long-term complexity of the Rebuild, this Parking and Curb Management Framework employs a "**Two-Phase" Implementation Strategy**. This approach distinguishes between the initial protocols required to maintain safety immediately and the "Future State" systems that can be activated if construction density or funding availability warrants expansion.

The detailed tools and technologies described in the subsequent sections serve as a **comprehensive operational blueprint**. While they define the full capabilities of a high-density management system, the City is not required to activate all components simultaneously. Instead, implementation follows a logical progression:

Phase 1: Immediate Operational Readiness (Existing Authorities)

The primary objective of Phase 1 is to secure the right-of-way using established municipal tools and staffing levels. This phase requires no new ordinances, no software procurement, and limited expansion of the civil service workforce.

- **Mechanism:** Activation of **Contractor Parking Zones** and **Food Truck Staging Areas** utilizing **Standard Traffic Control Plans** (pre-approved templates). This streamlines engineering review and allows contractors to "self-permit" routine safety zones.
- **Tracking:** Utilization of a **Cloud-Based Digital Registry** (integrated with existing PWRS workflows) to log active zone locations. This replaces the need for immediate sensor deployment with a simple, verified list of approved permits.
- **Enforcement:** Adoption of a "**Complaint-Driven**" enforcement model. Operations focus on responding to resident reports (via the Community Notification Channel) and safety-critical violations (e.g., blocked fire lanes), aligning with current Traffic Officer staffing capacity.
- **Field Operations:** Leverage of **LADOT Field Operations** for the installation of standard regulatory signage, removing jurisdictional friction.

Phase 2: Scalable Technology and Ordinance Integration (Conditional Activation)

As reconstruction volume intensifies, the City retains the option to scale up to the advanced capabilities described in this section. Transitioning to Phase 2 is **conditional**, triggered only when construction density exceeds manual management capacity or when specific cost-recovery funding is secured.

- **Advanced Tools:** Deployment of the **Sensor Networks** and **Real-Time Dashboards** to automate occupancy tracking.
- **Legislative Framework:** Exploration of a temporary ordinance to authorize comprehensive cost-recovery fees, ensuring the program remains fiscally neutral at scale.
- **Service Delivery:** Activation of a **Third-Party Concessionaire** model to handle system maintenance and data analytics, protecting City resources from administrative overload.

Blueprint for Activation

The remainder of this section details the full technical and operational specifications for Phase 2 Tools. This documentation ensures that if the City identifies a specific need—whether due to a surge in permit volume or the availability of grant funding—the **operational architecture is ready to be activated** without further planning delays.

6.2. Core Tools

Managing curb space during the upcoming Palisades Rebuild will require a level of coordination and precision beyond what traditional parking controls can provide. Standard measures, such as the aforementioned static "No Parking" postings or long-term residential parking districts, are not designed for the **rolling, high-intensity construction activity** anticipated during the multi-year rebuild. Each block will experience fluctuating curb demands from contractors, deliveries, residents, inspectors, and service vehicles. Without a proactive management framework, curb space could easily become oversubscribed, emergency access constrained, and community frustration heightened.

To address these anticipated pressures, this Plan **recommends** that the City, through LADOT and LADBS, **develops and implements a coordinated suite of four complementary curb-management tools**. Collectively referred to as the *Core Tools*, these mechanisms are intended to provide a flexible, scalable system for allocating, monitoring, and enforcing curb use throughout the reconstruction period. Rather than treating the curb as an unmanaged public resource, the City would manage it as a **shared operational asset**—one that adapts to construction intensity while maintaining safety, fairness, and fiscal neutrality.

Each proposed tool responds to a specific operational challenge:

- **Temporary Managed Parking Zones (TMPZs)** would organize and contain contractor and trade-vehicle demand to prevent it from overwhelming residential streets or blocking emergency routes.
- **Residential and Delivery Access Zones** would maintain neighborhood access and continuity of daily services for residents and deliveries in areas affected by reconstruction.
- **Mobile Food Service Zones (MFSZs)** would provide designated, safe locations for food trucks and service vendors, avoiding ad hoc clustering and maintaining pedestrian safety.
- **Community-Based Temporary Parking Zones (CTPZs)** would encourage voluntary participation by property owners and community institutions to offer supplemental off-street parking during peak construction phases.

These tools form part of the recommended framework described in this section, which establishes the structure for how the City may coordinate and manage parking and access during the rebuild. They are legally supportable under existing provisions of the **California Vehicle Code § 22507** and the **Los Angeles Municipal Code (LAMC) §§ 80.08.6, 80.55, 80.56, 80.58(d), and 80.73,** and would be further enabled by a **temporary ordinance** allowing cost-recovery fees for managed contractor and vendor parking.

All tools share four defining characteristics that guide their recommended design:

1. **Temporary and Reversible** – Each designation would be time-limited, simple to deploy, and easily removed upon project completion.
2. **Technology-Enabled** – Solar-powered sensors, mobile enforcement, and real-time dashboards would provide continuous visibility and accountability.
3. **Cost-Recovered and Self-Funded** – Participant fees would fully offset installation, monitoring, and enforcement costs, ensuring fiscal neutrality.
4. **Equitable and Transparent** – Public maps, multilingual notices, and standardized signage would communicate purpose, duration, and rules for each zone.

Collectively, these tools are **conceptual building blocks**, not current City programs. They are intended to guide inter-departmental planning, budgeting, and ordinance development so that, when reconstruction activity accelerates, the City is prepared with a tested, legally sound, and community-responsive framework. The subsections that follow describe each proposed tool in greater detail, outlining its purpose, implementation pathway, and potential benefits to the City and the Palisades community.

6.2.1. Temporary Managed Contractor Parking Zones

The Palisades Rebuild will bring hundreds of contractors, tradespeople, inspectors, and material-delivery vehicles into a neighborhood with narrow hillside streets and limited off-street parking. Under current conditions, these vehicles typically park wherever space is available, often double-parking, blocking driveways, or narrowing travel lanes below the 20-foot clearance required for emergency access. The cumulative effect during active reconstruction could significantly impede mobility, create safety hazards, and frustrate both residents and emergency responders.

To mitigate these impacts, the City **should consider establishing TMPZs** as the cornerstone of the curb-management program. TMPZs would consolidate contractor and trade-vehicle parking into **designated, time-limited, and fee-based zones** authorized under a temporary ordinance. By managing contractor parking in structured areas rather than on a first-come, first-served basis, the City could maintain clear travel lanes, reduce neighborhood congestion, and improve predictability for both field crews and residents.

6.2.1.1. Concept and Implementation Approach

Under this framework, TMPZs would operate as **short-term, renewable parking and staging areas** located on approved public rights-of-way or, where feasible, nearby off-street lots. Each TMPZ would be tied to active building-permit activity within the surrounding block or construction cluster, allowing the City to dynamically allocate and retire zones as rebuilding progresses.

Key implementation features include:

- **Linked Permitting:** TMPZ authorizations would be issued through LADBS in coordination with building-permit data, ensuring each active construction site is associated with a valid contractor-parking allocation.
- **Policy Oversight:** LADOT would define operating criteria, safety parameters, and fee structures, while LAFD would review proposed locations for emergency-lane compliance.
- **Field Setup:** StreetsLA would install removable signage and markings using standardized templates approved by LADOT.
- **Duration and Renewal:** TMPZ permits would typically be valid for 1 to 4 weeks, renewable upon inspection and verification of continued construction activity.
- **Cost Recovery:** All costs for signage, monitoring, and enforcement would be recovered through contractor participation fees established in the temporary ordinance.

These procedures would allow the City to scale the program incrementally, starting with pilot corridors or staging clusters, and to adapt the number, size, and location of TMPZs as reconstruction activity fluctuates.

6.2.1.2. Legal Basis

TMPZs would draw their authority from existing traffic-control provisions, primarily:

- **California Vehicle Code § 22507:** granting local governments authority to restrict or reserve parking for safety or operational reasons; and
- **LAMC §§ 80.08.6, 80.55, 80.56, 80.58(d):** empowering LADOT to post temporary traffic-control devices, designate parking and loading zones, and establish temporary preferential parking areas.

Because TMPZs would involve **fee-based reservations of curb space** for recurring use, implementation would also require a **temporary City ordinance**. That ordinance would authorize LADOT and LADBS to collect and administer cost-recovery fees, set program duration, and define enforcement procedures. The ordinance could sunset automatically upon completion of the Palisades Rebuild or after a fixed 5-year period.

If adopted, the TMPZ program could employ several best-practice features to enhance safety, compliance, and accountability:

- **Advance Public Notice:** Each new TMPZ should be posted with a minimum 7-day notice and listed on the public dashboard showing active zones.
- **Real-Time Monitoring:** Solar-powered sensors or mobile-enforcement feeds could record occupancy and flag violations for rapid response.
- **Integration with PALMS:** TMPZ data should link with the PALMS so deliveries, material drop-offs, and worker access are coordinated through a single scheduling system.
- **Adaptive Management:** Zones could be adjusted or re-located based on traffic-analysis data or community feedback, ensuring flexibility as rebuilding patterns evolve.

6.2.1.3. Expected Benefits

Implementing TMPZs would provide multiple community and operational advantages:

- **Safety:** Maintains continuous emergency-vehicle access and prevents lane obstruction.
- **Efficiency:** Reduces time lost to curb searching, double-parking, and vehicle circulation.
- **Community Livability:** Concentrates contractor activity away from sensitive residential frontages, reducing noise and congestion.
- **Accountability:** Creates a transparent, auditable record of curb use and cost recovery.
- **Fiscal Neutrality:** Ensures the City recovers all administrative and field-implementation costs through user fees rather than general funds.

6.2.1.4. Immediate Incentives and Selection Criteria (Phase 1 Activation)

Alignment with Phased Implementation

To operationalize the **Phase 1: Immediate Launch** strategy described in Section 6.1.1, the City must drive adoption of Contractor Parking Zones without relying on the advanced sensor technology planned for Phase 2. Instead of digital enforcement, the program utilizes **administrative incentives** embedded within the current LADBS/LADOT permitting workflow. This approach uses "process acceleration" to motivate contractors to participate voluntarily.

Incentivization Methodologies (The Phase 1 "Carrots")

- **Permit Streamlining (Time Incentive):** Contractors who select a **Standard Traffic Control Plan** for their parking zone during the LADBS intake process qualify for expedited "over-the-counter" clearance. In contrast, contractors proposing ad-hoc parking arrangements trigger a comprehensive Traffic Engineering review, resulting in longer approval timelines.
- **Enforcement "Safe Harbor" (Cost Incentive):** By securing a valid Contractor Parking Zone permit, contractors gain authorized, exclusive use of the curb frontage. This provides immunity from standard time-limit citations and neighborhood complaints, offsetting the permit fee with the savings from avoided parking tickets and work stoppages.
- **Predictable Access (Operational Incentive):** The Contractor Parking Zone guarantees a reserved staging area directly in front of the job site, eliminating the daily operational cost of crews "hunting" for parking or hauling materials from distant unrestricted streets.

Applicability Criteria (When is a Contractor Parking Zone Required?)

To filter requests effectively and prioritize limited curb space, Contractor Parking Zone requirements will be applied based on the "High-Impact" criteria identified during the LADBS Plan Check:

- **Project Scope:** Mandatory consideration for all **New Construction** or **Major Remodel** permits.
- **Street Geometry:** Required for any project located on a street with a curb-to-curb width of **less than 28 feet**, where unmanaged parking would block the 20-foot emergency clear lane.
- **Driveway Capacity:** Required for sites where on-site parking is insufficient to accommodate the projected volume of trade vehicles (e.g., fewer than two on-site spaces available during active construction).

Implementation Mechanism

These criteria will be enforced via the **Construction Parking Affidavit**. As a condition of permit issuance, applicants meeting the criteria above must declare their parking strategy: either (A) demonstrating sufficient off-street capacity, or (B) obtaining a Contractor Parking Zone permit using a Standard Plan. This integrates curb management directly into the existing "Clearance Summary Worksheet" workflow used by LADBS and LADOT, allowing for immediate implementation.



6.2.2. Residential and Delivery Access Zones

6.2.2.1. Purpose and Rationale

The Pacific Palisades neighborhood is characterized by narrow rights-of-way, steep grades, and homes that depend heavily on curbside parking. During the reconstruction period, these same streets will also accommodate contractors, delivery trucks, and construction staging. Without proactive management, residential access could be displaced for months at a time, undermining neighborhood livability and creating frustration among property owners and service providers.

To preserve daily access and continuity of essential services, this Plan **recommends that the City establish Residential and Delivery Access Zones** along corridors experiencing sustained construction activity. These zones would provide **time-limited and resident-priority curb areas** that protect access for households, mail and parcel delivery, waste collection, and other critical neighborhood functions. They are designed as **low-impact, reversible, and administratively simple measures** that extend LADOT's existing authority without requiring new long-term programs.

6.2.2.2. Concept and Implementation Approach

Residential and Delivery Access Zones are proposed as **block-level designations** that maintain predictable curb access and ensure compliance with safety and emergency-clearance standards. They can be created, adjusted, or retired as rebuild intensity shifts from one area to another.

Key implementation elements include:

- **Administrative Establishment:** Zones could be created by **LADOT**, under existing code authority, in coordination with **LAFD** to confirm 20-foot emergency-lane clearance. Because these designations would not involve paid reservations of curb space, they could be implemented without new ordinance language.
- **Linked to Construction Activity:** LADBS would provide weekly data on active building permits to inform where temporary residential protections are most needed.
- **Flexible Zone Types:** Each block could include a combination of:
  - Resident Parking Only – Construction Period segments;
  - Two-Hour Limit segments in mixed-use or shared-parking areas; and
  - 15-to-30-Minute Loading Zones supporting parcel deliveries, service calls, or quick pick-ups.
- **Signage and Communication: LADOT** would install standardized, removable signs and curb markings using LADOT-approved templates. All new or modified zones would be posted with a **minimum 7 day advance notice** and reflected on the public dashboard.

These measures would allow the City to adapt **access controls dynamically** and respond to community feedback, construction phasing, and traffic-analysis results.

6.2.2.3. Legal Basis

Residential and Delivery Access Zones can be established under **California Vehicle Code § 22507** and **LAMC §§ 80.55, 80.56, and 80.58(d)**, which authorize local agencies to regulate or reserve curb space for time-limited parking, loading, and preferential use. No additional ordinance would be required unless cost-recovery fees are later introduced. The same provisions empower LADOT to modify or rescind designations as conditions change, ensuring the framework remains temporary and reversible.

6.2.2.4. Operational Considerations

If implemented, several operational practices would enhance consistency and community confidence:

- **Emergency Coordination:** All proposed restrictions should be reviewed by **LAFD** to verify unobstructed evacuation routes.
- **ADA Compliance:** Curb cuts and accessible parking must be maintained near residences with documented needs.
- **Public Notification:** CD 11 and neighborhood councils should be engaged before each phase of deployment to communicate rationale, duration, and enforcement protocols.
- **Monitoring and Adjustment:** Utilization data from mobile-enforcement platforms or field observations could inform when zones are extended, downsized, or removed.

6.2.2.5. Expected Benefits

Establishing Residential and Delivery Access Zones would help the City and community achieve several outcomes:

- **Preserved Mobility and Access:** Residents maintain close-to-home parking and reliable neighborhood and delivery services even during peak construction.
- **Safety and Emergency Readiness:** Controlled curb use ensures emergency-vehicle clearance and sight-distance protection.
- **Community Fairness:** Prioritizes local households and essential services while providing clear expectations to contractors and visitors.
- **Administrative Efficiency:** Uses existing City authority and resources, minimizing new procedures or staffing burdens.

6.2.2.6. Summary

Residential and Delivery Access Zones are a **recommended near-term measure** that would give LADOT a flexible tool to preserve livability and safety as reconstruction accelerates. If advanced, these zones could be implemented incrementally, starting with the most congested corridors, and refined through community feedback and ongoing monitoring. They exemplify the broader principle of this framework: using **temporary, technology-enabled, and reversible interventions** to protect daily mobility and neighborhood function during the Palisades Rebuild.

6.2.3. Mobile Food Service Zones

6.2.3.1. Purpose and Rationale

Large-scale reconstruction activity will attract mobile food vendors and service trucks to the Pacific Palisades, as they provide convenient meals and refreshments for contractors and residents alike. However, without pre-designated locations, this activity can lead to ad hoc clustering of trucks along narrow corridors, double-parking near construction sites, and pedestrian-safety conflicts. Generators, crowding, and waste accumulation can further degrade neighborhood conditions if left unmanaged.

To avoid these issues, this Plan **recommends that the City create MFSZs**—designated curb or off-street areas where licensed food trucks and service vendors could operate safely and predictably. MFSZs would support workers and residents while ensuring that vending activity remains compatible with traffic flow, pedestrian safety, and neighborhood quality of life.

These zones would be coordinated with other curb-management tools such as TMPZs and Residential and Delivery Access Zones, ensuring all uses of curb space are organized, equitable, and compliant with emergency-access standards.

6.2.3.2. Concept and Implementation Approach

MFSZs are envisioned as **time-limited, pre-approved vending locations** situated along wide arterial corridors or within designated staging areas, such as PALMS hubs. They would balance access and convenience with strict safety and sanitation requirements.

Key elements of implementation include:

- **Designated Corridors:** LADOT would identify appropriate, and other wide rights-of-way capable of accommodating vending without impeding traffic (based on demand and need).
- **Permitting and Coordination:** Vendors would be required to hold valid **City business licenses and Los Angeles County health permits**. A temporary vending authorization could be issued through LADOT or LADBS as part of the same administrative framework used for TMPZs.
- **Hours of Operation:** Standard hours would be **7:00 a.m. to 4:00 p.m., Monday through Saturday**, unless modified by LADOT to reflect construction schedules, community events, or safety concerns.
- **Operating Standards:** All vendors would be required to comply with generator-noise limits, waste-management protocols, and fire-safety regulations, with regular inspections by the County Department of Public Health or designated City personnel.
- **Signage and Visibility:** StreetsLA would install consistent, temporary signage identifying each MFSZ and outlining hours, permit display requirements, and public contact information for inquiries or complaints.
- **Monitoring and Reporting:** Zone occupancy and compliance could be tracked through a digital dashboard or sensor-based platform, allowing LADOT to adjust zones or schedules as needed.

6.2.3.3. Legal Basis

MFSZs would operate under existing provisions of **LAMC § 80.73** (Catering Trucks), in combination with **§§ 80.55–80.56** (Traffic-Control and Parking Restrictions), and would be **formally authorized through the same temporary ordinance** that enables TMPZs. The ordinance would empower LADOT to:

- Designate and post MFSZ locations,
- Collect cost-recovery fees for participation,
- Enforce time and safety restrictions, and
- Suspend or modify MFSZs in response to safety or community concerns.

This temporary ordinance would include an **automatic sunset clause** aligned with the rebuild timeline, ensuring that all designations and vendor authorizations expire once reconstruction concludes.

6.2.3.4. Operational Considerations

If adopted, several operational practices could enhance safety, compliance, and public acceptance:

- **Equity and Fair Access:** The permitting process should ensure opportunities for local and minority-owned food-truck operators while maintaining clear rules for participation.
- **Community Coordination:** CD 11 and local homeowner associations should be notified in advance of new MFSZ designations, with clear communication on purpose, duration, and hours of operation.
- **Public Health and Sanitation:** Waste and grease-disposal requirements should mirror those used by the County's Department of Public Health and include penalties for noncompliance.
- **Integration with Contractor Schedules:** MFSZs should align with TMPZ and PALMS activity periods, providing convenient service locations without exacerbating curb congestion.
- **Safety and ADA Compliance:** Locations should maintain unobstructed sidewalks, curb ramps, and minimum 20-foot travel-lane clearance for emergency vehicles.

6.2.3.5. Expected Benefits

Creating MFSZs would provide both operational and community benefits during the Palisades Rebuild:

- **Safety and Order:** Reduces unsafe clustering of food trucks and associated traffic or pedestrian conflicts.
- **Community Liveability:** Ensures vending is predictable, clean, and compatible with residential expectations.
- **Economic Opportunity:** Provides a structured environment for vendors to serve the workforce without requiring permanent infrastructure.
- **Transparency and Accountability:** Enables monitoring and enforcement through real-time data and standardized rules.
- **Fiscal Neutrality:** Recovers program costs through vendor fees and avoids new City budget commitments.

6.2.3.6. Summary

MFSZs represent a **balanced, proactive strategy** for managing vendor activity during the Palisades Rebuild. While not yet implemented, the concept provides LADOT, LADBS, and partner agencies with a framework for safe, organized, and equitable vending operations in high-demand areas. By designating appropriate curb locations, enforcing uniform standards, and aligning hours of operation with construction activity, MFSZs would maintain safety and community harmony while supporting local economic participation.

If advanced, MFSZs should be piloted early in the reconstruction phase alongside TMPZs to test coordination, enforcement procedures, and data integration within the broader curb-management system.

6.2.4. Community-Based Temporary Parking Zones

6.2.4.1. Purpose and Rationale

Even with managed contractor parking and designated residential zones, the Pacific Palisades' limited curb inventory will strain under the combined demands of residents, contractors, inspectors, delivery services, and visitors. To supplement this limited capacity, the City should consider establishing a framework for **CTPZs**—a voluntary participation program through which private property owners, institutions, and community organizations could make off-street areas available for temporary parking during the Palisades Rebuild.

CTPZs would expand total parking supply without requiring new infrastructure. Churches, schools, and commercial or vacant parcels could participate for defined periods, offering safe, organized parking for construction workers or displaced residents. This community-partnership approach adds flexibility for the City, reduces on-street congestion, and builds goodwill among residents and property owners directly affected by reconstruction.

6.2.4.2. Concept and Implementation Approach

CTPZs are envisioned as short-term, renewable designations operating under City oversight but relying on voluntary participation and local cooperation. They would be simple to administer, require minimal physical improvements, and could be activated or closed as reconstruction phases shift.

Key implementation elements include:

- **Voluntary Participation:** Property owners, HOAs, and community institutions register their interest through an LADBS-managed web portal.
- **Administrative Review:** LADBS verifies basic site safety, ingress/egress, and insurance documentation, while LADOT reviews circulation and signage to ensure compliance with traffic and emergency-access standards.
- **Approval and Coordination:** Designations are jointly approved by LADOT, LADBS, and CD 11 to maintain local transparency and alignment.
- **Signage and Communication:** LADOT installs temporary signs identifying authorized hours, permitted user groups, and City contact information.
- **Duration and Renewal:** CTPZs typically operate for 3 to 6 months, renewable upon inspection and verification that they remain needed and compliant.
- **Fees and Cost Recovery:** Nominal administrative fees may be collected to offset review and signage costs, though participation could also be incentivized through fee waivers or recognition as a community partner.

6.2.4.3. Legal Basis

CTPZs can be established under existing **California Vehicle Code § 22507** and **LAMC §§ 80.55 and 80.56**, which authorize the City to regulate parking and install temporary traffic-control devices for public safety and operational purposes. Because participation is voluntary and does not involve paid reservation of public curb space, a new ordinance is not required. The City Attorney should prepare a **standard indemnification and insurance agreement** for participants to limit City liability and ensure compliance with risk-management requirements.

6.2.4.4. Operational Considerations

To ensure safety, transparency, and community confidence, several practices are recommended if the City proceeds:

- **Equitable Access:** Prioritize lots near high-impact rebuild corridors or areas with limited curb supply so relief reaches the most affected neighborhoods.
- **Safety and Design Standards:** Require adequate lighting, ADA-accessible routes, and safe pedestrian connections from lots to adjoining streets.
- **Community Engagement:** CD 11 and neighborhood councils assist with outreach, helping identify potential sites and explain participation benefits.
- **Data Integration:** Active CTPZ locations appear on the same public dashboard used for TMPZs and MFSZs, providing residents with a live map of available resources.
- **Sunset and Restoration:** All signage and temporary markings are removed promptly when the zone expires or the site returns to normal use.

6.2.4.5. Expected Benefits

Implementing CTPZs could deliver multiple benefits for both the City and the community:

- **Expanded Capacity:** Adds off-street spaces to absorb overflow demand from construction areas.
- **Reduced Congestion:** Lessens parking pressure on narrow residential blocks and key arterials.
- **Community Partnership:** Encourages collaboration between the City and local institutions, reinforcing shared ownership and civic pride for the Palisades Rebuild effort.
- **Low-Cost Scalability:** Uses existing properties and minimal City resources, aligning with the program's self-funded and reversible philosophy.
- **Public Goodwill:** Recognizes participating owners as partners in neighborhood recovery and resilience.

6.2.4.6. Summary

CTPZs offer a **flexible, low-cost strategy** to supplement the City's managed parking system during the Palisades Rebuild. Although not yet established, the concept gives LADOT, LADBS, and CD 11 a practical framework for expanding capacity and engaging residents as active participants in the recovery process.

If pursued, CTPZs could be piloted early in the program to test administrative procedures, insurance templates, and data-integration methods before wider rollout. This approach exemplifies the overarching principles of the Parking and Curb Management Framework—**temporary, community-driven, technology-enabled, and fiscally neutral**—ensuring that every available resource contributes to a safe, efficient, and collaborative rebuild.

6.3. Policy and Legal Basis

A clear legal foundation is essential for any parking and curb management program the City may choose to implement during the Palisades Rebuild. The recommended framework is designed to operate entirely within existing state and City authority while introducing a narrowly scoped **temporary ordinance** to enable limited cost-recovery and program oversight. This approach minimizes legal complexity, avoids permanent amendments to the LAMC, and ensures that all measures sunset automatically when reconstruction activity concludes.

6.3.1. Existing Statutory Authority

The following provisions already grant the City broad powers to manage and regulate curb use for public safety, access, and mobility:

- **California Vehicle Code § 22507:** Authorizes local authorities to restrict or prohibit stopping, standing, or parking for specific purposes, including emergency access, safety, and preferential parking.
- **LAMC § 80.08.6 (Temporary Traffic Controls):** Allows LADOT to post temporary "No Parking" or "No Stopping" restrictions and other controls needed for construction or maintenance operations.
- **LAMC § 80.55 (Department Authority to Install Devices):** Empowers LADOT to place and remove traffic-control signs, markings, and devices that regulate stopping, standing, or parking.
- **LAMC § 80.56 (Parking and Loading Zones):** Permits designation of passenger and commercial loading zones and short-term parking limits to facilitate deliveries and access.
- **LAMC § 80.58(d) (Temporary Preferential Parking Districts):** Enables LADOT to establish temporary residential parking restrictions during unusual or emergency conditions.
- **LAMC § 80.73 (Catering Trucks):** Provides the basis for regulating food-truck operations within posted restrictions and is adaptable for MFSZs.

Together, these codes provide a legally sufficient framework for **Residential and Delivery Access Zones** and **CTPZs**—measures that do not involve paid reservations of the public right-of-way and can therefore be implemented administratively by LADOT using existing procedures.

6.3.2. Need for a Temporary Ordinance

While most elements of the framework fall within existing authority, **TMPZs** and **MFSZs** would require a short-term enabling ordinance because both involve **fee-based, time-limited reservations** of curb space.

The ordinance, if adopted by City Council, should:

- Authorize LADOT and LADBS to issue and administer TMPZ and MFSZ permits and collect cost-recovery fees;
- Establish clear parameters for fee setting, reporting, and automatic program sunset;
- Define enforcement authority, citation procedures, and penalties for unauthorized use;
- Incorporate privacy, data-retention, and cybersecurity standards consistent with ITA policy; and
- Delegate limited operational authority to a **SIG** or comparable inter-departmental body, as described in Section 9.

A narrowly drafted ordinance of this kind would give the City the flexibility to manage intensive curb use during reconstruction without altering the City's permanent regulatory structure.

6.3.3. Legal Design Principles

The recommended policy framework is built around several guiding legal principles intended to balance authority, accountability, and public trust:

- **Temporary and Self-Limiting:** All new powers would expire automatically within a defined term (anticipated 60 months) or upon formal completion of the Palisades Rebuild.
- **Fiscal Neutrality:** All program costs, including signage, enforcement, and administration, would be fully recovered through participant fees; no ongoing general-fund obligation would be created.
- **Public Ownership and Control:** All curb designations remain City-controlled; permits confer use rights only for limited periods and purposes.
- **Transparency and Oversight:** Quarterly audits and public dashboards would document revenues, expenditures, and performance, reinforcing public accountability.
- **Data Privacy and Security:** Monitoring systems would retain operational data for no more than 72 hours and comply with the City's ITA Data Governance Policy.

6.3.4. Implementation Path for City Consideration

If the City elects to move forward, LADOT, LADBS, and the City Attorney could collaborate on a phased legal implementation plan:

1. **Confirm Existing Authorities:** Validate how current California Vehicle Code and LAMC provisions can support early pilot actions such as Residential and Delivery Access Zones.
2. **Draft Temporary Ordinance:** Prepare enabling language for TMPZ and MFSZ operations, cost recovery, and program sunset.
3. **Review and Approval:** Route through CAO for fiscal verification and City Council for adoption.
4. **Issue Administrative Rules:** LADOT to publish standardized procedures, signage templates, and compliance protocols.
5. **Pilot and Evaluate:** Test ordinance functionality during early construction phases and adjust prior to full rollout.



6.4. Operations

A successful parking and curb management program during the Palisades Rebuild will depend on clear roles, efficient coordination, and predictable field procedures. Because the recommended framework is temporary and multi-agency by design, operations must emphasize **simplicity, accountability, and adaptability** rather than permanent staffing or infrastructure. The following structure outlines how the City could organize day-to-day activities once the program is authorized and funded.

6.4.1. Administrative Framework

Operational responsibility would be distributed across existing departments, building upon their statutory authority and expertise:

- **LADOT – Program Lead:** Defines policy, approves curb designations, manages data integration and enforcement coordination, and publishes program performance reports.
- **LADBS – Permit Integration and Fee Collection:** Issues TMPZ, MFSZ, and CTPZ approvals tied to active building permits; collects and deposits participation fees into a restricted account for cost recovery.
- **LADOT – Field Implementation:** Fabricates and installs standardized signage and curb markings; removes them promptly when zones expire.
- **LAFD – Safety Oversight:** Reviews proposed curb changes for 20-foot clearance and emergency-access compliance; participates in adaptive-management reviews.
- **LADOT Parking Enforcement – Compliance:** Conducts on-site monitoring and citations supported by digital evidence feeds.
- **CD 11 – Community Interface:** Coordinates public notices, neighborhood council briefings, and feedback loops with residents and institutions.

This shared model keeps administrative control with existing departments while minimizing the need for new staffing or dedicated divisions.

6.4.2. Workflow and Coordination

Program operations would follow a **standardized request-review-approval workflow** so that each new zone, regardless of type, moves through a consistent sequence:

- **Request / Trigger:** Zone need is identified through building permit data, traffic analysis, or community request.
- **Pre-Screening:** LADOT checks network constraints and safety criteria.
- **Inter-Departmental Review:** LAFD confirm emergency-lane clearance; CAO verifies cost-recovery schedule when applicable.
- **Approval and Posting:** LADOT issues official authorization; installs signage and updates GIS map.
- **Notification:** Public dashboard and 7-day advance notice are distributed through CD 11 channels.
- **Monitoring and Enforcement:** Mobile-enforcement units and sensor data ensure compliance; violations are recorded digitally.
- **Renewal / Removal:** Upon permit expiration or change in activity, LADBS and LADOT coordinate to renew, relocate, or remove the zone.

By standardizing this workflow, the City could maintain transparency and speed while limiting manual effort and reducing potential for miscommunication among departments.

6.4.3. Technology and Field Operations

To support low-impact deployment and continuous oversight, operations would rely heavily on **portable, self-powered technologies** and cloud-based coordination tools:

- **Solar-Powered Signage and Sensors:** Provide occupancy data and compliance verification without trenching or hard-wiring.
- **Cloud Dashboard:** Displays all active zones, permit links, and enforcement actions; accessible to LADOT, LADBS, CAO, and public-facing users.
- **Mobile Enforcement Apps:** Allow parking-enforcement officers to verify permits, capture images, and issue citations.
- **Automated Reporting:** Generates weekly summaries for inter-departmental review and quarterly fiscal audits.

These tools reduce field labor, enhance transparency, and provide real-time information for adaptive management.

Adaptive Management and Feedback

Given the multi-year duration of reconstruction, operational policies must remain flexible. The City should implement a **continuous-improvement loop** whereby data from enforcement logs, community feedback, and traffic performance inform monthly adjustments. LADOT could chair recurring coordination meetings with LADBS, StreetsLA, and LAFD to review metrics, reevaluate zone boundaries, and approve modifications based on observed outcomes. Adjustments would then be communicated publicly through updated dashboards and outreach notices.

6.4.4. Public Notification and Transparency

Consistent communication will be vital to maintaining community trust. Prior to any new zone activation or modification, residents and nearby institutions should receive a **minimum 7-day advance notice** through online postings, email lists, and signage. The public dashboard would serve as the central information hub, displaying current restrictions, permit numbers, and anticipated expiration dates. These transparency measures ensure residents, contractors, and enforcement staff operate from a shared, reliable source of truth.

Figure 6.1: Example of solar powered signage and cameras



6.4.5. Operations Summary

Operational success during the Palisades Rebuild will depend on clarity of roles, efficient use of technology, and proactive coordination across City departments. The approach described here allows LADOT, LADBS, and partner agencies to administer temporary curb controls that are **scalable, reversible, and fiscally neutral** while maintaining continuous visibility for the public. By embedding standard workflows, real-time data, and community feedback into daily practice, the City can transform curb management from a reactive enforcement challenge into a **planned, transparent, and adaptive operational system** that supports both neighborhood livability and reconstruction efficiency.

6.5. Technology and Monitoring

6.5.1. Overview

The success of the Parking and Curb Management Program will rely on the City's ability to monitor activity across a complex, rapidly changing network of temporary parking and access zones. The Palisades Rebuild will involve hundreds of simultaneous construction sites spread across steep and narrow streets, creating continuous shifts in curb demand and requiring rapid adjustments to operational decisions. Historically, this level of field visibility has been difficult for LADOT to achieve without costly infrastructure or intensive staff patrols.

Given the temporary nature of the Rebuild, the City should avoid large-scale technology procurement or permanent IT integrations. Instead, it is recommended that the monitoring platform be delivered and operated by a qualified third-party vendor as a managed service, providing real-time visibility, analytics, and data hosting for the duration of the program. The system would operate under LADOT's oversight and ITA's governance standards but remain fully vendor-managed, thereby eliminating installation burdens, wiring, or long-term system maintenance for City departments.

Importantly, the proposed system is **not an automated enforcement or citation platform**. All legal enforcement actions would continue to be performed manually by LADOT Parking Enforcement officers and LAPD staff under existing procedures. The technology's purpose is to **augment human decision-making**, providing the insight necessary for limited enforcement resources to be deployed more strategically and for the City to operate with transparency and accountability.

6.5.2. Purpose and Objectives

The technology and monitoring component is intended to serve as the City's central operational intelligence tool during the Palisades Rebuild. Its design should accomplish four key objectives:

1. **Real-Time Awareness:** Provide LADOT, LADBS, and enforcement personnel with live information on the location, occupancy, and status of TMPZs, MFSZs, and CTPZs.
2. **Operational Efficiency:** Reduce the need for routine patrols and manual checks by using data and alerts to focus field officers where they are most needed.
3. **Data-Driven Management:** Produce quantitative evidence to help adjust zone locations, durations, and fee structures based on actual utilization and community conditions.
4. **Transparency and Accountability:** Offer public dashboards and standardized reports to demonstrate fair administration and fiscal neutrality.

Collectively, these objectives transform curb management from a reactive process into an adaptive, data-supported operation aligned with LADOT's Vision Zero and Mobility Plan 2035 goals of safety, equity, and performance-based decision-making (City of Los Angeles 2017, 2018; Los Angeles Department of City Planning 2016).

6.5.3. Service-Based Delivery Model

Implementing a temporary program through existing City IT channels could take years, exceed available staffing, and create permanent maintenance obligations. To avoid these challenges, the City should pursue an **"as-a-service" model,** contracting with a third-party supplier to provide the technology, data management, and reporting functions under a performance-based agreement.

Vendor responsibilities would include:

- Procuring, deploying, and maintaining solar-powered curb sensors, signage, and cellular gateways.
- Hosting all databases, dashboards, and analytical tools on secure, redundant cloud infrastructure.
- Providing daily system management, analytics, and help-desk support to City users.
- Ensuring all operations comply with City privacy, accessibility, and data-retention standards.
- Decommissioning and removing all assets at the program's conclusion and certifying secure data deletion.

City responsibilities would focus on policy oversight rather than system operation. LADOT would set data standards, interpret analytics, and direct enforcement resources. LADBS would use permit information to validate active zones. ITA would confirm cybersecurity compliance, while CAO would verify cost recovery. This division of roles allows the City to retain strategic control and data ownership while outsourcing all technical management.

6.5.4. System Architecture and Design Principles

The recommended technology stack should be modular, portable, and capable of operating entirely off-grid to accommodate the Pacific Palisades' steep topography and dispersed construction footprint. Design principles include:

- **Portable and Self-Powered:** Devices operate via solar and battery power, eliminating trenching, cabling, or permanent mounting.

- **Cloud-Hosted and Secure:** Software and storage reside on vendor-managed cloud services with 99.9% uptime and end-to-end encryption.
- **Application Programming Interface (API)-Based Integration:** Data exchange occurs through secure APIs linking LADBS permit records, PALMS logistics data, and enforcement dashboards without altering existing City systems.
- **User-Friendly Interface:** Dashboards accessible through web browsers, with tiered permissions for City staff, partner agencies, and public users.
- **Temporary and Reversible:** All hardware and software removable within days, leaving no permanent infrastructure in the public right-of-way.

This configuration allows the City to manage a sophisticated, real-time system using portable assets that can be deployed quickly and retired cleanly.

6.5.5. Monitoring and Decision-Support Functions

The system's primary role is to **inform and guide field operations**, not to initiate enforcement actions automatically. It serves as an operational intelligence tool that combines live data with analytics to prioritize human decision-making.

Core functions include:

- **Zone Validation:** Confirms that every active TMPZ, MFSZ, and CTPZ corresponds to a valid LADBS permit and LADOT approval.
- **Occupancy Awareness:** Displays which zones are full, underused, or nearing expiration to support real-time adjustments.
- **Compliance Indicators:** Flags potential overstays or unpermitted uses for staff review, allowing enforcement teams to focus on high-priority areas.
- **Targeted Field Deployment:** Provides heat maps and alerts that help Parking Enforcement allocate patrols more efficiently.
- **Analytical Reporting:** Aggregates data into monthly and quarterly summaries showing usage trends, compliance levels, and performance benchmarks.

By enabling precision enforcement and data-driven adjustments, the City can maintain compliance and safety without expanding staff or physical infrastructure.

6.5.6. Agency Adoption Challenges and Mitigation

City departments face practical barriers when adopting new technology: limited IT staff, lengthy approval cycles, and concerns about maintaining temporary systems. The service-based model directly mitigates these challenges. Because the vendor provides hosting, maintenance, and decommissioning, the City avoids permanent commitments, internal training demands, and hardware procurement. Contracts can be structured on a **fixed-fee or per-zone basis**, ensuring fiscal predictability and scalability as construction intensity changes.

This approach also protects LADOT's long-term IT posture. The system operates in parallel with, but not within, City networks, removing the risk of introducing unsupported software or hardware. It gives LADOT immediate access to advanced technology while preserving its core resources for traditional traffic management duties.

6.5.7. Data Privacy, Security, and Retention

All data handling must comply with strict municipal and state standards for privacy and cybersecurity:

- **City Data Ownership:** The City retains full ownership of all collected data. Vendors act solely as custodians.
- **Limited Retention:** Personally identifiable information (PII), including license plate imagery, is retained for no more than **72 hours** unless linked to a verified enforcement case.
- **Encryption and Auditability:** All transmissions are encrypted end-to-end; audit logs are maintained and accessible to LADOT and ITA.
- **Independent Security Certification:** Vendors are required to maintain third-party cybersecurity certifications and submit to City audits.
- **Secure Decommissioning:** At program sunset, all data are deleted or archived per City direction, and all devices physically removed.

These measures ensure that the system enhances transparency and accountability without compromising privacy or creating new liabilities.

6.5.8. Integration and Interoperability

The platform should function to provide essential connections linking the Plan's operational components:

- **PALMS Logistics Platform:** Synchronizes deliveries and worker scheduling with TMPZ and MFSZ operations to reduce congestion.
- **LADBS Permitting Database:** Links every curb zone to a verified building permit, automatically updating as permits close or change status.
- **Public Transparency Portal:** Provides residents and businesses with an interactive map showing active curb zones, durations, and contact channels for feedback or service requests.

This integration ensures all stakeholders—agencies, contractors, and residents—operate from a single, consistent source of information.

6.5.9. Performance Monitoring

To evaluate system effectiveness and maintain accountability, LADOT should establish clear KPIs, such as:

- **Targeted Deployment Efficiency:** Percentage of enforcement patrols guided by system data
- **Zone Compliance Rate:** Proportion of active zones operating within approved conditions
- **Utilization and Turnover:** Average occupancy relative to capacity and average zone-use duration
- **Fiscal Performance:** Ratio of program expenditures to recovered participation fees
- **Public Engagement:** Volume of dashboard visits, community feedback, and resolved inquiries

Monthly internal reviews and quarterly public reports should summarize these metrics, ensuring continuous improvement and transparency to both City leadership and the community.

6.5.10. Technology and Monitoring Summary

The technology and monitoring framework recommended for the Palisades Rebuild is a **decision-support system, not an automated enforcement platform**. It provides LADOT and its partners with modern, data-driven tools that enhance operational awareness and field efficiency while keeping enforcement firmly in human hands.

By delivering the system through a **third-party, service-based model**, the City can deploy advanced technology rapidly, manage it efficiently, and retire it completely once reconstruction is complete, avoiding the administrative and technical burdens typically associated with new City systems. This approach upholds the program's guiding principles of **temporary deployment, fiscal neutrality, safety, and transparency**, ensuring that LADOT and partner agencies can manage the Palisades Rebuild with precision, accountability, and minimal long-term impact on City resources.

6.6. Governance and Cost Recovery

6.6.1. Overview

The proposed Parking and Curb Management Program will succeed only if it operates within a governance framework that is both agile and accountable. Because the Palisades Rebuild will be a time-limited initiative involving multiple City departments, the management structure must emphasize **clear authority, transparent oversight, and fiscal neutrality**, ensuring that every operational cost is recovered from program revenues rather than the City's general fund.

The recommended governance model blends existing City processes with a streamlined coordination structure tailored for temporary programs. It allows LADOT to serve as the program lead while delegating daily coordination to a small, empowered inter-departmental body that can make timely field decisions, approve adjustments, and monitor financial performance.

6.6.2. Governance Objectives

The governance framework should pursue five primary objectives:

1. **Clarity of Authority:** Establish who approves, manages, and monitors program activities.
2. **Speed of Decision-Making:** Enable rapid adjustments as construction and traffic conditions evolve.
3. **Transparency and Accountability:** Provide consistent reporting to City leadership, the public, and partner agencies.
4. **Fiscal Neutrality:** Ensure that all program costs are fully offset by collected fees.
5. **Sunset and Decommissioning:** Guarantee that all powers, authorizations, and accounts close automatically once the Palisades Rebuild concludes.

6.6.3. Recommended Structure

Two organizational tiers are proposed: an **Executive Oversight Level** to provide policy direction and fiscal review, and an **Operational Coordination Level** to manage daily activities and reporting.

1. **Executive Oversight Level**
   - **Composition:** LADOT Executive Management (Chair), CAO, City Attorney, ITA, LADBS Director (or delegate), and CD 11 representative.
   - **Role:** Approve overall program policies, fee schedules, and audit findings; review quarterly performance and cost-recovery reports; and coordinate any required City Council actions such as ordinance extensions or amendments.
2. **Operational Coordination Level**
   - **Composition:** A small **SIG** led by LADOT's Project Manager, including representatives from LADBS, StreetsLA, LAFD, EMD, and CAO (fiscal liaison).
   - **Authority:** Approve routine field adjustments, renew or retire temporary zones, authorize signage changes, and review vendor performance against SLAs.
   - **Meeting Frequency:** Bi-weekly during peak reconstruction phases, monthly thereafter.
   - **Reporting:** Provide concise operational summaries to the Executive Oversight Level each quarter.

This two-tiered model ensures both speed and accountability: the SIG can act quickly within its delegated authority, while the Executive Oversight Level retains strategic and fiscal control.

6.6.4. Roles and Responsibilities

Table 6.1: Roles and Responsibilities

Entity	Primary Responsibilities
LADOT (Lead Department)	Program administration, policy approval, data governance, performance reporting, and overall coordination. Install and remove temporary signage, markings, and curb paint.
LADBS	Integrate building-permit data; issue TMPZ/MFSZ/CTPZ authorizations; collect and deposit participation fees.
CAO	Conduct quarterly fiscal audits; verify cost-recovery compliance; approve expenditure reimbursements.
City Attorney	Review contracts, indemnification language, and ordinance provisions; ensure compliance with state law.
ITA	Validate cybersecurity and data governance standards for third-party systems.
LAFD	Review all proposed zones for emergency-access compliance; coordinate during incident responses.
LAPD / Parking Enforcement	Carry out manual enforcement guided by monitoring system data.
CD 11	Lead community coordination, public briefings, and issue escalation.

6.6.5. Fiscal Structure and Cost Recovery

The Palisades Rebuild program is designed to be **self-funded**, with all direct and indirect costs recovered through participation fees. Revenues would flow through a **restricted program account** managed by LADBS and verified by the CAO.

Key fiscal elements include:

- **Fee Types:**
  - **TMPZ and MFSZ Fees**: Collected from contractors and vendors using designated curb areas; set at levels sufficient to cover program operations, signage, monitoring, and vendor service costs.
  - **CTPZ Administrative Fees**: Minimal charges (or waivers) for voluntary participants to offset signage and registration costs.
- **Disbursement:** LADOT reimburses StreetsLA, enforcement, and vendor invoices from the restricted account upon CAO verification.
- **Audits and Reporting:** CAO performs quarterly audits, validating revenues, expenditures, and compliance with fiscal-neutrality targets; summary findings shared with the Executive Oversight Level and published for transparency.
- **Fee Adjustments:** The SIG may recommend small (±15%) fee changes to maintain fiscal balance, subject to Executive Oversight approval.

This structure ensures the program remains financially sustainable without impacting core departmental budgets.

6.6.6. Vendor and Contract Oversight

Under the recommended service-based model, third-party vendors will deliver technology, monitoring, and possibly field-support functions. To maintain transparency and accountability, LADOT should:

- Define **SLAs** covering uptime, data accuracy, privacy, and response times.
- Require vendors to submit **monthly performance reports** and cost summaries.
- Conduct **semi-annual reviews** comparing vendor results against metrics such as system reliability, complaint resolution, and fiscal efficiency.
- Include clear **termination and decommissioning clauses** ensuring removal of all equipment and secure data deletion at program sunset.

Vendor payments would come exclusively from program revenues validated through the restricted account.

6.6.7. Public Transparency and Reporting

Public trust will be central to the success of the Parking and Curb Management Program. The Pacific Palisades community is both highly engaged and uniquely impacted by reconstruction activities; residents, contractors, and local businesses will expect clear, consistent, and timely communication from the City about how curb space is being managed. Transparency therefore extends beyond inter-departmental coordination—it must be **embedded in every aspect of program governance, reporting, and community interaction**.

The City should adopt a **multi-channel transparency and reporting framework** designed to ensure that residents and stakeholders can easily access, understand, and respond to information about the program's operations, performance, and fiscal integrity.

Quarterly Public Reports:

LADOT, in collaboration with the CAO and CD 11, should publish quarterly summaries outlining KPIs, fiscal outcomes, and upcoming actions. These reports should:

- Present clear visual metrics on active zones, cost-recovery status, and compliance trends;
- Explain any adjustments made to fees, policies, or procedures, and the rationale for those decisions;
- Highlight community feedback received during the quarter and how it informed program adjustments; and
- Be distributed through LADOT's public website, CD 11 newsletters, and local community organizations for maximum reach.

These reports provide a consistent, predictable rhythm of communication that reinforces accountability and invites public review.

Open Data Dashboards:

A dedicated web-based dashboard should display aggregated, non-PII data in real time. This dashboard would integrate directly with the monitoring system described in Section 6.5, showing:

- Active TMPZ, MFSZ, and CTPZ locations;
- Utilization rates and compliance percentages;
- Safety metrics such as verified 20-foot clearance compliance; and
- Fiscal summaries showing revenues, expenditures, and cost-recovery ratios.

The dashboard should be multilingual, ADA-compliant, and designed for mobile access, ensuring that all members of the community, including residents, contractors, and business owners, can view up-to-date information and track performance. Making this data open and easily digestible helps demystify City operations and strengthens public confidence that curb management is fair, transparent, and equitable.

Community Feedback and Engagement Mechanisms:

Feedback loops should form a cornerstone of transparency. CD 11, supported by LADOT, should manage dedicated **communication channels** for questions, concerns, and suggestions, such as an email inbox, web portal form, and phone hotline.

- Each inquiry should receive acknowledgment and a logged response.
- Feedback data should be compiled and reviewed by the SIG during bi-weekly meetings to identify recurring issues or areas for improvement.
- Summarized findings should be reported publicly as part of each quarterly update, demonstrating how community input leads to tangible adjustments.

This active feedback cycle ensures the program remains responsive and community-centered rather than purely administrative.

Outreach and Accessibility Commitments:

Transparency is only meaningful if the information is accessible. All materials, including reports, dashboard interfaces, and public notices, should be:

- **Multilingual,** covering predominant languages in the community;
- **ADA-compliant**, ensuring accessibility for people with disabilities;
- **Geographically inclusive**, ensuring outreach to hillside and coastal residents equally; and
- **Coordinated with existing community networks**, such as HOAs, schools, and local business groups.

By adopting these outreach standards, the City can demonstrate equitable communication and maintain engagement across the diverse Pacific Palisades population.

Integration with Program Evaluation:

Transparency should also serve as an input to program evaluation. Public reporting, feedback analysis, and open data will feed into the program's performance indicators and inform adaptive management decisions by LADOT and the SIG. This feedback loop reinforces a culture of **continuous improvement**, where transparency is not a compliance requirement but a practical management tool for refining operations and building long-term trust with the community.

Together, these measures create a transparency model that goes beyond basic information sharing. They provide residents, businesses, and contractors with continuous, accessible visibility into how the program operates and evolves, reinforcing the City's commitment to **accountability, equity, and collaborative recovery** throughout the Palisades Rebuild.

6.6.8. Sunset and Program Close-Out

Because this framework is temporary, all governance and fiscal mechanisms must dissolve automatically once the Palisades Rebuild concludes. Upon program completion:

- All temporary ordinances, contracts, and accounts expire by design.
- StreetsLA and vendors remove all physical and digital assets.
- LADBS and CAO reconcile the restricted account and issue a final financial statement.

This deliberate sunset ensures that the City benefits from the program's insights and infrastructure during the Rebuild without incurring any residual commitments afterward.

6.6.9. Governance and Cost Recovery Summary

The proposed governance and cost-recovery framework enables the City to manage the Palisades Parking and Curb Management Program with **agility, transparency, and fiscal integrity**. By establishing clear authority under LADOT leadership, supported by a nimble SIG and strict CAO oversight, the City can maintain accountability while responding quickly to evolving field conditions.

Equally important, the program's **self-funded structure and automatic sunset provisions** safeguard the City from long-term financial or operational burdens. Together, these measures create a governance model that is pragmatic, transparent, and fully aligned with the temporary, data-driven, and fiscally neutral principles of the Workstream 4 Plan.



6.7. Community Coordination

6.7.1. Overview

Community coordination will be the foundation for maintaining public confidence throughout the Palisades Rebuild. Unlike conventional transportation or construction programs, the Parking and Curb Management Program will operate in an environment of high local sensitivity, where residents, contractors, and business owners are both participants and directly impacted stakeholders. The City's approach must therefore prioritize **early communication, ongoing dialogue, and visible responsiveness** to community needs.

Because the program is temporary and will continuously evolve as rebuilding activity shifts, a **flexible and inclusive coordination framework** is essential. The framework should allow LADOT, LADBS, and CD 11 to work together in a unified voice, communicating what is happening, why it matters, and how residents can engage. The emphasis should be on **proactive engagement**, not reactive messaging.

6.7.2. Community Coordination Objectives

The community coordination strategy should advance five overarching objectives:

1. **Transparency and Trust:** Ensure that residents, contractors, and institutions understand the purpose of each temporary zone and how it benefits public safety and mobility.
2. **Accessibility and Equity:** Provide clear, multilingual communication that reaches hillside neighborhoods, coastal zones, and vulnerable populations equally.
3. **Feedback and Responsiveness:** Create clear channels for two-way communication and visible follow-up on community input.
4. **Partnership and Collaboration:** Involve local organizations, institutions, and property owners as active partners in program delivery, especially for community-based parking solutions.
5. **Consistency and Clarity:** Coordinate messaging across all agencies and platforms so the community receives one coherent narrative rather than fragmented updates.

These objectives reflect LADOT's broader commitment to equitable access and transparent governance under the City's **Mobility Plan 2035, Vision Zero**, and **Resilient Los Angeles** strategies (City of Los Angeles 2017, 2018; Los Angeles Department of City Planning 2016; Mayor's Office 2018).

6.7.3. Roles and Responsibilities

Community coordination responsibilities should be clearly distributed across City partners:

- **CD 11:** Serves as the primary liaison with residents, HOAs, and local business groups. Leads community briefings, manages feedback channels (email, phone hotline, and online form), and ensures timely follow-up.
- **LADOT:** Develops messaging and materials related to parking, traffic management, and program operations. Maintains the public dashboard and website, ensuring that updates are accurate, multilingual, and ADA-compliant.
- **LADBS:** Provides data on active building permits and ensures contractors are informed about parking policies, permit processes, and applicable TMPZ or CTPZ designations.
- **StreetsLA:** Coordinates field-level communication when installing or removing signage, including door hangers or on-site notices where appropriate.
- **CAO / ITA:** Support public transparency through accurate fiscal reporting and secure, user-friendly communication platforms.

This collaborative model ensures that all outreach is aligned, timely, and rooted in a consistent operational understanding across agencies.

6.7.4. Engagement and Outreach Framework

A tiered outreach approach should be used to inform, engage, and respond to the community across multiple levels of interaction:

Public Information and Awareness: Before any new curb or parking measure is implemented, LADOT and CD 11 should issue a **minimum 7-day advance notice** through digital channels (email lists, neighborhood newsletters, social media, and the public dashboard). These notices should explain:

- The purpose and duration of the change;
- How residents and contractors will be affected;
- Contact information for questions or feedback; and
- Links to the City's public dashboard and community portal for more details.

Neighborhood and Stakeholder Coordination: For areas experiencing sustained reconstruction, LADOT and CD 11 should host **targeted stakeholder meetings or virtual briefings** with local HOAs, schools, and businesses. These sessions can address site-specific conditions such as parking overflow, noise, or access limitations.

Contractor and Vendor Communication: LADBS and LADOT should maintain direct lines of communication with active contractors and trade organizations. This includes distributing information on TMPZ registration, compliance requirements, and designated access routes. Contractors should also receive periodic updates about program modifications to ensure that compliance expectations remain clear and consistent.

Community-Based Partnerships: Local institutions, such as churches, schools, and property owners participating in CTPZs, should be recognized as active program partners. These participants can help disseminate accurate information, identify emerging needs, and model collaborative solutions for nearby neighborhoods.

Public Events and Recovery Milestones: As reconstruction milestones are reached, the City should organize small community events or digital updates celebrating progress and summarizing outcomes. These touchpoints reinforce that the program is delivering tangible value and that community voices continue to shape its evolution.

6.7.5. Communication Tools and Channels

The coordination strategy should employ a range of tools to ensure information is accurate, inclusive, and easy to access:

- **Public Dashboard:** The central online hub displaying current TMPZ, MFSZ, and CTPZ locations, permit durations, and active notifications.
- **Community Portal:** A dedicated webpage with frequently asked questions, downloadable resources, contact forms, and subscription options for updates.
- **Multilingual Signage and Flyers:** Field-level materials posted by StreetsLA that reflect consistent branding and plain-language messaging.
- **Digital Communications:** Email newsletters, social media posts, and targeted SMS updates coordinated with CD 11 and LADOT's communications team.
- **Media Briefings and Local Coverage:** Periodic engagement with neighborhood media outlets to highlight program updates and success stories.

Each channel should reinforce the others, forming a unified communication ecosystem that keeps the public continuously informed.

6.7.6. Feedback and Adaptive Response

Effective coordination is not one-way. Community feedback must directly inform program adjustments to maintain legitimacy and responsiveness. All comments, complaints, and inquiries received through CD 11's communication channels should be logged into a central system accessible to the SIG. The SIG should review this feedback bi-weekly, identify recurring issues, and develop corrective actions or policy refinements.

The City should also report back to the community on how feedback influenced decisions, through quarterly updates, community newsletters, or dashboard announcements. Demonstrating that input leads to action is key to sustaining trust and engagement over the Rebuild's multi-year duration.

6.7.7. Equity, Accessibility, and Inclusion

Equitable communication is fundamental to public participation. All outreach materials and digital tools must be:

- **Multilingual:** Reflecting the predominant languages spoken within the Pacific Palisades area
- **ADA-Compliant:** Ensuring accessibility for individuals with visual, hearing, or mobility impairments
- **Geographically Inclusive:** Reaching both hillside and coastal neighborhoods equally, using in-person and digital outreach methods
- **Culturally Sensitive:** Crafted with consideration of community demographics and local concerns, particularly regarding safety, access, and noise impacts

This inclusive approach ensures that all voices are heard and that the City's recovery strategy benefits every segment of the community.

6.7.8. Community Coordination Summary

The community coordination framework for the Palisades Rebuild is designed to **build and sustain trust through proactive, inclusive, and consistent communication**. By empowering CD 11 as the primary community liaison, aligning messages across LADOT, LADBS, and StreetsLA, and using modern digital tools supported by field-level engagement, the City can ensure that information flows efficiently between agencies and the public.

This two-way communication model transforms residents, contractors, and local institutions from passive recipients of information into active participants in the Rebuild process. Through clear messaging, equitable outreach, and responsive feedback mechanisms, the City can maintain transparency, manage expectations, and foster a spirit of shared ownership, helping the Pacific Palisades community recover safely, collaboratively, and confidently.



6.8. Residential Parking and Local Access Management

6.8.1. Context and Overview

Residential access is one of the most visible and sensitive issues facing the Pacific Palisades community during the Rebuild. Many hillside neighborhoods feature narrow rights-of-way, steep grades, and limited off-street parking, leaving residents heavily dependent on curb space for daily access. At the same time, these same streets will serve as access routes for hundreds of contractors, delivery trucks, inspectors, and utility vehicles throughout the multi-year reconstruction effort. This overlap will create continuous pressure on already limited curb supply and could quickly lead to blocked driveways, congested lanes, and even compromised emergency access if unmanaged.

The City's challenge will be to **balance the competing needs of residents and reconstruction activity**, ensuring that essential rebuilding work proceeds efficiently while neighborhoods remain safe, livable, and accessible. The Residential Parking and Local Access Management framework is, therefore, a **core protective measure** within this broader Plan strategy. It defines how curb space in residential corridors can be temporarily managed to safeguard mobility, preserve emergency-lane clearance, and maintain community trust through proactive communication and fair enforcement.

This framework does not create a new permanent program but rather a **temporary, adaptable system** that LADOT can implement as needed, using existing legal authority and minimal administrative overhead. It builds on the City's principles of equity, transparency, and fiscal neutrality, ensuring that neighborhood protections are visible, data-driven, and reversible once reconstruction activity subsides.

6.8.2. Purpose and Objectives

The purpose of the **Residential Parking and Local Access Management** framework is to preserve the everyday functionality and livability of the Pacific Palisades community during an unprecedented period of reconstruction. The City recognizes that residents' experience of the Rebuild will be shaped not only by how quickly structures are restored, but also by whether people can safely reach their homes, park near their properties, and move through their neighborhoods without undue stress or obstruction.

The program is designed to address one of the most visible and sensitive challenges in any recovery effort: how to balance the influx of construction vehicles, workers, and equipment with the basic needs of residents who live on narrow, hillside streets that were never designed for this level of sustained activity. Without an organized system, construction-related parking could overwhelm residential areas, obstruct emergency vehicles, and generate frustration that undermines trust in the City's management of the Rebuild.

This framework therefore establishes a proactive, structured approach to curb and access management—one that ensures **safety, fairness, and predictability** for all users. It aims to give residents confidence that the City is safeguarding their daily quality of life while enabling contractors to perform essential rebuilding work efficiently and without conflict.

The **objectives** of the framework are to:

- **Preserve Mobility for Residents:** Maintain reliable curb access for households, especially in neighborhoods without driveways or sufficient off-street parking. By providing clear residential parking designations, residents can continue normal routines, such as school drop-offs, grocery trips, and caregiving, without competing with construction vehicles for space.
- **Ensure Emergency and ADA Compliance:** Guarantee that every street maintains the minimum 20-foot clearance required for fire, police, and emergency vehicles. Where necessary, establish temporary no-parking areas or adjusted curb layouts to ensure life-safety access and continued ADA-compliant parking for those with mobility challenges.
- **Reduce Curbside Conflicts:** Use visible, well-marked restrictions to eliminate friction between residents, contractors, and delivery drivers. Clearly defined rules reduce uncertainty, improve compliance, and minimize complaints or enforcement incidents.
- **Support Safe and Efficient Reconstruction:** Allow short-term loading, unloading, and service activity through carefully planned curb-use windows. This keeps construction moving forward while ensuring such activity remains orderly and minimally disruptive to local access.
- **Foster Trust and Transparency:** Maintain open communication with residents through consistent public notice, real-time updates on the City's dashboard, and clear pathways for feedback. By keeping residents informed before, during, and after changes are made, the City reinforces transparency and accountability as pillars of the Rebuild.

Together, these objectives reflect the City's broader commitment to **equitable recovery**, balancing urgent reconstruction needs with the everyday rights and expectations of residents. The framework ensures that progress on physical rebuilding does not come at the expense of public safety, accessibility, or neighborhood quality of life.

6.8.3. Policy Context and Legal Basis

This framework operates entirely within existing City authority—no new ordinance is required. LADOT may implement residential parking restrictions, loading zones, and temporary no-parking areas under the following provisions:

- **California Vehicle Code § 22507:** allows local authorities to restrict or reserve parking for specific uses or users.
- **LAMC §§ 80.55, 80.56, and 80.58(d):** grant LADOT authority to establish temporary controls, loading zones, and preferential parking designations when unusual or emergency conditions exist.

Because the Palisades Rebuild qualifies as an emergency reconstruction program, LADOT can activate these powers administratively in coordination with LADBS and LAFD to maintain neighborhood safety and access.

6.8.4. Implementation Approach

Implementing Residential Parking and Local Access Management will require coordination across multiple agencies, with policies that evolve as neighborhood conditions change. Unlike a static parking district or one-time permit program, this framework must remain **adaptive and iterative**, responding in real time to the pace of reconstruction and community feedback. The City should treat implementation as a **continuous management cycle** rather than a single rollout—one that combines data-driven decision-making, stakeholder input, and clear communication to ensure fairness and consistency across neighborhoods.

The City could manage implementation through four interconnected phases, each designed to ensure that measures are **targeted, reversible, and transparent**.

6.8.5. Identification of Impacted Corridors

The process begins with data. LADBS should provide weekly updates to LADOT identifying all active building permits within the Palisades Rebuild area, including start and projected completion dates. LADOT overlays this permit data with field observations, traffic analysis, and curb-use data from the monitoring platform described in Section 6.5. Community feedback—captured through CD 11's communication channels—serves as a qualitative layer, highlighting streets where residents report chronic congestion, blocked access, or parking displacement.

Using these inputs, LADOT classifies streets into **impact tiers**:

- **High Impact** (multiple concurrent rebuilds or high contractor presence),
- **Moderate Impact** (intermittent construction or constrained geometry), and
- **Low Impact** (limited construction or ample off-street parking).

This classification ensures that protective measures are prioritized where they are most urgently needed, optimizing staff effort and public visibility.

6.8.6. Designation and Review

Once corridors are identified, LADOT convenes a **field and safety review** with LAFD to determine which interventions are appropriate for each block. The objective is to match restrictions to actual risk and intensity, balancing access, safety, and flexibility.

Possible configurations include:

- **Resident Parking Only – Construction Period Zones** on streets with narrow rights-of-way or heavy contractor presence;
- **Two-Hour Limits or Shared Parking** on streets with moderate impacts or mixed-use frontages;
- **Short-Term Loading or Service Zones** near active work clusters to accommodate deliveries, inspections, or brief construction activity; and
- **Temporary "No Parking" Segments** on streets where emergency clearance drops below 20 feet or frequent blocking incidents occur.

During review, LAFD validates fire-lane width and turning-radius requirements. LADOT documents all recommendations in a digital management log, ensuring that future adjustments are traceable and transparent.

This designation phase culminates in a formal approval by the **SIG**—allowing LADOT and StreetsLA to proceed with field deployment once safety and policy criteria are met.

6.8.7. Public Notification and Field Deployment

Public awareness is critical to compliance. Once a designation is approved, LADOT installs temporary signage and curb markings using standardized templates that clearly indicate the restriction type, hours, and duration. All postings should include a visible installation date and QR code linking to the public dashboard for verification.

CD 11 leads the community notification effort, providing **at least seven days advance notice** to affected residents and stakeholders through multiple channels:

- Email and text alerts to neighborhood mailing lists;
- Updates to the City's online dashboard;
- Notices circulated via homeowner associations, local schools, and businesses; and
- Door hangers or flyers in particularly constrained corridors.

Each communication should explain the reason for the restriction, anticipated duration, and a contact for questions or complaints. Transparency at this stage helps avoid confusion and ensures that residents view the changes as temporary, necessary, and well-managed.

6.8.7.1. Monitoring, Feedback, and Adjustment

The final phase is **active management**. LADOT uses real-time data from the monitoring system (Section 6.5), along with on-the-ground observations and resident feedback, to evaluate the effectiveness of each zone. Metrics such as occupancy rates, compliance levels, and incident reports are reviewed monthly by the SIG.

Based on these insights, LADOT may:

- Extend zones if construction remains active or congestion persists;
- Modify zone boundaries or signage where conditions improve;
- Convert loading zones back to residential parking when activity declines; or
- Remove restrictions entirely once normal access conditions are restored.

All adjustments are publicly logged through the dashboard, and residents are notified of upcoming removals or changes in advance. This **closed-loop process**—data to decision to communication—creates a transparent and evidence-based management cycle.

6.8.7.2. Adaptive and Scalable Management

Because reconstruction will unfold unevenly across the Pacific Palisades, the framework must remain scalable. LADOT can activate or deactivate protections incrementally—starting with the most congested streets and expanding only as needed. This ensures that the City maintains a **balance between responsiveness and restraint**: providing meaningful protection where warranted while avoiding unnecessary regulation elsewhere.

By structuring implementation as an ongoing cycle of identification, action, and refinement, LADOT, LADBS, and CD 11 can maintain safety, access, and community confidence throughout every stage of the Rebuild. This adaptive model also provides a tested foundation for future emergency or recovery efforts in other neighborhoods across Los Angeles.

6.8.8. Operational Tools and Zone Types

To manage varying curb demands across neighborhoods, LADOT may deploy a combination of flexible curb-use tools:

- **Resident Parking Only – Construction Period:** Temporary designations providing resident-only access during active construction phases; eligibility verified through address-based permits or signage enforcement.
- **Two-Hour Time Limits:** Applied in mixed-use or moderate-traffic areas to maintain turnover for visitors, deliveries, and short-term parking.
- **Short-Term Loading Zones (15–30 Minutes):** Created near clusters of reconstruction activity to accommodate contractors, material drop-offs, or service providers without encroaching on residential parking.
- **Temporary "No Parking" Segments:** Implemented only when required to maintain fire-lane clearance or accommodate oversized construction vehicles; reviewed jointly by LADOT and LAFD.
- **Adaptive Adjustments:** LADOT authorized to expand, relocate, or deactivate restrictions based on field data, feedback, and changing construction patterns.

Each tool is designed to be **modular, reversible, and legally defensible**, providing a consistent framework across neighborhoods while remaining sensitive to local context.

6.8.9. Community Communication and Coordination

Because residential parking changes can be highly sensitive, public communication must be timely, transparent, and empathetic. CD 11, LADOT, and StreetsLA should coordinate outreach and messaging through a single unified process:

- **Advance Notification:** Residents receive a minimum of seven days' notice before any change via mailers, signage, and digital alerts.
- **Localized Outreach:** Field staff or community liaisons conduct door-to-door notification on narrow streets with limited access.
- **Clear Explanations:** Every sign and notice should indicate *why* the restriction exists, *how long* it will last, and *who to contact* with questions.
- **Feedback Integration:** All complaints or suggestions logged by CD 11 are reviewed by the SIG to identify emerging issues or unnecessary restrictions.
- **Cross-Agency Coordination:** LADBS informs contractors of all residential restrictions tied to their permits to prevent misunderstandings and conflicts.

This coordination ensures compliance through understanding rather than enforcement alone and promotes ongoing trust between the City and the community.

6.8.10. Enforcement Philosophy

A thoughtful enforcement strategy will be critical to the credibility and success of the Residential Parking and Local Access Management framework. Because the Palisades Rebuild will unfold in active neighborhoods where residents, contractors, and service providers all rely on the same limited street space, enforcement must strike a careful balance—**protecting safety and access without creating unnecessary tension or punitive perceptions.**

The City's enforcement approach should therefore prioritize **education, safety, and proportionality** over punishment. LADOT Parking Enforcement and LAPD officers would continue to issue citations manually, but their deployment should be **targeted and data-informed**, guided by the monitoring system described in Section 6.5 and community feedback reported through CD 11. Enforcement should reinforce compliance through understanding, not fear—emphasizing cooperation, clear communication, and consistency.

This philosophy recognizes that the majority of violations will stem from confusion rather than defiance, particularly during early rollout. The City's focus should be on helping residents and contractors understand the "why" behind each restriction while maintaining firm protection of safety-critical rules.

6.8.11. Key Enforcement Principles

- **Safety First:** Public and emergency safety must always drive enforcement priorities. Officers should focus first on violations that create immediate hazards—such as vehicles blocking fire lanes, driveways, hydrants, or ADA spaces. These infractions directly compromise emergency response or accessibility and warrant immediate correction. Other minor issues, such as overstays or time-limit violations, can be addressed once safety-critical corridors are secured.
- **Targeted Deployment:** Instead of routine patrols or Citywide sweeps, enforcement teams should use **data-driven deployment**. The monitoring platform can highlight streets where congestion, occupancy, or repeat complaints indicate emerging problems. CD 11's community reports further refine this picture, allowing officers to focus their attention precisely where it is most needed. This strategy maximizes the efficiency of limited enforcement staff and reduces unnecessary interactions in compliant areas.
- **Graduated and Educational Response:** During the early phases of new restrictions, the City should emphasize **education and outreach before citations**. Officers can issue warnings, distribute informational flyers, or provide verbal reminders to explain the purpose and duration of new zones. Once signage and public notification are well established, enforcement can gradually shift toward citations for repeat or deliberate violators. This graduated approach promotes voluntary compliance and builds goodwill among residents and contractors alike.
- **Fairness and Consistency:** To maintain credibility, enforcement must be applied consistently across all neighborhoods and user types—residents, contractors, and vendors. Officers should follow standardized procedures for evidence collection, documentation, and communication. LADOT should regularly review enforcement statistics to ensure equity and prevent disproportionate impacts on any single user group.
- **Documentation and Transparency:** Every enforcement action should be logged and categorized, capturing data such as type of violation, location, time, and response outcome. LADOT can aggregate these records into periodic reports showing compliance trends, citation frequency, and improvement over time. Sharing summary data through the City's public dashboard (see Section 6.5) reinforces accountability and allows the community to see that enforcement is measured, fair, and focused on maintaining safety.

6.8.12. Integrated Approach to Enforcement and Education

Enforcement alone cannot sustain compliance during a multi-year, neighborhood-scale rebuild. Long-term success will depend on pairing enforcement with **consistent public education and transparent communication** that help residents, contractors, and service providers understand why the restrictions exist and how they protect community safety and livability. When people view curb rules as legitimate, purposeful, and temporary rather than punitive, compliance becomes voluntary and self-sustaining.

This integrated approach relies on a coordinated effort between **CD 11, LADBS,** and **LADOT**, supported by StreetsLA field teams and the City's communication channels. Each partner plays a distinct role in reinforcing understanding, empathy, and accountability throughout implementation.

6.8.12.1. Coordinated Public Education

Public outreach and education should accompany every major operational milestone—such as the rollout of new residential restrictions, updates to construction access routes, or adjustments to loading zones. CD 11 and LADOT should jointly develop **consistent, plain-language messaging** that explains the purpose, duration, and benefit of each measure. These messages should be distributed through:

- **Neighborhood Newsletters and Email Blasts:** Brief updates that explain upcoming changes in simple, community-centered terms ("We're reserving this block for resident access during reconstruction to keep fire lanes clear").
- **Digital and Social Media Posts:** Timely reminders about safety practices, parking tips, and contact links for questions.
- **Multilingual Flyers and Signage:** Clear, friendly signage that conveys rules without heavy legal jargon, ensuring accessibility across diverse audiences.
- **Public Dashboard and Portal Updates:** Visual graphics showing current restrictions, reasons for placement, and estimated removal dates to demystify temporary measures.

This information should be consistent across platforms so that residents, contractors, and City staff receive a unified message.

6.8.12.2. Targeted Communication to Contractors and Service Providers

Contractors, vendors, and service companies are key participants in the Rebuild and must be treated as communication partners, not adversaries. LADBS should provide **targeted outreach** to these groups at the time of permit issuance or renewal, outlining the following:

- Active or upcoming TMPZs and Residential Parking Only **designations in their work area;**
- **Rules and safety expectations**, including maintaining 20-foot clearance and avoiding blocked driveways or ADA ramps;
- **Consequences for non-compliance**, clearly stated but framed as avoidable through cooperation; and
- **Reporting channels** to communicate logistical needs or request temporary adjustments through LADBS or LADOT.

This ensures contractors understand that compliance is part of their operational responsibility and reinforces the City's intent to maintain a cooperative working relationship.

6.8.12.3. Field Staff as Ambassadors

Frontline personnel—Parking Enforcement officers, LADOT crews, and community liaisons—are the City's most visible representatives during the Rebuild. They should be empowered and trained to serve as **educational ambassadors** in addition to performing their regulatory duties.

Field staff can:

- Provide verbal explanations of restrictions when approached by residents or contractors;
- Distribute short printed materials summarizing the rules and their safety purpose;
- Direct the public to the online dashboard or CD 11 communication channels for additional information; and
- Report recurring misunderstandings or signage issues to LADOT for correction.

A polite, informed field presence not only increases voluntary compliance but also humanizes the City's enforcement efforts, turning a potentially adversarial encounter into a constructive exchange.

6.8.12.4. Continuous Feedback and Adjustment

Education and enforcement should be supported by **continuous feedback loops** to ensure the program remains responsive. CD 11 and LADOT should log all inquiries, complaints, and requests for clarification received through email, hotline, or social media. This data should be reviewed regularly by the **SIG** to identify recurring points of confusion, signage gaps, or miscommunications. Corrective actions—such as updating signage language, expanding frequently asked questions, or clarifying policies—should then be implemented quickly and highlighted in public updates.

By showing that feedback leads to tangible improvements, the City strengthens credibility and reinforces public perception that the program is fair, transparent, and attentive to real concerns.

6.8.12.5. Building a Culture of Voluntary Compliance

Ultimately, the goal of this integrated approach is to **reduce the need for citations altogether** by cultivating a sense of shared responsibility among all stakeholders. Over time, as residents and contractors internalize the rules and see their purpose reflected in safer streets and smoother reconstruction, compliance will become self-reinforcing. Educational outreach, positive reinforcement, and visible responsiveness transform enforcement from a reactive task into a proactive partnership between the City and the community.

6.8.13. Expected Benefits

Implementing the **Residential Parking and Local Access Management** framework during the Palisades Rebuild would deliver measurable operational improvements and significant quality-of-life benefits for residents, emergency responders, and the City alike. Beyond managing curbside space, the framework builds confidence in the City's ability to handle complex, neighborhood-scale recovery efforts with precision, fairness, and transparency.

- **Safety and Emergency Access:** The most immediate benefit is enhanced public safety. By maintaining consistent **20-foot emergency-lane clearance** and controlling curb occupancy, the program ensures that fire engines, ambulances, and police units can navigate every corridor quickly and safely. This is particularly critical in the Pacific Palisades, where narrow hillside streets and limited turning radii can easily become impassable if unmanaged. Routine reviews by LAFD, supported by monitoring-system data, will help verify that all temporary zones preserve emergency access while allowing reconstruction activity to proceed efficiently.
- **Resident Confidence and Quality of Life:** The program visibly demonstrates that the City is protecting residents' ability to reach and park near their homes—a daily necessity that strongly influences community sentiment during recovery. By clearly prioritizing neighborhood access through signage, communication, and enforcement, LADOT reinforces that residents remain central to the Rebuild effort. Reduced parking competition and predictable access will help lower frustration, prevent complaints, and improve overall confidence in the City's management of post-disaster reconstruction.
- **Operational Efficiency and Coordination:** Structured curb designations and data-driven adjustments foster smoother coordination among residents, contractors, delivery services, and enforcement staff. Designated short-term loading areas reduce double-parking and minimize vehicle idling, while the monitoring platform allows LADOT to dynamically adjust restrictions as construction intensity changes. This flexibility reduces congestion, limits redundant patrols, and shortens response times for both field staff and emergency personnel—improving overall network performance and lowering program costs.
- **Transparency and Accountability:** The framework's reliance on data analytics, public dashboards, and standardized reporting ensures that every decision is traceable and evidence-based. Residents and stakeholders can see where and why restrictions are implemented, when they will be lifted, and how compliance is trending over time. This openness promotes trust, deters misinformation, and aligns directly with the City's broader objectives under its **Mobility Plan 2035** and **Resilient Los Angeles Strategy** to make operations transparent, equitable, and performance-driven (Los Angeles Department of City Planning 2016; Mayor's Office 2018).
- **Community Cohesion and Trust in Government:** Perhaps the most enduring benefit is social rather than technical. The program reinforces a sense of shared purpose between the City and the Pacific Palisades community by showing that the government listens, adapts, and responds to local concerns. Regular feedback loops—through CD 11's outreach, the SIG's reviews, and public dashboards—allow residents to see how their input shapes outcomes. This transparency cultivates civic trust, turning what could be a period of frustration into one of partnership and collective recovery.

6.8.14. Residential Parking and Local Access Management Summary

The **Residential Parking and Local Access Management** framework embodies the City's commitment to maintaining safety, accessibility, and neighborhood livability during an unprecedented period of reconstruction in the Pacific Palisades. It recognizes that rebuilding a community is not solely about physical structures—it is about preserving daily functionality, protecting residents' ability to move freely, and maintaining public confidence in the City's ability to manage recovery with care and precision.

This framework provides LADOT, LADBS, and their partner agencies with a **comprehensive yet flexible approach** to managing residential streets through the active rebuild period. By combining targeted curb designations, proactive communication, and data-supported enforcement, the City can preserve emergency access, prevent curbside congestion, and maintain clear routes for residents, contractors, and service providers alike. The strategy is dynamic, designed to evolve alongside construction activity and community needs, ensuring that curb management remains responsive rather than restrictive.

Equally important, the program is grounded in **existing legal authority**—requiring no new ordinances or permanent infrastructure—and is therefore practical and immediately implementable. Its reliance on portable, reversible measures allows the City to deploy protections quickly and remove them seamlessly once conditions normalize. This approach reinforces the framework's guiding principles of **safety, adaptability, transparency, and fiscal neutrality**, ensuring that protections for residents do not impose long-term burdens on City departments or budgets.

Beyond operational benefits, the program strengthens the social fabric of the Pacific Palisades community. Through consistent engagement, transparent reporting, and inclusive communication, the City demonstrates that residents are not merely impacted by the Rebuild—they are active partners in shaping it. This collaboration transforms what could be a disruptive construction period into an opportunity to build trust and showcase how equitable, data-driven governance can work at the neighborhood level.

In essence, Residential Parking and Local Access Management is both a **protective mechanism and a confidence-building measure**. It allows the City to safeguard essential mobility, uphold emergency readiness, and foster a sense of shared responsibility during one of Los Angeles' most complex recovery efforts. By placing residents at the center of operational planning, LADOT and its partners ensure that the Pacific Palisades community remains **functional, connected, and resilient**—not only throughout reconstruction, but as a lasting model for how Los Angeles can manage future neighborhood-scale recovery programs with empathy, efficiency, and integrity.



6.9. Mobile Food Service Zone Management

6.9.1. Context and Overview

As the Palisades Rebuild progresses, hundreds of construction workers, inspectors, vendors, and service personnel will converge on the area daily—creating new patterns of curb use, foot traffic, and midday activity. Inevitably, this workforce will attract food trucks, coffee vendors, and mobile service operators seeking to serve workers and nearby residents. While these vendors provide an essential convenience and local economic opportunity, unmanaged vending can also introduce **serious operational and safety risks** on narrow hillside streets: double-parking, pedestrian conflicts, generator noise, litter, and the obstruction of emergency or construction access routes.

During reconstruction, the City will need to **balance economic activity with safety and mobility**. Simply prohibiting vending could unfairly limit small business participation and reduce on-site food options for workers, while allowing unrestricted vending could undermine the City's broader traffic and access-management objectives. The **MFSZ framework** offers a middle ground—a **structured, transparent, and equitable way to accommodate mobile vendors** within a defined and regulated environment.

MFSZs are envisioned as designated curb or off-street locations where licensed food trucks and service vendors can operate under clear time limits, safety requirements, and sanitation standards. Managed properly, they can **enhance workforce welfare, support small business participation, and protect public safety**—helping the City maintain order and fairness during the Rebuild while modeling a replicable policy for future large-scale construction efforts across Los Angeles.

6.9.2. Purpose and Objectives

The **MFSZ** program is designed to ensure that mobile vending during the Palisades Rebuild contributes to the community's recovery rather than undermining it. While mobile food vendors will play an important role in serving construction workers, residents, and visitors, unregulated activity could quickly lead to safety hazards, congestion, and complaints—particularly in hillside corridors where roadways are narrow and curb space is scarce. The MFSZ framework seeks to **balance convenience, safety, and economic opportunity**, providing an organized structure for food-truck operations that supports both local livelihoods and neighborhood well-being.

This program recognizes that the presence of vendors during reconstruction is inevitable—and, if managed thoughtfully, can be a positive force. By designating safe, accessible vending zones and establishing clear operating rules, the City can protect public safety, preserve roadway functionality, and demonstrate its capacity to manage complex urban recovery operations in a fair, transparent, and inclusive manner.

The specific **objectives** of the MFSZ program are to:

1. **Preserve Safety and Access:** Safety is the City's foremost concern. The Pacific Palisades' hilly topography, limited right-of-way widths, and high construction-vehicle volume create conditions where unregulated vending could block travel lanes or restrict emergency access. MFSZs are therefore intended to **prevent ad hoc clustering of food trucks and service vehicles** that might impede traffic flow, obstruct visibility, or force pedestrians into the street. By channeling vending activity into pre-approved, properly spaced locations, the program maintains consistent access for residents, emergency responders, and construction vehicles while improving overall order and predictability on the roadway.
2. **Support Workforce Welfare and Efficiency:** The Rebuild workforce will include hundreds of daily laborers, inspectors, and delivery drivers working long hours under constrained schedules. Providing reliable on-site food options is a matter of practicality as well as equity—it reduces unnecessary vehicle trips out of the construction area for meals, minimizing congestion and idle emissions while saving workers time. MFSZs thus serve as **logistical support nodes** that improve daily efficiency, promote worker well-being, and help sustain productivity across the Rebuild effort. When well managed, these zones also create opportunities for informal social connection and morale among the workforce, reinforcing the community's recovery spirit.

3. **Promote Equity and Economic Opportunity:** The Palisades Rebuild will attract a diverse mix of mobile food operators, many of whom are small, family-run businesses. The MFSZ framework provides these entrepreneurs a legitimate pathway to participate in the recovery economy under **clear, consistent, and enforceable rules**. By defining approved zones and operating hours, the program levels the playing field—ensuring that permitted vendors compete fairly and that the public experiences orderly, safe, and diverse food options. This emphasis on equity aligns with the City's broader goals of supporting inclusive economic participation while maintaining regulatory fairness.
4. **Reduce Environmental and Quality-of-Life Impacts:** Unregulated vending can produce localized noise, air pollution, and litter—especially when generators and idling trucks operate near residences. Through designated zones, strict time limits, and defined waste-disposal requirements, MFSZs **minimize environmental footprint and neighborhood disruption**. The framework encourages use of quieter, low-emission power sources and requires vendors to manage waste responsibly, preventing overflow, grease discharge, or storm-drain contamination. These measures protect both the neighborhood's character and its environmental quality, reinforcing the City's sustainability commitments under the Green New Deal (City of Los Angeles 2019).
5. **Demonstrate Transparency and Accountability:** Public visibility and trust are essential to the success of any temporary curb-management program. The MFSZ initiative demonstrates transparency by making all active vending locations and participating vendors visible through **online listings, signage with QR codes, and public dashboards**. Residents can easily verify which trucks are permitted and how long they are authorized to operate, while vendors can reference the same system for clarity and compliance. Regular monitoring and performance reporting further reinforce the City's accountability, ensuring that the program remains fair, data-driven, and responsive to community feedback.

Together, these objectives transform mobile vending from a potential nuisance into a **managed public amenity**—one that sustains the workforce, supports local business participation, and enhances the community's daily experience during reconstruction. The MFSZ framework aligns directly with the City's core values of **safety, equity, transparency, and community responsiveness**, ensuring that curb use during the Rebuild supports both recovery and livability while leaving no permanent footprint once the program concludes.

6.9.3. Policy and Legal Basis

MFSZs can be established under existing authority, supported by a **temporary ordinance** that complements the broader curb-management framework. The ordinance would draw on the following provisions:

- **LAMC § 80.73 (Catering Trucks):** Authorizes the City to regulate mobile food vending within posted restrictions and to define permissible hours and locations.
- **LAMC §§ 80.55 and 80.56:** Empower LADOT to install traffic-control devices and designate loading or restricted zones as needed for public safety.
- **California Vehicle Code § 22507:** Permits local authorities to restrict parking or standing for specific purposes, including safety and traffic management.

The temporary ordinance would grant LADOT explicit authority to:

- Establish and post designated vending zones and hours of operation;
- Collect cost-recovery fees to cover signage, monitoring, and maintenance;
- Enforce compliance through manual inspections and citations under existing LADOT and LAPD protocols; and
- Suspend or modify any zone in response to safety or community concerns.

All provisions would **sunset automatically** upon completion of the Palisades Rebuild, ensuring no permanent regulatory expansion beyond the reconstruction period.

6.9.4. Implementation Approach

The MFSZ program should be implemented in close coordination with LADOT, LADBS, StreetsLA, CD 11, and the County Department of Public Health. Implementation can follow five steps:

1. **Site Selection and Evaluation:** LADOT, with input from community stakeholders, identifies candidate corridors and staging areas suitable for vending. Preference should be given to wide arterials such as *Sunset Boulevard and Temescal Canyon Road* or to off-street staging sites associated with the PALMS. Each proposed site should be evaluated for right-of-way width, pedestrian access, visibility, and proximity to construction clusters.
2. **Safety and Compliance Review:** LAFD review proposed locations to verify that vending activity will not impede emergency response or evacuation routes. LADBS and Public Health confirm that vendors meet licensing, sanitation, and food-safety standards.
3. **Designation and Signage:** LADOT installs standardized signage clearly identifying each MFSZ, permitted operating hours, and waste-disposal requirements. QR codes or web links on signage direct the public to an online map of active zones.
4. **Permitting and Vendor Enrollment:** Vendors apply for temporary MFSZ permits through LADBS or LADOT, presenting proof of:
    - Valid City business license;
    - County health permit;
    - Liability insurance; and
    - Agreement to abide by MFSZ operating rules.
    - Permit durations could align with rebuild phases (e.g., three to six months) and include cost-recovery fees for maintenance and monitoring.
5. **Monitoring and Adaptive Management:** LADOT uses the monitoring platform described in Section 6.5 to observe compliance and usage patterns. The SIG reviews occupancy and community feedback monthly to adjust locations, hours, or vendor caps as necessary. CD 11 communicates changes to residents and business owners to maintain transparency and trust.

6.9.5. Operational Standards and Controls

Each MFSZ should operate under clear and enforceable standards designed to protect safety and neighborhood character:

- **Operating Hours:** Standard hours (7:00 a.m. – 4:00 p.m., Monday through Saturday), adjustable based on construction activity and community feedback.
- **Safety Clearances:** Maintain a minimum 20-foot fire-lane clearance, unobstructed sight lines, and safe pedestrian circulation.
- **Noise and Emissions:** Limit generator noise and idling; encourage vendors to use low-emission or battery-based systems where feasible.
- **Waste and Sanitation:** Vendors responsible for collecting and properly disposing of waste; no grease or wastewater discharge into storm drains.
- **Accessibility and ADA Compliance:** Maintain clear sidewalks and ramps; no obstruction of crosswalks or driveways.
- **Vendor Identification:** All permitted vendors display decals or placards issued by LADOT verifying current authorization.

These standards ensure that vending remains orderly, equitable, and environmentally responsible throughout the Rebuild.

6.9.6. Community Coordination and Communication

Community engagement is essential to maintaining public support for MFSZs. CD 11 and LADOT should coordinate messaging to clarify that these zones are **planned, permitted spaces** created to prevent the very issues that unregulated vending would cause. Outreach should include:

- Advance notifications to residents and local businesses before zone activation;
- Listings of authorized MFSZ locations on the City's public dashboard;
- Opportunities for residents to provide feedback on zone performance or suggest improvements; and
- Recognition of compliant vendors as community partners contributing positively to the Rebuild environment.

By emphasizing transparency and accountability, the City can foster acceptance of MFSZs as a structured, beneficial component of the overall rebuild strategy.

6.9.7. Enforcement and Education

As with other curb-management elements, enforcement should emphasize education first. Parking Enforcement officers should focus on ensuring that only permitted vendors operate in MFSZs and that they comply with posted conditions. Violations—such as unpermitted vending, blocking access, or waste infractions—should be handled through manual citations or temporary suspensions of MFSZ privileges. LADBS and Public Health can jointly conduct periodic inspections for food-safety compliance, while CD 11 continues public communication to reinforce the purpose and benefits of regulated vending.

6.9.8. MFSZ Summary

The **MFSZ framework** represents a forward-looking, community-conscious approach to managing mobile vending during the Palisades Rebuild. It acknowledges that food trucks and mobile vendors are an integral part of Los Angeles' urban and cultural landscape—and, during reconstruction, an essential service for workers and residents alike. However, in a high-impact environment such as the Pacific Palisades, unregulated vending could easily disrupt traffic operations, compromise emergency access, and strain neighborhood relations.

Through the MFSZ framework, the City offers a balanced solution: designated, well-communicated vending locations governed by clear safety, cleanliness, and operational standards. The program enables LADOT and LADBS to transform vending activity from an unmanaged challenge into a structured, transparent partnership that benefits both the community and local businesses. By leveraging public dashboards, real-time monitoring, and consistent outreach, the City can maintain order while preserving the entrepreneurial vibrancy that defines Los Angeles' streetscape.

Ultimately, the MFSZ initiative demonstrates that **economic opportunity, community safety, and livability can coexist** when guided by thoughtful design and adaptive management. It provides a replicable model for other reconstruction or event-based contexts—proving that through careful coordination, temporary regulation can achieve permanent value: safer streets, stronger small businesses, and renewed public trust in the City's ability to manage recovery with empathy and efficiency.

6.10. Community-Based Temporary Parking Zones

6.10.1. Context and Overview

During the Palisades Rebuild, parking pressure will extend well beyond construction corridors. Streets that once comfortably served residents and visitors will face overlapping demand from contractors, delivery trucks, inspectors, and service vehicles. In hillside neighborhoods with little or no off-street parking, even small changes in demand can cascade into serious accessibility issues, forcing residents to park far from home and pushing workers to occupy curbs meant for emergency access.

Traditional curb-management tools alone—such as time limits or restricted zones—cannot fully absorb this excess demand. To close this gap, the City should pursue a **community-partnership approach** that leverages private and institutional parking resources already present in the Pacific Palisades. The **CTPZ** framework enables local property owners, schools, churches, and other organizations to temporarily share under-used off-street lots with the City and community.

CTPZs represent a practical extension of Los Angeles' broader resilience and sustainability goals. They convert idle private capacity into community benefit, reduce on-street congestion, and foster civic participation in the recovery process. By making residents and local institutions part of the solution, the City reinforces the principle that rebuilding the Pacific Palisades is a shared responsibility, not a purely governmental task.

6.10.2. Purpose and Objectives

The **CTPZ** program is designed to expand parking capacity and reduce congestion during the Palisades Rebuild through voluntary, low-impact partnerships between the City and the community. As reconstruction accelerates, the demand for parking from contractors, inspectors, residents, and service providers will exceed the available curb supply—particularly in hillside neighborhoods where space is already limited. The CTPZ framework responds to this challenge by turning private and institutional lots into community assets, creating authorized off-street parking options that relieve curbside pressure while preserving emergency access and neighborhood livability.

The program reflects a collaborative approach to urban recovery, grounded in the belief that rebuilding a community requires active participation from both public agencies and local institutions. By inviting property owners, schools, and community organizations to temporarily share their unused parking areas, the City can meet critical mobility needs without building new infrastructure or imposing permanent changes. In return, participating partners gain recognition and the opportunity to directly contribute to the success of the Pacific Palisades recovery effort.

The CTPZ framework also aligns with the City's fiscal neutrality principle, ensuring that temporary services are self-funded and sustainable. While participation is voluntary, the program can recover its operating costs through nominal administrative fees and user permits charged to contractors, service vehicles, and others who utilize CTPZ spaces. These user fees would offset the costs of signage, inspection, and administration while maintaining affordability and fairness. This revenue-neutral model prevents any burden on the City's general fund while supporting local equity and efficiency.

1. **Increase Local Parking Capacity:** Expand short-term parking availability for residents, contractors, and service providers when public curb space is limited by active reconstruction. By temporarily utilizing private and institutional lots, the City can add overflow capacity where it is most needed—reducing illegal or unsafe parking on narrow streets and ensuring vehicles remain clear of emergency lanes.
2. **Promote Community Participation and Ownership:** Foster a sense of shared responsibility for recovery by engaging local property owners, institutions, and community groups as active partners. The program encourages civic collaboration, recognizes participants through signage and public acknowledgment, and demonstrates how collective action can improve quality of life during reconstruction.
3. **Maintain Safety and Order:** Direct vehicles away from sidewalks, parkways, and unapproved shoulders by providing safe, authorized alternatives. Each CTPZ will be reviewed by LADOT, LADBS, and LAFD to ensure proper lighting, access, and circulation, maintaining neighborhood aesthetics and preventing hazards that could impede emergency or pedestrian movement.
4. **Ensure Simplicity, Accessibility, and Legal Compliance:** Keep participation straightforward and accessible through a streamlined registration and approval process. LADBS will manage an online portal for property owners to enroll their lots, LADOT will review circulation and signage plans, and the City Attorney will provide standard indemnification templates to ensure all agreements are legally secure. The process should require minimal paperwork, fast review cycles, and simple field verification.

5. **Support Fiscal Neutrality and Equity:** Operate within a cost-recovery and revenue-neutral model that ensures sustainability and fairness. In addition to covering administrative expenses, the City may issue temporary parking permits or user fees to contractors, Rebuild workers, or other approved users accessing CTPZ spaces. These fees offset signage, maintenance, and program management costs, while optional incentives or fee waivers may be offered for nonprofit or community-based participants. This model keeps the program financially self-sustaining without drawing from the City's general fund and ensures that those benefiting from the additional capacity contribute proportionally to its operation.

Together, these objectives create a framework that is community-driven, scalable, and reversible, allowing the City to manage temporary parking needs through collaboration rather than new construction. The CTPZ program transforms parking from a logistical constraint into an instrument of civic partnership—demonstrating that Los Angeles can meet its infrastructure challenges through shared solutions, fiscal responsibility, and adaptive neighborhood planning.

6.10.3. Policy Context and Legal Basis

The CTPZ framework operates entirely under existing authority—no new ordinance is required. LADOT and LADBS can jointly administer the program using the following legal provisions:

- **California Vehicle Code § 22507:** Grants local jurisdictions the authority to regulate and reserve parking for specific purposes.
- **LAMC §§ 80.55 and 80.56:** Authorize LADOT to install or remove temporary traffic-control devices, including signage designating restricted or shared parking.

Because CTPZs occur on private property made temporarily available to the public, the City Attorney should prepare a **standard participation and indemnification agreement** covering liability, insurance, and compliance requirements. This legal foundation ensures the City can enable voluntary partnerships without creating new regulatory structures or fiscal exposure.

6.10.4. Implementation Approach

Successful implementation of the **CTPZ** program will depend on collaboration, clear communication, and ongoing community participation. Because the Palisades Rebuild is dynamic—with active construction zones shifting across neighborhoods over time—the program must be equally flexible, capable of scaling up or down to meet fluctuating demand. Implementation should follow a **phased, transparent, and community-centered process** that ensures every CTPZ is safe, compliant, and fiscally neutral before activation.

This process integrates policy oversight, community engagement, and real-time data monitoring to ensure the program remains both adaptable and accountable. Each phase is designed to reinforce trust among residents, property owners, and City departments, while maintaining a consistent operational rhythm that minimizes administrative burden.

1. **Program Launch and Outreach:** The program should begin with a coordinated public launch led by **LADBS**, in partnership with **LADOT** and **CD 11**. This phase sets the tone for transparency and participation, introducing the CTPZ program as a community collaboration rather than a regulatory imposition. Outreach should leverage community meetings, neighborhood newsletters, and the City's **Rebuild Dashboard** to share information about how the program works, who can participate, and what safeguards are in place. Materials should emphasize that the initiative is temporary, revenue-neutral, and designed to relieve parking congestion caused by the Rebuild. Special outreach should target property owners and institutions with underused lots—such as churches, schools, community centers, and private developments—and provide simple, step-by-step instructions for registration, safety requirements, and available incentives or fee waivers.
2. **Property Registration and Review:** Interested property owners and organizations will register through a dedicated **LADBS online portal**, streamlining the process and ensuring documentation is consistent across all applicants. Applications should include site plans, available spaces, proposed operating hours, insurance verification, and confirmation of lot ownership or use authorization. LADBS reviews submissions for structural integrity, zoning compliance, and basic safety conditions. Concurrently, **LADOT** evaluates each site's circulation plan, access routes, and proximity to active construction areas to confirm that its use as a CTPZ will improve—not complicate—local mobility. **LAFD** will review emergency-access provisions to ensure that CTPZ operations do not impede response

routes or evacuation pathways. Only sites meeting all requirements will advance to the approval stage, ensuring that safety and operational readiness come first.

3. **Approval, Permitting, and Signage:** Once a site passes review, LADBS issues a formal CTPZ permit and coordinates with **StreetsLA** for on-site activation. StreetsLA installs standardized, durable temporary signage that clearly identifies the lot as an authorized City-approved CTPZ. Each sign should display the CTPZ identification number, operating hours, user eligibility (residents, contractors, or general public), and a **QR code linking to the City's public dashboard** for verification. This visibility prevents unauthorized use and helps community members understand that the program is structured, safe, and monitored. Approved zones typically operate in three- to six-month increments, with options for renewal following inspection and continued owner consent. During setup, the City should ensure ADA compliance, proper lighting, and pedestrian pathways that meet local accessibility standards.
4. **Fee Structure, Permit System, and Cost Recovery:** CTPZ operations must remain **revenue-neutral** to protect the City's fiscal balance while ensuring equitable participation. To achieve this, the City can combine two complementary cost-recovery mechanisms:
    - **Administrative Fees:** Nominal charges to offset registration, inspection, and signage costs, with potential waivers for nonprofit institutions, schools, or churches that provide space at no charge.
    - **User Permits and Contractor Access Fees:** Rebuild contractors, service providers, or other users who park in CTPZs would obtain temporary parking permits issued through **LADBS** or **LADOT**, priced to reflect program administration and site maintenance costs. These fees ensure that those who benefit most from added parking capacity contribute proportionally to its upkeep.

This phased, feedback-driven approach ensures that every CTPZ is **safe, compliant, and community-endorsed before activation** while maintaining the flexibility to evolve as reconstruction activity shifts. By combining streamlined permitting, continuous monitoring, and transparent cost recovery, the City can deliver a program that embodies the principles of safety, equity, and fiscal responsibility. Ultimately, this implementation framework turns a temporary parking solution into a model of civic collaboration—showing how Los Angeles can solve complex operational challenges through community partnership, smart management, and shared accountability.

6.10.5. Operational Guidelines

Each CTPZ should operate under consistent Citywide standards:

- **Safety and Design:** Clearly delineated parking stalls, proper lighting, and safe pedestrian pathways from the lot to adjacent sidewalks.
- **ADA Compliance:** At least one accessible stall and barrier-free routes for users with disabilities.
- **Operating Hours:** Defined in advance based on neighborhood context (e.g., 7 a.m.–7 p.m. for residential use, extended hours for contractor staging).
- **Maintenance and Cleanliness:** Participants responsible for routine upkeep and trash collection; StreetsLA provides inspection as needed.
- **Community Conduct:** Noise, lighting, and traffic volumes managed to prevent nuisance impacts on nearby homes.
- **Termination and Restoration:** Sites restored to normal use promptly upon program completion or property-owner withdrawal.

These operational requirements preserve neighborhood character and maintain consistency across all participating sites.

6.10.6. Community Engagement and Partnership

Community buy-in is essential to program success. CD 11 should lead engagement efforts to identify prospective participants, highlight success stories, and maintain communication with host sites and nearby residents. Strategies include:

- **Recognition and Visibility:** Publicly acknowledging participating institutions as community partners in newsletters and City updates.
- **Feedback Mechanisms:** Providing direct lines for neighbors to report issues or share positive outcomes.
- **Collaboration with Nonprofits and Business Improvement Districts:** Leveraging local networks to expand participation and coordinate shared-use logistics.

This cooperative approach builds goodwill and reinforces the narrative that the Palisades Rebuild is a **community-wide recovery**, not just a construction project.

6.10.7. Benefits and Outcomes

The **CTPZ** program delivers value far beyond simply increasing parking capacity. It represents a new way of managing urban recovery—one rooted in collaboration, resource-sharing, and community empowerment. By activating underused private and institutional spaces, the City can expand parking access, reduce congestion, and strengthen neighborhood trust without constructing new infrastructure or adding long-term maintenance costs.

- **Expanded Parking Capacity and Accessibility:** CTPZs increase the available parking supply during the most resource-constrained phase of the Palisades Rebuild. By temporarily converting existing private lots into shared public assets, the program provides safe, organized overflow capacity for residents, contractors, and service providers. This added flexibility reduces illegal curbside parking, eases neighborhood congestion, and preserves emergency-lane clearance—ensuring that local mobility continues even as construction intensifies.
- **Safety, Circulation, and Emergency Readiness:** Redirecting overflow vehicles from narrow streets and unapproved shoulders to designated CTPZs helps maintain orderly circulation and emergency access. Each site is reviewed by LADOT and LAFD to ensure that it meets lighting, access, and clearance requirements. This approach prevents unsafe, ad hoc parking behavior that could block driveways, obstruct fire apparatus, or endanger pedestrians, while promoting a neighborhood environment that remains functional, accessible, and safe throughout the Rebuild.
- **Community Participation and Civic Ownership:** Perhaps the program's most transformative benefit is its ability to foster community pride and ownership. By giving property owners and local institutions a direct role in solving parking challenges, the CTPZ framework turns residents from passive observers into active partners in recovery. These partnerships not only relieve physical constraints but also strengthen the social fabric of the Palisades, demonstrating how collaboration between the public and private sectors can accelerate and humanize urban resilience.
- **Economic and Fiscal Sustainability:** The CTPZ program operates within a **revenue-neutral model**, ensuring that its benefits do not create new financial obligations for the City. Costs associated with signage, inspection, monitoring, and administration are offset through nominal administrative fees and user permits issued to contractors and Rebuild workers. Participating property owners can recover maintenance expenses through shared fee revenues, while nonprofit institutions offering space voluntarily may receive recognition or waived fees. This cost-recovery mechanism makes the program self-sustaining, equitable, and replicable for future recovery scenarios across Los Angeles.
- **Transparency, Accountability, and Adaptive Management:** Because the program is rooted in community partnership, transparency is essential. Each CTPZ will be visible through the public dashboard described in Section 6.5, allowing residents to view active locations, hours of operation, and points of contact. Performance data—including usage, complaints, and renewals—will be reviewed monthly by the SIG and summarized in quarterly reports. This ensures that community feedback directly informs decision-making, reinforcing accountability and building confidence in the City's ability to manage temporary programs effectively and fairly.
- **Neighborhood Livability and Quality of Life:** By easing congestion and organizing access, CTPZs help preserve the everyday livability of neighborhoods during reconstruction. Residents retain access to parking near their homes, contractors have reliable staging options, and visitors can navigate without confusion or frustration. These outcomes collectively protect the Pacific Palisades' distinctive character—keeping it a safe, welcoming, and functional community even amidst large-scale rebuilding.

In short, the CTPZ program transforms a logistical necessity into a civic opportunity—strengthening relationships between the City and the community while ensuring that essential parking and mobility functions continue uninterrupted during the Palisades Rebuild.

6.10.8. CPTZ Summary

The **CTPZ** framework is both a practical solution and a statement of the City's values. It demonstrates that effective recovery management does not rely solely on new infrastructure or regulation but on collaboration, creativity, and shared responsibility. By inviting residents, institutions, and businesses to become partners in solving local challenges, the City can extend its operational capacity while deepening community trust and resilience.

Grounded in existing legal authority and designed around fiscal neutrality, the program operates entirely within the City's current administrative framework—requiring no new legislation, staffing, or capital investment. Its reliance on voluntary participation, cost-recovery mechanisms, and flexible management ensures that every parking zone is temporary, reversible, and responsive to real-time needs. Through this structure, the program remains agile, equitable, and transparent from launch to sunset.

The CTPZ initiative also provides a model for how Los Angeles can manage future neighborhood-scale emergencies and recovery programs. It converts the challenges of limited curb space and rising demand into opportunities for civic engagement and innovation. Most importantly, it underscores that urban recovery is as much a social process as a technical one—one that depends on partnership, transparency, and trust.

In essence, the CTPZ program is more than a parking strategy—it is a **blueprint for collaborative resilience**. It proves that by empowering communities, aligning incentives, and ensuring fiscal and operational accountability, the City can preserve mobility, enhance safety, and foster unity during even the most complex phases of rebuilding. The Palisades Rebuild thus becomes not only a test of physical reconstruction but also a model of how Los Angeles can recover with its communities—together, efficiently, and with enduring pride.



6.11. Enforcement and Compliance

6.11.1. Context and Overview

A clear and consistent enforcement and compliance strategy is essential to the success, integrity, and public acceptance of the **Palisades Parking and Curb Management Framework**. Because this program introduces several temporary but interdependent tools—**TMPZs, Residential and Delivery Access Zones, MFSZs,** and **CTPZs**—the City must maintain a unified enforcement structure that balances flexibility, safety, and fairness.

Each of these tools introduces new forms of curb regulation, user participation, and public-private coordination. Without a cohesive enforcement framework, the City risks uneven implementation, inconsistent user experiences, and potential challenges to fiscal neutrality or legal defensibility. Enforcement must therefore serve multiple purposes: to **protect safety and access, to preserve public trust and compliance,** to **ensure financial accountability,** and to **reduce the City's exposure to liability** during a complex, high-visibility rebuild period.

The Palisades Rebuild will occur in one of Los Angeles' most constrained mobility environments—narrow, hilly streets that must simultaneously accommodate residents, construction workers, vendors, and emergency vehicles. Enforcement in this context is not just a procedural function; it is a cornerstone of **risk management and public safety**, ensuring that temporary programs operate predictably, transparently, and within City authority.

6.11.2. Purpose and Enforcement Philosophy

The purpose of enforcement and compliance across the parking and curb management framework is to ensure that all designated zones—whether for contractors, residents, food vendors, or community partners—operate safely, equitably, and as intended. The City's approach must reflect a **service-based enforcement model**, prioritizing education, voluntary compliance, and community partnership over punitive actions.

Because the program's success depends on public cooperation and departmental coordination, enforcement should be **uniform in principle but adaptive in application**—tailored to the unique operational characteristics of each zone type. The goal is to maintain compliance through communication, transparency, and monitoring rather than through high-volume citation issuance.

The City's overarching enforcement philosophy is grounded in five guiding principles:

1. **Safety First:** Protect emergency access, ADA compliance, and public safety above all else. Violations that create safety hazards or impede emergency response must take enforcement priority.
2. **Consistency and Fairness:** Apply enforcement standards uniformly across all zone types, user groups, and neighborhoods to ensure fairness and public confidence.
3. **Transparency and Accountability:** Communicate enforcement policies, performance data, and corrective actions clearly to the public and City leadership. All enforcement outcomes should be traceable and auditable.
4. **Proportionality:** Focus enforcement efforts on high-impact violations and repeat offenses, emphasizing warnings and education for first-time or minor infractions.
5. **Education and Partnership:** Treat enforcement as an extension of public service—building understanding, trust, and cooperation among participants, residents, and businesses.

This philosophy underscores that enforcement is not only about compliance—it is about **governance, safety assurance,** and **preserving community confidence** throughout the Pacific Palisades' recovery.

6.11.3. Roles and Responsibilities

Effective enforcement requires a coordinated, multi-agency approach that leverages the strengths of each department while maintaining central oversight. The following roles define operational accountability across the program:

- **LADOT Parking Enforcement:** Develops and administers enforcement strategy across all zone types, sets uniform protocols, and integrates monitoring data into the City's Rebuild Dashboard. Oversees performance reporting and coordinates with Parking Enforcement and LAPD.
- **LADBS – Permitting and Compliance:** Ensures that TMPZ, MFSZ, and CTPZ permits adhere to approved conditions. Conducts inspections for property-owner compliance, verifies insurance and indemnification coverage, and coordinates permit suspension or renewal actions.
- **LAPD and LADOT Parking Enforcement:** Conducts field patrols, issues citations for violations, and ensures enforcement presence across active corridors. Uses data from LADOT's monitoring platform to direct officers toward high-priority areas.

- **LAFD:** Reviews enforcement logs to confirm emergency-clearance standards are maintained and provides operational feedback during field inspections.
- **CD 11 – Community Interface:** Serves as the public-facing communication channel, receiving and tracking complaints, coordinating responses with LADOT, and closing feedback loops with residents and businesses.
- **CAO / City Attorney:** Monitors fiscal neutrality, validates cost-recovery processes tied to enforcement revenues, and ensures compliance actions are legally sound and consistent with temporary-ordinance authority.

Together, these roles establish a **vertically integrated enforcement structure**—from field-level patrols to executive oversight—ensuring that compliance data, fiscal reporting, and community feedback are all aligned under one governance framework.

6.11.4. Enforcement Framework Across Zone Types

While the City's enforcement philosophy remains consistent, its application must be tailored to the operational context of each zone type.

- **TMPZs:** Enforcement focuses on validating permit compliance, ensuring contractors park only in designated zones, and preventing double-parking or lane blockage. Monitoring tools track occupancy and permit expiration, allowing officers to target high-risk locations.
- **Residential and Delivery Access Zones:** Enforcement prioritizes maintaining resident access, two-hour parking limits, and unobstructed driveways. Officers emphasize education, issuing warnings during early rollout and escalating to citations only for recurring issues or safety violations.
- **MFSZs:** Enforcement targets unpermitted vendors, violations of posted hours, and sanitation or noise infractions. LADBS and LADOT coordinate with County Health inspectors to ensure compliance with public health codes, while Parking Enforcement officers verify operating licenses on-site.
- **CTPZs:** Enforcement ensures participating property owners follow approved site plans and user-permit rules. LADBS inspects lots for lighting, accessibility, and circulation compliance, while LADOT verifies that contractors and Rebuild workers possess valid parking permits.

This differentiated approach ensures enforcement remains **context-sensitive**, focusing resources where risk or public impact is greatest.

6.11.5. Enforcement Tools and Processes

To maintain compliance efficiently and transparently, enforcement actions should follow a structured, predictable sequence that emphasizes communication and education before escalation.

1. **Education and Outreach:** Before enforcement begins, LADBS, LADOT, and CD 11 provide clear, multilingual communication materials explaining the program's purpose, regulations, and consequences of non-compliance. These materials—distributed through permits, signage, and online dashboards—ensure that all participants understand their roles and responsibilities.
2. **Active Monitoring and Verification:** The **real-time monitoring platform** described in Section 6.5 underpins enforcement across all zone types. LADOT and LADBS use this system to analyze occupancy, detect irregularities, and prioritize enforcement patrols. Automated alerts flag expired permits, over-capacity conditions, or recurring unauthorized use, enabling data-driven resource allocation.
3. **Field Inspection and Response:** LADOT and LAPD officers conduct regular field inspections and patrols, guided by monitoring data. LADBS verifies compliance during permit renewals or routine audits. When violations occur, officers issue manual citations under LAMC §§ 80.55–80.56, supported by photographic evidence for documentation and transparency.
4. **Graduated Enforcement Actions:** The City employs a tiered response system to encourage voluntary compliance and maintain fairness:
   - **Stage 1 – Warning and Education:** First-time violations receive verbal or written warnings with guidance on corrective actions.
   - **Stage 2 – Citation or Temporary Suspension:** Repeated or deliberate non-compliance results in citations or short-term permit suspension.
   - **Stage 3 – Revocation or Legal Action:** Persistent violations or safety-critical issues trigger permit revocation, fines, or escalation to the City Attorney for enforcement under temporary-ordinance authority.
5. **Documentation, Reporting, and Transparency:** All enforcement actions are logged in the monitoring database. LADOT compiles quarterly summaries of warnings, citations, and compliance trends for review by the **SIG** and City leadership. Public dashboards summarize enforcement performance and fiscal status, demonstrating accountability and reinforcing community confidence in program governance.

6.11.6. Community Engagement and Partnership

Because public understanding and trust are the foundation of compliance, education must remain a central part of enforcement across all program elements. CD 11, LADOT, and LADBS should coordinate **ongoing public outreach campaigns** explaining how enforcement protects community safety, ensures fairness, and supports an orderly recovery.

Field personnel—whether inspectors, enforcement officers, or contractors—should act as **program ambassadors**, providing information and context during enforcement interactions. LADOT can provide field officers with handouts or QR codes linking directly to program resources, allowing them to educate while enforcing. Recognizing compliant vendors, contractors, and institutions through newsletters or dashboard highlights fosters goodwill and reinforces voluntary compliance.

This education-first approach strengthens the relationship between City departments and the community, transforming enforcement from a reactive function into a **proactive partnership for neighborhood stability and resilience**.

6.11.7. Performance Evaluation and Continuous Improvement

Enforcement practices should evolve alongside the program itself, using measurable indicators to track performance, identify trends, and inform policy refinements. Key performance metrics may include:

- Percentage reduction in illegal parking and unauthorized zone use.
- Number of warnings and citations issued by zone type, with resolution rates.
- Response time between complaint and resolution.
- Compliance rate among permitted vendors, contractors, and property owners.
- Public satisfaction levels and community feedback metrics.
- Fiscal neutrality validation through CAO audits of enforcement-related revenues and costs.

The **SIG** should review these indicators quarterly, recommending procedural or policy adjustments as needed. LADOT may refine patrol strategies, signage, or digital tools based on lessons learned, while CD 11 integrates community insights into ongoing education and outreach. This iterative approach ensures that enforcement remains both **effective and adaptive**, evolving with changing field conditions and community expectations.

6.11.8. Enforcement Summary

Enforcement and compliance are the connective tissue of the **Palisades Parking and Curb Management Framework**—the mechanism that keeps each tool functioning safely, equitably, and transparently. By combining education, monitoring, and proportional field action, LADOT, LADBS, and partner agencies can maintain a delicate balance between public flexibility and regulatory accountability.

This unified enforcement model ensures that all zone types—TMPZs, Residential and Delivery Access Zones, MFSZs, and CTPZs—operate under the same guiding principles of safety, fairness, and fiscal neutrality. It also demonstrates that enforcement, when implemented as a coordinated management strategy rather than a punitive exercise, can build trust, uphold City standards, and strengthen community resilience.

Through consistency, communication, and accountability, this framework transforms enforcement from a reactive process into a proactive tool for **governance, safety assurance, and civic partnership**—helping Los Angeles not only manage the Palisades Rebuild but also model a modern, equitable approach to temporary mobility and curb-space management across the City.

6.12. Emergency Access and ADA Safeguards

6.12.1. Context and Overview

Emergency and accessibility safeguards form the non-negotiable foundation of the **Palisades Parking and Curb Management Framework.** Every element of the program—whether a TMPZ, Residential and Delivery Access Zone, MFSZ, or CTPZ—must preserve the ability of first responders and individuals with disabilities to move safely and predictably through the corridor network.

The Pacific Palisades' hillside topography, narrow rights-of-way, and dispersed neighborhood layout make emergency access and ADA compliance particularly challenging. Many residential streets measure less than 30 feet in width, leaving little margin for error once vehicles, construction equipment, and temporary signage occupy the curb. In this environment, even minor encroachments can slow fire-engine response times or obstruct evacuation routes. A single parked truck can effectively close a block.

For these reasons, maintaining continuous 20-foot emergency-lane clearance and full ADA accessibility is a baseline requirement across the entire program. Compliance with these standards is not optional—it is essential to public safety, regulatory adherence, and the City's duty of care. The framework must therefore include active review, documentation, and real-time monitoring procedures to ensure these safeguards are met every day, on every active corridor.

6.12.2. Purpose and Policy Alignment

The purpose of this section is to ensure that all temporary parking and curb-use activities under the program are planned, implemented, and operated in accordance with established **fire-safety, emergency-response, and accessibility standards**. The safeguards described here uphold multiple City and federal mandates:

- **LAFD Standards:** Require a minimum 20-foot clear width for emergency apparatus movement on all accessible streets and driveways.
- **ADA and California Building Code Requirements:** Require accessible parking, curb ramps, pathways, and clear signage to be maintained at all times, including during temporary construction or event conditions.
- **City Risk-Management and Liability Policy:** Requires departments to demonstrate due diligence in maintaining emergency and ADA compliance to mitigate exposure to legal or financial claims.

Collectively, these standards form the **minimum operational threshold** for all participating agencies and private partners under the Palisades Rebuild program.

6.12.3. Core Safeguard Principles

To ensure full compliance, all temporary curb and parking interventions must be guided by five core principles:

1. **Uninterrupted Emergency Access:** Maintain continuous 20-foot clear travel lanes and vertical clearance along all active corridors. No equipment, vending, or parking activity may reduce this clearance under any circumstances.
2. **ADA Accessibility and Equity:** Preserve access to curb ramps, crosswalks, and accessible parking spaces. Temporary obstructions must be relocated or removed immediately.
3. **Dynamic Monitoring:** Use technology and field inspections to detect encroachments or violations in real time, enabling immediate corrective action.
4. **Transparency and Accountability:** Document all safety reviews, inspections, and compliance actions in the program's shared database and communicate updates to City leadership and the public.

These principles ensure that emergency and accessibility standards are not simply design guidelines but **operational controls** embedded into the daily management of every active zone.

6.12.4. Planning and Design Integration

Emergency and ADA considerations must be integrated from the outset of program design, not retrofitted after activation. Each curb-use plan submitted to LADOT or LADBS must include:

- A scaled diagram showing the 20-foot clear lane width and turning radii for emergency vehicles.
- The location of all fire hydrants, hydrant lead lines, and utility access points.
- Designation of ADA-compliant parking stalls and pedestrian routes, verified by LADBS during site review.
- Identification of alternative accessible routes when temporary conditions require sidewalk or curb closures.
- Placement of temporary signage directing pedestrians and drivers to accessible pathways and available ADA parking.

By integrating these design elements at the permit stage, the City can reduce enforcement burden and prevent costly retroactive corrections.

6.12.5. Operational Oversight and Monitoring

Operational enforcement of emergency and accessibility safeguards will be continuous and multi-layered.

- **LADOT and LADBS** will conduct pre-deployment inspections to verify clearances and ADA compliance before signage installation.
- **LAFD** will review active corridor maps monthly to ensure that temporary designations do not interfere with primary or secondary emergency routes.
- **Monitoring Technology** will include visual or sensor-based verification of lane clearance in high-impact corridors. When potential obstructions are detected, automated alerts will notify LADOT field staff and Parking Enforcement for rapid response.
- **Public Feedback Channels** managed by CD 11 will provide an additional layer of oversight, allowing residents and contractors to report blocked access or safety concerns directly through the dashboard portal or hotline.

All field findings and corrective actions will be logged in the central database for audit and reporting purposes. Quarterly summaries will be reviewed by the **SIG** to ensure compliance trends are tracked and recurring issues addressed.

6.12.6. Corrective Measures and Enforcement Escalation

Because emergency and accessibility compliance are matters of public safety, violations in this category require **immediate corrective response**. The City will follow a structured escalation protocol:

1. **Immediate On-Site Correction:** When minor encroachments are identified—such as improperly parked vehicles or temporary obstructions—Parking Enforcement or StreetsLA crews will remove or relocate the obstruction within the same shift.
2. **Notice of Violation and Documentation:** For repeated or significant violations, StreetsLA issues a written notice to the responsible permit holder (contractor, vendor, or property owner) requiring corrective action within 24 hours and logs the violation in the monitoring system.
3. **Temporary Suspension of Permit:** If compliance is not achieved or if the violation presents a clear hazard (e.g., blocked fire lane or ADA space), LADOT or LADBS may immediately suspend the permit and notify LAFD.
4. **Revocation and Escalation:** Continued non-compliance results in permit revocation and potential fines or cost recovery under applicable LAMC provisions. Persistent or egregious violations are referred to the City Attorney for review and enforcement.

These escalation measures ensure swift resolution while maintaining procedural fairness and documentation for legal and administrative purposes.

6.12.7. Coordination with Emergency Services

Ongoing coordination with emergency-response agencies is critical. The City will maintain a standing **Emergency Access Coordination Group** comprising LADOT, LAFD, EMD, and CD 11 representatives. This group will meet monthly during the active rebuild period to:

- Review current TMPZ, MFSZ, and CTPZ maps and any upcoming permit applications.
- Identify high-risk or high-impact corridors requiring additional signage or enforcement.
- Evaluate response-time metrics and incident reports related to blocked access.
- Share data from monitoring systems and community reports to enhance situational awareness.

This coordination ensures that emergency-response agencies remain fully informed and can integrate CTPZ and TMPZ data into their dispatch and routing systems when needed.

6.12.8. ADA Compliance, Communication, and Community Engagement

Maintaining accessibility extends beyond physical compliance—it also involves communication and inclusion. LADBS, LADOT, and CD 11 should ensure that all public materials, signage, and dashboards are ADA-compliant and that residents with disabilities are informed of accessible parking and detour routes. Outreach should include:

- Public notices and dashboard updates showing current accessible parking locations.
- Translations and screen-reader-friendly formats for digital materials.
- Coordination with disability-advocacy groups to review program accessibility and suggest improvements.
- Rapid notification to residents if temporary changes affect ADA routes or accessible stalls.

This proactive engagement reflects the City's commitment to equity and reinforces its broader **Vision Zero** and **Mobility Plan 2035** goals of safe, inclusive streets for all users (City of Los Angeles 2017, 2018; Los Angeles Department of City Planning 2016).

6.12.9. Performance Evaluation and Reporting

Emergency and accessibility compliance should be treated as KPIs for the entire Parking and Curb Management Framework. LADOT and LAFD will jointly track metrics such as:

- Number of incidents or complaints related to blocked emergency or ADA access.
- Average time to resolve reported obstructions.
- Compliance rate from periodic LAFD and LADBS inspections.
- Verified 20-foot lane-clearance adherence across active zones.
- Documented corrective actions completed within target timelines.

These metrics will be included in the SIG's quarterly review and summarized in program-wide transparency reports to City leadership and the public. Maintaining high compliance rates in these categories demonstrates the City's operational discipline and commitment to public safety.

6.12.10. Emergency Access and ADA Safeguards Summary

Emergency access and ADA safeguards are the backbone of the **Palisades Parking and Curb Management Framework**. They ensure that all temporary curb uses—no matter how innovative or flexible—operate within clear life-safety and accessibility boundaries. By embedding these requirements into the permitting, monitoring, and enforcement structure, the City not only meets regulatory obligations but also reinforces community trust that safety and inclusivity remain top priorities.

This section's procedures ensure that every active zone—whether a contractor parking area, residential access segment, vending corridor, or community lot—preserves emergency mobility, protects accessibility, and supports the City's broader goals of safety, equity, and accountability. Through continuous coordination, real-time monitoring, and transparent reporting, LADOT and its partners can safeguard lives, maintain legal compliance, and uphold the City's reputation for professional, community-focused management throughout the Palisades Rebuild and beyond.





7. Logistics and Supply Chain Coordination

This section introduces the PALMS—a centralized logistics and delivery-booking platform. It coordinates and consolidates material deliveries, worker access, staging, and truck routing to minimize congestion and emissions. The goal is to treat construction logistics as a managed network rather than an unregulated activity, ensuring efficient goods movement, fair contractor access, and integration with the Land Closure Scheduling System and parking systems for a single, Citywide operating picture.

Many projects identified in this document are currently in preliminary stages of the project development process, and may still be pending funding, final approvals, and/or permitting. All projects are subject to change in scope, schedule, and cost until they are fully approved. Some of the projects, strategies, and efforts described in this report may not be possible for the City to complete without additional funding from the Federal and State governments as well as philanthropy, which may or may not be forthcoming.



7.1. Overview of PALMS Concept

As the reconstruction process takes place, managing the influx of vehicles and materials is critical to maintaining the community's functionality. Efficient logistics is the backbone of successful construction projects, especially in urban and high-traffic areas. Every mile a truck travels adds cost—not just in fuel, but also in labor, vehicle wear, and time. When trucks are stuck in traffic or navigating congested streets, delays can lead to missed deadlines and additional costs.

The core objectives of PALMS include:

- **Enforcing routes:** Enforce approved freight routes, no-go zones, and turning restrictions based on assessed routes.
- **Align timing:** Align booking slots with LA's construction-hour restrictions, school drop-off blackouts, street cleaning days, and utility schedules.
- **Operate PALMS staging areas:** Operate as service hubs to minimize disruption on narrow streets.
- **Manage delivery points:** Show delivery bays (front yard, curbside crane spot) and current capacity.

There are several potential ways that a PALMS system could function in practice, depending on the exact nature of platform functionalities. There could be a stand-alone PALMS platform, that incorporates both spreadsheet and GIS-based platforms as well as other software capabilities that interact with other systems, such as a booking platform. Alternatively, some aspects of PALMS could interconnect with existing systems. For example, rather than being a stand-alone scheme, PALMS could be integrated with the existing Los Angeles PWRS. This may make the scheme easier to implement, with PALMS requirements building on existing permitting processes and systems.

The PALMS staging areas offer a unique opportunity to coordinate the recovery effort while minimizing the impact on neighbors across Los Angeles. Additionally, this aligns with the concept of a single logistics hub within the Pacific Palisades and the opportunity to consolidate construction logistics activities.

By positioning materials, equipment, and workers close to the work zone, PALMS seeks to:

- Reduce road safety risks
- Reduce transportation costs.
- Minimize delivery delays.
- Ease traffic congestion.
- Reduce emissions and wear on public roads, especially along high-impact corridors such as the PCH.
- Provide safe, organized parking for trucks, improving driver welfare and streamlining delivery schedules.

Benefits include improved road safety, reduced road traffic congestion, reduced costs, lower emissions, and streamlined schedules.



7.1.1. Phased Implementation Strategy

To manage the influx of construction deliveries effectively from the start of the Rebuild, the Logistics Framework employs a **"Two-Phase" Implementation Strategy**. This approach distinguishes between the immediate protocols required to mitigate traffic initially and the advanced automated systems that can be activated if delivery volumes scale beyond manual capacity.

The detailed technical specifications for the **PALMS** described in the subsequent sections serve as a **comprehensive operational blueprint**. While they define the full capabilities of an automated booking platform, the City is not required to deploy this technology immediately. Instead, implementation follows a logical progression:

Phase 1: Immediate Logistics Protocol (Guidelines and Manual Coordination)

The primary objective of Phase 1 is to "flatten the peak" of construction traffic through policy and manual scheduling, utilizing existing City authority without complex software procurement.

- **Mechanism:** Implementation of **Logistics and Delivery Guidelines** distributed to all contractors during the permitting process. These guidelines establish mandatory "delivery windows," restricted hours, and "staging protocols."
- **Tracking:** Contractors submit projected delivery schedules via a **Standard Logistics Form** (web-based or PDF) to the SIG for review. This allows the City to identify major conflicts—such as two concrete pours scheduled for the same block—using simple administrative tools.
- **Enforcement:** Field staff and **Complaint-Driven Enforcement** verify that vehicles are not idling or staging in prohibited areas during peak hours.

Phase 2: Automated Logistics Management (Future State)

The transition to Phase 2 is conditional, designed to be triggered only if operational demand necessitates automation AND if specific funding is secured.

- **Triggers for Activation:** The City may elect to deploy the automated platform only if:
  1. Simultaneous delivery volume creates recurring gridlock that exceeds manual management capacity;
  2. **Grant funding or cost-recovery revenues** are secured to cover software development and maintenance costs; or
  3. The sheer number of active permits requires automated deconfliction.
- **Tools:** Activation of the **PALMS**—a reservation-based application that contractors use to book specific delivery slots.
- **Automation:** The system automatically approves or denies requests based on roadway capacity, replacing manual SIG review.

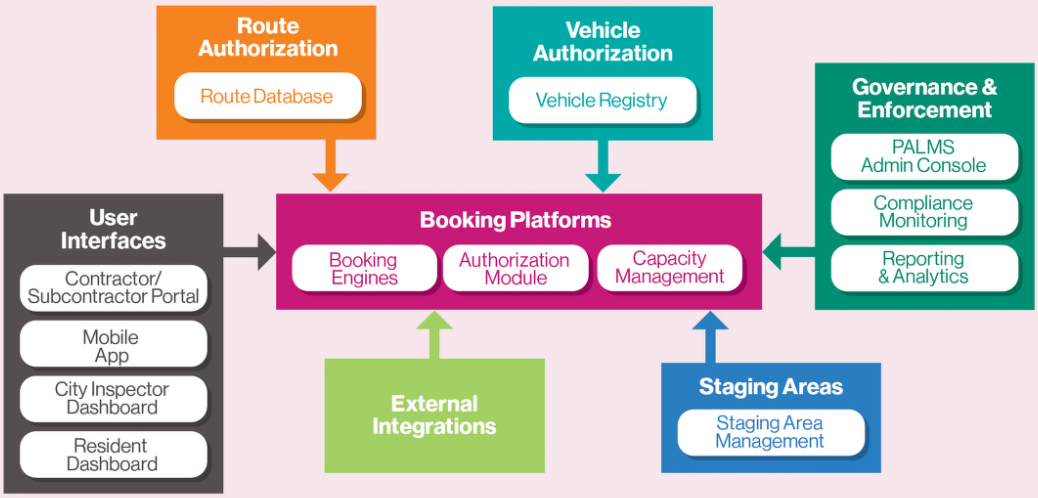
Blueprint for Activation

The software architecture, user interfaces, and functional requirements detailed in the remainder of this section serve as the **future-state vision**. They ensure that if the City identifies a critical need based on traffic demand and secures the necessary resources, the **operational architecture is ready to be activated** without further planning delays.

7.2. PALMS Booking System

The PALMS booking system can act as the "operating system" for logistics coordination, dynamically using real-time data to plan and adjust deliveries, staging, and routing. Rather than being static, the system can continuously replan based on traffic conditions, staging yard capacity, and site readiness, ensuring that construction flows remain efficient under changing circumstances. As above, some or all elements could be incorporated into the existing Los Angeles PWRS rather than as a stand-alone system, depending on the final requirements and specifications of the scheme.

Figure 7.1: FALMS bookings platform



In addition, in their *Recovery and Rebuilding Logistics Plan*, the Palisades Recovery Coalition has noted that they are working on a collective contractor app that with functions including helping to manage deliveries and co-ordinate schedules (Palisades Recovery Coalition 2025a). It may be that some aspects of the PALMS booking system could integrate within this. Critical elements of the PALMS Booking System include:

- **Dynamic Scheduling:** The system can reallocate slots or reroute vehicles if congestion thresholds are reached or if a site is not ready.
- **Integrated Data Layers:** GIS-based route databases, vehicle registries and staging area occupancy data feed into the booking engine to validate routes and enforce restrictions.
- **Governance and Enforcement:** Compliance monitoring and reporting tools can help enforce approved routes and time windows, reducing unauthorized trips.
- **User Interfaces:** Contractors and subcontractors can book slots via a portal or mobile app, while city inspectors and residents may access dashboards for visibility and notifications.
- **Ease of Use:** The system can provide automated confirmations, route maps and potentially geo-fenced check-ins to streamline the process for operators.

Figure 7.1 illustrates how these components interact:

- **Front-End Layer:** Contractor portal, mobile app, inspector dashboard and resident dashboard.
- **Core Logic:** Booking engine, authorization module and capacity management.
- **Data and Integration Layer:** GIS route database, vehicle registry, staging area management and external integrations for notifications and field data capture.
- **Governance Layer:** Admin console, compliance monitoring and analytics for trip volumes and route usage.

Below demonstrates how a potential booking system may work:

Booking Flow:

1. Subcontractor schedules a slot via portal or app.
2. System checks route permits, staging slot availability, site capacity, and delivery time compliance (authorized bookings during peak hours).
3. If the site is not ready, the vehicle is diverted to a PALMS holding bay until called forward.

This dynamic, data-driven approach ensures that PALMS is a real-time coordination platform that minimizes congestion, improves safety, and provides transparency for all stakeholders.

Additional functions if available:

- Geofenced automated check-in at PALMS gates.
- Oversize load flagging for haul-route review.
- Resident dashboard for real-time delivery updates and notifications for exceptional deliveries.



7.3. The Impact of Logistics Consolidation

Consolidation helps lead to:

- **Improved Efficiency:** Centralized deliveries reduces on-site congestion and streamlines material handling, saving time and labor.
- **Reduced Environmental Impact:** Fewer vehicle movements to site lead to lower emissions and noise, supporting sustainability goals.
- **Enhanced Site Safety and Control:** Consolidated logistics improve traffic management and reduce risks associated with uncontrolled deliveries.

Three scenarios (Figures 7.2 through 7.4) have been developed to demonstrate the potential impact of consolidation and the need for it in the Pacific Palisades, linking with the PALMS concept.

Scenario 1 – no consolidation: Each supplier delivers material directly to the construction site when required. This includes both full vehicle loads, such as concrete, and smaller, more frequent deliveries of items like lumber, windows, and landscaping supplies. Vehicles are then driven back to suppliers, returning waste, damaged goods, pallets, and stillage to suppliers on their return journeys.

Figure 7.2: Scenario 1 – no consolidation

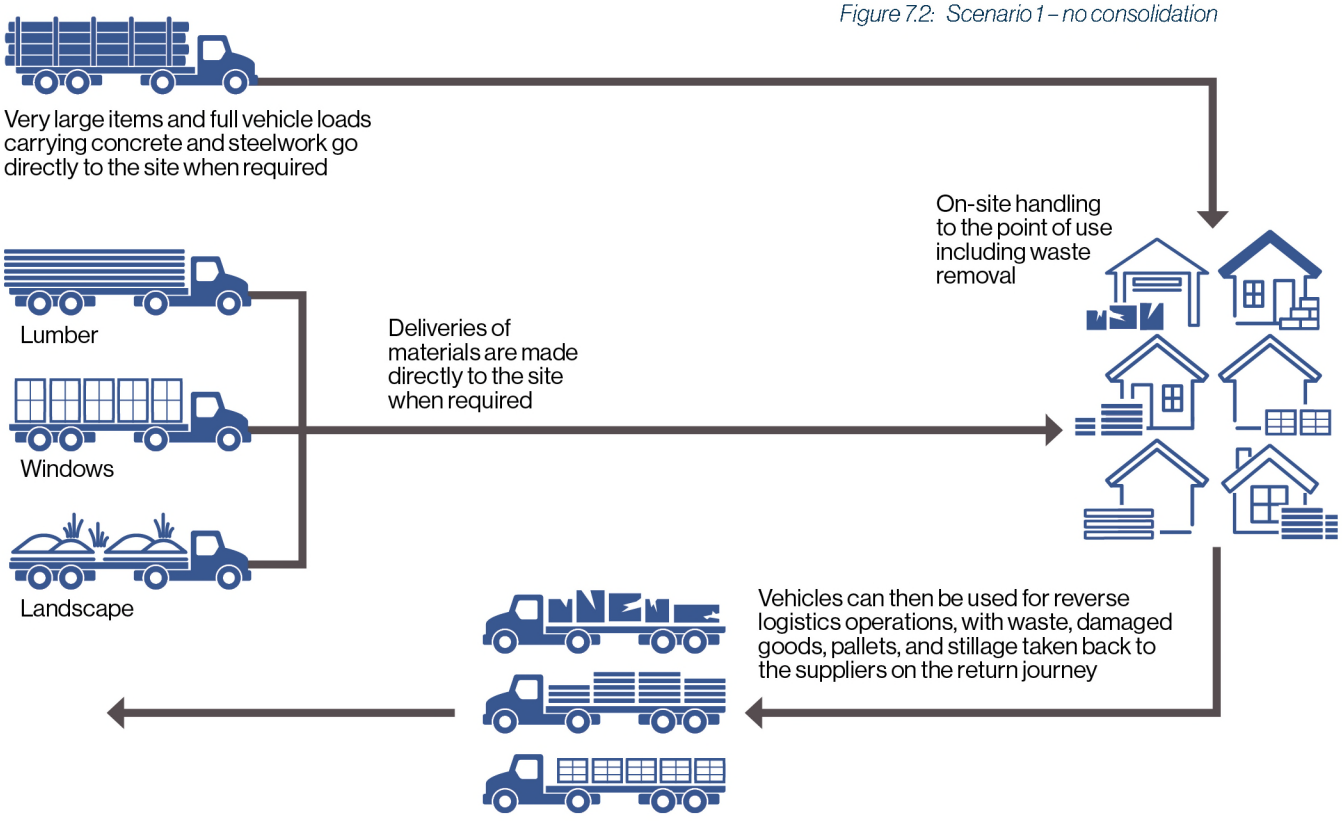
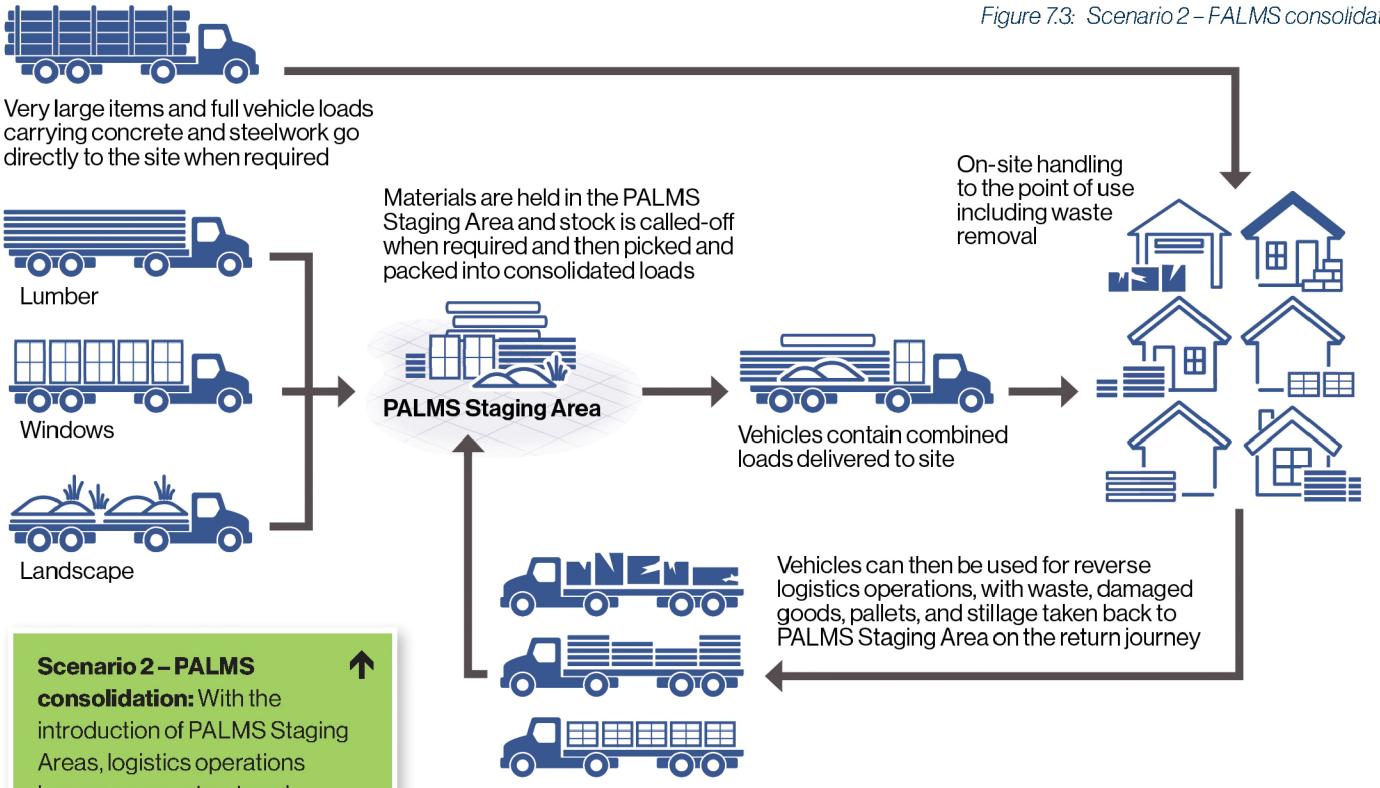


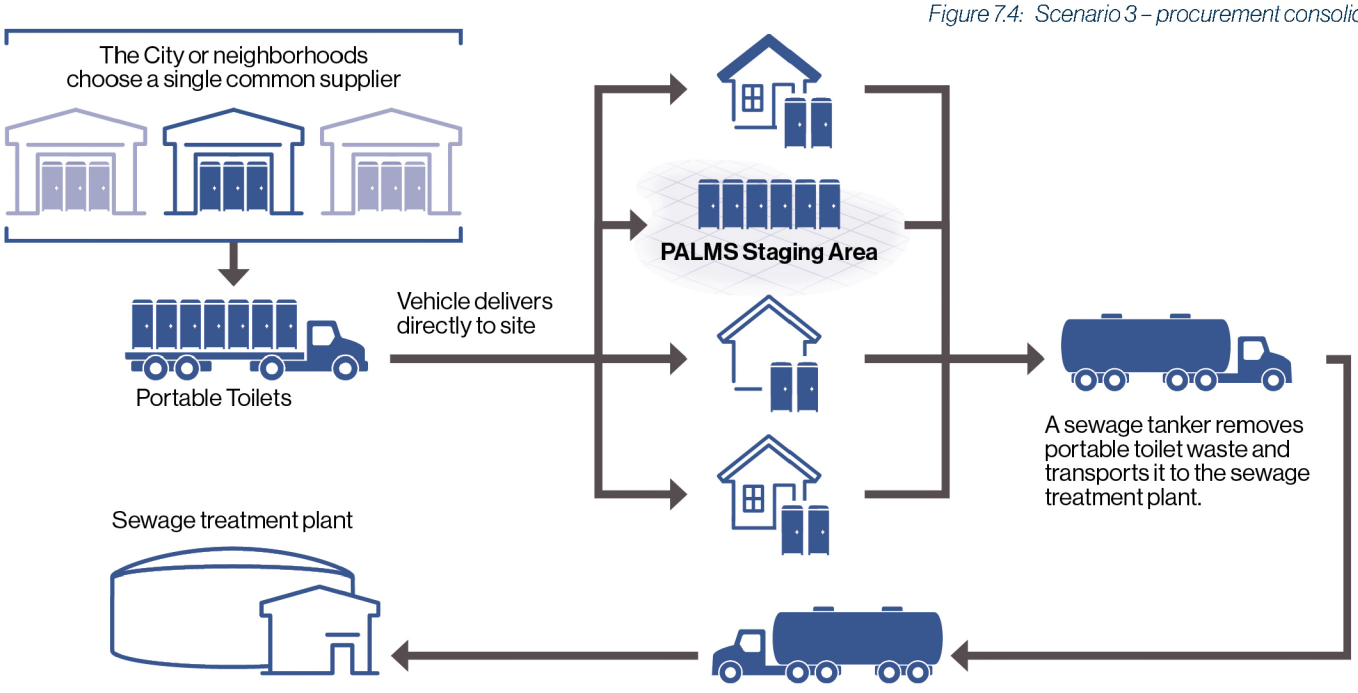
Figure 7.3: Scenario 2 – FALMS consolidation



Scenario 2 – PALMS consolidation: With the introduction of PALMS Staging Areas, logistics operations become more structured. Suppliers deliver materials to the staging area rather than directly to site. These materials are then stored, picked, and packed into consolidated loads before being dispatched to the construction site. Reverse logistics operations can also be routed through the staging areas.

Scenario 3 – procurement consolidation: In the procurement consolidation model, the City, or neighborhoods, choose a single, common supplier to coordinate material and service delivery. This consolidated approach improves efficiency and allows for the select supplier to deliver directly to each construction location. Reverse logistics continues to function as before, with waste and/or reusable materials collected from the sites and returned to the supplier for processing or reuse.

Figure 7.4: Scenario 3 – procurement consolidation



Effective traffic and logistics management will be essential to maintaining community functionality during reconstruction. In shaping our Logistics and Traffic Management Plan, we have carefully taken into account the insights and recommendations of the Palisades Recovery Coalition—a community-rooted, volunteer-led organization built by Palisadians, for Palisadians. The following strategies have been noted as key considerations in balancing reconstruction needs with safety, accessibility, and community well-being:

- **Coordinated Routing:** Construction deliveries will follow time-sensitive routes, eastbound inbound traffic in the morning and westbound outbound in the afternoon, primarily via Chautauqua or Sunset Boulevard to minimize bottlenecks.
- **Heavy Haul Scheduling:** Large material transports will occur during off-peak hours (late night or early morning) to lessen disruption.
- **Worker and Material Staging:** Designated staging areas will be established for both materials and workers to reduce vehicle trips in and out of Pacific Palisades.
- **On-Site Worker Housing and/or Transportation:** Temporary accommodation and shuttle services will be considered to further reduce daily traffic and facilitate faster reconstruction.

These coordinated measures aim to balance rapid rebuilding with the preservation of safety, mobility, and community quality of life.

7.3.1. County Blueprint

It is important to address the coordination of supply chains, material sourcing, and shared city-administered services to support efficient and cost-effective rebuilding in the Pacific Palisades.

The *LA County Forward: Blueprint for Rebuilding* emphasizes the importance of collaboration between the city and private companies to stabilize prices and leverage economies of scale (County of Los Angeles 2025). Reflecting this approach, the City should explore mechanisms to coordinate both material supply and on-site services.

Key actions may include:

- Centralized purchasing and material supply through local or regional hubs, such as shared depots or on-site concrete batching facilities, to reduce delivery times and costs.
- Partnerships with private suppliers and contractors to manage bulk procurement of key materials (e.g., lumber, steel, and concrete), promoting price transparency and consistency.
- City-administered common services, including waste collection, recycling, and portable toilet servicing, to ensure alignment with environmental goals.
- Integration of food vendors and support services at staging areas to meet workforce and community needs during reconstruction.

This integrated approach would streamline operations, reduce costs, enhance coordination across contractors and suppliers, and support sustainable recovery in alignment with the *LA County Forward: Blueprint for Rebuilding* (County of Los Angeles 2025).

7.4. Neighborhood-Level Analysis

A neighborhood-level analysis is critical as reconstruction impacts are not uniform across the Pacific Palisades neighborhoods. Each area has unique street layouts, possible access constraints and varying levels of destruction, which directly influence traffic intensity and delivery patterns. By modeling trip volumes at this level, planners can anticipate higher-congestion neighborhoods and apply targeted traffic governance measures, such as dynamic routing, time-of-day restrictions and adaptive staging zones, to manage peak construction periods. This approach enables proactive monitoring and control of material deliveries and worker access, ensuring that heavily affected neighborhoods like Alphabet Streets and Via Bluffs receive tailored logistics strategies. Neighborhood-level trip data supports congestion mitigation and emissions reduction, minimizing disruption. In their *Recovery and Rebuilding Logistics Plan*, the Palisades Recovery Coalition has noted that the scale of reconstruction is expected to be "immense," with over 1,000 truck trips per day and thousands of workers expected (Palisades Recovery Coalition 2025a).

7.4.1. Trips Calculations

The Trip Calculator provides a structured view of trip volumes by neighborhood and by material source location, enabling planners to anticipate traffic impacts during peak construction periods.

Table 7.1: Round Trips by Neighborhood Table

Round Trip Calculator	Houses			Total Trips		Peak Trips in a Semester (6 months)		Average Trips Per Month in Peak Semester		Average Trips Per Working Day in Peak Semester	
Pacific Palisades Neighborhoods	Destroyed	Total	% Destroyed	Consolidated	Unconsolid.	Consolidated	Unconsolid.	Consolidated	Unconsolid.	Consolidated	Unconsolid.
Alphabet Streets	1,577	1,748	90%	943,861	1,348,372	188,772	269,674	31,462	44,946	1,498	2,140
Bel Air Bay	79	119	66%	54,401	77,715	10,880	15,543	1,813	2,591	86	123
Bienveneda	63	248	25%	43,383	61,975	8,677	12,395	1,446	2,066	69	98
Canyon	8	1,000	1%	5,509	7,870	1,102	1,574	184	262	9	12
Castellamare	143	401	36%	98,472	140,674	19,694	28,135	3,282	4,689	156	223
El Medio Bluffs	409	787	52%	281,644	402,348	56,329	80,470	9,388	13,412	447	639
El Medio Palisair	143	371	39%	98,472	140,674	19,694	28,135	3,282	4,689	156	223
Highlands-Lower	30	436	7%	20,658	29,512	4,132	5,902	689	984	33	47
Highlands-Upper	193	627	31%	132,903	189,861	26,581	37,972	4,430	6,329	211	301
Huntington	245	593	41%	168,711	241,015	33,742	48,203	5,624	8,034	268	383
Las Casas	311	348	89%	214,159	305,942	42,832	61,188	7,139	10,198	340	486
Marquez Lower	322	376	86%	221,734	316,763	44,347	63,353	7,391	10,559	352	503
Marquez Upper	79	306	26%	54,401	77,715	10,880	15,543	1,813	2,591	86	123
Marquez Knolls	441	630	70%	229,109	327,299	45,822	65,460	7,637	10,910	364	520
Paseo Miramar	35	85	41%	24,102	34,431	4,820	6,886	803	1,148	38	55
Riveria	25	700	4%	17,215	24,593	3,443	4,919	574	820	27	39
Sunset Mesa	310	611	51%	213,471	304,958	42,694	60,992	7,116	10,165	339	484
Tahitian Terrace	313	314	100%	215,537	307,910	43,107	61,582	7,185	10,264	342	489
Via Bluffs	905	1,018	89%	541,657	773,796	108,331	154,759	18,055	25,793	860	1,228
Will Rogers	68	96	71%	46,826	66,894	9,365	13,379	1,561	2,230	74	106
Total	**5,699**	**10,814**	**-**	**3,626,224**	**5,180,319**	**725,245**	**1,036,064**	**120,874**	**172,677**	**5,756**	**8,223**

Unconsolid. = *Unconsolidated*

7.4.2. Neighborhood-Level Analysis

Each neighborhood is listed with:

- Houses Destroyed, Total Houses, and Percentage Destroyed (sourced from the Pacific Palisades Neighborhoods dataset).
- Total Trips for consolidated material and labor movements (Appendix B-1).
- Total Trips for unconsolidated material and labor movements, based on a 70% consolidation factor
- Peak Trips in a Semester (6 months), derived from the fast construction scenario in the Projected Construction Employment Needs – Eaton and Palisades table (20% peak employment assumed to equal peak trip demand) (ULI 2025).
- Average Trips per Month and Average Trips per Working Day during the peak semester, based on an average of 21 working days in a month.

This allows planners to see how trip volumes scale during peak construction periods, and which neighborhoods will generate the most traffic.

- Peak semesters will see significantly higher trip volumes, which can strain local roads.
- Alphabet Streets followed by Via Bluffs stand out as the two largest contributors to inbound trips due to their high destruction percentages and total house counts.

Inputs like peak construction percentage and trips per house can be adjusted to test different recovery timelines.

Table 7.2: Average Trips per Working Day by Neighborhood

Pacific Palisades Neighborhood	Consolidated	Unconsolidated
Alphabet Streets	1,498	2,140
Bel Air Bay	86	123
Bienveneda	69	98
Canyon	9	12
Castellamare	156	223
El Medio Bluffs	447	639
El Medio Palisair	156	223
Highlands-Lower	33	47
Highlands-Upper	211	301
Huntington	268	383
Las Casas	340	486
Marquez Lower	352	503
Marquez Upper	86	123
Marquez Knolls	364	520
Paseo Miramar	38	55
Riveria	27	39
Sunset Mesa	339	484
Tahitian Terrace	342	489
Via Bluffs	860	1,228
Will Rogers	74	106
Total	5,756	8,223

7.4.3. Adaptive Management Trigger Levels

Traffic conditions and delivery patterns will be continuously reviewed. If thresholds for trips are exceeded, the following management levels can apply:

- **Level 1:** Time-of-day restrictions for deliveries.
- **Level 2:** Staggered delivery schedules, adjust or redistribute delivery windows among operators to balance traffic flows.
- **Level 3:** Temporary re-routing or forced consolidation requirements.

This ensures that as construction intensity increases, management responses scale appropriately. It supports efficient logistics, public safety and sustainability while maintaining flexibility for contractors.

7.5. PALMS Staging Areas

By establishing logistics staging areas, efficiency during the reconstruction phase can be significantly improved. These areas are designated zones used to organize, prepare, and temporarily hold materials, equipment, vehicles, or workers before they are moved to their destination. They are critical in supply chain and construction operations for maintaining efficiency and coordination.

By positioning materials, equipment, and workers close to the work zone, PALMS Staging Areas:

- Reduce transportation costs
- Minimize delivery delays
- Ease traffic congestion
- Lower emissions and reduce wear on public roads, especially along high-impact corridors such as the PCH.
- Provide safe, organized parking for trucks, improving driver welfare and streamlining delivery schedules.

Overall, they support better coordination, faster project timelines, and a more environmentally responsible approach to construction logistics.

There are several key elements of the PALMS staging areas, some of which will be easier to implement and some more difficult as listed below:

Easier Wins (common/non-competitive):

- Worker welfare: toilets, shade tents, refreshment stations.
- Secure tool storage and worker lockers.
- Waste and recycling stations.
- Worker parking to reduce local street congestion.
- Vehicle holding/wait zones so trucks remain off-street until their time slot is approved.

Harder to Implement (requires governance and buy-in):

- Materials holding (buffer stock of framing lumber, drywall).
- Load consolidation (combining deliveries before the last mile).
- Common procurement of bulk/core items (e.g., concrete, rebar, sand) can lend efficiency gains, but face potential contractor resistance.

The Staging Areas will place strong emphasis on welfare facilities for both workers and delivery drivers, enabling them to complete their work efficiently while reducing car trips on the local network.

7.5.1. Potential Locations of Staging Areas

The General Site Selection Criteria has been identified as follows:

- **Easement Impacts and Overhead Power Lines:** Sites will be evaluated for potential conflicts with existing easements and overhead power lines to ensure construction safety and regulatory compliance, minimizing disruptions to utility services.
- **Proximity to Residential or Commercial Buildings:** The distance from staging sites to currently inhabited residential dwelling units (D.U.) or commercial buildings will be assessed to minimize noise, dust, and other disturbances, thereby safeguarding community well-being.
- **Street Classification for Access:** Access routes are being reviewed according to their classification—local, collector, or arterial. Priority will be given to sites with access via arterial or collector streets to enable efficient transportation of materials and equipment while reducing traffic impact on local roads.

7.5.2. Logistical Approach and Key Tasks

Launch Logistics and Access Planning Taskforce:

- Coordinate with key stakeholders such as the BOE, LADOT, DWP, Streets Services, LAFD, LAPD, EMD, and other relevant departments.
- Define impact zones, staging areas, access constraints, and recovery activity timelines to ensure seamless operational integration.

Assess Physical and Operational Constraints:

- Inventory damage to critical infrastructure including roads, bridges, intersections, traffic signals, and signage.
- Identify debris piles, road obstructions, slope failures, and unsafe conditions that may impact site access.
- Map emergency access routes, school zones, hospitals, and evacuation corridors to facilitate timely and safe transit during recovery operations.
- Use proper best management practice measures to proactively address potential slope failures due to future storm events.

Identify Material, Equipment, and Labor Staging Requirements:

- Define the volume and frequency of material deliveries such as aggregates, lumber, and utility facilities and appurtenances.
- Assess the need for laydown yards, container storage, field offices, contractor mobilization zones, and temporary workforce housing to support crews moving from outside the community.
- Identify potential staging locations on public or private parcels, considering easement and permitting requirements.

By integrating these logistical tasks with the currently defined site selection parameters, the Palisades Rebuild project is set to implement a robust framework for staging site management. This comprehensive approach ensures that all operational, physical, and community factors are addressed, ultimately leading to a smoother, safer, and more efficient rebuilding process.

Based upon these key parameters, the nine sites included in Table 7.3 and Figure 7.5 have been selected.

Table 7.3: FALMS Staging Area Sites

Site	Site Location	Size (acres)	Overhead Powerline Conflicts	Nearby Residential Status	Road Access Classification
1	Temescal Canyon Public Park	2.5	None	Optimal distance from residential/commercial	Arterial
2	Palisades Recreation Center	15.5	None	Mostly uninhabited due to burn area	Local
3	Rustic Canyon Recreation Center	0.94	None over parking lot; powerlines east of Latimer Road	Inhabited	Local
4	Paul Revere Soccer Fields	4.1	None	Occupied; school in session	Collector
5	Palisades Drive roadside pullout	0.8	None	No inhabited residential nearby	Arterial
6	HOA 1	2.7	None	Inhabited residential across Palisades Drive	Arterial
7	HOA 2	2.5	None	Inhabited residential across Palisades Drive	Arterial
8	Santa Ynez Reservoir	0.96	None	No inhabited residential nearby	Local
9	1433 Monte Grande Place	0.1	None	Located in residential area; mostly uninhabited	Local

Figure 7.5: Proposed staging sites



7.5.3. Next Steps

After our preliminary evaluation of the logistical parameters and site selection criteria, it has been concluded that the laydown areas may be strategically positioned near the burn sites. This decision ensures optimal access to the affected zones, facilitating efficient transportation of materials and equipment, and expediting the rebuilding process.

Moving forward, additional research and analysis will be conducted to address factors such as easements, encumbrances, environmental constraints, and other potential conflicts. This will involve close collaboration with all relevant stakeholders, including local authorities, community representatives, and environmental agencies, to ensure that all considerations are comprehensively addressed. By maintaining a flexible and informed approach, the project team is committed to adapting to information and challenges as they arise in the future, ensuring the successful execution of the Palisades Rebuild project.

7.5.4. Potential Layouts of Staging Areas

This section gives an indication of what the layouts of staging areas in the Pacific Palisades could be like and the potential approximate size dimensions required. It is important to note that the final locations of staging areas are unlikely to be perfect rectangles and more irregular in shape, and this may impact exact layouts and configurations. In addition, once any process of finalizing layouts commences, these will need to be checked to ensure they are compliant with all related Los Angeles codes, such as those related to setbacks, and other related traffic control measures.

Figure 7.6 illustrates a compact waste management plant designed to process construction debris from the Pacific Palisades redevelopment. The facility spans approximately 165 by 130 feet. Trucks enter at a designated entrance and have their documents checked before unloading waste in a central sorting area, where materials are separated and placed into four designated dumpsters. Once sorted, outbound trucks load materials to take the waste away when needed.

Figure 7.6: Indicative layout of a waste management plant

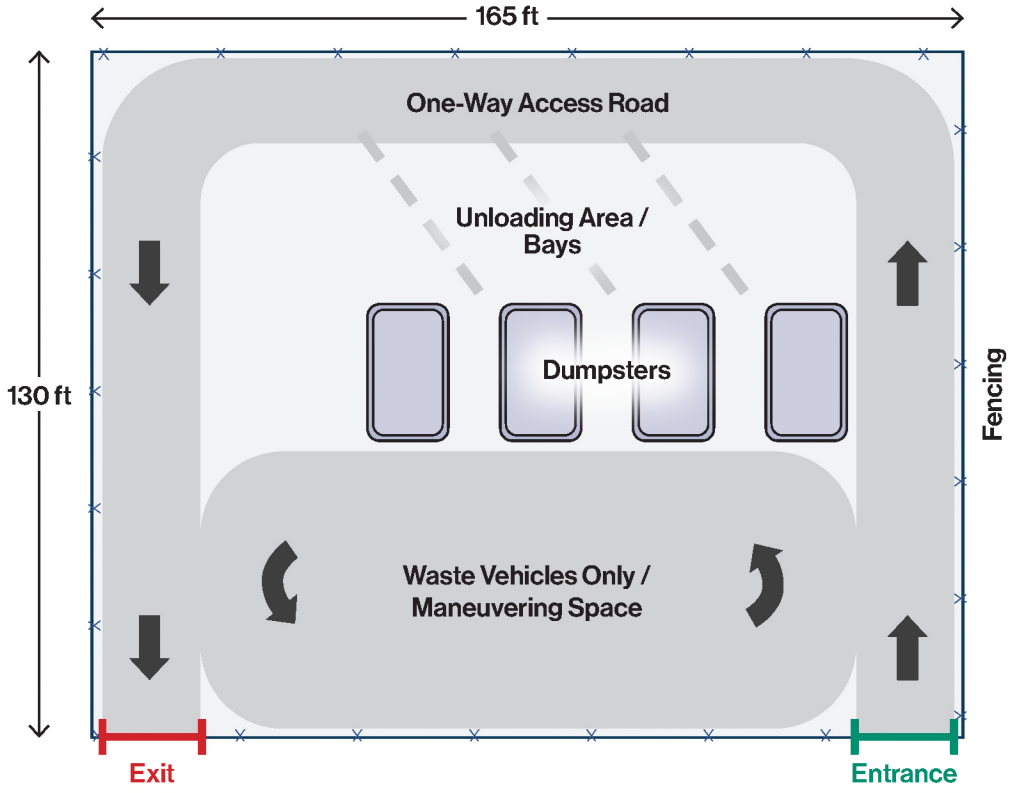


Figure 7.7 illustrates a planned contractor facility and vehicle holding area for use when drivers are waiting to enter some of the other staging areas, or as a general parking area. Trucks enter through a designated gate and first stop at the checking area for document verification. There is a mobile office trailer equipped with key amenities including toilets, showers, and a number of food options enabling drivers to rest and refresh. This area could also incorporate food trucks to provide options for users. Next to this area are secure, lockable sheds for storage. The site also includes four designated parking spaces/holding areas for trucks.

Figure 7.7: Indicative layout of a contractor facility and vehicle holding area

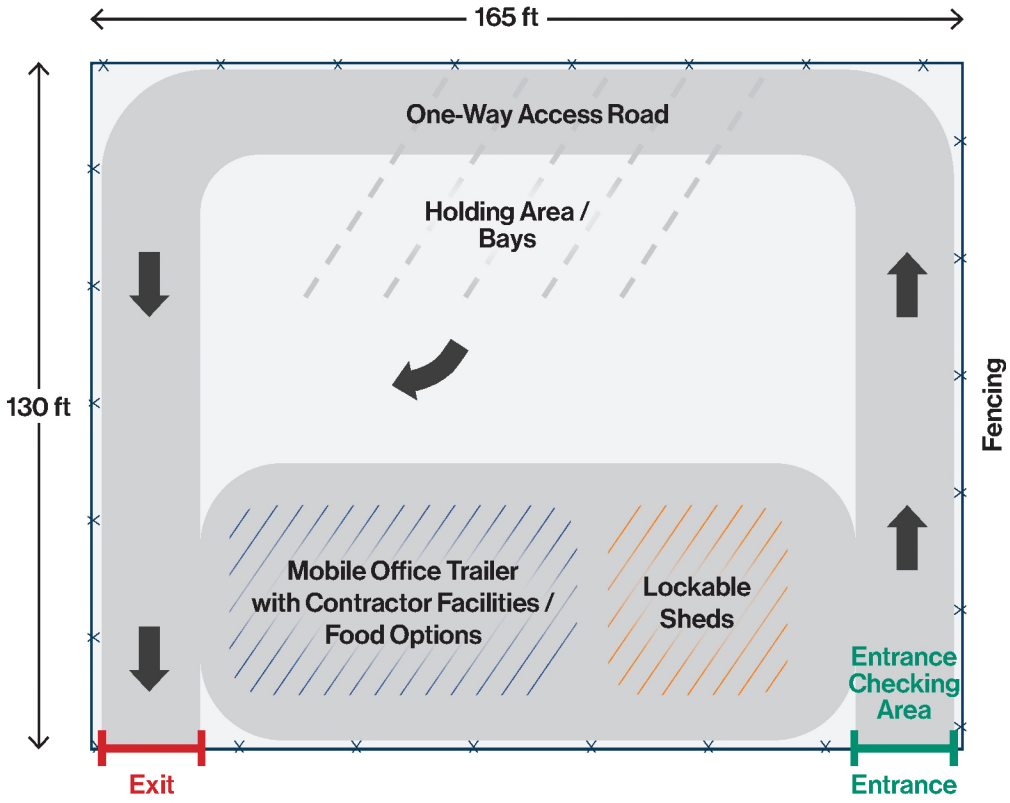


Figure 7.8 shows the planned layout of a storage facility for wholesale building materials supporting the Pacific Palisades redevelopment. Trucks enter through a gate and have their documents checked. Inbound trucks then unload materials at the bottom of the site into the Goods unload in a central lay-down and sorting Area, where items are organized and moved into the main sorting area. When needed, materials are loaded onto outbound trucks for delivery to construction sites in the Pacific Palisades.

In their *Logistics Recovery Plan*, the Palisades Recovery Coalition has noted that food options could also be available in community hubs, which could also include a workers hall and a builders gathering area (Palisades Recovery Coalition 2025b).

Figure 7.8: Indicative layout of a storage facility

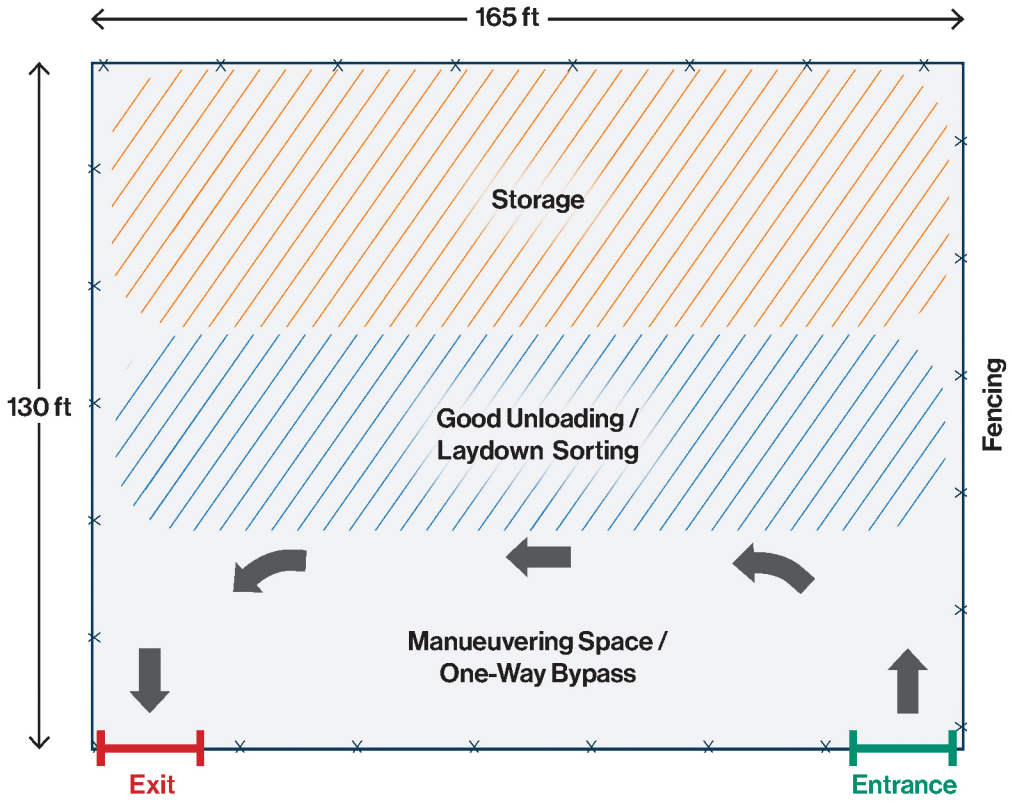
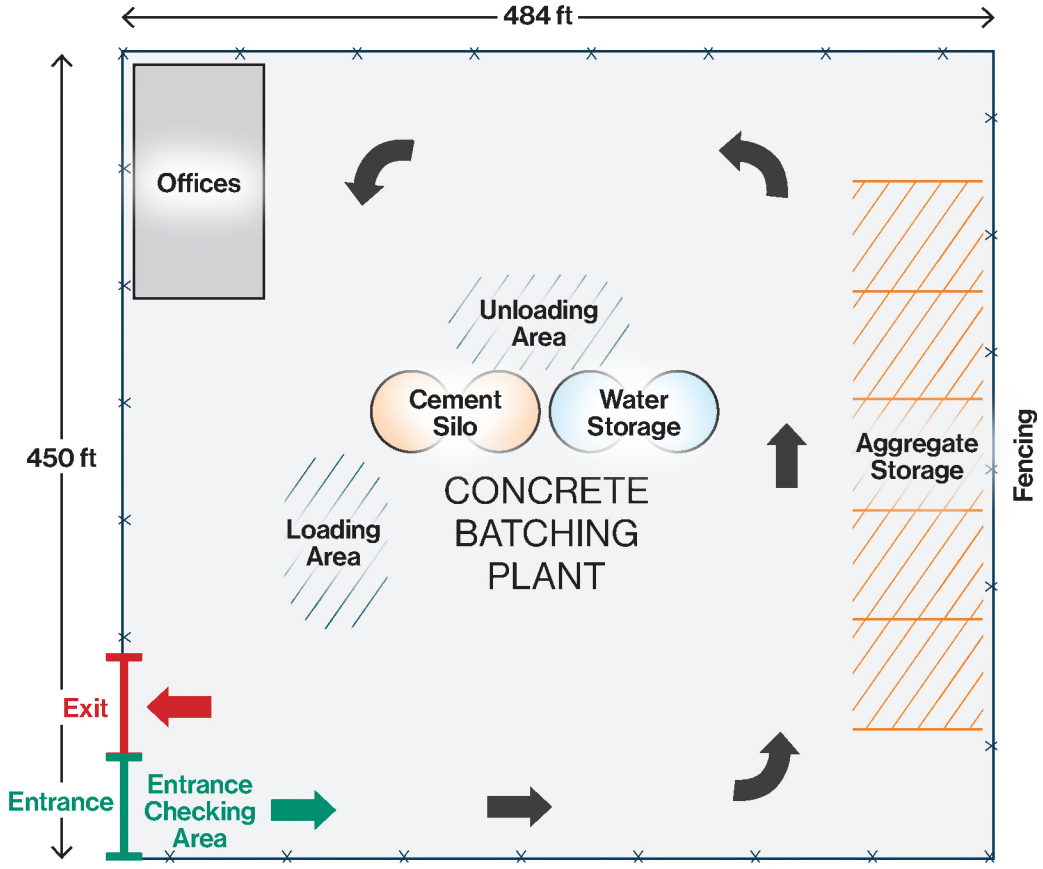


Figure 7.9 presents the layout of a concrete batching plant designed to support the Pacific Palisades redevelopment. This is larger than the other staging areas, with typical batching plants being around 5 acres in area. Trucks carrying raw materials enter through a gate and firstly stop at the checking area for document verification. Materials are then unloaded and moved into a storage area prior to being processed in the batching plant. Cement silos and water storage areas also provided to provide a specialist holding solution for these commodities. Once mixed, the final product is loaded onto outbound vehicles for delivery to nearby construction sites in the Pacific Palisades.

On-site batching offers key advantages: it ensures concrete is mixed close to where it's used and also reduces transport delays.

Figure 7.9: Indicative layout of a concrete batching plant



In their *Logistics Recovery Plan*, the Palisades Recovery Coalition has noted that they intend to mix concrete in a central location in the Palisades. This would be a mix specific to the Palisades Rebuild. Having concrete plants in the Pacific Palisades will also save on delivery costs (Palisades Recovery Coalition 2025b).

In addition to the above, there is also the potential for construction worker housing to be included within staging areas, depending on how this is expected to be managed as part of the Rebuild. This would enable workers to make use of facilities within staging areas, however there could be alternative locations that are dedicated to worker housing, which is more tailor-made to the needs of construction workers. Any construction worker housing would need to be:

- Appropriately located to enable workers to be close to sites
- Have amenities, including food trucks or similar facilities, available to construction workers
- Be large enough to accommodate expected numbers of workers

7.6. PALMS Route Classifications

Figure 7.10 and Figure 7.11 demonstrate potential classifications of the road network around the Pacific Palisades where PALMS may be applied.

It is expected that Temescal Canyon Road will be the primary entry to the Pacific Palisades for logistics movements.

Some of the lumber yards and concrete plants located close to the Pacific Palisades have also been marked. These are not exhaustive but give an indication of where some of the truck movements may be coming to the Pacific Palisades from.

In their *Logistics Recovery Plan,* the Palisades Recovery Coalition proposes that in areas of Pacific Palisades where the burn rate exceeds 70%, material deliveries can be made late at night or early in the morning to accommodate reduced travel time and swift rebuilding (Palisades Recovery Program 2025b). This document also notes that traffic flow could be improved by routing morning deliveries eastbound into the Pacific Palisades, and afternoon exits westbound out of Chautauqua Boulevard.

The *Recovery and Rebuilding Logistics Plan* also reinforces the concept of different inbound and outbound flows in the morning and afternoon, with morning flows one way via Chautauqua and Sunset (eastbound) and afternoon flows outbound one way via Chautauqua (westbound) (Palisades Recovery Coalition 2025a).

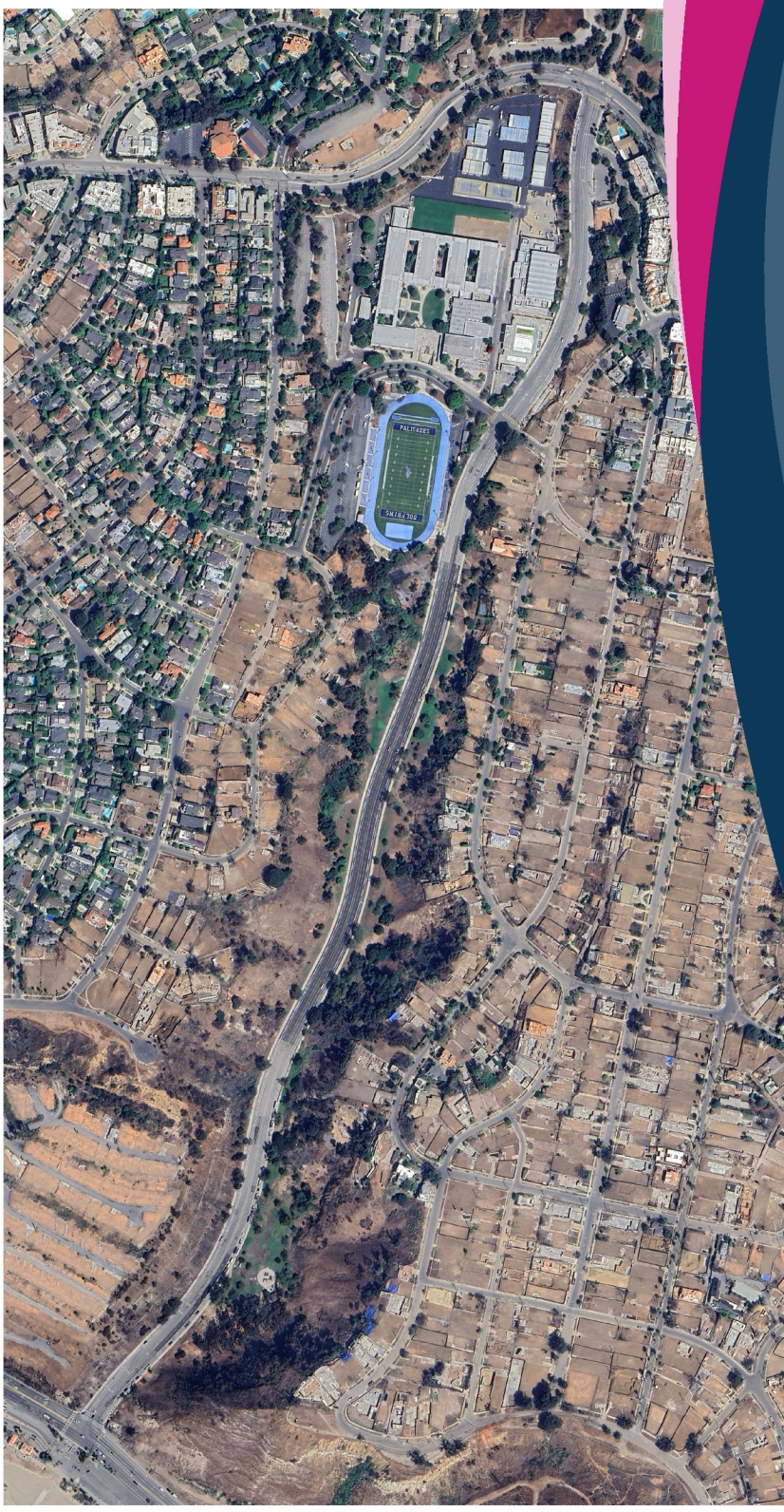


Figure 7.10: Potential route classifications

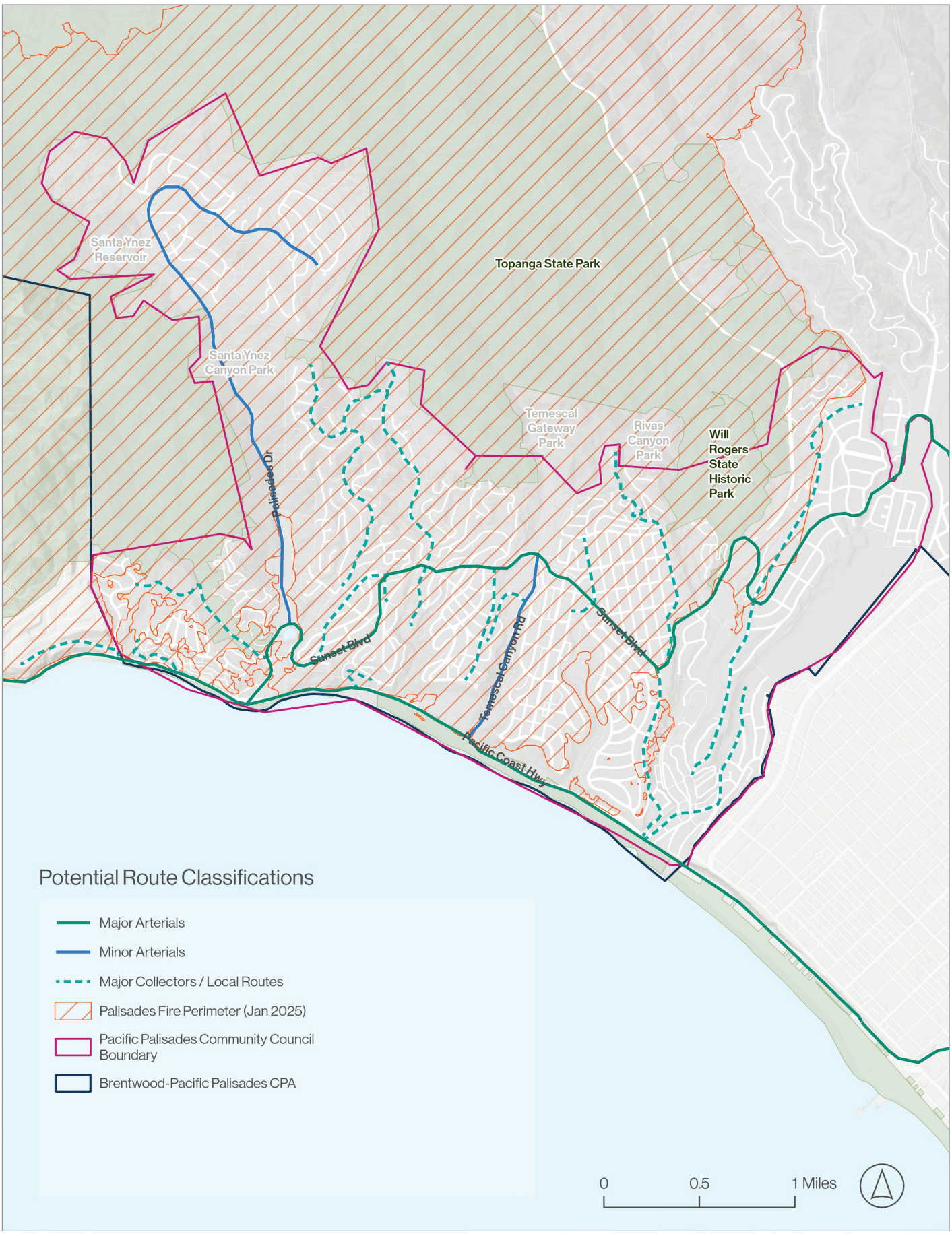
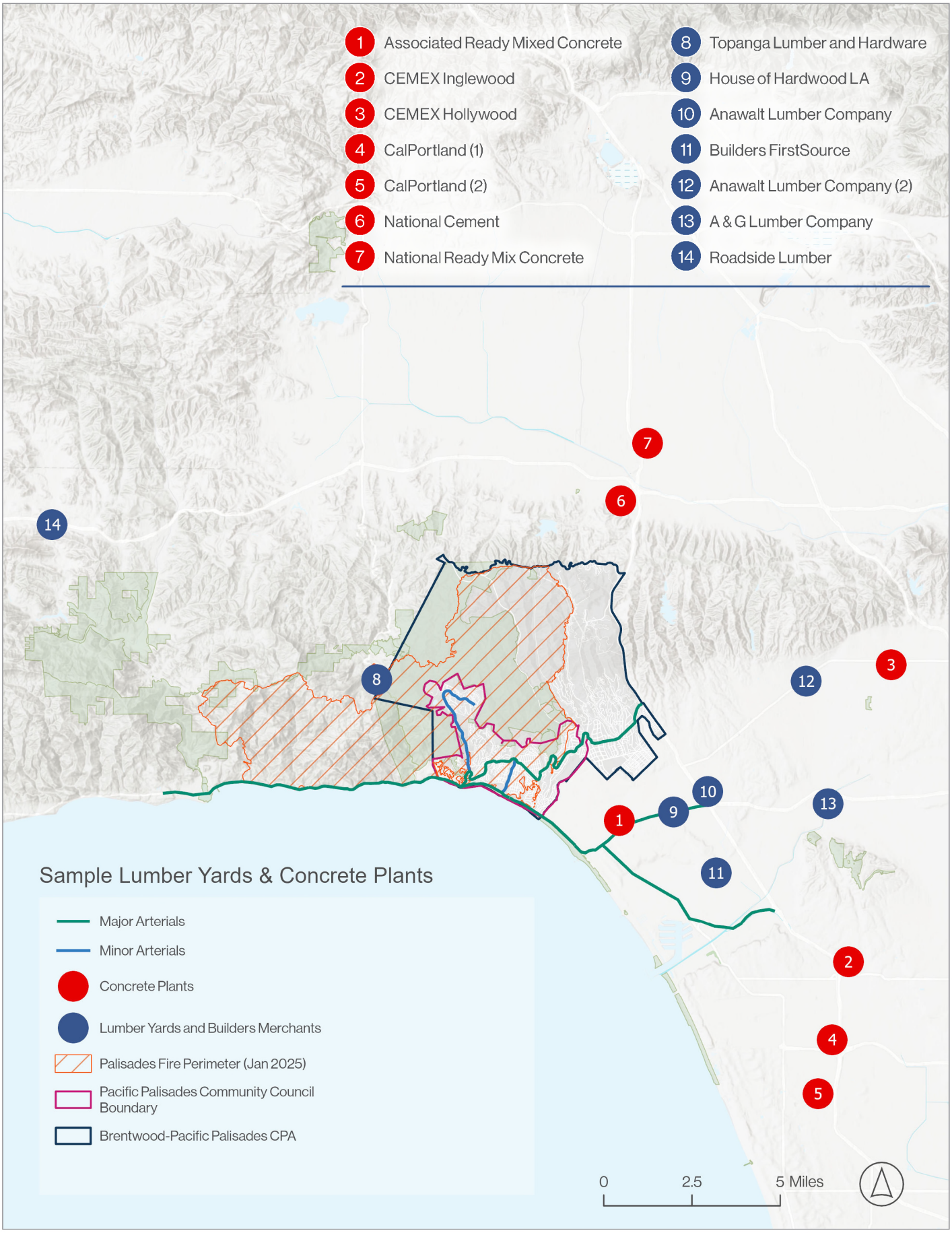


Figure 7.11: Sample lumber yards and concrete plants



7.7. Governance and Enforcement

This section outlines the governance considerations for PALMS and identifies the stakeholders who will play a role in its operation, access control, booking processes, and enforcement.

PALMS would be run by:

- Logistics Manager (appointed by the City/local authority).
- PALMS staff (marshals, staging yard operators, safety officers).

Access would be granted by:

- General Contractors and Subcontractors – self-service booking portal.
- City Inspectors – view-only access for compliance monitoring.
- Residents' Committee – community oversight.

Bookings would be made by:

- Subcontractors for their own deliveries.
- Contractors for large or complex movements (e.g., crane days, concrete pours).
- PALMS admin for overrides (e.g., school day restrictions, fire danger).

Enforcement would include:

- Procedures for un-booked arrivals.
- Restrictions and penalties for unauthorised street parking (e.g. traffic fines could be doubled in construction zones).

7.8. Integration

PALMS connects directly to several other systems that, as a collective, govern the overall logistics, traffic, parking and communications management of the Palisades Rebuild. These are the LCS for lane-closure and work-zone management, the TMPZ for parking and curbside coordination, and the PCCT for public communication and issue tracking. These could form part of a single, integrated dashboard with shared data depending on final implementation.

In addition, PALMS links with complementary management tools that are specific to the Parking and Curb Management stream. This includes Residential and Delivery Access Zones, MFSZs, and CTPZs. that collectively balance efficiency with neighborhood mobility.

PALMS road classifications link with corridor-specific guidance, including road classifications, as noted in the *Traffic Operational Analysis* section. These will underpin any PALMS-related policies that are put into place.

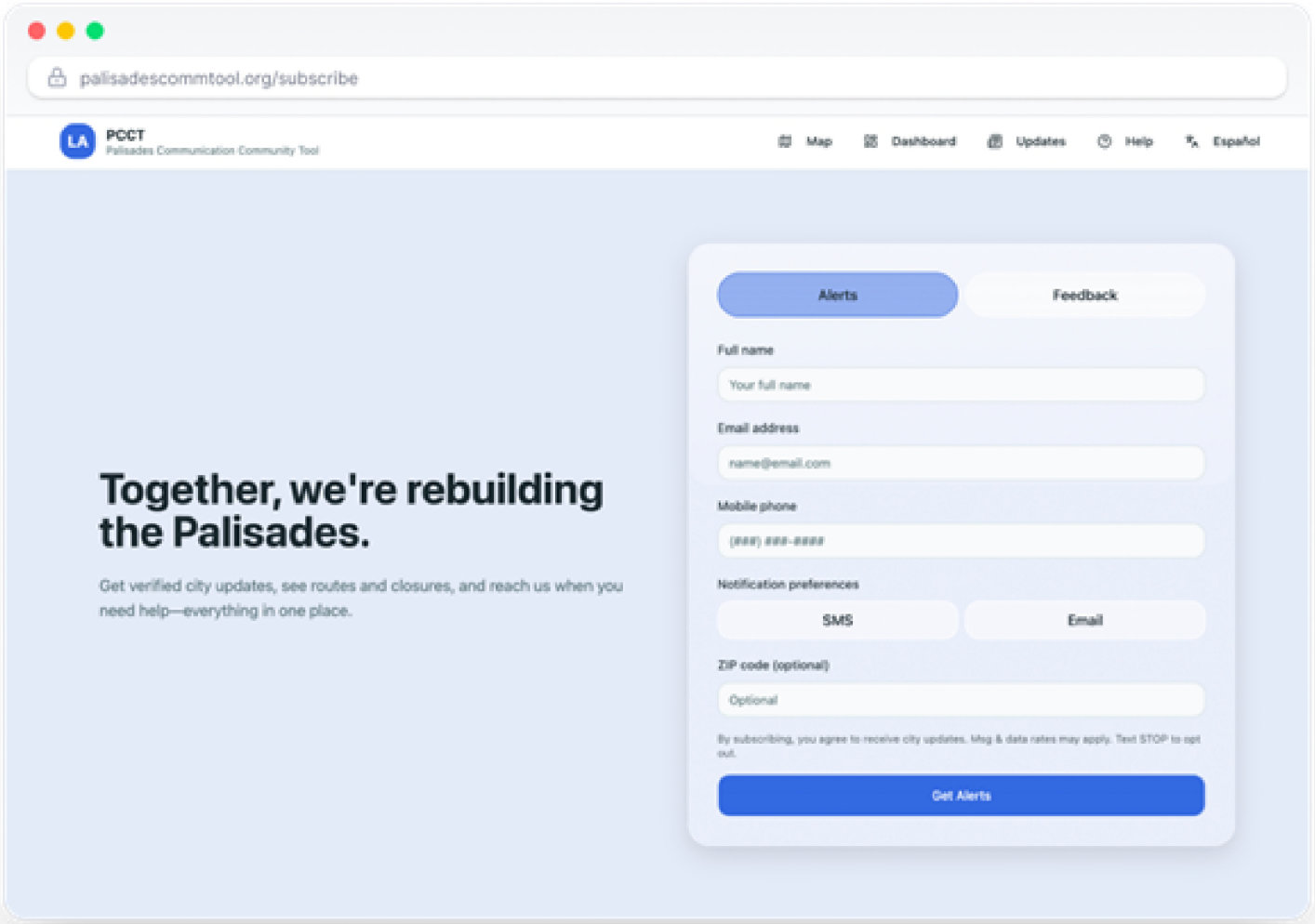
Links with governance of other streams, including Traffic Management and Parking and Curb Management, to ensure these are all considered, and could all be overseen by the same body.



8. Communication and Public Information Tools

Clear, consistent, and accessible communication will be essential to the success of the **Palisades Rebuild Program**. The Rebuild will unfold in a tightly constrained geography with limited access routes, sensitive hillside neighborhoods, and overlapping activity by residents, contractors, utility providers, and emergency responders. In this context, communication is more than an outreach function—it is a form of **digital infrastructure** that ensures the flow of accurate information keeps pace with the flow of traffic, construction, and daily life.

Figure 8.1: Welcome dashboard concept



As construction activity expands, the City's ability to deliver reliable, real-time information will directly affect safety, mobility, and public confidence. Residents will need predictable updates to plan commutes and access their homes safely. Contractors and service providers will require accurate data to schedule work, deliveries, and equipment staging. City agencies will depend on shared dashboards and integrated alerts to coordinate lane closures, inspections, and emergency response. When all of these groups operate from the same trusted information source, congestion decreases, confusion declines, and confidence in the City's management increases.

To meet this need, this Plan recommends that City Leadership—under the direction of the Mayor's Office to establish a SIG to oversee and implement a unified communication system for the Palisades Rebuild. The SIG should include representatives from LADOT, LADBS, BOE, DWP, StreetsLA, EMD, CD 11, and ITA, ensuring that all communication originates from one accountable body operating under City Leadership. This recommended structure provides clear oversight and positions the communication system as a coordinated, Citywide effort rather than a departmental tool.

The **Logistics and Traffic Management Plan** therefore proposes a comprehensive communication framework that will tie together project information, traffic data, and emergency alerts under one coordinated system. This framework fulfills the intent of defining the concept, scope, and functional requirements for how the City could communicate with stakeholders throughout the Rebuild. It is not a system-development plan or procurement document; rather, it outlines the **communication architecture and governance model** that City Leadership may adopt to operate transparently, efficiently, and inclusively.

At the center of this proposed framework is a suite of integrated, public-facing communication tools to be implemented through the **Palisades Community Communication Tool (PCCT)**: a text and email alert system, a web-based construction dashboard, and an interactive, mobile-accessible GIS map. Together, these tools would create a single, coordinated communication ecosystem connecting field operations, agency coordination, and community engagement in real time. This system would ensure that every stakeholder—from a homeowner on Sunset Boulevard to a contractor managing a concrete delivery on Chautauqua—receives timely, relevant, and actionable information.

The City's proposed communications approach, to be implemented under SIG oversight through the PCCT, is guided by five core principles:

- **Transparency:** The community deserves a single, consistent source of verified information about construction schedules, lane closures, parking restrictions, and emergency conditions. By maintaining a clear chain of communication across agencies, the City can build public confidence and minimize confusion or misinformation.
- **Accessibility:** Information must be designed for all users. Content should be available in multiple languages, formatted for screen readers, and optimized for mobile devices—ensuring that residents, commuters, and field workers alike can access updates anytime and anywhere.
- **Coordination:** Communication must unify the voices of multiple City departments—**LADOT, LADBS, BOE, DWP, EMD, StreetsLA, ITA, and CD 11**—and extend outward to contractors, vendors, and utility partners working in the corridor. A single City "voice" will ensure that information shared with the public, project partners, and the media remains accurate and consistent.
- **Timeliness:** Alerts and updates must be delivered as close to real time as possible. Integrating construction data, permit information, traffic feeds, and emergency alerts will allow the City to communicate with the same immediacy that conditions change in the field. This timeliness enables residents and contractors to make informed decisions and avoid preventable disruptions.
- **Engagement and Feedback:** Communication must be two-way. The public, contractors, and partner agencies should be able to ask questions, report issues, and share observations. Feedback loops—monitored by the SIG—will enable the City to respond quickly, address problems before they escalate, and continuously refine its communication practices.

This framework acknowledges that **contractors and field partners are as critical to the communication network as residents and agencies**. Their daily operations—deliveries, inspections, lane closures, and site access—generate much of the information that affects the community. By connecting contractors to the same communication ecosystem as the public, the City will ensure that work activities are coordinated, predictable, and transparent. For example, a lane-closure alert sent to residents could simultaneously notify contractors of timing constraints, inspection windows, or revised access points, reducing conflicts and improving efficiency.

The envisioned tools within the PCCT are intended to serve three interconnected audiences:

- **The Public:** Residents, commuters, and local businesses who need real-time visibility into construction activity, traffic conditions, detours, and safety information.
- **Contractors and Field Partners:** Construction managers, subcontractors, vendors, and utility providers who rely on accurate scheduling, access data, and inspection coordination to plan daily work safely and efficiently.
- **The City:** Agencies and project teams who require a shared operational view of all construction and communication activity to manage coordination, performance, and emergency response.

By serving these groups together, the **PCCT** would function as both a community-engagement platform and an operational coordination layer—linking what happens in the field with what the community experiences at street level. This integration would create the predictability and transparency that are vital for maintaining neighborhood trust during years of construction.

Finally, this Plan envisions that the PCCT and its supporting communication framework will serve as a **foundation for long-term resilience and transparency**. The requirements defined here position the City to establish a scalable model that could extend beyond the Pacific Palisades.

In summary, this section outlines how Los Angeles can transform communication from a reactive process into a **strategic infrastructure capability**—a system that informs, connects, and empowers every stakeholder—residents, contractors, and City teams—to navigate the Palisades Rebuild safely, confidently, and together.

Many projects identified in this document are currently in preliminary stages of the project development process, and may still be pending funding, final approvals, and/or permitting. All projects are subject to change in scope, schedule, and cost until they are fully approved. Some of the projects, strategies, and efforts described in this report may not be possible for the City to complete without additional funding from the Federal and State governments as well as philanthropy, which may or may not be forthcoming.



8.1. Purpose and Objectives

8.1.1. Purpose

The Palisades Rebuild will unfold within one of Los Angeles's most geographically constrained and operationally sensitive corridors. With limited access routes, ongoing utility restoration, widespread construction, and high community reliance on predictable mobility, the City will need a coordinated communication system that is both reliable and authoritative. The flow of timely, accurate information will directly influence public safety, traffic operations, construction efficiency, and community confidence.

The Communication and Public Information Tools—implemented through the **PCCT** provide this foundation. This platform is envisioned as a single, City-managed framework that consolidates verified data from multiple departments and utilities into one coherent, real-time view of reconstruction activity.

The communication system is not intended as a promotional or outreach tool. It is conceived as critical **operational infrastructure**—a digital backbone that allows people to make informed decisions, supports safe and orderly movement through the corridor, and strengthens public trust throughout a reconstruction program expected to span multiple years.

8.1.2. Phased Implementation Strategy

To maintain public trust and ensure a consistent flow of information from the start of the Rebuild, the Community Communication Framework employs a **"Two-Phase" Implementation Strategy**. This approach allows the City to establish a "Single Source of Truth" immediately using existing digital channels, while reserving advanced interactive platforms for future deployment.

Phase 1: Immediate Notification Channels (Existing Tools).

The primary objective of Phase 1 is to provide residents with reliable, weekly updates on construction impacts using the City's current digital infrastructure.

- **Mechanism:** Activation of **Community Notification Channels** managed by the city today.
- **Tools:** Utilization of **existing web portals** (e.g., a dedicated page on the City's website), email newsletters, and SMS alert systems to distribute updates.
- **Feedback:** Establishment of a dedicated email address or web-form to collect resident inquiries, which are reviewed manually by the coordination team.

Phase 2: Advanced Digital Engagement Platform (Future State).

The transition to Phase 2 is **conditional**, designed to be triggered only if the complexity of communication requires a dedicated interactive solution and if resources are available.

- **Triggers for Activation:** The City may elect to develop the advanced platform if:
  1. The volume of public inquiries exceeds manual response capacity;
  2. funding is secured to support software development; or
  3. Residents require real-time, map-based visualization of daily closures.
- **Tools:** Deployment of the fully integrated **PCCT** (or equivalent platform) described in this section.

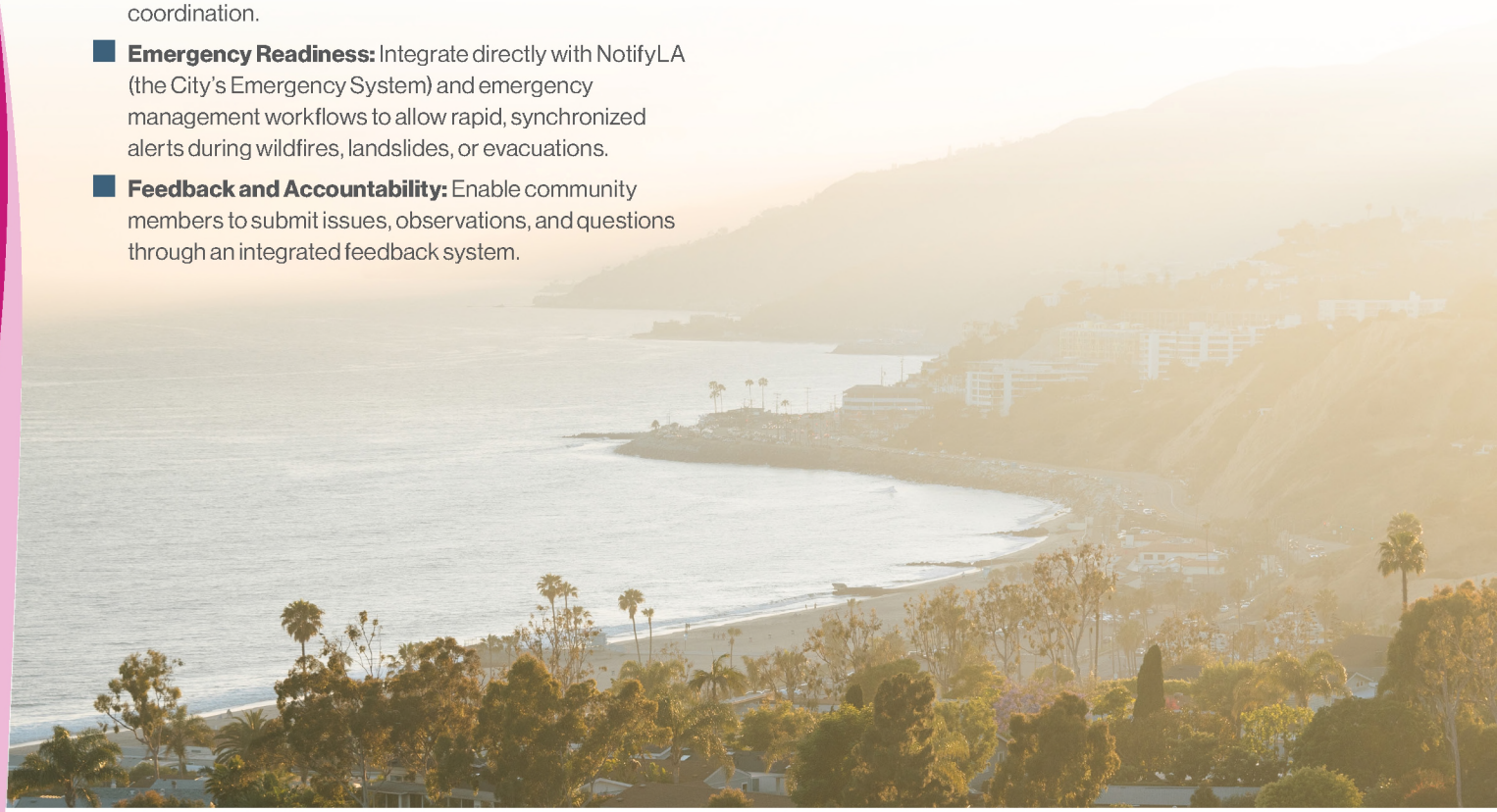
8.1.3. Objectives

Under the leadership of the City and coordinated through a SIG, the platform fulfills the following objectives:

- **Real-Time, Reliable Information:** Provide current, verified updates on construction activity, lane closures, detours, traffic performance, parking changes, utility service impacts, and emergency conditions.
- **Unified City Messaging:** Eliminate fragmented, department-specific messaging by ensuring all communications draw from shared, verified data and consistent templates.
- **Data Integration and Operational Coordination:** Synchronize information across LADBS, LADOT, BOE/StreetsLA, DWP, and utility partners to create a continuously updated picture of field conditions.
- **Accessibility and Equity:** Provide multilingual, ADA-compliant, mobile-first communication tools that serve residents and workers of all backgrounds and abilities.
- **Support for Contractors and Field Partners:** Deliver targeted operational notifications tied to permits, staging zones, and access restrictions, enabling safer work coordination.
- **Emergency Readiness:** Integrate directly with NotifyLA (the City's Emergency System) and emergency management workflows to allow rapid, synchronized alerts during wildfires, landslides, or evacuations.
- **Feedback and Accountability:** Enable community members to submit issues, observations, and questions through an integrated feedback system.

8.1.4. Summary

Taken together, the purpose and objectives redefine communication as an essential, data-driven operational system for the Palisades Rebuild. By consolidating information, coordinating updates, and providing a transparent, user-centered platform, the City can reduce uncertainty, improve mobility, streamline field operations, and maintain public trust throughout all phases of reconstruction.



8.2. The Stakeholder Ecosystem

8.2.1. Network Overview

The scale and duration of the Rebuild mean that construction schedules and traffic patterns will shift frequently. To maintain clarity, the communication ecosystem must function as a **two-way operational network**, not just a broadcast tool. It is designed to circulate data continuously between three distinct groups:

- **Outbound Flow:** Providing residents and travelers with predictable, location-specific updates.
- **Inbound Flow:** Gathering ground-truth observations from the community to validate City data.
- **Internal Flow:** Aligning City departments and utilities on a shared operating picture.

To function effectively, this ecosystem must serve the distinct operational needs of the following key audiences:

8.2.2. Key Stakeholder Audiences

The ecosystem must accommodate a diverse set of users—each with distinct information needs but all interdependent within the narrow mobility constraints of the Palisades corridor.

8.2.2.1. Residents and Neighborhood Associations

Residents are among the most sensitive and directly affected stakeholders. They require clear, predictable, and hyper-localized information that helps them navigate daily life during reconstruction, including:

- Lane closures, detours, and traffic shifts.
- Parking restrictions and temporary access limitations.
- Emergency notifications and evacuation guidance.
- Visual maps showing how to reach homes, schools, parks, and essential services.

8.2.2.2. Contractors, Vendors, and Field Partners

Contractors generate significant operational data and rely on accurate City information to plan and execute work safely. Their needs include:

- Verified staging, laydown, and TMPZ availability.
- Permitted work hours and access windows.
- Inspection schedules, detour notices, and temporary restrictions.
- Alignment with public notifications to minimize conflicts with residents.

8.2.2.3. Local Businesses and Service Providers

Local businesses—including schools, delivery providers, home-service operators, and logistics companies—depend on clear and timely updates to maintain operations. Their priorities include:

- Reliable access routes for deliveries and customers.
- Predictable scheduling to minimize service disruptions.
- Targeted notifications that reduce unnecessary alert volume.

8.2.2.4. City Departments and Partner Agencies

City staff and partner agencies use the platform to coordinate activity internally and ensure public-facing information remains accurate. They require:

- Shared visibility of construction schedules, closures, and utility work.
- Unified, pre-approved messaging based on verified datasets.
- Tools for monitoring public feedback and tracking department responses.
- Analytics that strengthen coordination and highlight areas needing adjustment.

8.2.2.5. Emergency Management and First Responders

LAFD, LAPD, and EMD depend on up-to-date mobility and access data to manage emergency response and evacuation. They require:

- Real-time updates on road conditions and closures.
- Seamless integration with NotifyLA for critical alerts.
- Clear mapping of access routes and response priorities.

8.2.2.6. Commuters and Regional Travelers

Non-local travelers passing through on PCH, Sunset, or Chautauqua need:

- Immediate access to detours and congestion advisories.
- Integration with regional transportation platforms, such as Caltrans and Waze for Cities.

8.2.2.7. Utility Partners and Service Providers

Utility providers—including DWP and telecommunications companies—must synchronize their work with roadway activity. Their information needs include:

- Coordination on work windows and planned outages.
- Notifications of conflicts with construction or access restrictions.
- The ability to share verified updates that affect service delivery.

Stakeholders Summary

From Audience to Action Collectively, these distinct groups form the Palisades Communication Ecosystem. While their operational needs differ—ranging from a resident requiring a detour map to a utility provider needing a dig permit—they all rely on the same "Single Source of Truth."

To serve this diverse network effectively, the City cannot rely on a "one-size-fits-all" broadcast. Instead, the program must match each audience with the appropriate delivery method—ensuring that critical alerts reach the right people on the right platforms. This operational necessity drives the selection of the specific **Communication Channels and Tools** detailed in the following section.

8.2.3. Communication Relationships and Data Flows

The **Palisades Communication Ecosystem**, implemented through the **PCCT**, is built on a network of relationships, information exchanges, and coordinated workflows that connect the City, its contractors, utility partners, and the community. This structure transforms raw data—from construction schedules, permits, and field activity—into clear, actionable messages for residents and stakeholders while simultaneously providing City leadership with feedback and operational intelligence.

The system is both an **information distribution network** and a **data coordination framework**, where every participant contributes to maintaining transparency, safety, and trust. The process functions through a series of interconnected layers—each with a specific role in the overall flow of information: **data generation, verification, public communication, feedback,** and **decision-making**.

8.2.3.1. Data Generation Layer – Where Information Begins

All communication begins with data generated by daily field and operational activity. This includes:

- **Construction and Permit Data:** LADBS and BOE manage permitting systems and construction schedules that define where and when work will occur. Each permit or lane-closure request includes information on location, timing, duration, and responsible contractor.
- **Traffic and Mobility Data:** LADOT collects real-time traffic performance metrics (e.g., congestion levels, signal timing, travel times) and integrates external feeds such as **Waze for Cities, Google Maps**, and regional networks from **Caltrans**.
- **Utility and Infrastructure Data: DWP** provides information on planned maintenance, emergency outages, and infrastructure restoration activities. Coordination with BOE ensures alignment between roadway and utility work.
- **Emergency and Safety Data: LAFD** contribute data on emergency events, evacuation routes, and hazard alerts through **NotifyLA** and GIS-based systems.
- **Contractor Field Updates:** Contractors provide near-real-time updates on work progress, TMPZ occupancy, staging needs, and completion milestones through structured digital forms or mobile interfaces.
- **Community Inputs:** Residents, neighborhood councils, and businesses generate "soft data" through feedback reports and inquiries (e.g., signage knocked down, unposted closures), which help validate field accuracy and direct corrective action.

Together, these inputs form the **raw informational landscape** that powers the PCCT and serves as the foundation for all public and internal communication.

8.2.3.2. Data Verification and Quality Control Layer – Ensuring Accuracy Before Publishing

Data accuracy is essential to maintaining public confidence. Before any update reaches the public, it passes through a **verification and approval process** managed by participating departments and coordinated under **SIG oversight**.

Key verification steps include:

Cross-Departmental Review: LADOT, LADBS, BOE, DWP, and EMD verify incoming data through automated synchronization and manual review. For example, if a contractor modifies a lane-closure time, LADOT confirms the change against permit limits before publication.

Centralized Data Repository: All verified information is stored in a secure, City-managed cloud environment (such as ArcGIS Online or a comparable platform) accessible to authorized departments and used by all PCCT public-facing tools.

Standardized Data Formats: Shared templates and metadata standards—such as uniform time fields, geographic coordinates, and classification tags—ensure consistency and interoperability across systems.

Governance Oversight: The **SIG**, with technical support from ITA, maintains policies for version control, timestamping, and audit logs to prevent data conflicts, unauthorized edits, or outdated publications.

This verification layer ensures that Los Angeles communicates with **one consistent and authoritative voice** and that every message the public receives has been verified by the responsible department before release.

8.2.3.3. Public Communication Layer – Distributing Information to Stakeholders

Once verified, data moves into the **public communication layer**, where it is disseminated through the PCCT's integrated suite of tools and channels to ensure accessibility, redundancy, and reach.

- **Alert Engine (Text and Email):** Sends notifications based on user preferences or geofenced zones. For example, a lane-closure update on Temescal Canyon would trigger messages only to subscribers within the affected area.
- **Construction Dashboard:** Displays verified schedules, detours, and milestones in a consolidated, visual interface accessible to residents, contractors, and City teams.
- **Interactive GIS Map:** Provides real-time spatial visualization of closures, TMPZs, MFSZs, CTPZs, detours, and utility work, integrating with LADOT's traffic data and DWP's maintenance feeds.
- **Social and Media Coordination: CD 11** and the **SIG** Communications Lead manage public messaging, using verified PCCT data to post updates through social media, City websites, and newsletters.
- **Contractor and Utility Notifications:** Contractors and utility partners receive targeted updates on TMPZ renewals, access changes, and emergency suspensions—ensuring that private-sector field operations remain aligned with City and public information.

All public-facing communication tools draw from the **same verified dataset**, eliminating inconsistencies between departments, platforms, or external channels.

8.2.3.4. Feedback and Response Layer – Capturing and Closing the Loop

An effective communication ecosystem must not only inform but also listen and adapt. The **feedback layer** closes the loop between the community, contractors, and the City, creating a continuous cycle of communication and improvement.

- **Resident Feedback:** Users submit reports or concerns through online forms embedded in the dashboard or map interface. These entries are automatically categorized by issue type (e.g., signage, access, noise).
- **Routing and Assignment:** The system routes each submission to the appropriate department (LADOT for traffic, LADBS for construction, BOE for right-of-way, DWP for utility concerns).
- **Response Tracking:** Each case receives a unique ID, enabling transparent tracking and follow-up communication. CD 11 and the SIG will maintain oversight of response times and escalation procedures.
- **Contractor and Utility Feedback:** Contractors and utility partners receive automated notifications about public reports linked to their permitted zones, prompting quick corrective actions or confirmations.
- **Analytics and Reporting:** Feedback data is aggregated and reviewed monthly by the **SIG**, which identifies trends—such as recurring community concerns or specific problem areas—and directs adjustments in communication or field operations.

This closed-loop process transforms the PCCT into a **learning system**, where public feedback directly informs City management and helps improve accuracy, responsiveness, and trust.

8.2.3.5. Decision and Coordination Layer – Turning Data into Action

At the highest level, PCCT data becomes a **management tool** for strategic decision-making and program oversight.

- **Cross-Department Coordination:** Regular coordination meetings led by the **SIG** bring together LADOT, LADBS, BOE, DWP, StreetsLA, EMD, and CD 11 to review dashboard analytics, upcoming closures, feedback patterns, and coordination needs.
- **Performance Metrics:** Communication analytics—such as alert open rates, dashboard usage, feedback resolution times, and regional traffic trends—are incorporated into **SIG quarterly performance** reports submitted to City Leadership.

- **Policy and Planning Feedback:** Long-term trends identified through the PCCT (e.g., recurring congestion hotspots, frequent permit conflicts, or high-value community feedback) inform policy, engineering, and planning decisions for the Rebuild and future programs.

This decision layer ensures that communication is not just outward-facing but a **core operational tool**—aligning public sentiment, field activity, and City management into a unified, data-driven decision framework.

System Integration Summary

In practical terms, the **Palisades Communication Ecosystem** functions as a **multi-directional data flow network**, managed by the **SIG** under City Leadership:

Field Activity — Data Entry (Permits, Sensors, Contractor and Utility Reports) — Data Verification (City Systems under SIG Oversight) — Public Distribution (Alerts, Dashboard, Map) — Feedback and Reports (Residents, Contractors, Utilities) — City Response and Adjustment.

Each step strengthens the next. Accurate field data leads to reliable public updates; public feedback improves data integrity; and verified, transparent communication fosters compliance, safety, and trust. This iterative cycle transforms communication from a static function into a **living management system**—a form of digital infrastructure that evolves continuously with on-the-ground conditions during the Palisades Rebuild.

8.2.4. Typical Use Cases

To illustrate how the proposed **PCCT** would function in real-world conditions, the following use cases demonstrate day-to-day, weekly, and emergency operations that the system is designed to support under **SIG oversight**. Each example represents a distinct workflow connecting data, users, and outcomes—showing how verified information could move seamlessly between the City, contractors, utilities, and the public.

Together, these scenarios demonstrate how the PCCT will support the City's goals of **safety, transparency, coordination,** and **predictability** during reconstruction.

8.2.4.1. Use Case 1 – Routine Lane Closure Notification

Trigger: A contractor obtains a City-issued permit to close one lane on Sunset Boulevard for concrete delivery and resurfacing.

System Response:

- The closure permit and schedule are entered into the LADBS permit database and synchronized through the PCCT's integration layer managed by ITA.
- The system validates timing against other permits and posts the verified update to the LADOT dashboard.
- The alert engine issues notifications to residents, businesses, and contractors subscribed to that corridor.
- The mobile GIS map displays a color-coded closure icon and alternative routes.
- **CD 11** receives an automated summary for inclusion in community bulletins and social media.

Stakeholders Involved: LADBS (permit data), **LADOT** (alert coordination), **StreetsLA** (signage), **CD 11** (public messaging), **Contractors** (field work), **Residents/Commuters** (information recipients).

Value: Residents receive early notice and travel options; contractors avoid scheduling conflicts; and the City maintains consistency across channels while reducing congestion.

8.2.4.2. Use Case 2 – Emergency Incident and Evacuation Coordination

Trigger: A wildfire or major landslide threatens upper Pacific Palisades neighborhoods, requiring partial evacuation and suspension of construction.

System Response:

- Evacuation routes, safe egress points, and temporary closure zones automatically overlay on the public map.
- Simultaneous notifications go to residents, contractors, utilities, and City crews.
- Construction and utility activities in affected zones are flagged for suspension until the "all-clear" is issued.
- The platform logs alert delivery metrics for SIG performance review.

Stakeholders Involved: EMD (alert origin), **LADOT** (detours and data sync), **LAFD** (route verification), **LADBS** (work suspension), **DWP** (service safety coordination), **Contractors** (field execution), **Residents** (public alerts).

Value: The City communicates verified, real-time information across all sectors, ensuring aligned evacuation, halted field activity, and coordinated emergency response.

8.2.4.3. Use Case 3 – Contractor Coordination and TMPZ Availability Update

Trigger: A contractor completes work early in a TMPZ, freeing curb space for another project team.

System Response:

- The contractor updates TMPZ status through the LADBS interface.
- The PCCT verifies the change and automatically updates the dashboard and map.
- Nearby contractors subscribed to TMPZ updates receive notifications.
- LADOT reviews and confirms signage adjustments.
- **CD 11** receives an automated note for weekly updates.

Stakeholders Involved: Contractors (update entry), **LADBS** (verification), **LADOT** (coordination), **CD 11** (public notice), **SIG** (oversight).

Value: Improves curb-space efficiency, prevents redundant closures, and demonstrates how automated verification reduces staff workload while keeping the public informed.

8.2.4.4. Use Case 4 – Resident Report and Feedback Loop

Trigger: A resident notices that "No Parking" signage for an upcoming TMPZ has fallen, creating confusion for drivers.

System Response:

- The resident submits a report via the dashboard feedback form.
- The PCCT categorizes it as "signage maintenance" and routes it to LADOT's maintenance team.
- The assigned crew receives a mobile alert with location and photo.
- After correction, LADOT closes the ticket, triggering a follow-up email to the resident.
- The entire interaction is logged for SIG's quarterly customer-service metrics.

Stakeholders Involved: Resident (feedback), **LADOT** (response), **CD 11** (communication oversight), **SIG** (performance review).

Value: Creates a transparent, two-way communication loop that builds trust and measures responsiveness through verifiable metrics.

8.2.4.5. Use Case 5 – Weekly Project Summary and Community Transparency

Trigger: At week's end, project and permit updates are compiled for public reporting.

System Response:

- The PCCT aggregates data from LADBS, LADOT, BOE, and DWP.
- A "Weekly Summary" dashboard view displays active closures, upcoming projects, and milestone completions.
- **CD 11** distributes a concise community email linking to the dashboard.
- Contractors and City teams receive the same dataset for coordination.

Stakeholders Involved: SIG (oversight), **LADOT** (data aggregation), **LADBS/BOE/DWP** (data feeds), **CD 11** (public communication), **Contractors** (coordination), **Residents** (recipients).

Value: Provides a predictable communication rhythm that enhances transparency and keeps all audiences aligned.

8.2.4.6. Use Case 6 – Special Event or Holiday Moratorium Coordination

Trigger: A holiday or special event requires temporary suspension of construction near key corridors.

System Response:

- LADOT activates an "event mode" within the PCCT.
- Automatic alerts notify contractors and utilities with active permits of moratorium dates.
- The GIS map shades restricted zones and disables scheduling in the permitting interface.
- CD 11 issues a public notice; residents receive alerts confirming restored access.

Stakeholders Involved: LADOT (system activation), **LADBS** (permitting), **BOE** (validation), **DWP** (utility coordination), **Contractors** (compliance), **CD 11** (outreach), **SIG** (oversight).

Value: Demonstrates proactive coordination across departments and utilities, preventing conflicts and reinforcing public confidence.

8.2.4.7. Use Case 7 – Community Feedback Integrated into Planning

Trigger: Repeated resident reports cite poor visibility of detour signage near Palisades Drive.

System Response:

- The PCCT aggregates feedback tagged "access issue."
- Analytics highlight recurring concerns for SIG review.
- SIG directs **StreetsLA** and **LADOT** to adjust signage plans.
- Once implemented, a follow-up notice thanks residents for their input.

Stakeholders Involved: Residents (feedback), **SIG** (review and direction), **StreetsLA/LADOT** (implementation), **CD 11** (public communication).

Value: Shows how the feedback loop informs decision-making, turning community observations into tangible operational improvements.

8.2.4.8. Use Case 8 – Leadership Review and Performance Reporting

Trigger: The SIG conducts its quarterly communication-performance review.

System Response:

- The PCCT generates analytics: alerts issued, open rates, dashboard visits, top concerns, average response times, and resolution rates.
- Data visualizations track sentiment trends and correlate communication effectiveness with field performance.
- The **SIG** evaluates findings, adjusts workflows, and issues a public transparency summary.

Stakeholders Involved: SIG (lead oversight), **LADOT** (analytics), **CD 11** (public reporting), **BOE/LADBS/DWP** (data inputs), **CAO** (fiscal review).

Value: Reinforces accountability and continuous improvement. Quantitative reporting validates communication investment and provides a framework the City can replicate in future infrastructure programs.

Use Case Summary

These use cases collectively illustrate that the proposed **PCCT** is not a static platform but a **living, City-managed system**. Under **SIG leadership**, it adapts to multiple scenarios—from daily construction updates to emergency coordination—while supporting diverse users across the community.

Each example demonstrates how technology, workflow, and human coordination would converge to make communication an **operational function of the Rebuild**, not a passive reporting activity. The result is a smarter, more transparent, and more resilient City—one where the **flow of information is as organized and reliable as the physical infrastructure it supports**.

8.3. Tool Suite and Functional Overview

8.3.1. Context and Overview

The Palisades Rebuild will require a coordinated, multi-platform communication system capable of reaching diverse audiences with accurate, real-time information. To meet this need, **this Plan recommends the City establish the PCCT**—an integrated suite of digital tools operating as a single communication ecosystem under the **SIG** (appointed and overseen by the Mayor's Office).

These tools are designed to serve dual purposes:

1. **Public-facing interfaces** that inform and engage residents, contractors, utilities, and businesses.
2. **Operational tools** that allow City departments and partners to coordinate activities, verify information, and manage performance.

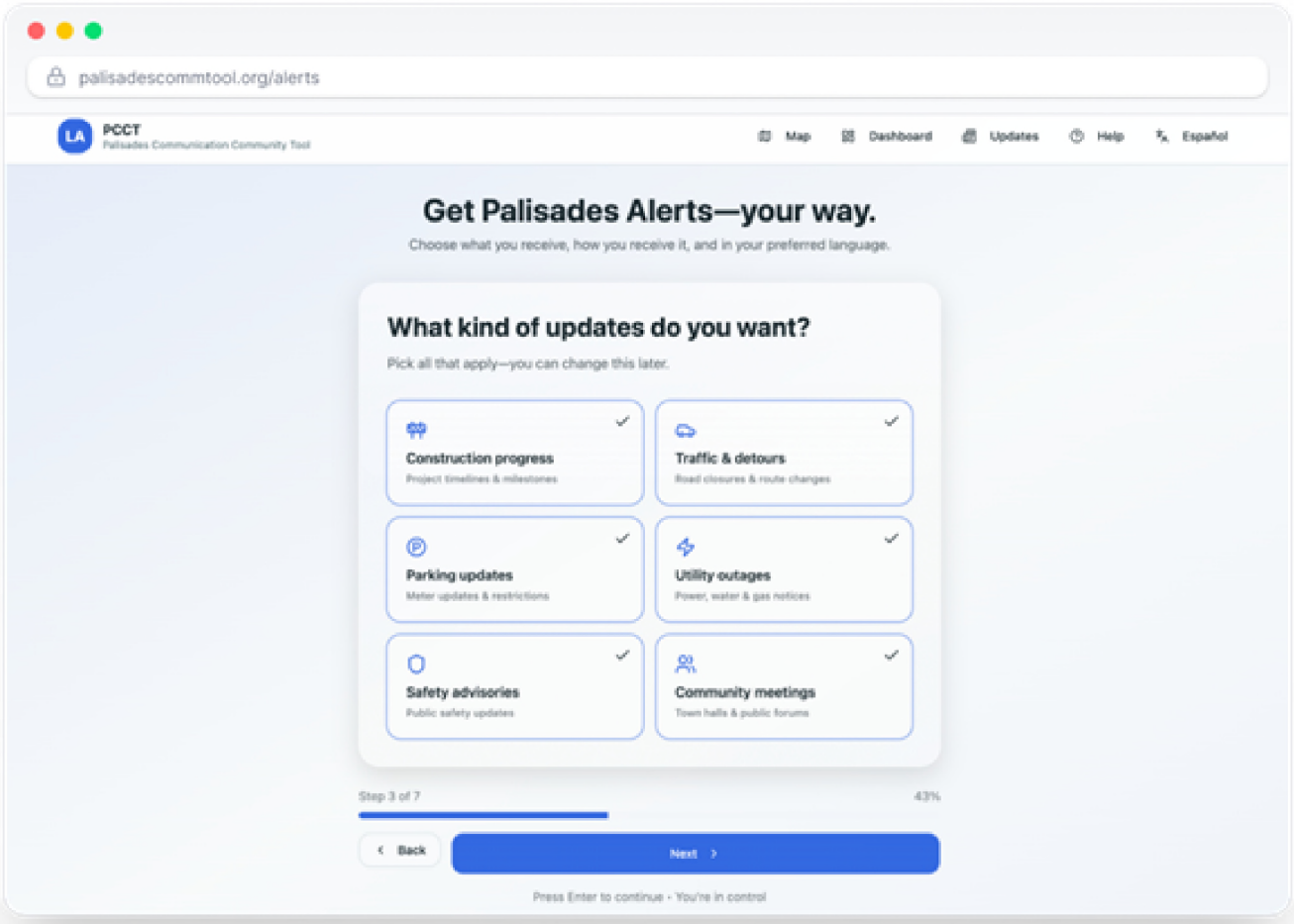
Together, the PCCT components would form a unified platform—built on verified City and utility data and SIG-managed workflows—that ensures **consistent messaging, equitable access,** and **continuous feedback** across all phases of the Palisades Rebuild.

The communication suite consists of four interconnected components:

1. A **Text and Email Alert System** for time-sensitive notifications and real-time updates.
2. A **Construction Dashboard** for project visibility and status tracking.
3. An **Interactive, Mobile-Accessible GIS Map** for spatial views of closures, detours, parking, and utility work.
4. A **Two-Way Feedback and Response Portal** for resident and contractor input, service reporting, and performance tracking.

Each component is described below with its functional purpose, data relationships, governance, and operational value.

Figure 8.2: Alerts registration concept



8.3.2. Text and Email Alert System

Purpose and Role

The Text and Email Alert System would serve as the City's primary **real-time, outbound notification channel** for residents, contractors, utilities, and other stakeholders. Its role is to push verified, location-relevant information (closures, detours, TMPZ changes, utility outages, and safety advisories) directly to users' phones and email—supplementing the dashboard and map (Figure 8.2).

Functional Concept

- **Opt-In Structure:** Users subscribe voluntarily, selecting preferred channels (SMS, email) and topics (construction, traffic, parking, utility updates, emergency alerts).
- **Geographic Segmentation:** Alerts are targeted to defined corridors or neighborhoods to avoid alert fatigue.
- **Message Types:** Daily construction updates; emergency notifications (via **NotifyLA** integration); detour and TMPZ updates; utility service notices (via DWP data); milestone announcements.
- **Automated Scheduling:** Routine notices can be pre-scheduled; urgent/emergency alerts are on-demand and near real time.
- **Multilingual Capability:** Messages should be available in English, Spanish, Korean, Chinese (and others as identified) to comply with City language-access policies.
- **Data Integration:** Alerts draw only from **verified** data sources (LADBS permits, LADOT lane closures, DWP outages) via the PCCT integration layer.
- **Governance and Oversight:** Under this Plan, the **SIG Communications Lead** would manage message policy and release standards; **EMD** retains authority for emergency alerts through NotifyLA; **CD 11** supports community-facing distribution and framing. **ITA** ensures opt-in privacy, data security, and retention compliance.

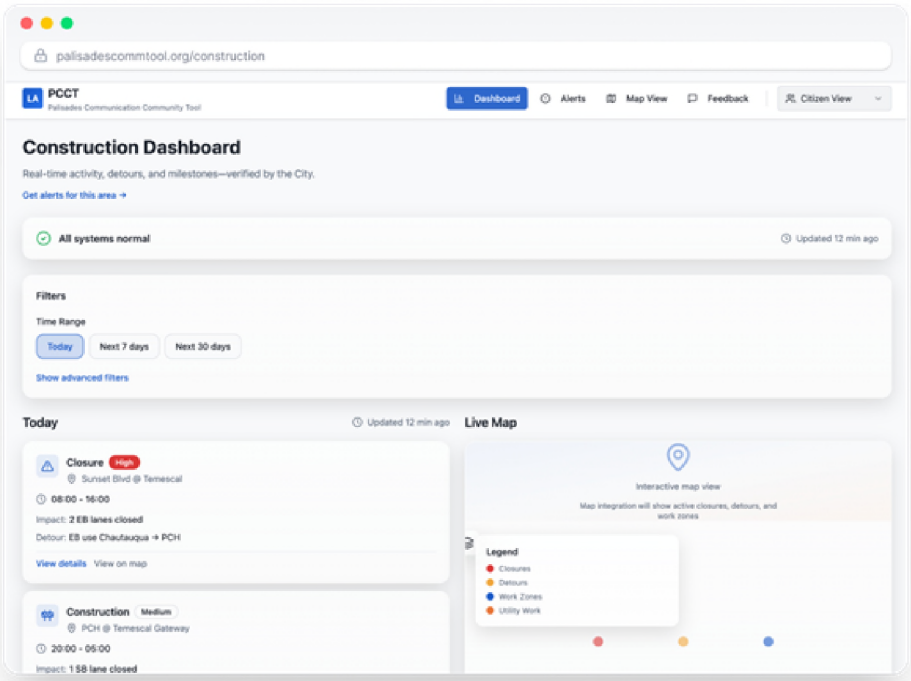
Operational Value

- Immediate outreach for urgent changes and emergencies.
- Precise, location-specific notifications that reduce confusion.
- Equal access to the same verified information for the public and field partners.
- Measurable performance (open rates, delivery times) to support continuous improvement.

8.3.3. Construction Dashboard

Purpose and Role: The Construction Dashboard would act as the **central information hub** of the PCCT—providing the public, contractors, utilities, and City teams with a single, visual source of truth on project progress, closures, detours, and milestones (Figure 8.3).

Figure 8.3: Construction dashboard concept



Functional Concept

- **Real-Time Status:** Displays daily/weekly construction activity, closure windows, and schedule updates.
- **Context and Milestones:** Summaries explain what is being built, why it matters, and milestone timing to reinforce transparency.
- **Filtering and Timelines:** Users can filter by street/corridor, date range, or project type; timeline views present near-term and forecasted impacts.
- **Media and Explainers:** Photos, diagrams, and short explainers improve understanding and build public trust.
- **Analytics Views (Internal):** Secure back-end views for staff and SIG reporting (engagement, inquiries, response metrics).
- **ADA and Mobile-First Design:** Interfaces are accessible and responsive across devices.
- **Data Inputs and Integration:** The dashboard aggregates verified data from **LADBS** (permits/schedules), **LADOT** (closures/traffic), **BOE/StreetsLA** (right-of-way work), **DWP** (planned work/outages), and **EMD/NotifyLA** (emergencies). All dashboard information is synchronized with the alert system and GIS map to prevent inconsistencies.
- **Governance and Oversight:** The **SIG** sets dashboard content standards, approves critical messaging, and reviews analytics; departments/utilities provide verified feeds; **ITA** safeguards security and uptime.

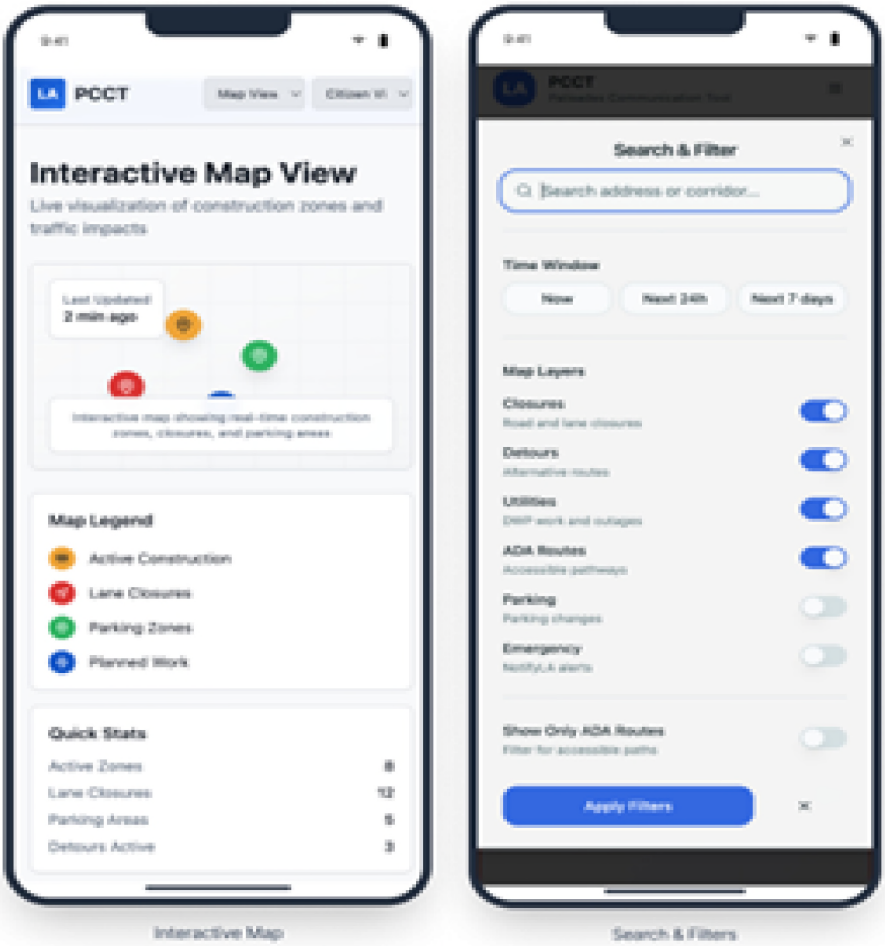
Operational Value

- Single, authoritative source for public and internal use.
- Improved interdepartmental and utility coordination via shared visibility.
- Increased public confidence through clear, consistent, and accessible updates.
- Built-in analytics to evaluate communication performance and community response.

8.3.4. Interactive, Mobile-Accessible GIS Map

Purpose and Role: The Interactive GIS Map would provide **real-time spatial context**: where construction is happening, which lanes are open, where to detour/park, and where utility work is active. It is the quickest way for users to **interpret where** impacts exist and **how to navigate** around them (Figure 8.4).

Figure 8.4: Mobile map and filters concept



Interactive Map | Search & Filters

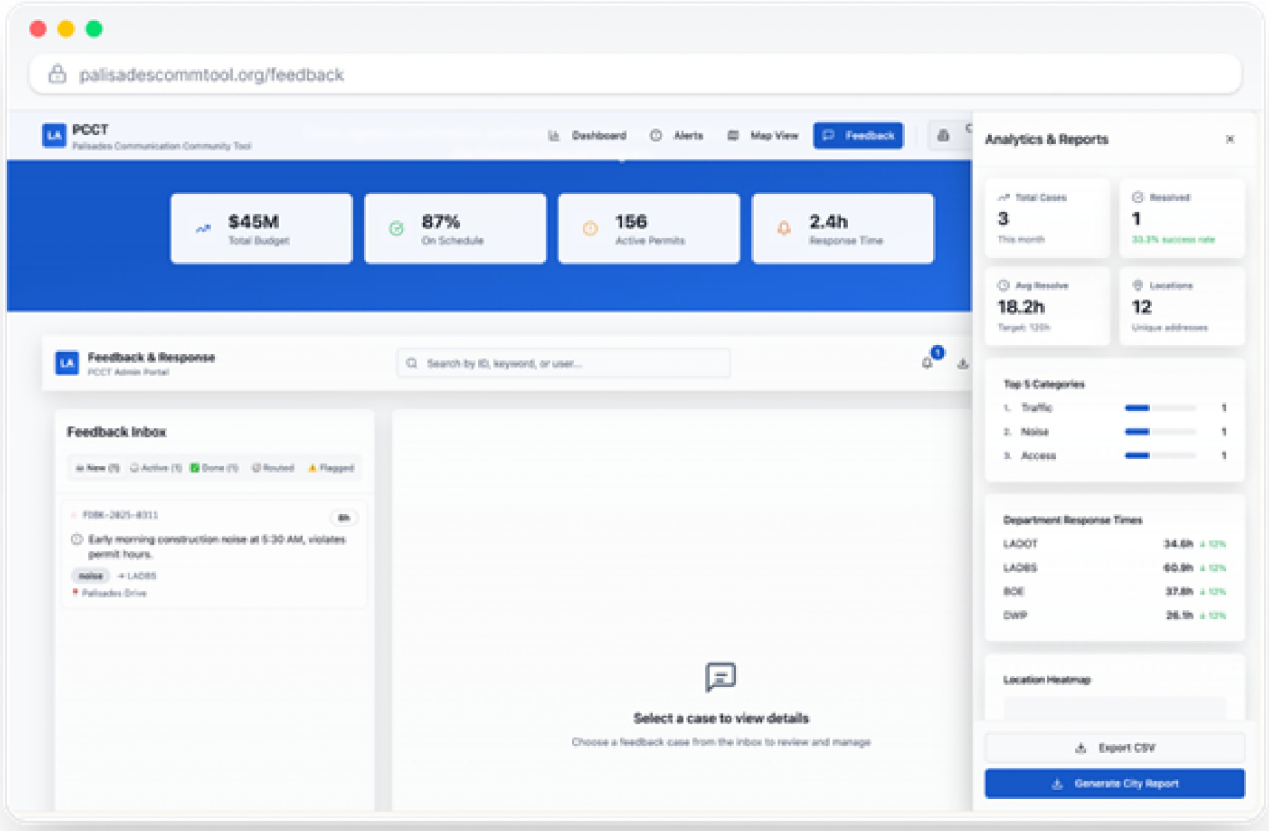
Functional Concept

- **Live Layers:** Closures, detours, TMPZs, MFSZs, CTPZs, ADA-accessible routes, and **DWP utility work/outages**.
- **Near Real-Time Refresh:** Changes in LADBS/BOE/LADOT/DWP/EMD systems update the map within minutes via secure APIs.
- **Role-Based Views:** Residents see public layers; contractors/utilities and City staff can toggle operational layers as authorized.
- **Traffic and Mobility Feeds:** Integrates LADOT congestion data and partner feeds (e.g., **Waze for Cities**, **Google**, and **Caltrans**).
- **Emergency Mode:** During incidents, the map highlights evacuation routes, closures, and shelters (via NotifyLA).
- **Search and Filters:** Address and corridor search with filters by time window and impact type.
- **Governance and Oversight:** The **SIG** sets map standards and operational use; **LADOT/LADBS/BOE/DWP/EMD** are responsible for verified layer updates; **ITA** ensures security and GIS data governance.

Operational Value

- Intuitive, visual understanding of impacts.
- Shared operational picture improves coordination between departments, utilities, and contractors.
- Heightened safety through real-time emergency overlays and routing.
- A data foundation for performance analysis and post-event review.

Figure 8.5: City admin two-way feedback dashboard concept



8.3.5. Two-Way Feedback and Response Portal

Purpose and Role: The Feedback and Response Portal would create a **direct line** between the community/contractors and the City—capturing issues, routing them to the responsible party, and tracking resolution for accountability (Figure 8.5).

Functional Concept

- **Web/Mobile Intake:** Simple forms embedded in the dashboard and map.
- **Smart Routing:** Automatic categorization (traffic, access, utility, noise, signage) and routing to **LADOT, LADBS, BOE, DWP, EMD**, or other lead as appropriate.
- **Case Tracking:** Each submission receives a case ID; status (open/in progress/resolved) visible to staff and optionally summarized to the public.
- **Notifications:** Contractors/utilities receive alerts on issues tied to their permitted work zones for timely correction.
- **Performance Reporting:** Aggregated metrics (volume, time-to-close, repeat issues) inform **SIG** reviews and public transparency summaries.
- **Governance and Oversight:** The **SIG** oversees service levels (response/closure targets) and quarterly reporting; **CD 11** supports public-facing communication; **ITA** ensures privacy and compliance with City customer-service protocols.

Operational Value

- Converts one-way updates into **two-way engagement.**
- Documented resolution builds trust and operational discipline.
- Analytics reveal trends, enabling targeted fixes and continuous improvement.

8.3.6. Integrated Platform Functionality

Individually, each PCCT tool serves a specific function; collectively, they operate as an **integrated, data-driven platform** managed by the **SIG**:

- **Shared Data Backbone:** All tools draw from the same **verified database**, maintained through secure APIs and standardized data dictionaries—eliminating silos and conflicting messages.
- **Automated Synchronization:** Any verified update (e.g., lane-closure timing, utility outage) propagates across alerts, dashboard, and map within defined latency thresholds.
- **Role-Based Access:** The public sees verified information; authorized contractors/utilities and City staff access operational layers as needed.
- **Multilingual and ADA-Compliant Design:** Equitable, mobile-first access to ensure inclusion across languages and abilities.
- **Feedback Loop Integration:** Community and contractor inputs flow back into the platform for issue resolution, data quality improvement, and **SIG** performance oversight.

Through this integrated suite, the City can maintain **real-time transparency**, ensure **operational coordination**, and provide **consistent, inclusive communication** across all audiences. The PCCT's design establishes communication as an integral operating system for the Palisades Rebuild—not a separate add-on—helping Los Angeles manage the program safely, equitably, and efficiently under unified SIG governance.

8.4. Functional and Technical Requirements

Context and Overview

The effectiveness of the **Palisades Communication and Public Information Tools** will depend on how well the system functions, integrates with existing City platforms, protects user data, and meets accessibility standards. This section defines the **conceptual requirements** that the City must establish before development or procurement of any specific technology solution.

These requirements ensure that the communication ecosystem outlined in Sections 8.2 and 8.3 functions as a **cohesive, secure, and user-centered system**—capable of providing reliable, multilingual, and ADA-compliant information across all platforms. They are structured into three key categories: **Functional Requirements, Technical Requirements, and Data Governance and Integration Requirements**.

8.4.1. Functional Requirements

Functional requirements define how the City's communication system must perform to meet the operational, safety, and equity goals of the Palisades Rebuild. They focus on **what capabilities the system must deliver**, rather than how it will be built. Because this is a community-centered infrastructure program operating within one of Los Angeles's most sensitive and high-profile corridors, these requirements are designed to ensure that the City's communication tools are **accurate, timely, accessible, inclusive, and adaptive**. They provide the foundation for building a single, unified communication environment that supports residents, contractors, and City teams equally—ensuring that everyone works from the same trusted source of truth.

Each requirement is rooted in a guiding principle from the City's **Mobility Plan 2035, Vision Zero**, and **Resilient Los Angeles** frameworks: that safe, equitable, and transparent information access is a core component of mobility and community resilience (City of Los Angeles 2017, 2018; Los Angeles Department of City Planning 2016; Mayor's Office 2018).

8.4.1.1. Multichannel Communication and Message Consistency

The communication system must provide **multiple synchronized channels**—including text alerts, emails, dashboards, mobile maps, and social media posts—so that all users receive the same verified information regardless of how they access it.

- LADOT, LADBS, and BOE data updates must automatically propagate across all platforms (alerts, dashboard, GIS map) within minutes of publication.
- Every update—whether a lane closure, TMPZ change, or emergency evacuation—should originate from a single verified dataset to prevent conflicting messages between departments or outlets.
- The system should be capable of pushing information outward to existing City communications channels (e.g., NotifyLA, CD 11's newsletters, LADOT's social media) to maintain message consistency.

Why it matters:

Public trust depends on message reliability. Fragmented or conflicting communications can erode confidence and increase congestion or noncompliance. Multichannel synchronization ensures a unified City "voice" and reinforces predictability for residents and contractors alike.

8.4.1.2. Real-Time Updates and Event-Driven Alerts

The system must support both **scheduled updates** (e.g., weekly project summaries, routine notifications) and **real-time, event-driven alerts** triggered by verified data changes or emergencies.

- Lane closure start/end times, detour activations, or emergency events should trigger automated alerts to all relevant users.
- A built-in priority hierarchy (normal, urgent, critical) ensures the appropriate response level and routing through the right communication channels.
- Residents should receive proactive notifications before events begin, while contractors receive simultaneous operational notices tied to their permitted areas.

Why it matters:

Reconstruction is dynamic. Crews may work ahead of schedule, emergencies can interrupt access, and delays can cascade. Real-time, event-triggered alerts reduce uncertainty, enhance safety, and allow the City to respond to changing conditions as they occur.

8.4.1.3. Geographic Targeting and User Segmentation

To ensure communication relevance, alerts and notifications must be geo-targeted to specific neighborhoods, corridors, or user groups.

- Geographic Targeting and User Segmentation. To ensure communication relevance, alerts and notifications must be geo-targeted to specific neighborhoods, corridors, or user groups. The system should allow LADOT and LADBS staff to define notification zones based on construction impact areas, TMPZ boundaries, or evacuation routes.
- Residents can subscribe to receive updates by zip code, street, or project boundary.
- Contractors and vendors can subscribe by permit ID or work zone to receive targeted operational updates.
- Users should also be able to select topic preferences—construction, traffic, parking, or emergency.

Why it matters:

Targeted messaging prevents "alert fatigue" and increases the likelihood of message engagement. It ensures that updates are meaningful, reducing unnecessary messages for unaffected areas while focusing attention where it is needed most.

8.4.1.4. Accessibility, Language, and Inclusivity

The system must ensure that all communications meet **ADA and language-access standards**, reflecting the diversity of the Pacific Palisades community.

- Interfaces and alerts must comply with **WCAG 2.1 AA** accessibility standards (screen-reader compatibility, adjustable text, high contrast).
- All major public-facing content must be available in the primary languages spoken in the area (English, Spanish, Korean, and Chinese, with flexibility for others identified through outreach).
- Visual dashboards and maps must use clear color coding, icons, and concise labeling for ease of use by individuals with limited digital literacy.
- All tools should be designed mobile-first, enabling access from smartphones and tablets with limited bandwidth.

Why it matters:

Accessibility and equity are core City obligations. In a geographically isolated community like the Pacific Palisades, communication failures can become safety risks. Ensuring that all users—regardless of ability, language, or technology access—receive timely, understandable information is a matter of equity and resilience.

8.4.1.5. Two-Way Communication and Feedback Integration

The communication system must allow for **bidirectional engagement** between the City and its users.

- A web-based feedback form embedded in the dashboard and mobile map will allow residents and contractors to submit questions, concerns, or reports (e.g., unclear signage, noise, or blocked access).
- Each submission generates a unique case number, automatically routed to the responsible department (LADOT for traffic, LADBS for contractor issues, BOE for infrastructure coordination).
- Status updates ("open," "in progress," "resolved") must be visible to staff and optionally available to the public for transparency.
- Feedback analytics should feed into quarterly reporting, helping identify recurring issues or community priorities.

Why it matters:

Two-way communication transforms information into collaboration. It helps the City proactively identify issues, close information gaps, and demonstrate responsiveness—key to maintaining community support during long-term reconstruction.

8.4.1.6. User Subscription and Self-Service Management

Users must be able to **manage their own subscriptions** to alerts, selecting what topics, areas, or notification types they wish to receive.

- The opt-in/out process should be simple, mobile-friendly, and compliant with privacy laws (Controlling the Assault of Non-Solicited Pornography And Marketing Act of 2003 [CAN-SPAM], California Consumer Privacy Act [CCPA]).
- Residents, contractors, and businesses should be able to register directly through the dashboard, map, or City website.
- The system should verify user preferences and automatically update their subscription profile without manual staff intervention.
- Notifications should confirm successful subscription or unsubscription to provide reassurance and transparency.

Why it matters:

Empowering users to manage their communication preferences builds trust and reduces administrative burden. It ensures data privacy while improving user satisfaction and compliance with City privacy policies.

8.4.1.7. Content Management and Approval Workflow

The communication system must include a **structured, role-based workflow** for message creation, review, and approval.

- Authorized City staff (LADOT, LADBS, EMD, CD 11) can draft and propose updates within their operational area.
- A central content manager or supervisor (within LADOT or SIG oversight) must review all messages for consistency, accuracy, and tone before publication.
- Predefined templates (closure alert, project milestone, emergency notice) streamline communication and minimize errors.
- The workflow must support both routine scheduling and urgent "fast-track" approval for emergency alerts.

Why it matters:

Clear governance over messaging prevents duplication, contradiction, or misinformation. Consistent approval processes reinforce professionalism and public confidence in City communications.

8.4.1.8. Data Visualization and User Analytics

To support transparency and internal decision-making, the system must include tools for visualizing and analyzing communication data.

- The dashboard should display dynamic charts showing construction progress, closure durations, or response times.
- City staff should have access to communication analytics such as:
  - Alert engagement (open and click rates).
  - Dashboard visitation frequency and popular topics.
  - Common themes in public feedback.
- Analytics should feed into quarterly **SIG** reports, supporting continuous improvement and accountability.

Why it matters:

Visual analytics make communication performance measurable. They help City leadership understand what works, identify underperforming channels, and refine strategies for greater effectiveness.

8.4.1.9. Redundancy, Continuity, and Fail-Safe Communication

Given the Pacific Palisades' geography and risk profile, the system must include **redundant communication pathways** to maintain service during outages or emergencies.

- Duplicate message delivery channels (multiple SMS and email providers) ensure continuity if one system fails.
- The dashboard and mobile map should host cached "offline view" versions that remain visible if live data feeds are temporarily interrupted.
- Hosting environments must include backup servers and disaster-recovery protocols, consistent with City ITA standards.
- Emergency alerts should be broadcast through NotifyLA as a parallel backup to the City's alert system.

Why it matters:

The Pacific Palisades' limited ingress and egress routes make reliable communication critical. Fail-safe systems ensure that vital information continues to reach users when it matters most—during high-impact events or network disruptions.

8.4.1.10. Scalability and Reusability for Future Citywide Programs

The functional framework must be designed for scalability beyond the Pacific Palisades. The same architecture should support future programs such as capital improvement projects, mobility pilots, or disaster-recovery efforts elsewhere in Los Angeles.

- Functional modules (alerts, dashboards, maps, feedback) must be modular and reusable across departments.
- APIs and data standards should align with Citywide digital transformation and Smart City strategies.
- Documentation, templates, and workflows should be developed with future replication in mind.

Why it matters:

The City's investment in defining this communication framework extends beyond the Pacific Palisades. By designing tools and workflows that can scale, Los Angeles establishes a sustainable model for transparent, technology-enabled communication that can be applied Citywide.

Functional Requirements Summary

These functional requirements translate the City's communication vision into tangible capabilities. They define how information should move—accurately, equitably, and securely—between the City, contractors, and the community.

By combining accessibility, interactivity, automation, and analytics, these requirements ensure that the **Palisades Communication Framework** will operate not merely as a website or notification system, but as a **living civic infrastructure**—a tool for real-time governance, safety management, and community partnership that reflects Los Angeles's leadership in transparent and inclusive public service.

8.4.2. Technical Requirements

The **PCCT** must operate as a **mission-critical system**—equivalent in importance to the physical infrastructure it supports. Its technical foundation should be robust enough to manage real-time data, flexible enough to integrate multiple City and utility systems, and secure enough to safeguard both operational and personal information.

These technical requirements do not prescribe a specific technology platform; rather, they outline the **standards and conditions** any solution—developed in-house or through a vendor—should meet to support the Palisades Rebuild effectively.

The **SIG**, appointed and overseen by the **Mayor's Office**, will coordinate system development and implementation. The **ITA** will provide technical governance—ensuring compliance with Citywide architecture, cybersecurity, accessibility, and data-management standards. Together, these bodies will ensure the PCCT remains reliable, secure, and future-ready.

8.4.2.1. System Architecture and Platform Design

The PCCT should be built on a **modular, service-oriented architecture** that supports interdepartmental integration and allows scalability for future City initiatives.

Key Architectural Principles

- **Cloud-Based, City-Managed Hosting:** Operate in an ITA-approved secure cloud (e.g., Microsoft Azure Government Cloud, Amazon Web Services GovCloud, or equivalent) to ensure redundancy, uptime, and centralized management.
- **Modular Components:** Each tool—Alert System, Dashboard, GIS Map, and Feedback Portal—functions as a discrete module linked through secure APIs to a shared database, allowing independent upgrades without downtime.
- **Central Data Hub:** All data flows through a single master repository aggregating verified inputs from LADOT, LADBS, BOE, DWP, StreetsLA, and EMD. The hub feeds all PCCT components to maintain data consistency.
- **Open API Framework:** Use open standards (REST/JSON, SOAP/XML, etc.) to ensure interoperability with City systems and third-party data sources.
- **High Availability and Uptime:** Target 99.9 percent uptime through load balancing, auto-scaling, and multi-region failover capability.
- **Disaster Recovery and Continuity:** Maintain mirrored environments and automated backups for rapid restoration in case of outages.

Why it matters:

A modular, cloud-based architecture provides flexibility, scalability, and continuous access to verified information—essential for real-time community confidence and City operations.

8.4.2.2. Interoperability and Integration with Existing City and Utility Systems

The PCCT should integrate seamlessly with existing City technologies and partner networks to leverage existing data, reduce redundancy, and coordinate operational information.

Required Integrations

- **LADBS Permitting and Project Data:** Automated synchronization of permits and construction schedules ensures lane-closure and staging data appear in real time on public tools.
- **LADOT Traffic and Closure Systems:** Connection with LADOT's Advanced Transportation System and Coordination and closure databases supplies live traffic and congestion data.
- **BOE / StreetsLA Right-of-Way Systems:** Integration ensures utility and roadway work are reflected together, preventing overlap.
- **DWP Utility Networks:** Direct API feeds provide planned-work schedules, emergency outage updates, and restoration timelines, coordinated through BOE's Right-of-Way system.
- **ArcGIS Online / City GIS Framework:** All map layers connect to the City's GIS standards to ensure spatial accuracy and security.
- **CD 11 and Citywide Communications Channels:** Enable verified, automated data feeds for newsletters, websites, and social media to extend outreach.

Why it matters:

Integration eliminates information silos, reduces manual entry, and ensures all departments, utilities, and residents operate from a unified data source.

8.4.2.3. Data Management and Synchronization

Real-time accuracy is central to public trust. The system should support continuous or near-real-time synchronization between internal systems and PCCT interfaces.

Requirements

- **Automated Synchronization:** Data changes (e.g., permit updates, TMPZ status, DWP outages) propagate automatically across the dashboard and map within minutes.
- **Hierarchical Data Flow:** Information progresses from source — verification — publication, preserving version control.
- **Timestamped Updates:** All records include visible timestamps indicating verification time.
- **Automated Validation:** Pre-publication checks confirm data accuracy and permissions (e.g., valid permit, authorized user).
- **Latency Thresholds:** Target < 5 minutes for operational updates; < 1 hour for scheduled summaries.

Why it matters:

Reliable synchronization ensures decisions—from route planning to construction scheduling—are based on the most current, verified information available.

8.4.2.4. Security, Privacy, and User Protection

Given the PCCT's public reach and its handling of limited personal data, the system should meet the highest standards of security and privacy compliance under **SIG** and **ITA** oversight.

Security Standards

- **End-to-End Encryption:** TLS 1.2+ for all transmissions and AES-256 for data at rest.
- **Role-Based Access Control:** Tiered permissions for editors, approvers, and viewers.
- **Audit Logging:** Immutable logs track all edits, approvals, and deletions.
- **Authentication:** Single sign-on and multi-factor authentication via City identity services.
- **Vulnerability Testing:** Quarterly penetration tests and annual audits coordinated by ITA.

Privacy and Compliance

- **Opt-In Consent:** Users must opt in to receive alerts; data used solely for program purposes.
- **Data Minimization:** Collect only essential contact data; encrypt all PII.
- **Legal Compliance:** Align with CCPA, CAN-SPAM, and City privacy ordinances.
- **Retention Policy:** Delete or anonymize inactive user data after 12 months unless renewed by consent.

Why it matters:

Protecting personal information and system integrity preserves public trust and reduces City risk exposure.

8.4.2.5. Performance, Reliability, and Scalability

The PCCT should be engineered for high performance and elasticity—capable of sustaining heavy traffic during emergencies or large events.

Performance Targets

- **Uptime:** ≥ 99.9 percent.
- **Concurrent-User Capacity:** The PCCT should be engineered to accommodate up to 100,000 simultaneous public users during peak communication events (e.g., emergency alerts or regional incidents), with scalable cloud infrastructure to expand capacity as needed.
- **Scalability:** Automatic scaling to handle alert surges or user spikes.
- **Response Time:** Dashboard/map load < 3 seconds; alert dispatch < 60 seconds.
- **Load Balancing and Caching:** Prevent service delays during high-volume events.
- **Continuous Monitoring:** ITA and SIG use telemetry dashboards for live performance tracking.

Why it matters:

Performance resilience ensures uninterrupted communication when it is most critical to safety and public confidence.

8.4.2.6. Compatibility and Accessibility Across Platforms

The PCCT should deliver an equitable, consistent experience across devices and connectivity conditions.

Requirements

- **Mobile-First Design:** Full functionality on smartphones and tablets.
- **Cross-Browser Compatibility:** Consistent performance on major browsers.
- **Adaptive Design:** Responsive layouts for varying screen sizes and bandwidths.
- **Low-Bandwidth Mode:** Lightweight map and text-only alert options for limited connectivity.
- **Accessibility Integration:** Full WCAG 2.1 AA compliance—screen readers, voice navigation, captions, and contrast controls.
- **Multilingual Interfaces:** Built-in translation for major community languages.

Why it matters:

Accessibility and inclusivity are fundamental civic responsibilities; every resident and worker must be able to access accurate information.

8.4.2.7. External Data Partnerships and Regional Integration

Regional connectivity ensures that Palisades communication aligns with broader transportation and emergency networks.

Required Partnerships

- **Waze for Cities / Google Maps:** Share verified closures to display accurate detour data regionally.
- **Caltrans District 7:** Synchronize freeway and PCH impact data.
- **County EMD / OEM:** Coordinate emergency alerts and situational awareness.
- **Utilities (DWP, Telecom):** Exchange real-time work and outage updates to avoid overlapping disruptions.

8.4.2.8. Maintenance, Support, and Lifecycle Management

Long-term reliability requires proactive maintenance and clear support structures.

Requirements

- **Maintenance Protocols:** Regular software patches and API compatibility testing per ITA schedules.
- **Automated Health Checks:** Continuous uptime and error monitoring.
- **Incident Response:** 24/7 escalation managed by ITA with SIG notification.
- **Comprehensive Documentation:** Version-controlled manuals for all components.
- **Lifecycle Planning:** Design for modular upgrades to prevent obsolescence.

Why it matters:

Integrating with regional partners expands coverage and situational awareness, minimizing traffic and service conflicts beyond City boundaries.

Why it matters:

Ongoing maintenance and lifecycle planning keep the PCCT dependable throughout the multi-year Rebuild and adaptable for future City programs.

Technical Requirements Summary

These technical requirements establish the framework for a **secure, high-performance, and interoperable** communication ecosystem managed under **SIG leadership** with **technical stewardship from ITA**.

By adhering to these principles, Los Angeles can implement the **PCCT** as both a functional necessity for the Palisades Rebuild and a model for **Citywide digital transparency and resilience**—connecting government, contractors, and the community through data that is **trusted, timely, and universally accessible**.

8.4.3. Data Governance and Integration Requirements

At the core of the **PCCT** is data—schedules, permits, closures, utility and traffic feeds, feedback reports, and emergency alerts—all of which must be accurate, consistent, and securely managed across multiple City departments and platforms.

Unlike traditional, department-specific systems, the PCCT will rely on interconnected data pipelines that feed the alert engine, dashboard, GIS map, and feedback portal from shared, verified sources. To maintain public trust, the City must treat this data not merely as a technical asset but as a matter of **governance and accountability**. Effective data governance ensures that every public message can be traced to an authoritative source, verified for accuracy, and published in compliance with City standards for privacy, accessibility, and cybersecurity.

The following requirements describe how information should be governed, shared, and protected under the **SIG's oversight**, with **ITA** providing technical stewardship and **departmental liaisons** maintaining data accuracy. These requirements apply equally to all contributing entities—**LADOT, LADBS, BOE, DWP, StreetsLA, EMD, CD 11,** and **ITA**—and any external partners participating in the Palisades Rebuild communication ecosystem.

8.4.3.1. Data Ownership and Stewardship

Each contributing agency or partner will retain ownership of its original data but operate under a **shared-stewardship model** managed through the SIG.

- **Departmental Ownership**
  - **LADBS:** Permitting, inspection, and contractor scheduling.
  - **LADOT:** Lane-closure, traffic-performance, and congestion data.
  - **BOE / StreetsLA:** Infrastructure, right-of-way, and maintenance activity.
  - **DWP:** Utility work schedules, outage, and restoration information.
- **Shared Stewardship:** The **SIG**, with ITA support, will coordinate interdepartmental data flows, manage the master data environment, and ensure that only verified, current information is published.
- **Departmental Liaisons:** Each agency will designate a **Data Liaison Officer** to validate updates, resolve discrepancies, and participate in SIG coordination meetings.

Why it matters:

Shared stewardship prevents departmental silos, producing one trusted, Citywide information environment.

8.4.3.2. Verification and Quality Assurance

All data integrated into the PCCT should pass through automated and human validation before publication.

- **Automated Validation:** System checks confirm completeness, logical accuracy, and formatting.
- **Human Review:** Department liaisons verify anomalies such as overlapping closure times or conflicting coordinates.
- **Verification Cadence:**
  - Real-time feeds (e.g., closures, alerts, outages) – continuous validation.
  - Short-term data (e.g., weekly schedules) – daily review.
  - Long-term program data (e.g., milestones) – weekly review.
- **Source Attribution:** Each record will include a "verified by" tag and timestamp identifying the responsible department or partner.

Why it matters:

Verification safeguards credibility and allows every published update to be auditable and defensible.

8.4.3.3. Standardization and Metadata Framework

To ensure interoperability and enable analytics, all data should follow consistent schemas and metadata standards adopted by the SIG and ITA.

- **Common Data Dictionary:** Uniform field names for critical attributes such as Start Time, Closure Type, Zone ID, Permit Number, and Status.
- **Metadata Elements:** Each record must include source, department, verification timestamp, data owner, spatial coordinates, and related project IDs.
- **Spatial Standards:** All GIS data must use the City's standard projection (NAD 83 State Plane CA Zone V) to maintain compatibility with ArcGIS Online.
- **Version Control:** Every dataset carries a revision history and unique version ID for change tracking and rollback.

Why it matters:

Standardization ensures that all dashboards, maps, and alerts draw from consistent definitions and integrate seamlessly.

8.4.3.4. Data Integration and Synchronization Protocols

Reliable, repeatable integration workflows are the backbone of governance.

- **Secure API Exchange:** All data transfers occur through documented, encrypted APIs supporting automated synchronization between departmental and PCCT systems.
- **Data Flow Hierarchy:**
  - **Source Entry** – Data created/updated in departmental systems.
  - **Validation Layer** – Automated and manual verification.
  - **Integration Layer** – Data standardized and merged into the master repository.
  - **Publication Layer** – Verified data published to public tools (alerts, dashboard, GIS).
- **Update Frequency:** Real-time for closures/outages/alerts; hourly for permits and traffic updates; daily for summary datasets.
- **Change Management:** APIs should generate automatic notifications for schema changes or failed updates, allowing rapid intervention by the SIG and ITA.

Why it matters:

Standardized integration keeps every tool synchronized, ensuring that the public and City staff always reference the same verified data.

8.4.3.5. Privacy, Security, and User Data Protection

Because the PCCT will store limited personal data for subscribers and feedback users, strict privacy controls are essential.

- **Opt-In and Consent:** Users explicitly consent to receive alerts or submit feedback; consent records are timestamped and stored securely.
- **Data Minimization:** Only minimal contact data (name, email/phone, preferred area) is collected.
- **Encryption:** All personal data encrypted in transit and at rest using AES-256 or stronger.
- **Access Controls:** Only authorized staff with a defined business need can view PII; analytics use anonymized data sets.
- **Retention Policy:** Inactive records deleted or anonymized after 12 months unless renewed by consent, consistent with CCPA and City policy.
- **Incident Response:** ITA Cybersecurity Division will coordinate investigation and notification if a breach occurs.

Why it matters:

Robust privacy protocols protect users and demonstrate that the City applies the same safety standards to digital systems as it does to physical infrastructure.

8.4.3.6. Access Control and Permissions Management

Given the multi-agency nature of the PCCT, access must be structured around role-based permissions under SIG and ITA management.

- **Tiered Access Model:**
  - **Public Users:** View verified information only.
  - **Contractors and Utilities:** Update limited records (e.g., TMPZ status or utility outage resolution) tied to approved permits.
  - **City Staff:** Edit and approve data within their domain.
  - **Supervisors / SIG Administrators:** Authorize publishing across modules and manage interdepartmental workflows.
  - **ITA Administrators:** Maintain security settings, audit logs, and configuration.
- **Authentication:** All internal users log in through City Single Sign-On with Multi-Factor Authentication.
- **Audit Trails:** Every user action (who, what, when) recorded and retained for at least five years.
- **Least-Privilege Principle:** Users access only data required for their function.

8.4.3.7. Auditability, Transparency, and Public Accountability

Governance requires traceability and public visibility into how information is managed.

- **Automated Audit Logs:** All data edits, approvals, and publications captured in immutable logs available to SIG and ITA reviewers.
- **Public Transparency Metrics:** Aggregated statistics—alerts issued, feedback resolved, average response times—should be published on the dashboard to demonstrate performance.
- **Quarterly Governance Reviews:** The SIG, supported by ITA, will conduct quarterly audits to confirm data accuracy, privacy compliance, and adherence to governance policies.
- **Records Retention:** Audit logs and communications must comply with City records-management standards and the California Public Records Act.

Why it matters:

Role-based permissions protect system integrity and create a transparent record of every change made to public data.

Why it matters:

Transparent auditing and reporting reinforce public confidence and create a documented chain of custody for every message the City publishes.

Data Governance and Integration Summary

These data-governance and integration requirements define how information within the PCCT should be owned, verified, standardized, and protected. Under the leadership of the **SIG** and technical stewardship of **ITA**, this framework creates a unified system of record for the Palisades Rebuild. By linking departments, utilities, and the community through verified data flows, Los Angeles can maintain a communication platform that is accurate, secure, and transparent—setting a new standard for governance and public trust in City infrastructure programs.

8.5. Governance and Interagency Coordination

8.5.1. Context and Overview

The **PCCT** will require close collaboration across multiple City departments and utility partners, each responsible for generating, verifying, and communicating critical information to the public. For this system to function effectively, these activities must operate within a **centralized governance structure** and a clearly defined **interagency coordination process**.

Governance provides accountability, message consistency, and adherence to Citywide policy and transparency standards. Coordination ensures that every department's actions—whether issuing lane-closure data, approving permits, responding to emergencies, or publishing updates—align under a single, City-led communication strategy.

This section outlines the proposed **governance model, roles, and coordination mechanisms** that will maintain the integrity of the City's communication framework throughout the Palisades Rebuild. It builds upon the principles established in Section 6.6 and extends them specifically to public communication and data management.

The model is organized around three complementary levels:

- **Executive Oversight** – Strategic direction, policy authority, and accountability to City Leadership.
- **Operational Coordination** – Day-to-day management of interdepartmental workflows and data accuracy.
- **Program Implementation** – Execution of public communication, system maintenance, and feedback response.

8.5.2. Executive Oversight and Policy Direction

Executive oversight should be provided through the **SIG**, established under the direction of the **Mayor's Office** or a designated **Recovery and Rebuild Coordination Office.** The SIG will be the governing body responsible for implementing, operating, and evaluating the PCCT on behalf of the City.

Key Oversight Roles

- **SIG:** Chaired by a senior City Leadership representative, the SIG will provide quarterly oversight of the PCCT, reviewing performance metrics, analytics, and community feedback to guide continuous improvement.
- **City Leadership / Mayor's Office:** Receives quarterly reports and policy recommendations from the SIG, ensuring alignment with Citywide communication, accessibility, and resilience goals.
- **ITA:** Serves as the City's technical and cybersecurity authority, advising the SIG on architecture, data protection, and digital-governance compliance.
- **CAO and City Attorney (Advisory):** Provide fiscal and legal review of interdepartmental agreements, ensuring accountability and compliance with municipal law.

Policy Objectives of Oversight

- Ensure all communications comply with the **LAMC, ADA, CCPA,** and **ITA** digital-governance standards.
- Maintain a consistent City messaging tone—**"One City, One Voice."**
- Approve data-sharing agreements, communication standards, and emergency-response protocols.
- Provide executive-level accountability for transparency, equity, and public-trust outcomes.

Why it matters:

Placing oversight under the SIG ensures that communication functions as a formal City program—directly accountable to leadership, residents, and the law—rather than as a collection of departmental activities.

8.5.3. Operational Coordination and Agency Roles

Operational coordination translates executive direction into daily practice. Under the SIG's leadership, participating departments and partners will perform defined roles while adhering to shared protocols for data exchange, message approval, and public release (Table 8.1).

Table 8.1: Agency / Partner Roles and Responsibilities

Agency / Partner	Primary Role	Core Responsibilities (under SIG Direction)
LADOT	Traffic data, alerts, and road-impact coordination	Maintain lane-closure and congestion data; verify updates; manage transportation feeds to the PCCT.
LADBS	Permitting and Contractor liaison	Update permit and TMPZ data; validate contractor inputs; synchronize construction schedules.
BOE / StreetsLA	Right-of-way and infrastructure coordination	Provide schedules for public-works and street maintenance; prevent project conflicts.
DWP	Utility coordination	Supply planned-work and outage data; coordinate utility activities with roadway operations.
CD 11	Community engagement and public messaging	Translate technical data into accessible updates; distribute verified information to residents and businesses.
ITA	Technology governance and cybersecurity	Manage system hosting, integration standards, and data protection in support of SIG policy.
CAO / City Attorney (Advisory)	Fiscal and legal oversight	Review governance documents, contracts, and compliance.

Daily Coordination Mechanisms

- **SIG Coordination Meetings:** Weekly virtual sessions chaired by the SIG Coordinator to review new permits, upcoming closures, and key updates before publication.
- **Shared Communication Calendar:** Tracks milestones, community events, and major deliverables to avoid overlap.
- **Rapid Verification Channel:** Provides expedited approval for urgent updates (e.g., emergency closures), with follow-up documentation afterward.
- **Performance Tracking:** Each department submits monthly logs summarizing data updates, alerts issued, and feedback resolved for SIG review.

Why it matters:

Centralized coordination through the SIG prevents conflicting information, shortens response times, and ensures that every department communicates from the same verified dataset.

8.5.4. Program Implementation and Communication Workflow

Program implementation describes **how information moves** from data source to public message, ensuring every update is validated, approved, and traceable. The SIG will oversee this workflow and maintain accountability for each stage.

Proposed Workflow

1. **Data Entry and Validation:** Departments and utilities enter new data (permits, closures, outages, alerts) into their source systems. Each entry is validated by the responsible liaison before integration.
2. **Synchronization and Verification:** Automated and manual checks under SIG oversight confirm accuracy; verified data populates the PCCT's master environment.
3. **Message Development:** Automated templates generate alerts and dashboard updates from verified data. For major community impacts, CD 11 drafts plain-language summaries for public dissemination.
4. **Message Approval and Release:** Messages are reviewed and authorized through the SIG Communications Lead or designated approvers. Emergency alerts are issued by EMD via NotifyLA.
5. **Public Distribution:** Approved updates publish simultaneously to the alert system, dashboard, GIS map, and CD 11 channels. Contractors and utilities receive parallel notifications through their user interfaces or subscriptions.
6. **Feedback and Monitoring:** Public and contractor feedback flows into the PCCT portal, triggering departmental responses. Resolved cases and performance metrics are reported quarterly to the SIG for evaluation and improvement.

Why it matters:

A standardized workflow ensures that every message is based on verified information, released through authorized channels, and traceable from origin to publication—building operational discipline and public confidence.

8.5.5. Governance and Interagency Summary

The **Governance and Interagency Coordination Framework** defines how Los Angeles should manage, verify, and sustain communication across departments, utilities, and partners during the Palisades Rebuild. It establishes a unified structure—anchored by the **SIG** under the **Mayor's Office**—that combines strategic oversight, operational coordination, and program accountability.

By embedding governance within daily workflows, the City transforms communication into a disciplined, transparent, and equitable process. This framework not only supports the Palisades Rebuild but also provides a **scalable model** for future infrastructure and recovery programs, reinforcing Los Angeles's reputation as a leader in **transparent, data-driven, and community-responsive public management.**



9. Governance, Oversight, and Fiscal Management

9.1. Context and Overview

The **Palisades Rebuild Communication, Logistics, and Mobility Framework** represents a new model for how Los Angeles manages reconstruction activities in complex, high-impact environments. This framework integrates multiple systems—each serving a specialized purpose—into one coordinated ecosystem governed through a unified structure. Together, these systems form the digital and operational backbone of the City's strategy to rebuild efficiently, transparently, and safely.

The framework includes:

- The **PCCT** – the public-information and coordination platform connecting residents, contractors, and agencies in real time;
- **PALMS** – the scheduling and routing environment for deliveries, workforce access, and material staging;
- The **LCS** – the authorization and monitoring platform for all temporary traffic control and lane-use permits;
- The **TMPZ** program – the curb-management and staging-area system that balances contractor needs with neighborhood access; and
- Supporting applications and data interfaces that link construction, permitting, emergency, and mobility information across departments.

Together, these systems form a **coordinated infrastructure network**—a living information environment that connects policy, data, and daily field operations.

9.1.1. Purpose of Governance and Fiscal Management

Large-scale recovery efforts like the Palisades Rebuild require **more than technical coordination**. They demand an integrated governance and fiscal framework that defines how decisions are made, how data flows, and how the cost of managing that coordination is recovered equitably. Without a unified structure, overlapping departmental processes can lead to inconsistent messaging, duplicated costs, and community frustration.

This section establishes the principles and structure for governing and funding the entire framework—ensuring that:

- All communication, logistics, and permitting systems operate under a **single chain of accountability**;
- Financial responsibilities are transparent, auditable, and fiscally neutral; and
- The community and contractors are **partners** in shaping how cost recovery and program deployment occur.

9.1.2. Balancing Accountability, Fiscal Neutrality, and Community Value

The City's approach must balance two interdependent priorities:

1. **Accountability and Transparency** – All programs (PCCT, PALMS, LCS, TMPZ) must function under a single, auditable structure that reports clearly to City Leadership and the public. This ensures consistent messaging, verifiable data, and uniform application of City policies.
2. **Fiscal Neutrality and Community Value** – Any costs associated with these systems—technology, maintenance, permitting coordination, or operational oversight—should be recovered through **existing or adjusted permitting mechanisms** rather than new taxes or general-fund allocations. Recovery should occur only when systems are activated, ensuring that costs are paid by those who directly benefit from the efficiencies created.

This balance allows the City to deliver coordinated communication and mobility services **without expanding long-term fiscal obligations**, while providing measurable returns in time saved, improved safety, and reduced project risk.

9.1.3. Role of the SIG

To implement this balance, the City should establish a **SIG** under the **Mayor's Office** as the centralized governing and fiscal body.

The SIG will oversee all systems within the Palisades Framework—**PCCT, PALMS, LCS, TMPZ**, and related coordination platforms—ensuring they operate as components of one integrated program.

Under City Leadership, the SIG will:

- Provide unified **governance, budgeting, and policy oversight** for all communication and logistics systems;
- Coordinate cross-departmental decision-making among LADOT, LADBS, BOE, DWP, StreetsLA, EMD, CD 11, and ITA;
- Oversee **fiscal planning and cost recovery**, working with the **CAO** and **Controller** to maintain transparency and compliance; and
- Report quarterly to the **Mayor's Office** and **CD 11** on program performance, fiscal status, and community feedback.

By consolidating responsibility under a single cross-departmental body, the City replaces fragmented committee structures with a streamlined, data-driven model that empowers rapid coordination and clear accountability.

9.1.4. Integration Across Systems

Although each system has a distinct purpose, all share the same governance and data principles:

- **The PCCT** communicates verified information to residents and stakeholders;
- **PALMS** manages logistics, scheduling, and mobility around reconstruction sites;
- **LCS** regulates lane closures, ensuring consistency with PALMS routing and PCCT public notices; and
- **TMPZ** manages parking and staging, feeding occupancy and schedule data back into PALMS and PCCT for public visibility.

These components operate through shared data standards, security protocols, and financial oversight mechanisms defined by the SIG and enforced by ITA. This integration ensures that each tool contributes to the same overarching objectives—**safety, predictability, and transparency**—without duplicating infrastructure or administrative effort.

9.1.5. Community Partnership and Future Evaluation

At this stage, **no specific fees, funding levels, or operational budgets are proposed**. Instead, the Plan establishes the **framework for how such analyses will be performed**—openly and collaboratively—with the Pacific Palisades community, contractor organizations, and City oversight bodies.

The SIG, once established, will:

- Conduct financial and operational analyses to determine when and how cost-recovery mechanisms should be activated.
- Evaluate **cost–benefit relationships** across all systems—quantifying how coordination and communication reduce project delays, safety incidents, and neighborhood impacts.
- Engage residents and contractors through advisory sessions and public dashboards to review findings before implementation.

This ensures that any fiscal decisions are **data-driven, community-informed, and scalable**, aligning operational needs with real-world conditions.

9.1.6. Framing Communication, Logistics, and Mobility as Infrastructure

The Palisades Framework recognizes that information, logistics, and permitting are not administrative overhead—they are **critical infrastructure**. Like roads, signals, and utilities, these systems require dedicated governance and maintenance to remain reliable. When properly managed, they yield tangible benefits: faster project delivery, safer neighborhoods, fewer disputes, and greater public trust.

By embedding these systems within the City's existing permitting and cost-recovery structure, Los Angeles can sustain them responsibly while demonstrating that **transparency and coordination are investments that pay for themselves** through avoided delays, reduced enforcement costs, and improved community outcomes.

9.1.7. Summary

This Plan establishes the context for governing and funding the integrated **Palisades Communication, Logistics, and Mobility Framework**—inclusive of **PCCT, PALMS, LCS, TMPZ**, and all supporting systems. It recommends that the **SIG** under the **Mayor's Office** provide unified oversight, fiscal management, and transparency, ensuring that these systems are implemented and maintained as one cohesive program.

By defining a single governance and cost-recovery structure—grounded in accountability, fiscal neutrality, and community partnership—Los Angeles can deliver a Rebuild program that is **technically integrated, financially sustainable, and publicly trusted**, setting a precedent for coordinated infrastructure management Citywide.

9.2. Governance and Oversight Model

9.2.1. Context and Purpose

Effective governance for the **Palisades Communication, Logistics, and Mobility Framework** must do more than manage technology—it must organize people, policies, and decisions around a single, transparent structure. Without unified oversight, even the best tools risk producing fragmented results: inconsistent data, delayed decisions, and uneven accountability.

To prevent this, the City should adopt the **SIG** model—a single, cross-departmental governance and fiscal body operating under the direction of the **Mayor's Office** or **a Recovery and Rebuild Coordination Office**. This model ensures that every system within the framework—the **PCCT, PALMS, the LCS**, and the **TMPZ** program—functions under one shared vision, one chain of command, and one transparent set of policies.

This is not simply an administrative arrangement; it is a **governance innovation** designed to make the City faster, clearer, and more accountable in how it communicates, coordinates, and manages public-right-of-way activities.

9.2.2. Why the SIG Model Is Necessary

Historically, large, multi-agency initiatives—particularly those involving permitting, construction, and community outreach—have relied on **steering committees** composed of separate departmental representatives. While inclusive, these committees can become cumbersome: decisions take weeks, communication lags between agencies, and community confidence suffers when responsibilities overlap or information contradicts itself.

The **SIG model replaces fragmentation with integration**. By consolidating authority within a single, empowered group, the City ensures that:

- **Policy direction and implementation are linked.** The same group that establishes priorities also monitors delivery, enabling agile responses to changing conditions in the field.
- **Transparency and accountability are centralized.** Financial decisions, system operations, and public reporting flow through one accountable body.
- **Departments and utilities work in unison.** Agencies no longer need to negotiate coordination project by project; the SIG establishes a standing, pre-approved structure for collaboration.

In essence, the SIG model enables Los Angeles to **speak with one voice and act with one plan**. This clarity benefits not only the City, but also homeowners, contractors, and residents who depend on predictable, coordinated communication throughout the Rebuild.

9.2.3. Structure and Composition

The **SIG** will operate under the authority of the **Mayor's Office** or designated **Recovery and Rebuild Coordination Office** and will serve as the central body for governance, fiscal management, and performance oversight.

Core Composition:

- **City Leadership (Chair):** Provides executive authority and policy direction.
- **LADOT:** Oversees traffic coordination, lane-closure data, and TMPZ management.
- **LADBS:** Leads on permitting, contractor coordination, and inspection data integration.
- **BOE / StreetsLA:** Manages right-of-way schedules, construction logistics, and field implementation.
- **DWP:** Aligns utility work schedules, planned maintenance, and outage communications.
- **EMD:** Directs emergency communications through NotifyLA and ensures readiness for evacuations or hazard events.
- **CD 11:** Serves as the community liaison, translating technical updates into accessible information for residents.
- **ITA:** Provides technology governance, cybersecurity, and compliance oversight.
- **CAO / City Attorney (Advisory):** Ensures fiscal integrity, legal compliance, and adherence to City policies.

The SIG may also engage **ad hoc members** or **consulting partners**—such as contractor associations, community representatives, or academic research partners—to provide technical or community perspectives during specific review periods.

Why it matters:

A clearly defined membership structure ensures that all relevant agencies are represented while avoiding duplication of responsibility. It gives the SIG the authority to act decisively and the diversity of expertise to act wisely.

9.2.4. Functions and Responsibilities

The SIG will serve as both the **governance hub** and the **program management body** for all Palisades systems. Its responsibilities will span four primary domains:

1. **Strategic Oversight**
   - Establish policy direction and program priorities consistent with City Leadership objectives.
   - Approve annual plans, budgets, and operational frameworks for the PCCT, PALMS, LCS, and TMPZ systems.
   - Review quarterly performance reports, community feedback, and fiscal statements before submission to City Leadership and Council.
2. **Fiscal Management**
   - Oversee all cost-recovery processes linked to building, parking, and logistics permits.
   - Ensure fiscal neutrality—confirming that user fees recover program costs without creating profit or deficit.
   - Work with the **CAO** and **Controller** to conduct quarterly audits and validate compliance with City financial policies.
3. **Data and Systems Governance**
   - Approve shared data standards, metadata frameworks, and interoperability requirements across all systems.
   - Verify compliance with **ITA**, **ADA**, and **privacy regulations (CCPA)**.
   - Ensure that public communication tools are accessible, multilingual, and mobile-first.
4. **Community and Contractor Coordination**
   - Host quarterly community and contractor coordination forums.
   - Present performance dashboards and respond to community questions.
   - Engage neighborhood councils and trade organizations in reviewing proposed updates or fee adjustments before implementation.

9.2.5. Decision-Making and Reporting Cadence

Reporting Structure

- **SIG — Mayor's Office / Recovery Coordination Office:** Strategic oversight, executive decisions, and interagency accountability.
- **SIG — CAO / Controller:** Fiscal and compliance audits; quarterly financial performance review.
- **SIG — City Council (CD 11):** Community-facing reporting, system performance summaries, and policy recommendations.

Cadence and Mechanisms

- **Monthly Coordination Meetings:** Review operational metrics, system performance, and interdepartmental issues.
- **Quarterly Performance Reviews:** Present comprehensive operational and fiscal reports to City Leadership, CAO, and City Council.
- **Annual Public Transparency Report:** Publish consolidated results, community feedback, and cost-recovery summaries on the **PCCT dashboard** for public review.

Why it matters:

A predictable cadence of reviews and reports turns governance from a reactive process into a proactive system of accountability. Regular reporting creates institutional memory, prevents information gaps, and demonstrates measurable progress to both the City and the community.

Why it matters:

The SIG's cross-functional responsibilities **create a closed accountability loop**—where technical, financial, and community outcomes are reviewed together rather than in isolation. This ensures that the systems supporting the Palisades Rebuild remain aligned with both operational realities and public expectations.

9.2.6. Integration with Existing City Policies and Frameworks

The SIG model builds on, rather than replaces, existing City policies and oversight mechanisms. It will align with:

- **Citywide ITA Digital-Governance Standards** for system security and data management.
- Fiscal Oversight Policies administered by the CAO and Controller.
- Transparency and Language-Access Mandates under the ADA and LAMC.
- Emergency Coordination Protocols managed through EMD and NotifyLA.

By harmonizing these existing frameworks within one programmatic structure, the SIG ensures that compliance is not treated as a series of checkboxes but as an **operational philosophy**—where technology, finance, and communication are interconnected dimensions of good governance.

9.2.7. Why This Model Matters for the Community

From a resident or contractor perspective, the governance model may seem abstract, but its effects are tangible. When governance is unified:

- **Information is trustworthy.** The public receives verified, consistent updates—no conflicting notices from multiple departments.
- **Permitting is predictable.** Coordination among LADBS, LADOT, and BOE reduces delays and confusion during project scheduling.
- **Costs are controlled.** Transparent, permit-based cost recovery prevents ad hoc surcharges or escalating administrative costs.
- **Accountability is visible.** Public dashboards show performance and spending in clear, accessible terms.

Ultimately, the SIG model ensures that the systems guiding the Palisades Rebuild—communication, logistics, and mobility—**serve the community, not bureaucracy**. It turns City coordination from a behind-the-scenes process into a publicly visible standard of transparency, efficiency, and fairness.

9.3. Fiscal Management and Cost Recovery

9.3.1. Context and Purpose

The Palisades Rebuild is not only a construction and recovery effort—it is a test of how Los Angeles manages shared infrastructure, transparency, and accountability. A program of this scale requires systems that are financially sustainable, operationally efficient, and publicly trusted. To achieve this, the City should adopt a **fiscally neutral and adaptable model**, in which operational costs for communication, logistics, and coordination are covered equitably through **existing or adjusted permitting mechanisms**, supplemented—when warranted—by **City, state, or federal funding**.

The SIG, operating under the Mayor's Office or Recovery and Rebuild Coordination Office, will oversee fiscal management and cost recovery for all systems within the Palisades Communication, Logistics, and Mobility Framework—including the PCCT, PALMS, LCS, and TMPZ.

This structure ensures that the costs of maintaining safety, coordination, and communication are shared proportionally among those who benefit from them—homeowners, contractors, and the public—without limiting the City's ability to participate or offset costs through external funding sources when available.

9.3.2. Why Fiscal Neutrality and Flexibility Matter

Fiscal neutrality is a commitment to fairness and sustainability—it ensures that the framework can fund itself without draining City resources. However, **fiscal neutrality does not mean rigidity**. The City retains discretion to supplement or offset costs through public investment when it is in the community's best interest.

The Palisades model achieves balance by:

- **Protecting City Funds:** Relying primarily on user-based recovery mechanisms, but enabling the City to contribute through **grants, state/federal programs, or the general fund** when necessary.
- **Promoting Equity:** Allowing cost adjustments or shared contributions to reduce the burden on small projects, homeowners, or local businesses.
- **Demonstrating Efficiency:** Ensuring that any fee or subsidy produces measurable savings in time, coordination, and community disruption.
- **Enabling Scalability:** A flexible fiscal model can adapt as the Rebuild progresses, responding to new funding opportunities or community needs.

9.3.3. Cost-Recovery Framework

The fiscal strategy will align with existing City permitting and finance processes, ensuring simplicity, transparency, and accountability. All cost recovery will occur through **nominal, program-specific coordination fees** attached to existing permits, subject to SIG review, audit, and public reporting. When new funding opportunities or public priorities emerge, the **City may elect to cover a portion of costs directly**—reducing or offsetting fees to maintain fairness and community participation.

Cost-Recovery Principles

1. **User-Based Equity:** Costs are proportionally distributed among the participants whose activities generate demand for City coordination—contractors, developers, and homeowners whose projects require lane closures, TMPZs, or logistics support.
2. **Transparency and Accountability:** All fee structures, expenditures, and performance metrics will be published through the **PCCT dashboard** and reviewed quarterly by the **SIG** and **CAO**.
3. **Fiscal Neutrality with Flexibility:** Revenue collected through permits will be used exclusively for operational costs; however, the City may contribute matching or supplemental funding—from **grants, general-fund allocations, or state/federal programs**—to offset costs, accelerate system deployment, or reduce fee burdens when justified by public benefit.
4. **Continuous Review and Adjustment:** The SIG, in coordination with the **CAO**, will review cost and funding structures annually to confirm they remain balanced, fair, and consistent with program goals.

Why it matters:

This approach demonstrates responsible governance—funding essential services transparently while preserving flexibility to support affordability, fairness, and community benefit.

9.3.4. Primary Cost-Recovery Channels

For the Palisades Rebuild to operate as a fiscally neutral yet flexible program, the City must link its cost-recovery mechanisms directly to the activities that create coordination demand. Rather than imposing new fees or taxes, the framework uses **existing permitting processes**—for construction, parking, and logistics—to fund the communication and mobility systems that make those same activities more predictable, efficient, and safe.

This approach ensures that each contributor—whether a homeowner undertaking a remodel, a contractor staging materials, or a utility performing scheduled maintenance—pays only for the services and coordination support that directly benefit their work. It also gives the **City Leadership and the SIG** flexibility to supplement or offset these fees when broader community value or grant funding makes shared investment appropriate.

Under this structure, the **SIG**, in coordination with the **CAO**, **Controller,** and participating departments (**LADBS, LADOT, BOE / StreetsLA, DWP,** and **ITA**), will review all cost-recovery measures annually to ensure that they remain balanced, transparent, and equitable. The following permitting channels provide the foundation for that model.

1. **Building and Construction Permits (LADBS):** A **Technology and Coordination Fee** may be applied to residential and commercial permits within the Palisades Rebuild area.
    - A nominal **Technology and Coordination Fee** may be applied to residential and commercial permits in the Pacific Palisades area.
    - Supports PCCT integration, PALMS scheduling, and LCS coordination functions.
    - May be adjusted or offset by City funding if community participation or economic conditions warrant.
2. **Parking and Curbside Access Permits (LADOT):** A Temporary Curb Use and Access Management Fee would support curb-space planning and parking coordination through the TMPZ program.
    - A **Temporary Curb Use and Access Management Fee** supports TMPZ operations and curbside coordination.
    - Funds signage, field monitoring, and public notifications.
    - If regional or federal grants for mobility management become available, these funds may be used to reduce or eliminate this fee.
3. **Construction Logistics and Right-of-Way Permits (BOE / StreetsLA):** A Logistics Coordination Fee would support the integration of right-of-way, traffic, and utility data within PALMS and the LCS.
    - A **Logistics Coordination Fee** supports PALMS and LCS data integration, traffic analysis, and cross-department scheduling.

Utility coordination and safety inspections are funded through this channel, with opportunities for offset through infrastructure or resilience grants.

Why it matters:

These cost-recovery channels tie program funding directly to the activities that benefit from better coordination, creating a fair and sustainable model. The hybrid approach—fee-based with City participation as needed—maintains **fiscal neutrality** while ensuring that essential communication and logistics tools can be deployed and maintained **without financial strain on homeowners or small projects**. By embedding these channels within existing permit processes, Los Angeles ensures that transparency, accountability, and community value remain central to every aspect of the Palisades Rebuild.

9.3.5. Community Value and Economic Efficiency

Although these measures introduce modest administrative fees, they are best understood as **shared investments** that produce significant long-term returns for the community. For every project that proceeds smoothly—without delays, fines, or accidents—the value of coordination exceeds the nominal cost of participation.

Why it matters:

A coordinated permitting and logistics framework saves both time and money. It prevents unbudgeted disruptions, fosters trust, and turns a modest coordination fee—or shared public investment—into measurable savings for all.

- **Reduced Delays and Costs:** Proactive scheduling and communication minimize conflicts that lead to lost workdays and costly change orders.
- **Improved Safety:** Better lane, curb, and staging management reduces risk for workers and residents alike.
- **Predictability and Transparency:** Clear public dashboards and notifications help contractors and residents plan more efficiently.
- **Reduced Hidden Costs:** Fewer interruptions, re-inspections, and enforcement actions translate into tangible savings.
- **Shared Investment:** When the City and community share costs, outcomes are more equitable and sustainable.

9.4. Key Community and Contractor Benefits

9.4.1. Implementation and Oversight

Fiscal oversight will remain under the **SIG**, with transparent review by existing City financial bodies.

Oversight Structure

- **SIG:** Oversees all cost-recovery planning, system funding, and coordination of external funding sources (state, federal, or grant-based).
- **CAO / Controller:** Conduct quarterly audits verifying cost alignment, fiscal neutrality, and compliance with City policy.
- **ITA:** Ensures financial transactions and data comply with cybersecurity and privacy standards.
- **Community and Contractor Engagement:** The SIG will convene regular meetings to review proposed fee adjustments or funding options with stakeholders before changes are implemented.

Why it matters:

This governance ensures fiscal transparency while maintaining adaptability—allowing the City to leverage new funding sources and relieve community burdens without sacrificing accountability or performance.

9.4.2. Readiness for Future Cost-Benefit and Funding Analysis

At this conceptual stage, no specific rates or budgets are prescribed. The framework simply defines **how future analyses and funding evaluations should occur.**

The **SIG**, with support from the **CAO** and **Controller**, will:

- Conduct financial modeling to evaluate long-term sustainability and cost-benefit outcomes.
- Assess grant and funding opportunities at the state or federal level for technology, safety, and mobility programs.
- Determine when public co-funding or subsidies may be justified to ensure equitable participation.
- Engage the Pacific Palisades community and contractor representatives in reviewing fiscal models before any policy or fee adoption.

9.4.3. Fiscal Governance and Cost Recovery Summary

The fiscal-management and cost-recovery framework for the **Palisades Communication, Logistics, and Mobility Program** is designed to be both **fiscally responsible and socially equitable**. It balances user-based recovery with the flexibility for the **City to share costs or secure external funding** when warranted—ensuring the program remains accessible and sustainable.

By consolidating fiscal oversight under the **SIG** and aligning permitting, cost recovery, and transparency under one structure, Los Angeles can deliver a rebuild that is **efficient, fair, and future-ready**.

This approach demonstrates that the City can manage modern infrastructure systems like PCCT, PALMS, LCS, and TMPZ not just as technology investments, but as **shared civic assets**—co-funded, co-managed, and co-beneficial for the entire community.

Why it matters:

This ensures that every financial decision is **data-driven, community-informed, and flexible**—able to adapt to funding availability and evolving community needs.

9.5. Procurement and Deployment Strategy

To effectively implement the systems and services defined in the **Logistics and Traffic Management Plan**, the City will employ a procurement and deployment strategy that balances speed, accountability, and fiscal neutrality. The Palisades Rebuild is a time-sensitive initiative—permit volumes are projected to rise substantially as reconstruction accelerates. To respond efficiently, the City must reduce the traditional administrative lead time associated with technology and operational procurements while maintaining rigorous oversight and transparency.

9.5.1. Procurement Objectives

The goal of this strategy is to enable the City to **develop, deploy, and adapt systems quickly** in support of the LCS, PALMS, and PCCT. Each of these systems is essential to managing access, logistics, and communication during the Rebuild. The City's procurement objectives are to:

- Expedite deployment through streamlined contracting and approval processes.
- Leverage existing City contract vehicles and vendor agreements wherever possible to avoid redundant procurements.
- Maintain fiscal neutrality by using cost-recovery mechanisms and temporary program revenues.
- Ensure compliance with the City's cybersecurity, data governance, and accessibility standards.
- Preserve flexibility to scale, adapt, or decommission systems as the Rebuild progresses.

9.5.2. Procurement Methods

Procurements will be administered under the direction of the **BOE**, the **ITA**, and the **SIG** in accordance with Public Works contracting requirements. Depending on project scope and technical needs, the City may employ a combination of **as-a-service** and **time-and-materials** contracting models:

- **As-a-Service Models:** Used for turnkey or vendor-hosted platforms that provide software, analytics, and monitoring as managed services under defined SLAs. This model enables rapid deployment, predictable costs, and vendor accountability for system performance and uptime.
- **Time-and-Materials Models:** Applied for professional and technical services, such as integration, configuration, and ongoing support, where iterative development and field coordination are necessary. This model provides flexibility to refine systems as operational requirements evolve.

All procurement activities will emphasize:

- **Speed and Efficiency:** Streamlined contracting to meet anticipated increases in permit and field activity.
- **Interoperability:** Open data standards and secure APIs to facilitate data sharing across City systems.
- **Performance-Based Oversight:** SLAs defining reliability, responsiveness, and service quality.
- **Fiscal Responsibility:** Alignment with cost-recovery models defined in Section 6.6.
- **Transparency and Compliance:** Full adherence to ITA data-security, privacy, and accessibility standards, with procurement actions subject to SIG oversight.

9.5.3. Use of Existing Contract Vehicles

Wherever feasible, the City will **leverage existing contract vehicles, pre-qualified vendor pools, and on-call agreements** already established through BOE, ITA, and LADOT. Incorporating these efforts into current vendor scopes will reduce procurement timelines, streamline onboarding, and maintain continuity with existing systems and technologies. This approach will allow the City to mobilize operational capabilities rapidly while maintaining the rigor of its existing contracting framework.

9.5.4. Deployment Oversight

System deployment will proceed under SIG direction and in coordination with LADOT, LADBS, StreetsLA, EMD, and ITA. Oversight will focus on ensuring that each deployed system aligns with City policy, technical standards, and operational needs. Quarterly reviews will assess vendor performance, service quality, and fiscal compliance. As conditions evolve, the City will adjust deployment priorities to reflect program demand, community feedback, and rebuild progress.

9.5.5. Outcome

Through this procurement and deployment strategy, the City will be able to activate the tools and technologies necessary to manage mobility, logistics, and communication during the Palisades Rebuild efficiently and responsibly. The combined use of **as-a-service** and **time-and-materials** models—along with the strategic use of existing contract vehicles—will reduce administrative burden, accelerate deployment, and ensure the City remains prepared to meet the surge in permitting and construction activity expected over the coming years.

9.6. Community Value and Efficiency

9.6.1. Context and Purpose

The Palisades Rebuild introduces an integrated approach to communication, logistics, and mobility that redefines how Los Angeles manages complex neighborhood construction. Through a unified suite of systems—the **PCCT, PALMS, LCS**, and **TMPZ**—the City can coordinate activities that previously operated in isolation. This alignment delivers measurable community value: fewer conflicts between projects, faster permitting, safer streets, and greater confidence that reconstruction is being managed fairly and transparently.

For homeowners, this means shorter construction timelines, clearer expectations, and fewer surprise costs. For contractors, it provides a predictable environment where logistics, access, and inspection schedules are coordinated in advance. For the City, it strengthens credibility, reduces administrative workload, and improves the overall efficiency of right-of-way management.

While the program introduces modest, cost-recovery fees to sustain these functions, the net effect is a lower **total cost of construction and community disruption**. Every dollar invested in coordination prevents multiple dollars in delay, enforcement, or re-work.

9.6.2. Key Community and Economic Benefits

Reduced Delays and Avoided Costs

- Integrated scheduling through PALMS and LCS synchronizes street use, deliveries, and lane closures.
- Contractors avoid downtime caused by overlapping permits or conflicting restrictions.
- Homeowners benefit from shorter project durations—often saving weeks of carrying costs, rent, or temporary relocation expenses.
- City field crews and inspectors gain clarity on priorities, reducing rescheduling and overtime.

Improved Safety and Neighborhood Livability

- Centralized curb and lane management decreases crash risk, illegal parking, and blocked emergency access.
- TMPZ and PALMS provide structured staging zones, eliminating ad hoc contractor parking that can endanger pedestrians and cyclists.
- Coordinated signage and real-time alerts ensure residents and workers are aware of changing conditions.
- Fewer unplanned closures mean calmer traffic, cleaner air, and less noise in hillside neighborhoods.

Transparency and Predictability

- The PCCT dashboard and alert system give residents a single, authoritative source of verified information.
- Predictable communication replaces rumor-based updates, improving public sentiment and reducing calls to City hotlines.
- Contractors can subscribe to corridor-specific notifications, ensuring they receive the same information residents do.
- Clear, early notice supports voluntary compliance, lowering the need for enforcement actions.

Lower Hidden Costs and Administrative Burden

- Unified digital workflows reduce the number of forms, emails, and site visits required to obtain approvals.
- LADBS, LADOT, BOE, and DWP work from the same verified data, preventing redundant reviews.
- Contractors save on administrative labor; the City saves on staff time formerly spent reconciling inconsistent records.
- Reduced enforcement and re-inspection costs contribute to overall fiscal neutrality.

Shared Investment and Fiscal Fairness

- The cost-recovery structure ties fees directly to benefits: those generating construction activity contribute proportionally to the coordination effort that supports them.
- The City retains the ability to **supplement or offset costs** using grants, state or federal funding, or general-fund allocations when communitywide benefits justify shared investment.
- This flexibility allows the City to protect small homeowners from disproportionate impacts while maintaining program solvency.
- Transparent reporting through the PCCT dashboard shows residents how collected funds are used and what efficiencies are achieved in return.

Environmental and Quality-of-Life Gains

- Coordinated lane closures and logistics reduce idle time and emissions from construction vehicles.
- Fewer redundant trips and detours lower neighborhood congestion and improve air quality.
- Better sequencing of projects reduces waste and unnecessary material deliveries.
- Collectively, these efficiencies align with the City's sustainability and Vision Zero safety goals (City of Los Angeles 2017, 2018).

Economic Resilience and Replicability

- The governance and cost-recovery model under the SIG creates a repeatable framework for future infrastructure or recovery projects Citywide.
- Once proven in the Pacific Palisades, the same data standards, fiscal model, and community-engagement practices can be applied to other corridors, accelerating future program launches.
- Long-term, this builds institutional capacity for proactive, data-driven project management across Los Angeles.

9.6.3. Why It Matters

The **value of this framework** extends far beyond its individual systems. By uniting communication, permitting, and mobility management under a single governance and fiscal structure, the City transforms reconstruction from a reactive, fragmented process into a coordinated public service. **Small, carefully structured fees—balanced by the City's ability to co-fund or secure external grants—create stability and fairness** while preventing the far greater hidden costs of uncoordinated construction: project delays, enforcement disputes, neighborhood frustration, and safety hazards.

For residents, it means **confidence that rebuilding will be predictable and transparent**. For contractors, it means a professional, efficient work environment with fewer administrative obstacles. For the City, it means reduced operational strain, measurable performance metrics, and restored public trust.

In short, the Palisades framework proves that when Los Angeles treats communication and coordination as civic infrastructure, the entire community benefits—through saved time, reduced risk, improved safety, environmental stewardship, and stronger confidence in City leadership.

9.7. Accountability, Audit, and Transparency

9.7.1. Context and Purpose

Accountability and transparency are the foundation of public confidence in the Palisades Rebuild. The governance and fiscal model for the Palisades Communication, Logistics, and Mobility Framework—encompassing the PCCT, PALMS, LCS, and TMPZ—is designed not only to coordinate operations, but also to ensure that every action, expenditure, and communication is traceable and auditable.

For the City, accountability means maintaining rigorous oversight without slowing progress. For residents and contractors, it means clear visibility into what the City is doing, how funds are being used, and what outcomes are being achieved. Transparency is built into every layer of program governance—from data verification to fiscal reporting—and all systems operate under the principle "One City, One Source of Truth."

9.7.2. Governance Framework for Accountability

The SIG will serve as the primary accountability body, supported by the CAO, Controller, and ITA. Together, these entities will ensure that decision-making, financial management, and system performance remain independently verifiable and compliant with City standards.

Roles and Responsibilities

- **SIG:** Oversees governance, performance, and fiscal activities across PCCT, PALMS, LCS, and TMPZ. Ensures policies are followed, data is accurate, and cost recovery remains balanced.
- **CAO and Controller:** Conduct quarterly financial and compliance audits, certify that revenues and expenditures align with approved budgets, and confirm that cost neutrality is maintained.
- **ITA:** Manages digital and data-governance policies, ensuring cybersecurity, privacy, and ADA/language-access compliance.
- **Mayor's Office / Recovery and Rebuild Coordination Office:** Provides executive oversight, policy alignment, and coordination with external reporting requirements or grant conditions.
- **CD 11 and Community Partners:** Act as communication liaisons, reviewing quarterly transparency reports and ensuring that community voices are reflected in governance decisions.

This structure creates a multi-tiered accountability system that combines strategic oversight at the top, operational verification at the middle, and public transparency at the ground level.

Why it matters:

A structured governance framework ensures that accountability is not fragmented. It brings fiscal, operational, and community oversight under one unified process, enabling the City to maintain control while remaining transparent to the public.

9.7.3. Audit and Compliance Mechanisms

The Palisades framework will apply existing City audit procedures while incorporating modern, data-driven validation tools that enhance timeliness and accessibility. Every component of the program—from digital communication systems to field logistics—will generate measurable data streams that can be reviewed, compared, and reported in real time.

Core Audit and Compliance Actions

- **Quarterly Audits:** The CAO and Controller will review revenues, expenditures, and compliance with fiscal policies each quarter. Results will be submitted to the SIG and summarized for public release through the PCCT dashboard.
- **Annual Independent Review:** The SIG may commission an independent performance audit each year to validate financial integrity, technology performance, and program outcomes.
- **Data Accuracy Audits:** The ITA will employ automated tools to verify data quality, security compliance, and adherence to City data standards.
- **Privacy and Accessibility Compliance:** Periodic reviews will confirm adherence to ADA accessibility, CCPA privacy laws, and City multilingual communication mandates.
- **Operational Peer Review:** Departments such as LADOT, LADBS, BOE, and DWP will conduct interdepartmental reviews to ensure that coordination and workflow standards remain consistent across agencies.

Why it matters:

Robust auditing ensures that public funds and user fees are handled with integrity, that systems remain compliant with all local and state regulations, and that corrective actions can be taken quickly if inefficiencies or discrepancies arise.

9.7.4. Transparency Tools and Public Reporting

Transparency is an ongoing service embedded in the program's design. The Palisades framework integrates multiple communication channels to ensure that information about performance, costs, and community outcomes is accessible to all stakeholders.

Public Transparency Tools

- **PCCT Dashboard:** Serves as the central hub for transparency, providing real-time updates on construction activity, mobility impacts, and key metrics such as permits processed, alerts issued, and TMPZ occupancy. It will also host a Public Accountability Page displaying quarterly financial summaries, audit results, and progress against benchmarks.
- **Quarterly Reports:** The SIG will publish quarterly summaries covering financial status, community engagement metrics, and program performance. These reports will be available online and distributed through CD 11 channels and neighborhood associations.
- **Community and Contractor Forums:** Quarterly forums, led by the SIG and CD 11, will review program results, discuss community feedback, and present planned updates. These sessions allow stakeholders to engage directly with City representatives and understand how feedback informs decisions.
- **Annual Public Briefing:** A comprehensive yearly report and public meeting will summarize key accomplishments, lessons learned, and next steps for the Palisades Rebuild.

Why it matters:

Public transparency transforms accountability into action. By publishing data and engaging stakeholders directly, the City not only meets compliance obligations but also strengthens public trust through consistent, open communication.

9.7.5. Performance Measurement and Continuous Improvement

Accountability extends beyond compliance to a continuous improvement process. The SIG will track performance indicators to measure how effectively communication, coordination, and logistics systems are delivering results.

Key Performance Metrics

- **Operational Efficiency:** Average permit-processing time, number of scheduling conflicts avoided, and reduction in project delays.
- **Fiscal Performance:** Cost recovery ratio, audit compliance scores, and percentage of fees offset by external funding.
- **Safety Outcomes:** Reduction in curbside incidents, work-zone conflicts, and emergency-access violations.
- **Community Satisfaction:** Survey-based metrics capturing homeowner, contractor, and neighborhood feedback on transparency and coordination.
- **Environmental Benefits:** Reduction in vehicle idling time, congestion, and emissions associated with construction activity.

These indicators will be reviewed quarterly by the SIG and published semiannually to demonstrate progress and identify opportunities for refinement.

Why it matters:

Continuous measurement transforms the program from a static system into a learning organization—one that evolves through data, feedback, and accountability. By quantifying results, the City can prove the value of transparency and performance to taxpayers and community members alike.

9.7.6. Governance Framework Summary

The Palisades Rebuild framework is more than a technical solution; it is a civic contract built on transparency, accountability, and trust. Through structured oversight by the SIG and independent audits by the CAO and Controller, every dollar and decision is traceable. Through data governance by the ITA and public reporting through the PCCT dashboard, every outcome is visible. Through continuous performance evaluation, every improvement is measurable.

This framework ensures that governance is not merely a matter of compliance but a demonstration of the City's commitment to responsible stewardship. By embedding audit, reporting, and community engagement into the program's structure, Los Angeles establishes a model for transparent, accountable, and community-centered recovery—providing residents and stakeholders with lasting confidence in both the process and the results.



10. Risk Management and Contingency Planning

10.1. Context and Purpose

The Palisades Rebuild is an unprecedented undertaking—geographically complex, politically visible, and logistically dense. It brings together multiple City departments, contractors, utilities, and residents into a single, high-intensity operating environment. Within this environment, even routine construction risks are amplified: one missed communication or uncoordinated closure can cascade into neighborhood gridlock, safety incidents, or loss of public confidence.

Risk management, therefore, is not an ancillary task; it is a **core management discipline** embedded in every aspect of Workstream 4. This section provides a unifying framework to anticipate, monitor, and respond to risk across all systems.

The goal is to ensure the program operates with resilience—capable of absorbing and adapting to disruption without compromising safety, transparency, or progress. This is achieved through a governance-led approach that empowers the **SIG** to direct cross-departmental readiness, coordination, and escalation procedures.

Key Takeaways:

- Risk management is positioned as a *governance function*, not a technical afterthought.
- The City's credibility and pace of recovery depend on anticipating disruption before it becomes public failure.
- This section establishes how risk is shared, communicated, and resolved across agencies—anchoring accountability at the SIG level.



10.2. Risk Management Framework

The City's approach to risk management aligns with the same governance hierarchy that defines Workstream 4's overall structure. Risk management is embedded in every operational layer, from executive oversight to field-level implementation.

1. **Strategic Oversight – SIG:** The SIG, under the Mayor's Office or Recovery and Rebuild Coordination Office, sets risk policy, authorizes contingency activation, and ensures that risk management remains fully integrated into program governance. The SIG does not "own" risk in a vacuum—it owns *risk governance*, ensuring each department understands and fulfills its risk responsibilities.
2. **Operational Coordination – Departmental Risk Liaisons:** Each participating agency (LADOT, LADBS, BOE/StreetsLA, DWP, EMD, ITA, CD 11) appoints a Risk Liaison responsible for identifying and reporting potential risks, maintaining readiness plans, and participating in monthly cross-agency reviews chaired by the SIG.
3. **Field Implementation – Program Managers and Contractors:** Frontline managers, inspectors, and contractors are responsible for executing mitigation procedures, maintaining operational discipline, and escalating issues according to predefined protocols.

The strength of this framework lies in its **horizontal communication**—risks are identified in the field, validated by departmental liaisons, and escalated vertically to the SIG for rapid decision-making and resource coordination.

Key Takeaways:

- Risk management mirrors Workstream 4's governance structure—executive leadership sets policy, departments manage, and field teams act.
- The SIG functions as the City's single point of accountability for resilience and contingency governance.
- This model prevents risks from becoming siloed or delayed through bureaucratic chains of communication.

Many projects identified in this document are currently in preliminary stages of the project development process, and may still be pending funding, final approvals, and/or permitting. All projects are subject to change in scope, schedule, and cost until they are fully approved. Some of the projects, strategies, and efforts described in this report may not be possible for the City to complete without additional funding from the Federal and State governments as well as philanthropy, which may or may not be forthcoming.



10.3. Primary Risk Domains

The Palisades Rebuild's complexity spans a spectrum of interconnected risks. These can be grouped into four overarching domains that collectively cover the full life-cycle of the program. Each domain is tied to a responsible City entity, ensuring clarity of ownership and coordination under the SIG's oversight (Table 10.1).

Table 10.1: Risk Domains

Domain	Context and Description	Responsible Lead
Operational Risk	Includes on-the-ground disruptions such as uncoordinated lane closures, equipment failure, delivery conflicts, or loss of emergency access. These risks directly affect safety, mobility, and community perception of competence.	LADOT / LADBS
Technical and Cyber Risk	Encompasses outages or integrity issues within digital systems, cybersecurity incidents, and connectivity failures for self-powered field sensors. Technology reliability is the backbone of transparency; failure here undermines every other system.	ITA / Vendors / SIG
Fiscal and Contractual Risk	Covers any event that threatens cost neutrality, such as under-recovery of fees, vendor non-performance, delayed reimbursements, or audit findings. Fiscal integrity directly affects program credibility and sustainability.	CAO / Controller / LADBS
Reputational and Community Risk	Relates to loss of public trust due to communication lapses, perceived inequity, or misinformation. Even minor operational issues can escalate into reputational crises in a highly engaged community like the Pacific Palisades.	CD 11 / LADOT Communications / SIG

Key Takeaways:

- Each risk domain is owned and actively managed; no area operates in isolation.
- The City's transparency systems are both assets and potential vulnerabilities—requiring constant cybersecurity and data governance vigilance.
- Protecting community trust is as critical as maintaining traffic flow or fiscal balance; reputational risk is a performance indicator, not a public-relations concern.

10.4. Qualitative Trigger Levels and Escalation

Because the Palisades program operates in a rapidly evolving environment, it is not practical to rely solely on numeric thresholds for intervention. Instead, the City uses a qualitative, three-tier escalation framework that defines *when* and *how* to act (Table 10.2).

Table 10.2: Escalation Framework

Level	Condition	City Response
Level 1 – Routine Variance	Minor deviation from expected performance, such as a temporary data lag or short-term congestion.	Managed within the originating department; documented in monthly SIG report.
Level 2 – Operational Degradation	Noticeable performance degradation affecting coordination, access, or public perception (e.g., repeated field conflicts or rising complaints).	SIG convenes coordination call within 48 hours; corrective measures enacted; communication issued.
Level 3 – Critical Disruption	Event poses imminent risk to safety, fiscal integrity, or public confidence (e.g., system outage, major accident, emergency evacuation).	SIG activates contingency protocols; emergency messaging issued; executive briefing within 24 hours.

This escalation model prioritizes **speed and accountability**. Every department understands what qualifies as a Level 2 or Level 3 event and what procedural steps are required.

Key Takeaways:

- Escalation is based on *impact*, not data availability.
- The model reinforces "no surprises" governance—departments act early and report upward quickly.
- The SIG's activation authority ensures coordinated, cross-departmental response rather than fragmented reaction.

10.5. Preventive and Mitigation Measures

Prevention remains the most cost-effective form of risk management. The City's approach combines **redundancy, data integrity, field readiness, and transparent communication** to reduce the likelihood or impact of disruptions.

1. **Operational Continuity**
   - » Pre-approved detour templates for all major corridors (Sunset, PCH, Chautauqua) ensure that traffic rerouting can be executed immediately.
   - » LADOT and LADBS maintain joint inspection schedules to detect potential lane or staging conflicts before they occur.
   - » Cross-trained inspectors allow continuity if a single department experiences workforce shortages.
2. **Technology Resilience**
   - » All digital systems operate in redundant, cloud-based environments with automated failover to backup servers.
   - » ITA mandates 24-hour data restoration capability and continuous penetration testing for cybersecurity.
   - » Field units (solar-powered cameras, sensors, and signage) store data locally and sync automatically once connectivity is restored.
3. **Fiscal Integrity and Oversight**
   - » Each cost-recovery account is restricted to program use, audited quarterly by CAO.
   - » Any fiscal variance greater than 10% triggers an automatic financial review by SIG and Controller.
   - » Vendor contracts include performance-based SLAs linked to uptime, delivery accuracy, and data security.
4. **Workforce Safety and Readiness**
   - » All field staff undergo standardized training on emergency procedures, communications protocol, and hazard identification.
   - » Monthly safety briefings reinforce situational awareness across agencies and contractors.
   - » EMD conducts semiannual table-top drills simulating multi-agency response to infrastructure disruption.
5. **Public Transparency and Trust**
   - » Real-time public dashboards display active closures, financial audits, and risk metrics to maintain visible accountability.
   - » All public inquiries logged through the feedback portal are acknowledged within 24 hours and tracked to closure.
   - » Community engagement staff coordinate messaging with CD 11 to ensure consistent, multilingual communication.

Key Takeaways:

- Mitigation is as much cultural as procedural—risk awareness is part of daily operations.
- Redundancy in systems and staff ensures continuity even under degraded conditions.
- Transparency is a preventive tool: by informing the public early, the City prevents rumor, speculation, and reputational harm.

10.6. Roles and Responsibilities

Clear lines of accountability are essential during crisis response. Each participating entity has a defined function within the risk and continuity structure (Table 10.3).

Table 10.3: Risk and Contingency Planning Roles and Responsibilities

Entity	Core Risk and Contingency Functions
SIG	Directs Citywide (Palisades) risk policy, maintains Risk Register, activates contingency protocols, and reports to the Mayor's Office.
LADOT	Manages traffic, curb, and mobility risks; oversees LCS and TMPZ continuity; ensures emergency-lane access.
LADBS	Maintains permitting continuity and fiscal tracking; coordinates contractor compliance and inspection safety.
BOE / StreetsLA	Ensures right-of-way safety, debris clearance, and field infrastructure restoration during hazard events.
DWP / Utilities	Manages power, water, and communications resilience; prioritizes service to operational hubs and staging areas.
ITA	Provides cybersecurity oversight, cloud redundancy, and data-governance compliance across all systems.
CAO / Controller	Oversees fiscal audits, validates cost neutrality, and monitors vendor performance and financial exposure.
LAFD / LAPD	Lead agencies for emergency activation, public safety, and coordination with City EOC (Emergency Operations Center).
CD 11 and Community Partners	Serve as communication liaisons, coordinate messaging, and maintain two-way feedback channels with residents and contractors.

Key Takeaways:

- Roles are explicitly defined to prevent confusion or duplication of effort.
- The SIG acts as a single decision-making node supported by technical and fiscal agencies.
- Community communication is formally recognized as part of risk management—not an afterthought.

10.7. Monitoring, Reporting, and Continuous Improvement

The City's risk strategy is not static; it evolves through continuous observation, feedback, and learning. The **SIG Risk Register** serves as the living backbone of this process, cataloging every identified risk, mitigation action, and resolution status.

Monitoring and Review Cadence

- **Monthly:** Departments submit risk updates identifying emerging issues or corrective actions.
- **Quarterly:** The SIG produces a consolidated Risk and Resilience Report summarizing incidents, trends, and mitigation progress for executive leadership and CD 11.
- **Annually:** An independent review validates audit closure, system uptime, and effectiveness of mitigation policies.

Feedback Integration

- Community feedback from PCCT and CD 11 channels is analyzed for patterns—frequent complaints or recurring bottlenecks become inputs to the Risk Register.
- Metrics such as system uptime, response time, and compliance rate inform early-warning signals and future resource allocation.

Adaptive Learning

- Every significant incident or Level 3 disruption undergoes a **Post-Event Review** within 30 days. Findings are documented, corrective measures assigned, and lessons integrated into updated training or SOPs.
- The City applies this learning process to build institutional memory—turning short-term issues into long-term performance improvements.

Key Takeaways:

- Continuous monitoring transforms risk management into an active feedback system rather than a static plan.
- Public transparency is embedded in risk reporting—residents can see progress and accountability.
- Institutional learning ensures the City becomes stronger with each cycle of review.



10.8. Summary and Executive Perspective

Risk management is the connective tissue of the Palisades Rebuild. It links governance, technology, communication, and fiscal accountability into a coherent framework that sustains progress even under stress.

The City's approach recognizes that disruption is inevitable in an initiative of this scale—but **failure is preventable** through foresight, transparency, and coordination. The SIG's integrated governance ensures that every system—PCCT, PALMS, LCS, and TMPZ—operates with shared accountability, auditable data, and built-in resilience.

Through this section, the City affirms that resilience is not a contingency plan—it is an operating principle. The Palisades Rebuild, guided by this framework, will stand as a benchmark for how a modern city prepares for the unexpected and sustains public confidence through disciplined, transparent governance.

Executive Takeaways:

- The Palisades Rebuild demonstrates a model for *resilient city governance*: risk-aware, data-driven, and community-centered.
- Embedding risk management within daily operations ensures that safety, fiscal responsibility, and public trust are maintained continuously, not reactively.
- The program's legacy will not only be rebuilt infrastructure—but a tested framework for how Los Angeles can manage large-scale, high-stakes recovery with confidence and transparency.







11. Community Engagement and Equity

11.1. Context and Purpose

Rebuilding the Pacific Palisades after the wildfire is not only an engineering challenge—it is a human one. The success of the Palisades Rebuild will be measured as much by how the community feels and functions during reconstruction as by how efficiently roads, logistics, and permits are managed. Residents are living through a long-term transformation of their neighborhood; contractors and businesses are adjusting to unfamiliar regulations; and City departments are balancing safety, access, and speed under intense public scrutiny.

Community engagement is therefore an essential component of risk management, governance, and equity. This section establishes a structured, inclusive framework to ensure that every resident, business, and institution has a clear voice and reliable visibility into what the City is doing, why it matters, and how to provide feedback. It links the technical systems—PCCT, PALMS, LCS, and TMPZ—with transparent communication processes that sustain public confidence and protect the most vulnerable users.

Key Takeaways:

- Engagement is not outreach—it is governance in practice.
- Equity means lowering participation barriers and ensuring that the benefits and burdens of reconstruction are shared fairly.
- Transparent, two-way communication is essential to preserving trust and maintaining social license for the Rebuild.

11.2. Guiding Principles

The City's community-engagement philosophy rests on five guiding principles that echo the broader Palisades Framework of safety, transparency, and fiscal neutrality.

- **Transparency and Truthfulness** – The public deserves accurate, verified information delivered consistently across all channels.
- **Accessibility** – All materials and platforms are multilingual, ADA-compliant, and mobile-first so every resident can participate.
- **Equity and Inclusion** – Outreach prioritizes populations most affected or least represented—renters, seniors, and residents without digital access.
- **Consistency of Voice** – Information originates from a unified City message under SIG oversight, preventing fragmentation or contradiction.
- **Responsiveness and Accountability** – Every inquiry receives acknowledgment and closure; performance metrics are published quarterly.

Key Takeaway:

- These principles transform communication from episodic updates into an ongoing public-service obligation.

11.3. Stakeholder Landscape

The Pacific Palisades community is diverse in both geography and need. Effective engagement requires recognizing the different perspectives that converge within the Rebuild corridor.

- **Residents and Homeowner Associations** – Concerned about daily mobility, noise, parking, and emergency access.
- **Contractors and Trades** – Depend on timely permits, staging coordination, and consistent rules.
- **Local Businesses and Service Providers** – Rely on predictable customer access and delivery routes.
- **Institutions (Schools, Churches, Community Centers)** – Act as communication partners and potential hosts for meetings or temporary parking.
- **Vulnerable and Mobility-Limited Populations** – Require prioritized curb access, ADA-compliant routes, and accessible communication formats.
- **Regional Travelers and Commuters** – Depend on timely traffic and detour information through public dashboards.

By mapping these constituencies, the City ensures that engagement remains representative, not reactive.

11.4. Engagement Strategy and Channels

The engagement strategy operates across four integrated tiers, ensuring continuous communication from general awareness to co-creation of solutions (Table 11.1).

Table 11.1: Engagement Strategy Tiers

Tier	Objective	Primary Channels and Activities	Responsible Parties
Tier 1 – Information and Awareness	Keep all stakeholders informed of current and upcoming activities.	PCCT dashboard, email/text alerts, newsletters, social media, field signage.	LADOT Comms / CD 11 / SIG Comms
Tier 2 – Consultation and Feedback	Capture reactions, questions, and concerns.	Online forms, dedicated hotline, neighborhood-council briefings.	CD 11 / LADBS / SIG
Tier 3 – Collaboration and Co-Design	Engage stakeholders in shaping pilot programs or ordinance refinements.	Focus groups, contractor roundtables, institutional partnerships.	SIG Comms / CAO / LADOT
Tier 4 – Monitoring and Reporting	Close the feedback loop and demonstrate accountability.	Quarterly engagement reports, "You Spoke–We Acted" dashboard updates.	SIG Comms / ITA

Context

This tiered structure mirrors the adaptive-management philosophy used elsewhere in the Plan—scaling communication intensity to community impact.

Key Takeaways:

- Engagement is continuous and traceable.
- Digital transparency and face-to-face dialogue reinforce each other.
- Every interaction becomes data for improvement.

11.5. Communication Protocols

Clear protocols guarantee that the City speaks with one credible voice and that residents know where to look for accurate information.

- **Unified Messaging:** All departments release updates through PCCT, ensuring synchronization and version control.
- **Advance Notification:** Minimum seven-day notice before any new lane, curb, or parking change; emergencies communicated immediately via NotifyLA.
- **Language Access:** Core materials in English, Spanish, Korean, and Chinese, with additional translations as needed.
- **ADA Compliance:** Web content meets WCAG 2.1 AA; printed materials use high-contrast fonts and large text.
- **Response Standards:** Public inquiries acknowledged within 24 hours and resolved or referred within five business days.
- **Branding and Visual Consistency:** All graphics and notices use Palisades Rebuild visual standards to build recognition and reduce confusion.

Why it matters:

Predictability in communication equals predictability in public behavior. When the community knows where and how to get verified information, compliance improves and frustration decreases.

11.6. Equity Framework

11.6.1. Fair Access

Engagement activities will be geographically and demographically distributed to ensure that participation opportunities reach every segment of the Pacific Palisades population.

- Printed notices and bulletin-board postings for neighborhoods with limited internet access.
- Evening and weekend meetings to accommodate working families.
- Virtual participation options for those unable to attend in person.
- Partnerships with schools, faith-based organizations, and community nonprofits to extend reach.

11.6.2. ADA Compliance and Universal Design

Equity also means designing physical and digital spaces that everyone can use.

- Field signage positioned to maintain wheelchair and stroller accessibility.
- Construction detours include tactile and audible cues for visually impaired users.
- All online dashboards and forms are screen-reader compatible.

11.6.3. Vulnerable User Protection

Special attention will be given to residents without driveways, older adults, and individuals with disabilities.

- Priority access to Residential and Delivery Access Zones.
- Dedicated accessibility hotline routed through CD 11.
- Real-time reporting of blocked ADA routes through PCCT.

Key Takeaways:

- Equity is engineered into operations, not appended later.
- Universal design and multilingual access convert compliance into compassion.
- Protecting vulnerable users strengthens the entire system's legitimacy.

11.7. Engagement Governance and Roles

Engagement oversight follows the same integrated model used for technical governance (Table 11.2).

Table 11.2: Engagement Governance Entities and Functions

Entity	Engagement Functions
SIG	Sets overall engagement policy, approves quarterly plans, and integrates results into performance reporting.
CD 11	Serves as the community's principal liaison; hosts public forums; coordinates local messaging.
LADOT / LADBS / BOE / StreetsLA	Provide subject-matter expertise at community briefings; supply verified data for dashboards and notices.
ITA / SIG Communications Team	Maintain digital platforms, ensure accessibility compliance, and produce analytics dashboards.
Community Partners (HOAs, Schools, Nonprofits)	Amplify official messages, distribute materials, and return feedback to SIG.

Context:

This structure institutionalizes collaboration rather than relying on ad hoc outreach

Key Takeaway:

- Every department is accountable for engagement outcomes, not just communications staff.

11.8. Feedback Collection and Integration

Feedback is treated as operational data—collected, categorized, and analyzed like any other performance metric.

1. **Collection:** Residents submit input through PCCT web forms, hotline calls, social media, or in-person sessions.
2. **Routing:** The system automatically assigns each submission to the relevant department (e.g., LADOT for traffic, LADBS for permitting).
3. **Tracking:** Each case receives a unique ID; its status ("Open," "In Progress," "Resolved") appears on the dashboard.
4. **Analysis:** SIG analysts review data monthly to identify recurring themes or geographic clusters.
5. **Action and Reporting:** Responses and corrective measures are summarized in quarterly "Community Feedback and Response" reports.

Key Takeaways:

- Feedback management is transparent and data-driven.
- Residents can see evidence that their input influences outcomes.
- The system transforms complaint handling into continuous improvement.

11.9. Performance Measurement

The City will measure engagement quality through quantitative and qualitative indicators, aligning with Section 's evaluation framework.

Metrics

- Number of outreach events and participants.
- Average response time to public inquiries.
- Percentage of materials meeting accessibility standards.
- Distribution of participants by demographic and neighborhood.
- Community satisfaction index based on survey data.
- Number of policy or program adjustments triggered by feedback.

Results feed into the SIG's quarterly public reports and annual program review.

Why it matters:

What gets measured gets managed—and what is reported publicly earns trust.

11.10. Continuous Improvement and Learning

Engagement is iterative. Each communication cycle—whether a dashboard update or a public forum—provides lessons that inform the next.

- **Annual Review:** SIG Comms and CD 11 evaluate engagement effectiveness and propose improvements.
- **Cross-Program Learning:** Practices refined in the Palisades Rebuild will inform future City infrastructure or emergency-recovery initiatives.
- **Adaptive Design:** Engagement tools and messages evolve with community demographics, technology use, and program maturity.
- **Public Reflection:** "Lessons Learned" summaries published annually demonstrate institutional humility and commitment to progress.

Key Takeaway:

- Community engagement is a living system—designed to learn, adapt, and mature alongside the Rebuild itself

11.11. Summary and Executive Perspective

Reconstruction is more than rebuilding roads—it is rebuilding relationships. Through this framework, Los Angeles affirms that **people are infrastructure**: when communication, trust, and equity are strong, every physical improvement delivers greater value.

The Palisades Community Engagement and Equity Plan transforms outreach into a measurable governance practice. By embedding transparency, accessibility, and responsiveness into daily operations, the City ensures that residents, contractors, and businesses are not bystanders but partners in recovery.

Executive Takeaways:

- Engagement is continuous, measurable, and integrated with program governance.
- Equity is implemented through design standards, language access, and fair participation.
- Transparent two-way communication builds the social resilience necessary for physical reconstruction.
- The framework establishes a replicable model for inclusive, accountable infrastructure governance Citywide.



12. Monitoring, Evaluation, and Continuous Improvement

12.1. Context and Purpose

The Palisades Rebuild is not a static program—it is a living system that must evolve as conditions, technologies, and community expectations change. The multi-year recovery effort will operate within a constrained geography, across numerous concurrent projects, and under constant public scrutiny. Construction activity, logistics coordination, and public-communication demands will fluctuate week by week, requiring the City to remain agile, transparent, and data-driven in every decision it makes.

Monitoring and evaluation therefore serve as the **City's compass** for the Rebuild—transforming complex field operations into measurable indicators that show whether objectives are being achieved, resources are being used efficiently, and community outcomes are improving. Without this framework, even the most sophisticated systems—whether for lane management, logistics, or community engagement—risk losing alignment with the City's core principles of safety, equity, and fiscal integrity.

This section establishes how success will be measured, reported, and continuously improved. It defines a coordinated monitoring architecture that unites the **SIG**, department data liaisons, and City leadership under one shared purpose: to verify that every dollar spent and every action taken advances the goals of the Palisades Communication, Logistics, and Mobility Framework. By tracking performance across five dimensions—traffic, parking, logistics, communications, and fiscal management—the City creates an evidence-based feedback loop that drives accountability and informs timely course corrections.

The framework builds upon three interlocking pillars:

1. **Measurement as Governance** – Performance indicators are not peripheral metrics; they are instruments of policy oversight. Each department becomes both a service provider and a steward of transparent data, ensuring that City leadership and the public can see measurable progress in real time.
2. **Evaluation as Learning** – Quarterly reviews and annual audits will translate raw data into insight, identifying where systems succeed, where they stall, and how improvements can be implemented quickly. The focus is on institutional learning—creating a City organization that refines itself through experience rather than waiting for post-program evaluations years later.
3. **Continuous Improvement as Culture** – Monitoring is only valuable if it leads to change. The City's commitment is to treat every finding—whether positive or corrective—as actionable intelligence. Data will feed directly into operational adjustments, permit-logic refinements, community-communication strategies, and future policy design.

This approach redefines success for the Palisades Rebuild. Success will not be measured solely by the completion of infrastructure or the number of permits issued, but by how well the City sustains **safety, accessibility, equity, and public confidence** throughout the entire reconstruction process. The monitoring and evaluation framework thus becomes both a management tool and a public promise: a visible, auditable demonstration that Los Angeles can rebuild smarter, faster, and more transparently than ever before.

Key Takeaways:

- Monitoring and evaluation are the backbone of accountability—converting operations into measurable public outcomes.
- The City's leadership will use these insights to guide adaptive management, fiscal stewardship, and equitable service delivery.
- Continuous improvement ensures that the Palisades Rebuild remains aligned with community needs, City policies, and evolving best practices—making the program a model for transparent, data-driven urban recovery.

Many projects identified in this document are currently in preliminary stages of the project development process, and may still be pending funding, final approvals, and/or permitting. All projects are subject to change in scope, schedule, and cost until they are fully approved. Some of the projects, strategies, and efforts described in this report may not be possible for the City to complete without additional funding from the Federal and State governments as well as philanthropy, which may or may not be forthcoming.

12.2. Monitoring Framework and Governance

The effectiveness of the Palisades Rebuild depends on the City's ability to transform performance data into coordinated, evidence-based management. The monitoring framework is the institutional backbone that ensures every element of the Communication, Logistics, and Mobility Framework operates in sync—with real-time visibility, defined accountability, and transparent reporting from the field to City Hall.

This framework establishes a **governance-driven approach** to monitoring that embeds performance management directly into daily operations rather than treating it as a back-end audit. It links data collection, reporting, and analysis to the same decision-making structures that guide lane closures, logistics scheduling, curb management, and community communication. In doing so, it turns oversight into a continuous, living process—an operating rhythm that reinforces public accountability and adaptive management.

12.2.1. Oversight and Institutional Roles

At the center of this framework is the **SIG**, which acts as the coordinating and oversight body for all monitoring and evaluation activities. The SIG's mandate is to ensure that each participating department—**LADOT, LADBS, BOE/StreetsLA, DWP, EMD, ITA, CD 11**, and the **CAO**—collects, verifies, and reports performance data consistent with shared metrics and governance standards.

- **SIG Responsibilities**
  - Establish program-wide KPIs and review targets quarterly.
  - Convene performance-review meetings and publish consolidated findings for City Leadership and the public.
  - Ensure integration of fiscal, operational, and community-feedback data into one coherent evaluation narrative.
  - Direct corrective or improvement actions when performance deviates from expectations.
- **Departmental Data Liaisons** – Each department assigns a Data Liaison responsible for data validation, coordination with ITA analytics teams, and attendance at SIG review sessions. These liaisons act as custodians of accuracy and continuity, maintaining the link between frontline operations and executive oversight.
- **ITA** – ITA supports data integrity, hosting the secure cloud infrastructure for dashboards and automated reporting. It manages system interoperability, cyber-security, and redundancy, ensuring that the monitoring platform operates with the same resilience and transparency expected of physical infrastructure.

Context:

This structure eliminates fragmentation by uniting technical experts, fiscal managers, and communication leads under one coordinated performance-governance framework. It ensures that every data point—from a lane-closure log to a public-feedback form—is owned, verified, and actionable.

12.2.2. Reporting Cadence and Performance Cycles

Monitoring and evaluation depend on rhythm and predictability. The Palisades Rebuild adopts a tiered reporting cadence that provides both immediate visibility and long-term insight.

1. **Monthly Dashboards – Operational Pulse:** Live or near-real-time dashboards display metrics such as lane-closure compliance, TMPZ occupancy, PALMS booking accuracy, and public-alert response rates. These dashboards serve as the City's "pulse check," allowing SIG and departmental teams to respond rapidly to emerging issues.
2. **Quarterly Performance Reviews – Strategic Oversight:** Every quarter, the SIG compiles departmental reports into a consolidated **Performance and Accountability Summary**. This document highlights achievements, identifies systemic risks, and recommends adjustments. It is reviewed by the CAO and submitted to the Mayor's Office and CD 11 for transparency.
3. **Annual Independent Evaluation – Institutional Learning:** Once per year, an independent evaluator or cross-agency peer review will assess overall program performance, validate fiscal and operational data, and document lessons learned. Findings inform updates to policies, KPIs, and communication strategies for the subsequent year.

This cadence balances immediacy with reflection: daily operations remain responsive, while quarterly and annual reviews ensure strategic alignment with City goals and community expectations.

12.2.3. Integration with Governance and Transparency Systems

The monitoring framework is intentionally designed to dovetail with the City's broader governance ecosystem:

- **Fiscal Governance:** Data from cost-recovery accounts, audits, and vendor performance metrics flow directly into the monitoring platform, reinforcing Section 9's fiscal-neutrality commitments.
- **Community Engagement:** Feedback collected under Section 11 is cross-referenced with performance data to identify where communication or policy adjustments are needed.
- **Policy Alignment:** Metrics link to Citywide initiatives—**Vision Zero**, **Mobility Plan 2035**, and **Resilient Los Angeles**—ensuring local progress contributes to Citywide goals (City of Los Angeles 2017, 2018; Los Angeles Department of City Planning 2016; Mayor's Office 2018).
- **Transparency and Accountability:** Quarterly summaries are published through the **PCCT dashboard**, allowing residents to view outcomes, trends, and corrective actions. This visibility transforms performance management into a shared civic accountability mechanism.

12.2.4. The Role of Continuous Governance

Performance management is not a technical exercise; it is an act of governance. By institutionalizing data review within the SIG's routine meetings, the City embeds accountability into the same processes that authorize decisions and allocate resources. Over time, this structure cultivates a culture where **every operational change is evidence-based, every adjustment traceable, and every success demonstrable.**

The result is a system that evolves with experience—learning from both its successes and its stress tests—and uses data not merely to report outcomes but to improve them.

Key Takeaways:

- The monitoring framework transforms oversight from episodic evaluation into continuous governance.
- SIG coordination ensures that data from every department is standardized, validated, and publicly visible.
- Predictable reporting cycles—monthly, quarterly, annual—balance operational agility with long-term accountability.
- Integration across fiscal, operational, and community systems creates one transparent source of truth for City leadership and the public.

12.3. Performance Indicators and Key Metrics

The Palisades Rebuild integrates a wide range of complex systems—traffic control, logistics coordination, curb and parking management, public communication, and fiscal oversight. Each of these systems must be measured not only in isolation but also in terms of how they interact to shape community experience, safety, and trust.

This section defines the **performance indicators** that will serve as the program's management dashboard—quantifying outcomes, validating assumptions, and guiding continuous improvement. These indicators transform the Rebuild from a plan into a measurable enterprise, ensuring that data, not anecdote, drives every operational decision and policy refinement.

The indicators fall into six principal domains, each directly linked to the City's core objectives of **safety, equity, transparency, and fiscal neutrality.** Together, they provide a comprehensive picture of performance—technical, financial, and social—across the life of the program.

12.3.1. Traffic and Lane Management Performance

Purpose:

To ensure that reconstruction activities maintain acceptable levels of mobility and safety while minimizing community disruption.

Key Indicators:

- **LOS Trends:** Intersection and corridor performance tracked quarterly to identify bottlenecks and verify lane-closure scheduling efficiency.
- **Queue Length and Delay Duration:** Real-time monitoring of congestion severity on critical routes such as Sunset Boulevard, Chautauqua, and Temescal Canyon.
- **Travel-Time Reliability Index:** Measures the predictability of trips through active construction zones.
- **Safety and Incident Rate:** Frequency of near misses or collisions within active work areas, correlated with lane-closure configurations.

Application:

These indicators allow LADOT and the SIG to validate the timing of closures, enforce safety protocols, and adjust traffic control plans proactively.

Why it matters:

Reliable movement through the Pacific Palisades is essential not only for convenience but also for emergency response, evacuation readiness, and public perception of City competence.

12.3.2. Parking and Curb Management Performance

Purpose:

To ensure that TMPZs, Residential Access Zones, and CTPZs function efficiently, equitably, and safely throughout the Rebuild.

Key Indicators:

- **Zone Utilization Rate:** Average occupancy compared with planned capacity; identifies oversubscription or underuse.
- **Compliance Rate:** Percentage of vehicles parked in authorized zones with valid permits.
- **Turnover Rate:** Average duration of vehicle stays within managed zones, reflecting curb efficiency.
- **Emergency-Lane Clearance Rate:** Frequency and duration of obstructions violating 20-foot access standards.
- **Community Satisfaction Index:** Sentiment score derived from feedback and complaint resolution metrics.

Application:

LADOT and LADBS will use these metrics to rebalance zone distribution, modify permit durations, and refine enforcement deployment.

Why it matters:

Parking and curb access are the most visible elements of City management during reconstruction. Their success defines daily livability and sets the tone for public confidence in the overall program.

12.3.3. Logistics and Construction Coordination Performance

Purpose:

To verify that the PALMS is reducing congestion, improving scheduling, and enabling efficient material flow throughout the Rebuild area.

Key Indicators:

- **Booking Compliance:** Percentage of deliveries and removals scheduled and executed through PALMS.
- **Trip Volume and Peak-Hour Distribution:** Total vehicle trips by type (contractor, vendor, waste) and adherence to permitted time windows.
- **On-Time Delivery Rate:** Proportion of deliveries arriving within scheduled time slots.
- **Staging-Area Utilization:** Occupancy and turnover rates of logistics hubs and holding zones.
- **Emission Reduction Estimate:** Modeled decrease in vehicle miles traveled and idling emissions through consolidated logistics.

Application:

These indicators validate whether PALMS is meeting its design intent—to centralize deliveries, reduce unnecessary travel, and streamline operations for both contractors and residents.

Why it matters:

Logistics efficiency translates directly into lower congestion, shorter construction durations, reduced emissions, and improved community quality of life.

12.3.4. Communication and Public Engagement Performance

Purpose:

To ensure that the PCCT provides accurate, accessible, and timely information to all audiences—and that residents feel informed, heard, and supported throughout reconstruction.

Key Indicators:

- **Response Rate and Resolution Time:** Average time between public inquiry and official response or closure.
- **Feedback Closure Rate:** Share of logged comments or complaints resolved within target service levels (e.g., five business days).
- **Engagement Participation:** Number and diversity of residents attending meetings, accessing dashboards, or completing surveys.
- **Transparency Index:** Composite measure of public awareness and satisfaction derived from quarterly surveys.

Application:

These metrics guide improvements to messaging frequency, channel mix, and translation accessibility, ensuring that communication remains inclusive and effective.

Why it matters:

Transparent communication is the foundation of public trust. When information is consistent and credible, residents cooperate, contractors comply, and City leadership maintains legitimacy.

12.3.5. Fiscal and Governance Performance

Purpose:

To confirm that the Palisades Rebuild operates within its fiscal-neutrality mandate and that all costs, revenues, and vendor activities remain transparent and auditable.

Key Indicators:

- **Cost-Recovery Ratio:** Revenue from permits and program fees versus expenditures on operations and technology.
- **Audit Compliance Rate:** Percentage of financial processes meeting CAO and Controller standards without findings.
- **Vendor Performance Index:** Evaluation of contractors and service providers based on SLA adherence, uptime, and fiscal efficiency.
- **Expenditure Variance:** Difference between planned and actual costs, with justifications documented for deviations.
- **Grant and Funding Utilization:** Timeliness and effectiveness of applying external funds toward eligible program elements.

Application:

The SIG and CAO will use these data to safeguard fiscal integrity, inform future budgeting, and reinforce public confidence that the program delivers measurable value.

Why it matters:

Fiscal neutrality underpins political and community support for the Rebuild. Transparent management of program funds ensures sustainability and trust in City governance.

12.3.6. Equity and Accessibility Performance

Purpose:

To measure whether all residents—regardless of income, mobility, or digital access—are benefiting equitably from the Rebuild's systems and communication tools.

Key Indicators:

- **ADA Compliance Rate:** Verified adherence to physical and digital accessibility standards across all platforms and work zones.
- **Language Access Metrics:** Volume of materials translated and distributed in non-English languages; number of multilingual interactions recorded.
- **Engagement Representation:** Demographic diversity of participants in public forums and online interactions.
- **Vulnerable User Access Rate:** Proportion of reported accessibility issues resolved within target timeframes.
- **Equity Audit Findings:** Periodic third-party or community review assessing fairness and inclusion in decision-making processes.

Application:

The SIG's Communications and Equity Subcommittee will review these indicators quarterly to ensure that engagement and operations remain inclusive, responsive, and compliant with both City policy and federal requirements.

Why it matters:

Equity is both a legal and moral imperative. The City's commitment to transparency and fairness must be measurable—not assumed—ensuring that the Rebuild benefits every resident, not only those with resources or influence.

12.3.7. Integrated Performance Dashboard

All indicators will feed into a unified **Palisades Rebuild Performance Dashboard**. The dashboard will feature two parallel interfaces:

- **Public View:** Simplified summaries of metrics, trends, and key improvements presented in accessible, multilingual formats to maintain transparency.
- **Internal View:** Detailed, data-rich environment for the SIG, departments, and CAO to perform advanced analytics, identify correlations, and forecast future needs.

This dual-view approach ensures that the same verified data serves both internal decision-making and public accountability—reinforcing the "One City, One Source of Truth" principle that guides the entire program.

Key Takeaways:

- Performance measurement extends beyond engineering and permits—it captures the full spectrum of safety, efficiency, equity, and trust.
- Each indicator links back to a governance objective and is actionable, not symbolic.
- The integrated dashboard turns complex operations into an accessible, transparent narrative of progress.
- Data-driven accountability builds public confidence and provides the foundation for adaptive management across the Rebuild's lifecycle.

12.4. Data Sources and Tools

The integrity of the Palisades Rebuild depends on the accuracy, timeliness, and accessibility of its data. Each component of the Communication, Logistics, and Mobility Framework produces a steady stream of operational information that, when integrated, provides a live picture of program performance.

Section 12.3 established *what* will be measured; this section explains *how* those measures are collected, validated, and visualized. The City's approach emphasizes three principles: **data reliability, interoperability, and transparency**. These principles ensure that City staff, contractors, and residents all reference the same verified information—creating one unified system of record and accountability.

12.4.1. Data Integration and Interoperability

Data interoperability is the backbone of Citywide performance management. Each departmental system contributes to a **shared master data repository** governed by ITA under the SIG's oversight.

Integration Features:

- **Secure API Connectivity:** Data from LADOT, LADBS, and BOE systems feed automatically into the central repository in near real time, minimizing manual entry and lag.
- **Standardized Data Schema:** Common field structures—such as timestamp, location ID, permit number, and performance category—allow cross-system comparison and aggregation.
- **Automated Synchronization:** Updates occur at regular intervals (ranging from 5 minutes for real-time systems to daily for fiscal reporting).
- **Data Quality Assurance:** Built-in validation scripts flag anomalies or missing entries; department liaisons verify flagged items within 48 hours.

Governance:

The SIG's **Data and Analytics Subcommittee**, chaired by ITA, oversees integration policies, version control, and compliance with City privacy and cybersecurity standards.

Why it matters:

A unified data environment eliminates silos, reduces duplication, and ensures that the City, contractors, and public are all operating from a single, verified source of truth.

12.4.2. Data Validation and Quality Control

Accuracy and trust are paramount. The City will employ a layered quality-control process to ensure that every dataset feeding the monitoring framework meets verification standards.

Validation Methods:

- **Automated Consistency Checks:** System scripts compare data entries against expected ranges (e.g., TMPZ occupancy cannot exceed 100%).
- **Field Verification:** StreetsLA inspectors and enforcement officers conduct random audits to confirm that digital records reflect on-the-ground conditions.
- **Cross-System Correlation:** Feedback logs are analyzed against operational data to verify whether public complaints align with performance trends.
- **Quarterly Data Audits:** ITA and the CAO jointly review data integrity, sampling records from each department for accuracy and completeness.

Data Confidence Ratings:

Each dataset will carry a confidence score (High, Moderate, Low) determined by audit results. Metrics with lower confidence will trigger targeted training or system refinement to improve reliability.

Why it matters:

A data-driven program is only as strong as its weakest input. Robust validation procedures convert information into evidence that can withstand public, media, or audit scrutiny.

12.4.3. Visualization and Decision-Support Tools

Performance data will be transformed into accessible visual formats to enable quick interpretation by City staff and the public. Visualization is not just a communication tool—it is a management instrument that makes patterns and anomalies immediately visible.

Visualization Tools:

- **Palisades Rebuild Performance Dashboard:**
  - **Public View:** High-level summaries of performance metrics, improvement actions, and fiscal transparency indicators.
  - **Internal View:** Advanced analytics for SIG members, including trend charts, correlation heatmaps, and KPI tracking.
- **Operational Control Panels:** Department-specific interfaces displaying live field data (e.g., active lane closures, occupancy, or reservation status).
- **Interactive Map Layer:** Integrated with the PCCT GIS platform, showing spatial overlays of construction activity, logistics routes, and community feedback clusters.
- **Automated Alerts:** Custom triggers notify department leads of threshold breaches (e.g., congestion above defined limit, compliance drop, or unresolved complaints).

Why it matters:

Effective visualization transforms thousands of data points into actionable insight, enabling faster response times and smarter decision-making by City leadership.

12.4.4. Security, Privacy, and Accessibility

Data security and privacy are embedded at every layer of the system architecture.

Security and Privacy Standards:

- **Encryption:** All transmissions and stored data encrypted to City ITA and CCPA standards.
- **Role-Based Access Control:** Only authorized users access data relevant to their function; all activity logged and auditable.
- **Anonymization of Personal Information:** Feedback data stripped of PII before inclusion in analytics.
- **Data Retention and Deletion:** Defined schedules ensure compliance with City data-governance policies and public-record requirements.
- **Cyber-Resilience:** Regular penetration testing and backup redundancy through City-approved cloud infrastructure (e.g., Azure Government Cloud).

Accessibility:

All public-facing dashboards and portals will be ADA-compliant (WCAG 2.1 AA), multilingual, and optimized for both desktop and mobile viewing, ensuring equitable access to performance information.

Why it matters:

Protecting sensitive data safeguards public trust and ensures compliance with legal and ethical obligations, while broad accessibility demonstrates the City's commitment to transparency and inclusion.

12.4.5. Innovation and Future Scalability

The data framework is designed to evolve alongside technology and policy needs. As the Palisades Rebuild progresses, new tools and data streams can be seamlessly integrated without disrupting existing systems.

Innovation Opportunities:

- **Sensor Expansion:** Incorporate new solar-powered IoT devices to measure air quality, noise, or work-zone compliance.
- **Predictive Analytics:** Apply machine learning to forecast congestion, delivery conflicts, or public complaint hotspots.
- **Regional Integration:** Connect with county and state platforms for cross-jurisdictional coordination on traffic and emergency response.
- **Post-Program Legacy:** Transition the monitoring framework into a permanent City capability for future construction and emergency-recovery programs.

Why it matters:

A flexible, forward-looking architecture ensures that today's investments yield long-term benefits—turning a temporary recovery program into a permanent improvement in how Los Angeles monitors, manages, and communicates about complex urban operations.

Key Takeaways:

- The Palisades Rebuild Data Environment unifies all systems into a single, interoperable data framework managed under SIG and ITA governance.
- Robust validation and audit processes ensure accuracy and defensibility of every metric.
- Visualization tools convert data into insight—supporting real-time decision-making and public transparency.
- Security, privacy, and accessibility standards safeguard information and build community trust.

12.5. Evaluation and Learning Process

Monitoring provides information; evaluation turns that information into intelligence. The Palisades Rebuild uses evaluation as the bridge between data collection and better decision-making—ensuring that every measured outcome leads to insight, accountability, and improvement.

The process transforms the **SIG** from a coordinating body into a learning organization. Rather than treating reports as end products, the SIG uses them as diagnostic tools to understand *why* results occur and *how* to adapt operations, policy, and communication for greater impact.

12.5.1. Purpose and Approach

Evaluation within the Palisades Rebuild serves three complementary purposes:

1. **Accountability** – demonstrate to City Leadership and the community that program commitments on safety, equity, and fiscal neutrality are being met;
2. **Insight** – interpret performance data to reveal underlying causes and systemic interactions; and
3. **Improvement** – embed lessons learned into subsequent planning, permitting, and coordination decisions.

This approach marks a shift from compliance-based oversight to **performance-based learning**. Progress is judged not only by outputs—permits processed or closures managed—but by outcomes such as reduced congestion, faster delivery cycles, transparent communication, and community confidence.

12.5.2. The Evaluation Cycle

Evaluation operates through a repeating five-step cycle that keeps learning continuous:

1. **Collect and Validate** – Departments gather verified data; ITA confirms accuracy and completeness.
2. **Analyze and Synthesize** – SIG analysts aggregate cross-system data to detect trends, correlations, and emerging risks.
3. **Review and Reflect** – Quarterly SIG sessions compare findings against KPIs, discuss causes of variance, and identify corrective actions.
4. **Act and Adapt** – Departments adjust field operations, communication frequency, or resource allocation based on review outcomes.
5. **Learn and Share** – Lessons are summarized in quarterly and annual reports, incorporated into staff training, contractor briefings, and community engagement strategies.

This disciplined rhythm ensures that information gathered in the field directly informs executive decisions, while the same data feed public dashboards to maintain transparency.

12.5.3. Evaluation Methods

To balance responsiveness and strategic insight, the City can employ three complementary evaluation modes:

- **Formative Evaluation** – real-time learning during implementation, allowing immediate course corrections (e.g., revising TMPZ boundaries or alert timing).
- **Summative Evaluation** – periodic assessment of overall system effectiveness and equity outcomes.
- **Developmental Evaluation** – forward-looking analysis that identifies innovations—such as predictive analytics or policy models—that can be scaled Citywide.

Together, these methods provide both agility and perspective, ensuring that learning occurs at the pace of operations and at the depth of policy.

12.5.4. Communicating Findings

Evaluation results will be presented as **performance narratives** rather than raw statistics. SIG reports blend analytics with storytelling—explaining what happened, why it mattered, and how the City responded. Key highlights and graphics will be shared publicly through the PCCT dashboard and in quarterly briefings to CD 11 and the Mayor's Office.

This approach turns transparency into comprehension: residents and City leaders alike can see the relationship between metrics, decisions, and outcomes.

12.5.5. Learning, Validation, and Accountability

A culture of learning is institutionalized through consistent leadership attention and independent review.

- **Leadership and Cross-Department Learning:** SIG meetings double as knowledge-exchange forums where agencies share innovations and lessons learned.
- **Community Feedback Integration:** Resident input from PCCT and outreach sessions is analyzed alongside quantitative metrics to ensure that lived experience informs performance interpretation.
- **Independent Validation:** An annual peer or third-party review verifies the integrity of methods, data accuracy, and conclusions—reinforcing credibility with the public and audit bodies.

These mechanisms guarantee that evaluation findings are trusted and that improvement actions are implemented, not merely recorded.

12.5.6. From Learning to Policy Evolution

Findings from the Palisades Rebuild will inform future City practice—refining ordinances, digital-permitting processes, and coordination protocols for subsequent infrastructure or emergency-recovery efforts. By documenting what worked and what did not, the City creates a living knowledge base that outlasts the program itself, turning the Palisades Rebuild into a model for evidence-based governance.

Key Takeaways:

- Evaluation converts data into management intelligence and continuous learning.
- The five-step cycle ensures that results are analyzed, acted on, and communicated across the organization.
- Blending internal reflection with independent validation preserves credibility and public trust.



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Appendices



Appendix A-1

Synchro Level of Service Summary

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	154	10	62	25	10	54	24	1000	15	80	1018	140
Future Volume (veh/h)	154	10	62	25	10	54	24	1000	15	80	1018	140
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	164	11	66	27	11	57	26	1064	16	85	1083	149
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	294	20	80	136	73	198	52	1263	19	407	1959	874
Arrive On Green	0.19	0.19	0.19	0.19	0.19	0.19	0.03	0.35	0.35	0.23	0.55	0.55
Sat Flow, veh/h	995	101	414	304	374	1018	1781	3584	54	1781	3554	1585
Grp Volume(v), veh/h	241	0	0	95	0	0	26	528	552	85	1083	149
Grp Sat Flow(s),veh/h/ln	1510	0	0	1696	0	0	1781	1777	1861	1781	1777	1585
Q Serve(g_s), s	6.1	0.0	0.0	0.0	0.0	0.0	0.9	16.4	16.4	2.3	11.8	2.8
Cycle Q Clear(g_c), s	9.0	0.0	0.0	2.9	0.0	0.0	0.9	16.4	16.4	2.3	11.8	2.8
Prop In Lane	0.68		0.27	0.28		0.60	1.00		0.03	1.00		1.00
Lane Grp Cap(c), veh/h	394	0	0	407	0	0	52	626	656	407	1959	874
V/C Ratio(X)	0.61	0.00	0.00	0.23	0.00	0.00	0.50	0.84	0.84	0.21	0.55	0.17
Avail Cap(c_a), veh/h	544	0	0	568	0	0	148	687	719	407	1959	874
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	0.00	0.53	0.53	0.53	1.00	1.00	1.00
Uniform Delay (d), s/veh	22.9	0.0	0.0	20.6	0.0	0.0	28.7	17.9	17.9	18.8	8.7	6.7
Incr Delay (d2), s/veh	1.5	0.0	0.0	0.3	0.0	0.0	3.9	7.4	7.1	0.3	1.1	0.4
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.1	0.0	0.0	1.1	0.0	0.0	0.4	7.0	7.3	0.9	3.7	0.8
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	24.4	0.0	0.0	20.9	0.0	0.0	32.5	25.3	25.0	19.0	9.8	7.1
LnGrp LOS	C			C			C	C	C	B	A	A
Approach Vol, veh/h		241			95			1106			1317	
Approach Delay, s/veh		24.4			20.9			25.3			10.1	
Approach LOS		C			C			C			B	

Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	18.2	25.6		16.2	6.3	37.6		16.2				
Change Period (Y+Rc), s	4.5	4.5		4.5	4.5	4.5		4.5				
Max Green Setting (Gmax), s	5.3	23.2		18.0	5.0	23.5		18.0				
Max Q Clear Time (g_c+I1), s	4.3	18.4		11.0	2.9	13.8		4.9				
Green Ext Time (p_c), s	0.0	2.7		0.7	0.0	5.3		0.3				

Intersection Summary												
HCM 7th Control Delay, s/veh			17.8									
HCM 7th LOS			B									

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	75	5	110	50	5	25	180	1018	10	10	1078	120
Future Volume (veh/h)	75	5	110	50	5	25	180	1018	10	10	1078	120
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	80	5	117	53	5	27	191	1083	11	11	1147	128
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	248	167	650	153	17	40	571	2537	26	226	1280	143
Arrive On Green	0.09	0.09	0.09	0.09	0.09	0.09	0.32	0.70	0.70	0.01	0.40	0.40
Sat Flow, veh/h	1377	1870	1585	779	190	451	1781	3604	37	1781	3224	359
Grp Volume(v), veh/h	80	5	117	85	0	0	191	534	560	11	631	644
Grp Sat Flow(s),veh/h/ln	1377	1870	1585	1420	0	0	1781	1777	1864	1781	1777	1806
Q Serve(g_s), s	0.0	0.2	0.0	3.4	0.0	0.0	5.7	8.9	8.9	0.3	23.3	23.4
Cycle Q Clear(g_c), s	3.0	0.2	0.0	4.0	0.0	0.0	5.7	8.9	8.9	0.3	23.3	23.4
Prop In Lane	1.00		1.00	0.62		0.32	1.00		0.02	1.00		0.20
Lane Grp Cap(c), veh/h	248	167	650	210	0	0	571	1251	1312	226	706	717
V/C Ratio(X)	0.32	0.03	0.18	0.40	0.00	0.00	0.33	0.43	0.43	0.05	0.89	0.90
Avail Cap(c_a), veh/h	481	484	918	444	0	0	571	1251	1312	329	734	746
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	0.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	30.4	29.1	13.2	30.8	0.0	0.0	18.1	4.4	4.4	15.2	19.7	19.8
Incr Delay (d2), s/veh	0.7	0.1	0.1	1.2	0.0	0.0	0.3	1.1	1.0	0.1	16.2	16.3
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.3	0.1	1.1	1.4	0.0	0.0	2.2	2.4	2.5	0.1	11.6	11.9
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	31.1	29.2	13.3	32.0	0.0	0.0	18.4	5.5	5.4	15.3	35.9	36.0
LnGrp LOS	C	C	B	C			B	A	A	B	D	D
Approach Vol, veh/h		202			85			1285			1286	
Approach Delay, s/veh		20.8			32.0			7.4			35.8	
Approach LOS		C			C			A			D	

Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	5.5	53.8		10.8	26.9	32.3		10.8				
Change Period (Y+Rc), s	4.5	4.5		4.5	4.5	4.5		4.5				
Max Green Setting (Gmax), s	5.0	33.4		18.1	9.5	28.9		18.1				
Max Q Clear Time (g_c+I1), s	2.3	10.9		5.0	7.7	25.4		6.0				
Green Ext Time (p_c), s	0.0	7.5		0.5	0.1	2.4		0.3				

Intersection Summary			
HCM 7th Control Delay, s/veh		21.8	
HCM 7th LOS		C	



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	590	554	745	290	553	421
Future Volume (veh/h)	590	554	745	290	553	421
Initial Q (Qb), veh	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)	1.00			1.00	1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No	No		No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	628	589	793	309	588	448
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	2	2	2	2	2	2
Cap, veh/h	659	2500	1007	761	679	898
Arrive On Green	0.37	0.70	0.28	0.28	0.20	0.20
Sat Flow, veh/h	1781	3647	3647	1585	3456	1585
Grp Volume(v), veh/h	628	589	793	309	588	448
Grp Sat Flow(s),veh/h/ln	1781	1777	1777	1585	1728	1585
Q Serve(g_s), s	30.9	5.3	18.5	11.3	14.8	15.4
Cycle Q Clear(g_c), s	30.9	5.3	18.5	11.3	14.8	15.4
Prop In Lane	1.00			1.00	1.00	1.00
Lane Grp Cap(c), veh/h	659	2500	1007	761	679	898
V/C Ratio(X)	0.95	0.24	0.79	0.41	0.87	0.50
Avail Cap(c_a), veh/h	683	2500	1007	761	691	904
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	27.6	4.7	29.7	15.1	35.0	11.8
Incr Delay (d2), s/veh	23.0	0.2	6.2	1.6	11.1	0.4
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	16.5	1.6	8.4	6.0	6.9	16.1
Unsig. Movement Delay, s/veh						
LnGrp Delay(d), s/veh	50.6	5.0	36.0	16.7	46.1	12.2
LnGrp LOS	D	A	D	B	D	B
Approach Vol, veh/h		1217	1102		1036	
Approach Delay, s/veh		28.5	30.6		31.5	
Approach LOS		C	C		C	

Timer - Assigned Phs			4		6	7	8
Phs Duration (G+Y+Rc), s			67.8		22.2	37.8	30.0
Change Period (Y+Rc), s			4.5		4.5	4.5	4.5
Max Green Setting (Gmax), s			63.0		18.0	34.5	24.0
Max Q Clear Time (g_c+I1), s			7.3		17.4	32.9	20.5
Green Ext Time (p_c), s			4.4		0.3	0.4	2.0

Intersection Summary		
HCM 7th Control Delay, s/veh	30.1	
HCM 7th LOS	C	

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	193	912	2	2	896	34	2	2	2	25	2	137
Future Volume (veh/h)	193	912	2	2	896	34	2	2	2	25	2	137
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	205	970	2	2	953	36	2	2	2	27	2	146
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	461	2621	5	469	2515	95	125	112	82	86	15	186
Arrive On Green	0.72	0.72	0.72	0.72	0.72	0.72	0.14	0.14	0.14	0.14	0.14	0.14
Sat Flow, veh/h	569	3638	8	578	3492	132	361	794	578	154	109	1321
Grp Volume(v), veh/h	205	474	498	2	485	504	6	0	0	175	0	0
Grp Sat Flow(s),veh/h/ln	569	1777	1869	578	1777	1847	1733	0	0	1583	0	0
Q Serve(g_s), s	14.1	6.6	6.6	0.1	6.8	6.8	0.0	0.0	0.0	3.6	0.0	0.0
Cycle Q Clear(g_c), s	20.9	6.6	6.6	6.7	6.8	6.8	0.2	0.0	0.0	6.9	0.0	0.0
Prop In Lane	1.00		0.00	1.00		0.07	0.33		0.33	0.15		0.83
Lane Grp Cap(c), veh/h	461	1280	1346	469	1280	1330	319	0	0	287	0	0
V/C Ratio(X)	0.44	0.37	0.37	0.00	0.38	0.38	0.02	0.00	0.00	0.61	0.00	0.00
Avail Cap(c_a), veh/h	461	1280	1346	469	1280	1330	525	0	0	499	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	7.5	3.5	3.5	4.7	3.5	3.5	24.1	0.0	0.0	26.9	0.0	0.0
Incr Delay (d2), s/veh	3.1	0.8	0.8	0.0	0.9	0.8	0.0	0.0	0.0	2.1	0.0	0.0
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.6	1.5	1.6	0.0	1.6	1.6	0.1	0.0	0.0	2.7	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	10.6	4.3	4.2	4.8	4.4	4.3	24.1	0.0	0.0	29.0	0.0	0.0
LnGrp LOS	B	A	A	A	A	A	C			C		
Approach Vol, veh/h		1177			991			6			175	
Approach Delay, s/veh		5.4			4.3			24.1			29.0	
Approach LOS		A			A			C			C	

Timer - Assigned Phs		2		4		6		8				
Phs Duration (G+Y+Rc), s		13.7		51.3		13.7		51.3				
Change Period (Y+Rc), s		4.5		4.5		4.5		4.5				
Max Green Setting (Gmax), s		18.0		38.0		18.0		38.0				
Max Q Clear Time (g_c+I1), s		2.2		22.9		8.9		8.8				
Green Ext Time (p_c), s		0.0		7.2		0.6		7.1				

Intersection Summary												
HCM 7th Control Delay, s/veh			6.7									
HCM 7th LOS			A									

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	27	1028	25	25	882	487	25	5	175	296	5	25
Future Volume (veh/h)	27	1028	25	25	882	487	25	5	175	296	5	25
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	29	1094	27	27	938	0	27	5	186	315	5	27
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	94	1701	41	95	1694		115	44	451	497	6	31
Arrive On Green	0.51	0.51	0.51	0.51	0.51	0.00	0.31	0.31	0.31	0.31	0.31	0.31
Sat Flow, veh/h	37	3360	82	38	3347	1585	108	139	1438	1146	18	98
Grp Volume(v), veh/h	594	0	556	505	460	0	218	0	0	347	0	0
Grp Sat Flow(s),veh/h/ln	1791	0	1687	1768	1617	1585	1686	0	0	1262	0	0
Q Serve(g_s), s	0.0	0.0	12.1	0.0	9.8	0.0	0.0	0.0	0.0	7.6	0.0	0.0
Cycle Q Clear(g_c), s	11.5	0.0	12.1	9.1	9.8	0.0	5.3	0.0	0.0	12.9	0.0	0.0
Prop In Lane	0.05		0.05	0.05		1.00	0.12		0.85	0.91		0.08
Lane Grp Cap(c), veh/h	983	0	854	971	819		610	0	0	533	0	0
V/C Ratio(X)	0.60	0.00	0.65	0.52	0.56		0.36	0.00	0.00	0.65	0.00	0.00
Avail Cap(c_a), veh/h	983	0	854	971	819		698	0	0	602	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	1.00	0.00	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	8.9	0.0	9.1	8.3	8.5	0.0	13.6	0.0	0.0	16.1	0.0	0.0
Incr Delay (d2), s/veh	2.8	0.0	3.8	2.0	2.8	0.0	0.4	0.0	0.0	2.1	0.0	0.0
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	4.0	0.0	4.0	3.1	3.0	0.0	1.8	0.0	0.0	3.6	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	11.7	0.0	12.9	10.3	11.3	0.0	14.0	0.0	0.0	18.1	0.0	0.0
LnGrp LOS	B		B	B	B		B			B		
Approach Vol, veh/h		1150			965			218			347	
Approach Delay, s/veh		12.3			10.8			14.0			18.1	
Approach LOS		B			B			B			B	

Timer - Assigned Phs	2	4	6	8
Phs Duration (G+Y+Rc), s	20.2	29.8	20.2	29.8
Change Period (Y+Rc), s	4.5	4.5	4.5	4.5
Max Green Setting (Gmax), s	18.5	22.5	18.5	22.5
Max Q Clear Time (g_c+I1), s	7.3	14.1	14.9	11.8
Green Ext Time (p_c), s	1.0	4.6	0.8	4.6

Intersection Summary	
HCM 7th Control Delay, s/veh	12.6
HCM 7th LOS	B

Notes

Unsignalized Delay for [WBR] is excluded from calculations of the approach delay and intersection delay.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	26	1637	25	48	1471	61	25	5	77	102	5	27
Future Volume (veh/h)	26	1637	25	48	1471	61	25	5	77	102	5	27
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	28	1741	27	51	1565	65	27	5	82	109	5	29
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	276	2610	40	247	2534	105	107	24	147	251	9	39
Arrive On Green	0.73	0.73	0.73	0.73	0.73	0.73	0.12	0.12	0.12	0.12	0.12	0.12
Sat Flow, veh/h	309	3582	55	270	3477	144	273	199	1211	1198	71	323
Grp Volume(v), veh/h	28	862	906	51	797	833	114	0	0	143	0	0
Grp Sat Flow(s),veh/h/ln	309	1777	1860	270	1777	1844	1683	0	0	1592	0	0
Q Serve(g_s), s	3.0	15.3	15.5	7.4	13.2	13.4	0.0	0.0	0.0	1.1	0.0	0.0
Cycle Q Clear(g_c), s	16.4	15.3	15.5	22.8	13.2	13.4	3.7	0.0	0.0	4.8	0.0	0.0
Prop In Lane	1.00		0.03	1.00		0.08	0.24		0.72	0.76		0.20
Lane Grp Cap(c), veh/h	276	1295	1356	247	1295	1344	278	0	0	299	0	0
V/C Ratio(X)	0.10	0.67	0.67	0.21	0.62	0.62	0.41	0.00	0.00	0.48	0.00	0.00
Avail Cap(c_a), veh/h	276	1295	1356	247	1295	1344	553	0	0	544	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	0.74	0.74	0.74	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	8.1	4.3	4.3	10.3	4.0	4.0	24.8	0.0	0.0	25.2	0.0	0.0
Incr Delay (d2), s/veh	0.7	2.7	2.6	1.4	1.6	1.6	1.0	0.0	0.0	1.2	0.0	0.0
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.2	3.3	3.5	0.5	2.6	2.7	1.5	0.0	0.0	2.0	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	8.8	7.0	6.9	11.7	5.6	5.6	25.8	0.0	0.0	26.4	0.0	0.0
LnGrp LOS	A	A	A	B	A	A	C			C		
Approach Vol, veh/h		1796			1681			114			143	
Approach Delay, s/veh		7.0			5.8			25.8			26.4	
Approach LOS		A			A			C			C	

Timer - Assigned Phs	2	4	6	8
Phs Duration (G+Y+Rc), s	11.8	48.2	11.8	48.2
Change Period (Y+Rc), s	4.5	4.5	4.5	4.5
Max Green Setting (Gmax), s	18.0	33.0	18.0	33.0
Max Q Clear Time (g_c+I1), s	5.7	18.4	6.8	24.8
Green Ext Time (p_c), s	0.4	10.7	0.6	6.4

Intersection Summary	
HCM 7th Control Delay, s/veh	7.8
HCM 7th LOS	A

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	27	1323	467	606	1157	15	408	31	873	15	82	15
Future Volume (veh/h)	27	1323	467	606	1157	15	408	31	873	15	82	15
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	29	1407	497	645	1231	16	434	33	929	16	87	16
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	211	1303	806	553	2443	32	490	486	861	38	109	19
Arrive On Green	0.37	0.37	0.37	0.28	0.68	0.68	0.14	0.26	0.26	0.09	0.09	0.09
Sat Flow, veh/h	446	3554	1585	1781	3592	47	3456	1870	1585	121	1233	210
Grp Volume(v), veh/h	29	1407	497	645	609	638	434	33	929	119	0	0
Grp Sat Flow(s),veh/h/ln	446	1777	1585	1781	1777	1862	1728	1870	1585	1565	0	0
Q Serve(g_s), s	6.6	55.0	21.5	42.5	25.0	25.0	18.5	2.0	39.0	6.2	0.0	0.0
Cycle Q Clear(g_c), s	6.6	55.0	21.5	42.5	25.0	25.0	18.5	2.0	39.0	11.0	0.0	0.0
Prop In Lane	1.00		1.00	1.00		0.03	1.00		1.00	0.13		0.13
Lane Grp Cap(c), veh/h	211	1303	806	553	1208	1266	490	486	861	165	0	0
V/C Ratio(X)	0.14	1.08	0.62	1.17	0.50	0.50	0.89	0.07	1.08	0.72	0.00	0.00
Avail Cap(c_a), veh/h	211	1303	806	553	1208	1266	490	486	861	210	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.66	0.66	0.66	1.00	1.00	1.00	0.82	0.82	0.82	1.00	0.00	0.00
Uniform Delay (d), s/veh	32.2	47.5	12.3	47.5	11.7	11.7	63.2	41.8	34.2	67.0	0.0	0.0
Incr Delay (d2), s/veh	0.9	45.6	2.3	93.5	1.5	1.4	14.9	0.0	51.6	8.4	0.0	0.0
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.8	32.2	7.7	34.0	10.0	10.4	9.0	0.9	42.3	4.8	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	33.1	93.1	14.6	141.0	13.2	13.1	78.1	41.9	85.8	75.4	0.0	0.0
LnGrp LOS	C	F	B	F	B	B	E	D	F	E		
Approach Vol, veh/h		1933			1892			1396			119	
Approach Delay, s/veh		72.0			56.7			82.4			75.4	
Approach LOS		E			E			F			E	

Timer - Assigned Phs		2	3	4	5	6		8				
Phs Duration (G+Y+Rc), s		43.5	47.0	59.5	25.8	17.7		106.5				
Change Period (Y+Rc), s		4.5	4.5	4.5	4.5	4.5		4.5				
Max Green Setting (Gmax), s		39.0	42.5	55.0	16.5	18.0		102.0				
Max Q Clear Time (g_c+I1), s		41.0	44.5	57.0	20.5	13.0		27.0				
Green Ext Time (p_c), s		0.0	0.0	0.0	0.0	0.2		11.4				

Intersection Summary												
HCM 7th Control Delay, s/veh			69.4									
HCM 7th LOS			E									

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	121	1657	277	339	1218	101	186	52	310	218	81	175
Future Volume (vph)	121	1657	277	339	1218	101	186	52	310	218	81	175
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.5	4.5		4.5	4.5			4.5		4.5	4.5	
Lane Util. Factor	1.00	0.95		1.00	0.95			1.00		1.00	1.00	
Frt	1.00	0.98		1.00	0.99			0.92		1.00	0.90	
Flt Protected	0.95	1.00		0.95	1.00			0.98		0.95	1.00	
Satd. Flow (prot)	1770	3463		1770	3499			1692		1770	1672	
Flt Permitted	0.15	1.00		0.15	1.00			0.70		0.39	1.00	
Satd. Flow (perm)	271	3463		271	3499			1198		732	1672	
Peak-hour factor, PHF	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Adj. Flow (vph)	129	1763	295	361	1296	107	198	55	330	232	86	186
RTOR Reduction (vph)	0	25	0	0	11	0	0	5	0	0	22	0
Lane Group Flow (vph)	129	2034	0	361	1392	0	0	578	0	232	250	0
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		6			2			4			8	
Permitted Phases	6			2			4			8		
Actuated Green, G (s)	27.5	27.5		27.5	27.5			18.5		18.5	18.5	
Effective Green, g (s)	27.5	27.5		27.5	27.5			18.5		18.5	18.5	
Actuated g/C Ratio	0.50	0.50		0.50	0.50			0.34		0.34	0.34	
Clearance Time (s)	4.5	4.5		4.5	4.5			4.5		4.5	4.5	
Vehicle Extension (s)	3.0	3.0		3.0	3.0			3.0		3.0	3.0	
Lane Grp Cap (vph)	135	1731		135	1749			402		246	562	
v/s Ratio Prot		0.59			0.40						0.15	
v/s Ratio Perm	0.48			c1.33				c0.48		0.32		
v/c Ratio	0.96	1.17		2.67	0.80			1.44		0.94	0.45	
Uniform Delay, d1	13.2	13.8		13.8	11.4			18.3		17.7	14.2	
Progression Factor	1.00	1.00		1.00	1.00			1.00		1.00	1.00	
Incremental Delay, d2	66.4	85.1		774.1	3.9			210.4		41.7	0.6	
Delay (s)	79.5	98.8		787.8	15.3			228.7		59.4	14.8	
Level of Service	E	F		F	B			F		E	B	
Approach Delay (s/veh)		97.7			173.4			228.7			35.4	
Approach LOS		F			F			F			D	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	133.1	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	2.17		
Actuated Cycle Length (s)	55.0	Sum of lost time (s)	9.0
Intersection Capacity Utilization	135.5%	ICU Level of Service	H
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	1917	457	120	1287	371	171
Future Volume (veh/h)	1917	457	120	1287	371	171
Initial Q (Qb), veh	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)		1.00	1.00		1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No	No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	2039	0	128	1369	395	0
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	2	2	2	2	2	2
Cap, veh/h	2026		247	2696	489	
Arrive On Green	0.57	0.00	0.14	0.76	0.14	0.00
Sat Flow, veh/h	3647	1585	1781	3647	3456	1585
Grp Volume(v), veh/h	2039	0	128	1369	395	0
Grp Sat Flow(s),veh/h/ln	1777	1585	1781	1777	1728	1585
Q Serve(g_s), s	51.3	0.0	6.0	13.6	10.0	0.0
Cycle Q Clear(g_c), s	51.3	0.0	6.0	13.6	10.0	0.0
Prop In Lane		1.00	1.00		1.00	1.00
Lane Grp Cap(c), veh/h	2026		247	2696	489	
V/C Ratio(X)	1.01		0.52	0.51	0.81	
Avail Cap(c_a), veh/h	2026		247	2696	691	
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	19.4	0.0	36.0	4.3	37.5	0.0
Incr Delay (d2), s/veh	21.6	0.0	1.9	0.7	4.8	0.0
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	24.1	0.0	2.7	3.5	4.4	0.0
Unsig. Movement Delay, s/veh						
LnGrp Delay(d), s/veh	41.0	0.0	37.9	5.0	42.3	0.0
LnGrp LOS	F		D	A	D	
Approach Vol, veh/h	2039			1497	395	
Approach Delay, s/veh	41.0			7.8	42.3	
Approach LOS	D			A	D	

Timer - Assigned Phs	2	3	4	8
Phs Duration (G+Y+Rc), s	17.2	17.0	55.8	72.8
Change Period (Y+Rc), s	4.5	4.5	4.5	4.5
Max Green Setting (Gmax), s	18.0	7.2	51.3	63.0
Max Q Clear Time (g_c+I1), s	12.0	8.0	53.3	15.6
Green Ext Time (p_c), s	0.8	0.0	0.0	14.4

Intersection Summary	
HCM 7th Control Delay, s/veh	28.5
HCM 7th LOS	C

Notes

Unsignalized Delay for [NBR, EBR] is excluded from calculations of the approach delay and intersection delay.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	179	1577	133	19	1125	26	121	6	19	27	7	156
Future Volume (veh/h)	179	1577	133	19	1125	26	121	6	19	27	7	156
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	190	1678	141	20	1197	28	129	6	20	29	7	166
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	347	2172	181	39	2576	60	218	14	24	74	25	246
Arrive On Green	0.65	0.65	0.65	0.02	0.73	0.73	0.17	0.17	0.17	0.17	0.17	0.17
Sat Flow, veh/h	455	3321	276	1781	3549	83	833	80	135	160	145	1410
Grp Volume(v), veh/h	190	889	930	20	599	626	155	0	0	202	0	0
Grp Sat Flow(s),veh/h/ln	455	1777	1821	1781	1777	1855	1047	0	0	1715	0	0
Q Serve(g_s), s	26.7	31.2	32.5	1.0	12.6	12.6	3.5	0.0	0.0	0.0	0.0	0.0
Cycle Q Clear(g_c), s	32.8	31.2	32.5	1.0	12.6	12.6	13.5	0.0	0.0	9.9	0.0	0.0
Prop In Lane	1.00		0.15	1.00		0.04	0.83		0.13	0.14		0.82
Lane Grp Cap(c), veh/h	347	1162	1190	39	1290	1347	256	0	0	345	0	0
V/C Ratio(X)	0.55	0.77	0.78	0.51	0.46	0.46	0.61	0.00	0.00	0.59	0.00	0.00
Avail Cap(c_a), veh/h	347	1162	1190	99	1290	1347	295	0	0	394	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	13.2	10.8	11.0	43.5	5.1	5.1	36.5	0.0	0.0	34.9	0.0	0.0
Incr Delay (d2), s/veh	6.1	4.8	5.1	10.1	1.2	1.2	2.7	0.0	0.0	1.7	0.0	0.0
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.9	11.4	12.2	0.5	3.8	4.0	3.5	0.0	0.0	4.3	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	19.3	15.6	16.1	53.6	6.3	6.3	39.3	0.0	0.0	36.7	0.0	0.0
LnGrp LOS	B	B	B	D	A	A	D			D		
Approach Vol, veh/h		2009			1245			155			202	
Approach Delay, s/veh		16.2			7.0			39.3			36.7	
Approach LOS		B			A			D			D	

Timer - Assigned Phs	2	3	4		6		8					
Phs Duration (G+Y+Rc), s	20.2	6.5	63.3		20.2		69.8					
Change Period (Y+Rc), s	4.5	4.5	4.5		4.5		4.5					
Max Green Setting (Gmax), s	18.5	5.0	53.0		18.5		62.5					
Max Q Clear Time (g_c+I1), s	15.5	3.0	34.8		11.9		14.6					
Green Ext Time (p_c), s	0.2	0.0	14.2		0.6		10.7					

Intersection Summary	
HCM 7th Control Delay, s/veh	15.2
HCM 7th LOS	B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBU	SBL	SBT
Lane Configurations												
Traffic Volume (vph)	152	0	582	214	121	61	489	1099	0	0	0	806
Future Volume (vph)	152	0	582	214	121	61	489	1099	0	0	0	806
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.5		4.5		4.5		4.5	4.5				4.5
Lane Util. Factor	1.00		1.00		1.00		1.00	0.95				0.95
Frt	1.00		0.85		0.98		1.00	1.00				1.00
Flt Protected	0.95		1.00		0.97		0.95	1.00				1.00
Satd. Flow (prot)	1770		1583		1776		1770	3539				3539
Flt Permitted	0.54		1.00		0.97		0.18	1.00				1.00
Satd. Flow (perm)	998		1583		1776		341	3539				3539
Peak-hour factor, PHF	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Adj. Flow (vph)	162	0	619	228	129	65	520	1169	0	0	0	857
RTOR Reduction (vph)	0	0	370	0	9	0	0	0	0	0	0	0
Lane Group Flow (vph)	162	0	249	0	413	0	520	1169	0	0	0	857
Turn Type	Perm		Perm	Perm	NA		pm+pt	NA		Perm		NA
Protected Phases					8		5	2				6
Permitted Phases	4		4	8			2			6		
Actuated Green, G (s)	19.0		19.0		19.0		47.0	47.0				23.8
Effective Green, g (s)	19.0		19.0		19.0		47.0	47.0				23.8
Actuated g/C Ratio	0.25		0.25		0.25		0.63	0.63				0.32
Clearance Time (s)	4.5		4.5		4.5		4.5	4.5				4.5
Vehicle Extension (s)	3.0		3.0		3.0		3.0	3.0				3.0
Lane Grp Cap (vph)	252		401		449		569	2217				1123
v/s Ratio Prot							c0.23	0.33				0.24
v/s Ratio Perm	0.16		0.16		0.23		c0.34					
v/c Ratio	0.64		0.62		0.92		0.91	0.53				0.76
Uniform Delay, d1	25.0		24.8		27.3		19.3	7.8				23.1
Progression Factor	1.00		1.00		1.00		1.00	1.00				0.97
Incremental Delay, d2	5.5		3.0		23.8		19.2	0.9				2.2
Delay (s)	30.5		27.8		51.0		38.5	8.7				24.5
Level of Service	C		C		D		D	A				C
Approach Delay (s/veh)		28.4			51.0			17.9				24.0
Approach LOS		C			D			B				C

Intersection Summary			
HCM 2000 Control Delay (s/veh)	25.1	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.95		
Actuated Cycle Length (s)	75.0	Sum of lost time (s)	13.5
Intersection Capacity Utilization	91.5%	ICU Level of Service	F
Analysis Period (min)	15		

c Critical Lane Group



Movement	SBR
Lane Configurations	
Traffic Volume (vph)	349
Future Volume (vph)	349
Ideal Flow (vphpl)	1900
Total Lost time (s)	4.5
Lane Util. Factor	1.00
Frt	0.85
Flt Protected	1.00
Satd. Flow (prot)	1583
Flt Permitted	1.00
Satd. Flow (perm)	1583
Peak-hour factor, PHF	0.94
Adj. Flow (vph)	371
RTOR Reduction (vph)	212
Lane Group Flow (vph)	159
Turn Type	Perm
Protected Phases	
Permitted Phases	6
Actuated Green, G (s)	23.8
Effective Green, g (s)	23.8
Actuated g/C Ratio	0.32
Clearance Time (s)	4.5
Vehicle Extension (s)	3.0
Lane Grp Cap (vph)	502
v/s Ratio Prot	
v/s Ratio Perm	0.10
v/c Ratio	0.32
Uniform Delay, d1	19.4
Progression Factor	1.14
Incremental Delay, d2	0.7
Delay (s)	22.9
Level of Service	C
Approach Delay (s/veh)	
Approach LOS	

Intersection Summary



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	6	2632	1903	112	220	123
Future Volume (veh/h)	6	2632	1903	112	220	123
Initial Q (Qb), veh	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)	1.00			1.00	1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No	No		No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	6	2800	2024	119	243	122
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	2	2	2	2	2	2
Cap, veh/h	16	2914	2747	1225	339	151
Arrive On Green	0.01	0.82	0.77	0.77	0.10	0.10
Sat Flow, veh/h	1781	3647	3647	1585	3563	1585
Grp Volume(v), veh/h	6	2800	2024	119	243	122
Grp Sat Flow(s),veh/h/ln	1781	1777	1777	1585	1781	1585
Q Serve(g_s), s	0.4	89.2	40.1	2.5	8.8	10.1
Cycle Q Clear(g_c), s	0.4	89.2	40.1	2.5	8.8	10.1
Prop In Lane	1.00			1.00	1.00	1.00
Lane Grp Cap(c), veh/h	16	2914	2747	1225	339	151
V/C Ratio(X)	0.38	0.96	0.74	0.10	0.72	0.81
Avail Cap(c_a), veh/h	80	2952	2747	1225	478	213
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	65.7	10.2	8.0	3.7	58.6	59.2
Incr Delay (d2), s/veh	14.0	9.2	1.1	0.0	3.0	14.3
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.3	24.2	11.8	0.6	4.0	4.6
Unsig. Movement Delay, s/veh						
LnGrp Delay(d), s/veh	79.7	19.3	9.1	3.8	61.6	73.5
LnGrp LOS	E	B	A	A	E	E
Approach Vol, veh/h		2806	2143		365	
Approach Delay, s/veh		19.5	8.8		65.6	
Approach LOS		B	A		E	

Timer - Assigned Phs	1	2		4		6
Phs Duration (G+Y+Rc), s	6.3	109.3		17.8		115.6
Change Period (Y+Rc), s	5.1	6.2		5.1		6.2
Max Green Setting (Gmax), s	6.0	99.7		17.9		110.8
Max Q Clear Time (g_c+I1), s	2.4	42.1		12.1		91.2
Green Ext Time (p_c), s	0.0	29.6		0.6		18.2

Intersection Summary	
HCM 7th Control Delay, s/veh	18.3
HCM 7th LOS	B

Notes
User approved volume balancing among the lanes for turning movement.



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	31	2807	2018	101	48	17
Future Volume (veh/h)	31	2807	2018	101	48	17
Initial Q (Qb), veh	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)	1.00			1.00	1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No	No		No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	33	2986	2147	107	51	18
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	2	2	2	2	2	2
Cap, veh/h	56	3078	2834	1264	65	23
Arrive On Green	0.03	0.87	0.80	0.80	0.05	0.05
Sat Flow, veh/h	1781	3647	3647	1585	1259	444
Grp Volume(v), veh/h	33	2986	2147	107	70	0
Grp Sat Flow(s),veh/h/ln	1781	1777	1777	1585	1727	0
Q Serve(g_s), s	2.5	96.5	42.4	2.0	5.5	0.0
Cycle Q Clear(g_c), s	2.5	96.5	42.4	2.0	5.5	0.0
Prop In Lane	1.00			1.00	0.73	0.26
Lane Grp Cap(c), veh/h	56	3078	2834	1264	89	0
V/C Ratio(X)	0.59	0.97	0.76	0.08	0.79	0.00
Avail Cap(c_a), veh/h	122	3106	2834	1264	238	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	65.5	7.7	7.1	3.0	64.3	0.0
Incr Delay (d2), s/veh	9.6	10.2	1.2	0.0	14.1	0.0
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.3	18.8	11.7	0.5	2.7	0.0
Unsig. Movement Delay, s/veh						
LnGrp Delay(d), s/veh	75.1	17.9	8.3	3.0	78.4	0.0
LnGrp LOS	E	B	A	A	E	
Approach Vol, veh/h		3019	2254		70	
Approach Delay, s/veh		18.5	8.1		78.4	
Approach LOS		B	A		E	

Timer - Assigned Phs	1	2		4		6
Phs Duration (G+Y+Rc), s	9.4	115.5		12.2		124.9
Change Period (Y+Rc), s	5.1	6.2		5.1		6.2
Max Green Setting (Gmax), s	9.4	105.3		18.9		119.8
Max Q Clear Time (g_c+I1), s	4.5	44.4		7.5		98.5
Green Ext Time (p_c), s	0.0	33.8		0.1		20.2

Intersection Summary	
HCM 7th Control Delay, s/veh	14.9
HCM 7th LOS	B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	385	2460	10	25	1845	644	0	0	0	841	5	259
Future Volume (vph)	385	2460	10	25	1845	644	0	0	0	841	5	259
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.4	6.7		5.4	6.7	6.7				5.4	5.4	5.4
Lane Util. Factor	0.97	0.91		1.00	0.91	1.00				0.91	0.86	0.95
Frt	1.00	1.00		1.00	1.00	0.85				1.00	0.99	0.85
Flt Protected	0.95	1.00		0.95	1.00	1.00				0.95	0.96	1.00
Satd. Flow (prot)	3433	5082		1770	5085	1583				3221	1513	1504
Flt Permitted	0.95	1.00		0.95	1.00	1.00				0.95	0.96	1.00
Satd. Flow (perm)	3433	5082		1770	5085	1583				3221	1513	1504
Peak-hour factor, PHF	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Adj. Flow (vph)	410	2617	11	27	1963	685	0	0	0	895	5	276
RTOR Reduction (vph)	0	0	0	0	0	142	0	0	0	0	2	149
Lane Group Flow (vph)	410	2628	0	27	1963	543	0	0	0	618	308	99
Turn Type	Prot	NA		Prot	NA	Perm				Split	NA	pm+ov
Protected Phases	1	6		5	2			3		4	4	1
Permitted Phases						2	3					4
Actuated Green, G (s)	20.9	74.9		6.0	60.0	60.0				30.2	30.2	51.1
Effective Green, g (s)	20.9	74.9		6.0	60.0	60.0				30.2	30.2	51.1
Actuated g/C Ratio	0.16	0.58		0.05	0.47	0.47				0.23	0.23	0.40
Clearance Time (s)	5.4	6.7		5.4	6.7	6.7				5.4	5.4	5.4
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0				3.0	3.0	3.0
Lane Grp Cap (vph)	557	2959		82	2372	738				756	355	660
v/s Ratio Prot	0.12	c0.52		0.02	c0.39					0.19	c0.20	0.02
v/s Ratio Perm						0.34						0.04
v/c Ratio	0.74	0.89		0.33	0.83	0.74				0.82	0.87	0.15
Uniform Delay, d1	51.2	23.2		59.4	29.8	27.8				46.6	47.3	24.8
Progression Factor	1.00	1.00		1.00	1.00	1.00				1.00	1.00	1.00
Incremental Delay, d2	5.0	3.6		2.4	2.5	3.8				6.8	19.4	0.1
Delay (s)	56.3	26.9		61.7	32.3	31.7				53.4	66.6	24.9
Level of Service	E	C		E	C	C				D	E	C
Approach Delay (s/veh)		30.8			32.4			0.0			50.9	
Approach LOS		C			C			A			D	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	34.9	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.95		
Actuated Cycle Length (s)	128.6	Sum of lost time (s)	22.9
Intersection Capacity Utilization	88.0%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	126	3254	15	50	2398	150	0	0	0	100	5	101
Future Volume (veh/h)	126	3254	15	50	2398	150	0	0	0	100	5	101
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	134	3462	16	53	2551	160	0	0	0	106	5	107
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	66	2772	13	49	2715	1211	0	294	249	148	9	116
Arrive On Green	0.76	0.76	0.76	0.76	0.76	0.76	0.00	0.00	0.00	0.16	0.16	0.16
Sat Flow, veh/h	106	3627	17	49	3554	1585	0	1870	1585	711	58	741
Grp Volume(v), veh/h	134	1694	1784	53	2551	160	0	0	0	218	0	0
Grp Sat Flow(s),veh/h/ln	106	1777	1867	49	1777	1585	0	1870	1585	1510	0	0
Q Serve(g_s), s	24.3	113.3	113.3	0.0	89.0	3.9	0.0	0.0	0.0	20.4	0.0	0.0
Cycle Q Clear(g_c), s	113.3	113.3	113.3	113.3	89.0	3.9	0.0	0.0	0.0	21.1	0.0	0.0
Prop In Lane	1.00		0.01	1.00		1.00	0.00		1.00	0.49		0.49
Lane Grp Cap(c), veh/h	66	1358	1427	49	2715	1211	0	294	249	273	0	0
V/C Ratio(X)	2.03	1.25	1.25	1.09	0.94	0.13	0.00	0.00	0.00	0.80	0.00	0.00
Avail Cap(c_a), veh/h	66	1358	1427	49	2715	1211	0	315	267	291	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	0.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	70.9	17.5	17.5	74.1	14.6	4.6	0.0	0.0	0.0	61.5	0.0	0.0
Incr Delay (d2), s/veh	512.6	117.9	118.5	157.1	7.3	0.0	0.0	0.0	0.0	13.8	0.0	0.0
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	11.9	79.9	84.3	3.9	30.6	1.1	0.0	0.0	0.0	9.0	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	583.5	135.4	136.0	231.2	22.0	4.6	0.0	0.0	0.0	75.3	0.0	0.0
LnGrp LOS	F	F	F	F	C	A				E		
Approach Vol, veh/h		3612			2764			0			218	
Approach Delay, s/veh		152.3			25.0			0.0			75.3	
Approach LOS		F			C						E	

Timer - Assigned Phs	2	4	6	8
Phs Duration (G+Y+Rc), s	120.0	28.3	120.0	28.3
Change Period (Y+Rc), s	6.7	5.0	6.7	5.0
Max Green Setting (Gmax), s	113.3	25.0	113.3	25.0
Max Q Clear Time (g_c+I1), s	115.3	23.1	115.3	0.0
Green Ext Time (p_c), s	0.0	0.2	0.0	0.0

Intersection Summary	
HCM 7th Control Delay, s/veh	96.4
HCM 7th LOS	F



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	385	3147	0	0	2433	1203	0	0	0	1235	0	367
Future Volume (vph)	385	3147	0	0	2433	1203	0	0	0	1235	0	367
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.2	7.2			7.2	7.2				5.9		5.9
Lane Util. Factor	1.00	0.91			0.91	1.00				0.97		1.00
Frt	1.00	1.00			1.00	0.85				1.00		0.85
Flt Protected	0.95	1.00			1.00	1.00				0.95		1.00
Satd. Flow (prot)	1770	5085			5085	1583				3433		1583
Flt Permitted	0.95	1.00			1.00	1.00				0.95		1.00
Satd. Flow (perm)	1770	5085			5085	1583				3433		1583
Peak-hour factor, PHF	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Adj. Flow (vph)	410	3348	0	0	2588	1280	0	0	0	1314	0	390
RTOR Reduction (vph)	0	0	0	0	0	335	0	0	0	0	0	245
Lane Group Flow (vph)	410	3348	0	0	2588	945	0	0	0	1314	0	145
Turn Type	Prot	NA		Prot	NA	Perm	Split		Perm	Split		Perm
Protected Phases	1	6		5	2		3	3		4	4	
Permitted Phases						2			3			4
Actuated Green, G (s)	20.8	84.7			58.7	58.7				36.1		36.1
Effective Green, g (s)	20.8	84.7			58.7	58.7				36.1		36.1
Actuated g/C Ratio	0.16	0.63			0.44	0.44				0.27		0.27
Clearance Time (s)	5.2	7.2			7.2	7.2				5.9		5.9
Vehicle Extension (s)	3.0	3.0			3.0	3.0				3.0		3.0
Lane Grp Cap (vph)	274	3216			2229	693				925		426
v/s Ratio Prot	c0.23	0.66			0.51					c0.38		
v/s Ratio Perm						c0.60						0.09
v/c Ratio	1.50	1.04			1.16	1.36				1.42		0.34
Uniform Delay, d1	56.6	24.6			37.6	37.6				48.9		39.3
Progression Factor	1.00	1.00			1.00	1.00				1.00		1.00
Incremental Delay, d2	241.7	27.9			77.9	172.7				195.6		0.5
Delay (s)	298.2	52.5			115.5	210.3				244.5		39.8
Level of Service	F	D			F	F				F		D
Approach Delay (s/veh)		79.3			146.9			0.0			197.7	
Approach LOS		E			F			A			F	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	128.9	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	1.47		
Actuated Cycle Length (s)	133.9	Sum of lost time (s)	23.4
Intersection Capacity Utilization	128.0%	ICU Level of Service	H
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL2	EBL	EBR	WBT	WBR	WBR2	SBR	SBR2	SEL2	SEL	SET	SER
Lane Configurations												
Traffic Volume (vph)	381	381	3620	2915	368	368	488	233	49	439	0	233
Future Volume (vph)	381	381	3620	2915	368	368	488	233	49	439	0	233
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		5.1	4.0	6.5	6.5		5.1	5.1	5.1		5.1	
Lane Util. Factor		1.00	0.76	0.91	1.00		0.88	1.00	0.95		0.95	
Frt		1.00	0.85	1.00	0.85		0.85	0.85	1.00		0.95	
Flt Protected		0.95	1.00	1.00	1.00		1.00	1.00	0.95		0.97	
Satd. Flow (prot)		1770	3610	5085	1583		2787	1583	1681		1625	
Flt Permitted		0.39	1.00	1.00	1.00		1.00	1.00	0.95		0.97	
Satd. Flow (perm)		723	3610	5085	1583		2787	1583	1681		1625	
Peak-hour factor, PHF	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Adj. Flow (vph)	405	405	3851	3101	391	391	519	248	52	467	0	248
RTOR Reduction (vph)	0	0	0	0	63	0	0	0	0	0	95	0
Lane Group Flow (vph)	0	810	3851	3101	719	0	519	248	47	0	625	0
Turn Type	D.Pm	D.Pm	Free	NA	Perm		Prot	Perm	Split	Split	NA	
Protected Phases				2			4!		1	1	1	
Permitted Phases	4!	4	Free		2			4				
Actuated Green, G (s)		10.3	75.0	30.0	30.0		10.3	10.3	18.0		18.0	
Effective Green, g (s)		10.3	75.0	30.0	30.0		10.3	10.3	18.0		18.0	
Actuated g/C Ratio		0.14	1.00	0.40	0.40		0.14	0.14	0.24		0.24	
Clearance Time (s)		5.1		6.5	6.5		5.1	5.1	5.1		5.1	
Vehicle Extension (s)		3.0		3.0	3.0		3.0	3.0	3.0		3.0	
Lane Grp Cap (vph)		99	3610	2034	633		382	217	403		390	
v/s Ratio Prot				c0.61			0.19		0.03		c0.38	
v/s Ratio Perm		c1.12	1.07		0.45			0.16				
v/c Ratio		8.18	1.07	1.52	1.14		1.36	1.14	0.12		1.60	
Uniform Delay, d1		32.4	37.5	22.5	22.5		32.4	32.4	22.3		28.5	
Progression Factor		1.00	1.00	1.00	1.00		1.00	1.00	1.00		1.00	
Incremental Delay, d2		3252.4	36.6	238.6	79.4		177.6	104.9	0.1		282.9	
Delay (s)		3284.8	74.1	261.1	101.9		210.0	137.3	22.4		311.4	
Level of Service		F	E	F	F		F	F	C		F	
Approach Delay (s/veh)				229.1							293.7	
Approach LOS				F							F	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	417.1	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	2.72		
Actuated Cycle Length (s)	75.0	Sum of lost time (s)	16.7
Intersection Capacity Utilization	157.2%	ICU Level of Service	H
Analysis Period (min)	15		

! Phase conflict between lane groups.
c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	150	15	70	50	15	75	91	1237	70	135	1342	140
Future Volume (veh/h)	150	15	70	50	15	75	91	1237	70	135	1342	140
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	160	16	74	53	16	80	97	1316	74	144	1428	149
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	257	24	85	151	63	172	124	1497	84	328	1961	875
Arrive On Green	0.20	0.20	0.20	0.20	0.20	0.20	0.07	0.44	0.44	0.18	0.55	0.55
Sat Flow, veh/h	899	122	429	434	316	869	1781	3421	192	1781	3554	1585
Grp Volume(v), veh/h	250	0	0	149	0	0	97	682	708	144	1428	149
Grp Sat Flow(s),veh/h/ln	1450	0	0	1618	0	0	1781	1777	1836	1781	1777	1585
Q Serve(g_s), s	6.5	0.0	0.0	0.0	0.0	0.0	4.0	26.3	26.5	5.4	22.6	3.5
Cycle Q Clear(g_c), s	12.4	0.0	0.0	5.9	0.0	0.0	4.0	26.3	26.5	5.4	22.6	3.5
Prop In Lane	0.64		0.30	0.36		0.54	1.00		0.10	1.00		1.00
Lane Grp Cap(c), veh/h	367	0	0	386	0	0	124	777	803	328	1961	875
V/C Ratio(X)	0.68	0.00	0.00	0.39	0.00	0.00	0.78	0.88	0.88	0.44	0.73	0.17
Avail Cap(c_a), veh/h	427	0	0	450	0	0	154	827	854	328	1961	875
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	0.00	0.09	0.09	0.09	1.00	1.00	1.00
Uniform Delay (d), s/veh	28.9	0.0	0.0	26.4	0.0	0.0	34.3	19.3	19.3	27.2	12.6	8.3
Incr Delay (d2), s/veh	3.6	0.0	0.0	0.6	0.0	0.0	1.9	1.5	1.5	0.9	2.4	0.4
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	4.5	0.0	0.0	2.3	0.0	0.0	1.7	9.9	10.2	2.3	8.1	1.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	32.5	0.0	0.0	27.1	0.0	0.0	36.2	20.7	20.8	28.1	15.0	8.7
LnGrp LOS	C			C			D	C	C	C	B	A
Approach Vol, veh/h		250			149			1487			1721	
Approach Delay, s/veh		32.5			27.1			21.8			15.6	
Approach LOS		C			C			C			B	

Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	18.3	37.3		19.4	9.7	45.9		19.4				
Change Period (Y+Rc), s	4.5	4.5		4.5	4.5	4.5		4.5				
Max Green Setting (Gmax), s	8.5	34.9		18.1	6.5	36.9		18.1				
Max Q Clear Time (g_c+I1), s	7.4	28.5		14.4	6.0	24.6		7.9				
Green Ext Time (p_c), s	0.0	4.4		0.5	0.0	8.0		0.5				

Intersection Summary												
HCM 7th Control Delay, s/veh			19.8									
HCM 7th LOS			B									

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	115	10	115	100	10	50	199	1159	46	15	1437	90
Future Volume (veh/h)	115	10	115	100	10	50	199	1159	46	15	1437	90
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	122	11	122	106	11	53	212	1233	49	16	1529	96
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	262	271	574	183	21	63	387	2392	95	219	1656	103
Arrive On Green	0.15	0.15	0.15	0.15	0.15	0.15	0.22	0.69	0.69	0.02	0.49	0.49
Sat Flow, veh/h	1338	1870	1585	813	147	435	1781	3484	138	1781	3397	212
Grp Volume(v), veh/h	122	11	122	170	0	0	212	628	654	16	796	829
Grp Sat Flow(s),veh/h/ln	1338	1870	1585	1395	0	0	1781	1777	1845	1781	1777	1832
Q Serve(g_s), s	0.0	0.5	0.0	10.0	0.0	0.0	9.5	15.4	15.5	0.4	37.5	38.1
Cycle Q Clear(g_c), s	8.4	0.5	0.0	10.6	0.0	0.0	9.5	15.4	15.5	0.4	37.5	38.1
Prop In Lane	1.00		1.00	0.62		0.31	1.00		0.07	1.00		0.12
Lane Grp Cap(c), veh/h	262	271	574	267	0	0	387	1220	1267	219	866	893
V/C Ratio(X)	0.47	0.04	0.21	0.64	0.00	0.00	0.55	0.52	0.52	0.07	0.92	0.93
Avail Cap(c_a), veh/h	337	376	663	344	0	0	387	1220	1267	288	886	914
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	0.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	36.5	33.1	19.8	37.4	0.0	0.0	31.3	6.8	6.8	15.0	21.4	21.6
Incr Delay (d2), s/veh	1.3	0.1	0.2	2.5	0.0	0.0	1.6	1.6	1.5	0.1	16.3	17.0
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.6	0.2	1.8	3.8	0.0	0.0	4.1	5.1	5.3	0.2	17.9	18.9
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	37.8	33.1	20.0	39.9	0.0	0.0	32.9	8.4	8.3	15.1	37.7	38.5
LnGrp LOS	D	C	C	D			C	A	A	B	D	D
Approach Vol, veh/h		255			170			1494			1641	
Approach Delay, s/veh		29.1			39.9			11.9			37.9	
Approach LOS		C			D			B			D	

Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	6.1	66.3		17.6	24.1	48.4		17.6				
Change Period (Y+Rc), s	4.5	4.5		4.5	4.5	4.5		4.5				
Max Green Setting (Gmax), s	5.1	53.3		18.1	13.5	44.9		18.1				
Max Q Clear Time (g_c+I1), s	2.4	17.5		10.4	11.5	40.1		12.6				
Green Ext Time (p_c), s	0.0	10.9		0.5	0.1	3.8		0.4				

Intersection Summary			
HCM 7th Control Delay, s/veh		26.4	
HCM 7th LOS		C	



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	581	582	873	396	767	648
Future Volume (veh/h)	581	582	873	396	767	648
Initial Q (Qb), veh	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)	1.00			1.00	1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No	No		No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	618	619	929	421	816	689
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	2	2	2	2	2	2
Cap, veh/h	612	2349	952	803	826	923
Arrive On Green	0.34	0.66	0.27	0.27	0.24	0.24
Sat Flow, veh/h	1781	3647	3647	1585	3456	1585
Grp Volume(v), veh/h	618	619	929	421	816	689
Grp Sat Flow(s),veh/h/ln	1781	1777	1777	1585	1728	1585
Q Serve(g_s), s	30.9	6.4	23.3	16.1	21.2	21.5
Cycle Q Clear(g_c), s	30.9	6.4	23.3	16.1	21.2	21.5
Prop In Lane	1.00			1.00	1.00	1.00
Lane Grp Cap(c), veh/h	612	2349	952	803	826	923
V/C Ratio(X)	1.01	0.26	0.98	0.52	0.99	0.75
Avail Cap(c_a), veh/h	612	2349	952	803	826	923
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	29.5	6.3	32.7	14.9	34.1	13.9
Incr Delay (d2), s/veh	39.0	0.3	24.0	2.4	28.4	3.4
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	19.0	2.1	12.7	9.2	11.5	25.3
Unsig. Movement Delay, s/veh						
LnGrp Delay(d), s/veh	68.6	6.5	56.6	17.4	62.5	17.3
LnGrp LOS	F	A	E	B	E	B
Approach Vol, veh/h		1237	1350		1505	
Approach Delay, s/veh		37.5	44.4		41.8	
Approach LOS		D	D		D	

Timer - Assigned Phs			4		6	7	8
Phs Duration (G+Y+Rc), s			64.0		26.0	35.4	28.6
Change Period (Y+Rc), s			4.5		4.5	4.5	4.5
Max Green Setting (Gmax), s			59.5		21.5	30.9	24.1
Max Q Clear Time (g_c+I1), s			8.4		23.5	32.9	25.3
Green Ext Time (p_c), s			4.7		0.0	0.0	0.0

Intersection Summary	
HCM 7th Control Delay, s/veh	41.4
HCM 7th LOS	D



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	127	1217	5	5	1237	75	5	2	5	52	2	27
Future Volume (veh/h)	127	1217	5	5	1237	75	5	2	5	52	2	27
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	135	1295	5	5	1316	80	5	2	5	55	2	29
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	358	2951	11	390	2766	168	97	42	54	142	6	38
Arrive On Green	0.81	0.81	0.81	0.81	0.81	0.81	0.07	0.07	0.07	0.07	0.07	0.07
Sat Flow, veh/h	387	3631	14	424	3404	206	445	559	717	911	83	506
Grp Volume(v), veh/h	135	634	666	5	686	710	12	0	0	86	0	0
Grp Sat Flow(s),veh/h/ln	387	1777	1868	424	1777	1833	1721	0	0	1499	0	0
Q Serve(g_s), s	13.1	8.3	8.3	0.3	9.4	9.5	0.0	0.0	0.0	4.0	0.0	0.0
Cycle Q Clear(g_c), s	22.6	8.3	8.3	8.6	9.4	9.5	0.5	0.0	0.0	4.5	0.0	0.0
Prop In Lane	1.00		0.01	1.00		0.11	0.42		0.42	0.64		0.34
Lane Grp Cap(c), veh/h	358	1444	1518	390	1444	1490	192	0	0	186	0	0
V/C Ratio(X)	0.38	0.44	0.44	0.01	0.47	0.48	0.06	0.00	0.00	0.46	0.00	0.00
Avail Cap(c_a), veh/h	358	1444	1518	390	1444	1490	422	0	0	407	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	5.7	2.2	2.2	3.4	2.3	2.3	34.5	0.0	0.0	36.3	0.0	0.0
Incr Delay (d2), s/veh	3.0	1.0	0.9	0.1	1.1	1.1	0.1	0.0	0.0	1.8	0.0	0.0
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.1	1.4	1.5	0.0	1.6	1.7	0.2	0.0	0.0	1.7	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	8.7	3.2	3.1	3.5	3.4	3.4	34.6	0.0	0.0	38.1	0.0	0.0
LnGrp LOS	A	A	A	A	A	A	C			D		
Approach Vol, veh/h		1435			1401			12			86	
Approach Delay, s/veh		3.7			3.4			34.6			38.1	
Approach LOS		A			A			C			D	

Timer - Assigned Phs		2		4		6		8				
Phs Duration (G+Y+Rc), s		10.5		69.5		10.5		69.5				
Change Period (Y+Rc), s		4.5		4.5		4.5		4.5				
Max Green Setting (Gmax), s		18.0		53.0		18.0		53.0				
Max Q Clear Time (g_c+I1), s		2.5		24.6		6.5		11.5				
Green Ext Time (p_c), s		0.0		13.4		0.3		13.3				

Intersection Summary												
HCM 7th Control Delay, s/veh			4.7									
HCM 7th LOS			A									

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	50	1028	50	37	1319	294	50	10	275	268	10	50
Future Volume (veh/h)	50	1028	50	37	1319	294	50	10	275	268	10	50
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	53	1094	53	39	1403	0	53	11	293	285	11	53
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	62	1133	70	72	1481		125	51	536	395	14	56
Arrive On Green	0.49	0.49	0.49	0.49	0.49	0.00	0.38	0.38	0.38	0.38	0.38	0.38
Sat Flow, veh/h	11	2296	142	36	3002	1585	174	136	1419	797	38	149
Grp Volume(v), veh/h	572	0	628	681	761	0	357	0	0	349	0	0
Grp Sat Flow(s),veh/h/ln	772	0	1677	1420	1617	1585	1729	0	0	984	0	0
Q Serve(g_s), s	3.0	0.0	21.2	11.8	31.5	0.0	0.0	0.0	0.0	12.6	0.0	0.0
Cycle Q Clear(g_c), s	34.5	0.0	21.2	33.1	31.5	0.0	11.8	0.0	0.0	24.4	0.0	0.0
Prop In Lane	0.09		0.08	0.06		1.00	0.15		0.82	0.82		0.15
Lane Grp Cap(c), veh/h	437	0	827	755	798		712	0	0	465	0	0
V/C Ratio(X)	1.31	0.00	0.76	0.90	0.95		0.50	0.00	0.00	0.75	0.00	0.00
Avail Cap(c_a), veh/h	437	0	827	755	798		713	0	0	466	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	1.00	0.00	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	17.7	0.0	14.4	16.3	17.0	0.0	17.3	0.0	0.0	22.2	0.0	0.0
Incr Delay (d2), s/veh	154.8	0.0	6.5	16.1	22.4	0.0	0.5	0.0	0.0	6.6	0.0	0.0
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	23.3	0.0	8.3	10.6	14.7	0.0	4.4	0.0	0.0	6.1	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	172.5	0.0	20.8	32.4	39.3	0.0	17.9	0.0	0.0	28.9	0.0	0.0
LnGrp LOS	F		C	C	D		B			C		
Approach Vol, veh/h		1200			1442			357			349	
Approach Delay, s/veh		93.2			36.0			17.9			28.9	
Approach LOS		F			D			B			C	

Timer - Assigned Phs	2	4	6	8
Phs Duration (G+Y+Rc), s	31.0	39.0	31.0	39.0
Change Period (Y+Rc), s	4.5	4.5	4.5	4.5
Max Green Setting (Gmax), s	26.5	34.5	26.5	34.5
Max Q Clear Time (g_c+I1), s	13.8	36.5	26.4	35.1
Green Ext Time (p_c), s	2.0	0.0	0.0	0.0

Intersection Summary	
HCM 7th Control Delay, s/veh	53.8
HCM 7th LOS	D

Notes

Unsignalized Delay for [WBR] is excluded from calculations of the approach delay and intersection delay.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	58	1591	54	56	1743	111	51	11	133	174	11	54
Future Volume (veh/h)	58	1591	54	56	1743	111	51	11	133	174	11	54
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	62	1693	57	60	1854	118	54	12	141	185	12	57
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	145	2283	77	185	2209	139	133	50	262	288	19	65
Arrive On Green	0.65	0.65	0.65	0.65	0.65	0.65	0.23	0.23	0.23	0.23	0.23	0.23
Sat Flow, veh/h	221	3508	118	275	3395	214	316	219	1142	892	83	282
Grp Volume(v), veh/h	62	854	896	60	961	1011	207	0	0	254	0	0
Grp Sat Flow(s),veh/h/ln	221	1777	1849	275	1777	1832	1677	0	0	1257	0	0
Q Serve(g_s), s	16.5	24.3	24.6	14.2	30.8	32.3	0.0	0.0	0.0	6.7	0.0	0.0
Cycle Q Clear(g_c), s	48.8	24.3	24.6	38.8	30.8	32.3	8.1	0.0	0.0	14.8	0.0	0.0
Prop In Lane	1.00		0.06	1.00		0.12	0.26		0.68	0.73		0.22
Lane Grp Cap(c), veh/h	145	1156	1203	185	1156	1192	445	0	0	371	0	0
V/C Ratio(X)	0.43	0.74	0.74	0.32	0.83	0.85	0.47	0.00	0.00	0.68	0.00	0.00
Avail Cap(c_a), veh/h	145	1156	1203	185	1156	1192	492	0	0	412	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	0.61	0.61	0.61	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	31.0	8.8	8.9	22.0	10.0	10.2	25.4	0.0	0.0	28.1	0.0	0.0
Incr Delay (d2), s/veh	9.0	4.3	4.2	2.8	4.4	4.8	0.8	0.0	0.0	4.1	0.0	0.0
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.5	8.2	8.6	1.0	10.1	11.0	3.3	0.0	0.0	4.7	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	40.0	13.1	13.1	24.8	14.4	15.0	26.2	0.0	0.0	32.2	0.0	0.0
LnGrp LOS	D	B	B	C	B	B	C			C		
Approach Vol, veh/h		1812			2032			207			254	
Approach Delay, s/veh		14.0			15.0			26.2			32.2	
Approach LOS		B			B			C			C	

Timer - Assigned Phs	2	4	6	8
Phs Duration (G+Y+Rc), s	21.7	53.3	21.7	53.3
Change Period (Y+Rc), s	4.5	4.5	4.5	4.5
Max Green Setting (Gmax), s	19.5	46.5	19.5	46.5
Max Q Clear Time (g_c+I1), s	10.1	50.8	16.8	40.8
Green Ext Time (p_c), s	0.8	0.0	0.4	5.1

Intersection Summary	
HCM 7th Control Delay, s/veh	16.1
HCM 7th LOS	B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	27	1349	522	550	1571	25	314	44	776	25	75	25
Future Volume (veh/h)	27	1349	522	550	1571	25	314	44	776	25	75	25
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	29	1435	555	585	1671	27	334	47	826	27	80	27
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	159	1328	785	534	2421	39	421	485	840	51	102	31
Arrive On Green	0.37	0.37	0.37	0.27	0.68	0.68	0.12	0.26	0.26	0.11	0.11	0.11
Sat Flow, veh/h	289	3554	1585	1781	3579	58	3456	1870	1585	191	964	291
Grp Volume(v), veh/h	29	1435	555	585	828	870	334	47	826	134	0	0
Grp Sat Flow(s),veh/h/ln	289	1777	1585	1781	1777	1860	1728	1870	1585	1446	0	0
Q Serve(g_s), s	9.8	52.3	22.8	37.9	39.6	39.8	13.2	2.7	36.3	8.5	0.0	0.0
Cycle Q Clear(g_c), s	9.8	52.3	22.8	37.9	39.6	39.8	13.2	2.7	36.3	12.6	0.0	0.0
Prop In Lane	1.00		1.00	1.00		0.03	1.00		1.00	0.20		0.20
Lane Grp Cap(c), veh/h	159	1328	785	534	1202	1258	421	485	840	183	0	0
V/C Ratio(X)	0.18	1.08	0.71	1.10	0.69	0.69	0.79	0.10	0.98	0.73	0.00	0.00
Avail Cap(c_a), veh/h	159	1328	785	534	1202	1258	421	485	840	214	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.53	0.53	0.53	1.00	1.00	1.00	0.86	0.86	0.86	1.00	0.00	0.00
Uniform Delay (d), s/veh	30.5	43.9	11.9	44.6	13.7	13.8	59.8	39.4	32.3	61.2	0.0	0.0
Incr Delay (d2), s/veh	1.3	44.3	2.9	67.8	3.2	3.1	8.8	0.1	24.7	10.2	0.0	0.0
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.7	30.7	8.0	28.4	15.8	16.6	6.2	1.2	31.9	5.1	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	31.9	88.2	14.8	112.4	17.0	16.9	68.5	39.5	56.9	71.4	0.0	0.0
LnGrp LOS	C	F	B	F	B	B	E	D	E	E		
Approach Vol, veh/h		2019			2283			1207			134	
Approach Delay, s/veh		67.2			41.4			59.5			71.4	
Approach LOS		E			D			E			E	

Timer - Assigned Phs	2	3	4	5	6	8
Phs Duration (G+Y+Rc), s	40.8	42.4	56.8	21.5	19.3	99.2
Change Period (Y+Rc), s	4.5	4.5	4.5	4.5	4.5	4.5
Max Green Setting (Gmax), s	36.3	37.9	52.3	13.8	18.0	94.7
Max Q Clear Time (g_c+I1), s	38.3	39.9	54.3	15.2	14.6	41.8
Green Ext Time (p_c), s	0.0	0.0	0.0	0.0	0.2	20.3

Intersection Summary	
HCM 7th Control Delay, s/veh	55.2
HCM 7th LOS	E

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	228	1469	270	325	1478	226	257	155	406	225	68	215
Future Volume (vph)	228	1469	270	325	1478	226	257	155	406	225	68	215
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.5	4.5		4.5	4.5			4.5		4.5	4.5	
Lane Util. Factor	1.00	0.95		1.00	0.95			1.00		1.00	1.00	
Frt	1.00	0.98		1.00	0.98			0.93		1.00	0.89	
Flt Protected	0.95	1.00		0.95	1.00			0.98		0.95	1.00	
Satd. Flow (prot)	1770	3457		1770	3469			1711		1770	1650	
Flt Permitted	0.16	1.00		0.16	1.00			0.69		0.33	1.00	
Satd. Flow (perm)	292	3457		292	3469			1200		613	1650	
Peak-hour factor, PHF	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Adj. Flow (vph)	243	1563	287	346	1572	240	273	165	432	239	72	229
RTOR Reduction (vph)	0	27	0	0	22	0	0	7	0	0	6	0
Lane Group Flow (vph)	243	1823	0	346	1790	0	0	863	0	239	295	0
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		6			2			4			8	
Permitted Phases	6			2			4			8		
Actuated Green, G (s)	25.5	25.5		25.5	25.5			20.5		20.5	20.5	
Effective Green, g (s)	25.5	25.5		25.5	25.5			20.5		20.5	20.5	
Actuated g/C Ratio	0.46	0.46		0.46	0.46			0.37		0.37	0.37	
Clearance Time (s)	4.5	4.5		4.5	4.5			4.5		4.5	4.5	
Vehicle Extension (s)	3.0	3.0		3.0	3.0			3.0		3.0	3.0	
Lane Grp Cap (vph)	135	1602		135	1608			447		228	615	
v/s Ratio Prot		0.53			0.52						0.18	
v/s Ratio Perm	0.83			c1.18				c0.72		0.39		
v/c Ratio	1.80	1.14		2.56	1.11			1.93		1.05	0.48	
Uniform Delay, d1	14.8	14.8		14.8	14.8			17.2		17.2	13.2	
Progression Factor	1.00	1.00		1.00	1.00			1.00		1.00	1.00	
Incremental Delay, d2	387.8	70.2		724.6	60.2			427.1		72.8	0.6	
Delay (s)	402.6	84.9		739.3	75.0			444.3		90.1	13.8	
Level of Service	F	F		F	E			F		F	B	
Approach Delay (s/veh)		121.8			181.5			444.3			47.5	
Approach LOS		F			F			F			D	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	187.0	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	2.28		
Actuated Cycle Length (s)	55.0	Sum of lost time (s)	9.0
Intersection Capacity Utilization	146.3%	ICU Level of Service	H
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	1801	458	170	1401	629	170
Future Volume (veh/h)	1801	458	170	1401	629	170
Initial Q (Qb), veh	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)		1.00	1.00		1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No	No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	1916	0	181	1490	669	0
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	2	2	2	2	2	2
Cap, veh/h	1990		196	2541	674	
Arrive On Green	0.56	0.00	0.11	0.71	0.19	0.00
Sat Flow, veh/h	3647	1585	1781	3647	3456	1585
Grp Volume(v), veh/h	1916	0	181	1490	669	0
Grp Sat Flow(s),veh/h/ln	1777	1585	1781	1777	1728	1585
Q Serve(g_s), s	51.5	0.0	10.1	20.6	19.3	0.0
Cycle Q Clear(g_c), s	51.5	0.0	10.1	20.6	19.3	0.0
Prop In Lane		1.00	1.00		1.00	1.00
Lane Grp Cap(c), veh/h	1990		196	2541	674	
V/C Ratio(X)	0.96		0.92	0.59	0.99	
Avail Cap(c_a), veh/h	2001		196	2541	674	
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	21.0	0.0	44.1	7.0	40.2	0.0
Incr Delay (d2), s/veh	13.1	0.0	43.5	1.0	32.8	0.0
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	22.5	0.0	6.7	6.5	11.0	0.0
Unsig. Movement Delay, s/veh						
LnGrp Delay(d), s/veh	34.1	0.0	87.6	8.0	72.9	0.0
LnGrp LOS	C		F	A	E	
Approach Vol, veh/h	1916			1671	669	
Approach Delay, s/veh	34.1			16.6	72.9	
Approach LOS	C			B	E	

Timer - Assigned Phs	2	3	4		8
Phs Duration (G+Y+Rc), s	24.0	15.5	60.5		76.0
Change Period (Y+Rc), s	4.5	4.5	4.5		4.5
Max Green Setting (Gmax), s	19.5	10.7	56.3		71.5
Max Q Clear Time (g_c+I1), s	21.3	12.1	53.5		22.6
Green Ext Time (p_c), s	0.0	0.0	2.5		16.8

Intersection Summary	
HCM 7th Control Delay, s/veh	33.3
HCM 7th LOS	C

Notes

Unsignalized Delay for [NBR, EBR] is excluded from calculations of the approach delay and intersection delay.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	178	1597	138	32	1281	34	122	11	30	37	12	153
Future Volume (veh/h)	178	1597	138	32	1281	34	122	11	30	37	12	153
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	189	1699	147	34	1363	36	130	12	32	39	13	163
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	288	2106	180	57	2538	67	210	24	37	87	36	236
Arrive On Green	0.64	0.64	0.64	0.03	0.72	0.72	0.18	0.18	0.18	0.18	0.18	0.18
Sat Flow, veh/h	386	3313	283	1781	3537	93	767	132	203	218	195	1293
Grp Volume(v), veh/h	189	902	944	34	684	715	174	0	0	215	0	0
Grp Sat Flow(s),veh/h/ln	386	1777	1819	1781	1777	1854	1102	0	0	1706	0	0
Q Serve(g_s), s	39.8	33.8	35.4	1.7	15.9	16.0	3.7	0.0	0.0	0.0	0.0	0.0
Cycle Q Clear(g_c), s	48.4	33.8	35.4	1.7	15.9	16.0	14.3	0.0	0.0	10.6	0.0	0.0
Prop In Lane	1.00		0.16	1.00		0.05	0.75		0.18	0.18		0.76
Lane Grp Cap(c), veh/h	288	1130	1157	57	1275	1330	271	0	0	358	0	0
V/C Ratio(X)	0.66	0.80	0.82	0.60	0.54	0.54	0.64	0.00	0.00	0.60	0.00	0.00
Avail Cap(c_a), veh/h	288	1130	1157	99	1275	1330	294	0	0	386	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	18.7	12.1	12.4	43.0	5.8	5.8	36.1	0.0	0.0	34.5	0.0	0.0
Incr Delay (d2), s/veh	11.1	5.9	6.4	9.8	1.6	1.6	4.2	0.0	0.0	2.3	0.0	0.0
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	4.0	12.8	13.8	0.9	5.0	5.2	4.0	0.0	0.0	4.6	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	29.7	18.0	18.8	52.8	7.5	7.4	40.3	0.0	0.0	36.8	0.0	0.0
LnGrp LOS	C	B	B	D	A	A	D			D		
Approach Vol, veh/h		2035			1433			174			215	
Approach Delay, s/veh		19.5			8.5			40.3			36.8	
Approach LOS		B			A			D			D	

Timer - Assigned Phs		2	3	4		6		8				
Phs Duration (G+Y+Rc), s		20.9	7.4	61.7		20.9		69.1				
Change Period (Y+Rc), s		4.5	4.5	4.5		4.5		4.5				
Max Green Setting (Gmax), s		18.0	5.0	53.5		18.0		63.0				
Max Q Clear Time (g_c+I1), s		16.3	3.7	50.4		12.6		18.0				
Green Ext Time (p_c), s		0.2	0.0	2.9		0.6		13.4				

Intersection Summary	
HCM 7th Control Delay, s/veh	17.3
HCM 7th LOS	B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBU	SBL	SBT
Lane Configurations												
Traffic Volume (vph)	213	0	429	151	30	90	558	831	0	0	0	1064
Future Volume (vph)	213	0	429	151	30	90	558	831	0	0	0	1064
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.5		4.5		4.5		4.5	4.5				4.5
Lane Util. Factor	1.00		1.00		1.00		1.00	0.95				0.95
Frt	1.00		0.85		0.96		1.00	1.00				1.00
Flt Protected	0.95		1.00		0.97		0.95	1.00				1.00
Satd. Flow (prot)	1770		1583		1731		1770	3539				3539
Flt Permitted	0.57		1.00		0.97		0.11	1.00				1.00
Satd. Flow (perm)	1058		1583		1731		208	3539				3539
Peak-hour factor, PHF	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Adj. Flow (vph)	227	0	456	161	32	96	594	884	0	0	0	1132
RTOR Reduction (vph)	0	0	357	0	20	0	0	0	0	0	0	0
Lane Group Flow (vph)	227	0	99	0	269	0	594	884	0	0	0	1132
Turn Type	Perm		Perm	Perm	NA		pm+pt	NA		Perm		NA
Protected Phases					8		5	2				6
Permitted Phases	4		4	8			2			6		
Actuated Green, G (s)	19.5		19.5		19.5		61.5	61.5				31.3
Effective Green, g (s)	19.5		19.5		19.5		61.5	61.5				31.3
Actuated g/C Ratio	0.22		0.22		0.22		0.68	0.68				0.35
Clearance Time (s)	4.5		4.5		4.5		4.5	4.5				4.5
Vehicle Extension (s)	3.0		3.0		3.0		3.0	3.0				3.0
Lane Grp Cap (vph)	229		342		375		588	2418				1230
v/s Ratio Prot							c0.29	0.25				0.32
v/s Ratio Perm	c0.21		0.06		0.16		c0.40					
v/c Ratio	0.99		0.29		0.72		1.01	0.37				0.92
Uniform Delay, d1	35.2		29.5		32.7		26.4	6.0				28.2
Progression Factor	1.00		1.00		1.00		1.00	1.00				1.00
Incremental Delay, d2	56.8		0.5		6.5		39.7	0.4				12.5
Delay (s)	92.0		29.9		39.2		66.1	6.4				40.7
Level of Service	F		C		D		E	A				D
Approach Delay (s/veh)		50.5			39.2			30.4				39.2
Approach LOS		D			D			C				D

Intersection Summary			
HCM 2000 Control Delay (s/veh)	37.8	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	1.04		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	13.5
Intersection Capacity Utilization	93.7%	ICU Level of Service	F
Analysis Period (min)	15		

c Critical Lane Group



Movement	SBR
Lane Configurations	
Traffic Volume (vph)	83
Future Volume (vph)	83
Ideal Flow (vphpl)	1900
Total Lost time (s)	4.5
Lane Util. Factor	1.00
Frt	0.85
Flt Protected	1.00
Satd. Flow (prot)	1583
Flt Permitted	1.00
Satd. Flow (perm)	1583
Peak-hour factor, PHF	0.94
Adj. Flow (vph)	88
RTOR Reduction (vph)	48
Lane Group Flow (vph)	40
Turn Type	Perm
Protected Phases	
Permitted Phases	6
Actuated Green, G (s)	31.3
Effective Green, g (s)	31.3
Actuated g/C Ratio	0.35
Clearance Time (s)	4.5
Vehicle Extension (s)	3.0
Lane Grp Cap (vph)	550
v/s Ratio Prot	
v/s Ratio Perm	0.03
v/c Ratio	0.07
Uniform Delay, d1	19.6
Progression Factor	1.00
Incremental Delay, d2	0.3
Delay (s)	19.9
Level of Service	B
Approach Delay (s/veh)	
Approach LOS	

Intersection Summary

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	84	3727	3514	283	160	91
Future Volume (veh/h)	84	3727	3514	283	160	91
Initial Q (Qb), veh	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)	1.00			1.00	1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No	No		No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	89	3965	3738	301	177	89
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	2	2	2	2	2	2
Cap, veh/h	86	3013	2714	1210	260	115
Arrive On Green	0.05	0.85	0.76	0.76	0.07	0.07
Sat Flow, veh/h	1781	3647	3647	1585	3563	1585
Grp Volume(v), veh/h	89	3965	3738	301	177	89
Grp Sat Flow(s),veh/h/ln	1781	1777	1777	1585	1781	1585
Q Serve(g_s), s	6.9	120.8	108.8	7.9	6.9	7.9
Cycle Q Clear(g_c), s	6.9	120.8	108.8	7.9	6.9	7.9
Prop In Lane	1.00			1.00	1.00	1.00
Lane Grp Cap(c), veh/h	86	3013	2714	1210	260	115
V/C Ratio(X)	1.03	1.32	1.38	0.25	0.68	0.77
Avail Cap(c_a), veh/h	86	3013	2714	1210	448	199
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	67.8	10.8	16.8	4.9	64.4	64.9
Incr Delay (d2), s/veh	105.8	144.6	172.3	0.1	3.1	10.3
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	5.6	85.0	98.2	2.2	3.2	3.5
Unsig. Movement Delay, s/veh						
LnGrp Delay(d), s/veh	173.6	155.5	189.1	5.0	67.6	75.2
LnGrp LOS	F	F	F	A	E	E
Approach Vol, veh/h		4054	4039		266	
Approach Delay, s/veh		155.9	175.4		70.1	
Approach LOS		F	F		E	

Timer - Assigned Phs	1	2		4		6
Phs Duration (G+Y+Rc), s	12.0	115.0		15.5		127.0
Change Period (Y+Rc), s	5.1	6.2		5.1		6.2
Max Green Setting (Gmax), s	6.9	108.8		17.9		120.8
Max Q Clear Time (g_c+I1), s	8.9	110.8		9.9		122.8
Green Ext Time (p_c), s	0.0	0.0		0.5		0.0

Intersection Summary	
HCM 7th Control Delay, s/veh	162.6
HCM 7th LOS	F

Notes

User approved volume balancing among the lanes for turning movement.



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	41	3842	3802	275	67	17
Future Volume (veh/h)	41	3842	3802	275	67	17
Initial Q (Qb), veh	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)	1.00			1.00	1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No	No		No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	44	4087	4045	293	71	18
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	2	2	2	2	2	2
Cap, veh/h	62	3040	2787	1243	88	22
Arrive On Green	0.04	0.86	0.78	0.78	0.06	0.06
Sat Flow, veh/h	1781	3647	3647	1585	1372	348
Grp Volume(v), veh/h	44	4087	4045	293	90	0
Grp Sat Flow(s),veh/h/ln	1781	1777	1777	1585	1739	0
Q Serve(g_s), s	3.4	120.3	110.3	6.9	7.2	0.0
Cycle Q Clear(g_c), s	3.4	120.3	110.3	6.9	7.2	0.0
Prop In Lane	1.00			1.00	0.79	0.20
Lane Grp Cap(c), veh/h	62	3040	2787	1243	112	0
V/C Ratio(X)	0.71	1.34	1.45	0.24	0.81	0.00
Avail Cap(c_a), veh/h	119	3040	2787	1243	228	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	67.1	10.2	15.2	4.0	64.9	0.0
Incr Delay (d2), s/veh	13.5	157.2	205.2	0.1	12.7	0.0
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.8	88.5	110.9	1.8	3.5	0.0
Unsig. Movement Delay, s/veh						
LnGrp Delay(d), s/veh	80.7	167.4	220.4	4.1	77.6	0.0
LnGrp LOS	F	F	F	A	E	
Approach Vol, veh/h		4131	4338		90	
Approach Delay, s/veh		166.5	205.8		77.6	
Approach LOS		F	F		E	

Timer - Assigned Phs	1	2		4		6
Phs Duration (G+Y+Rc), s	10.0	116.5		14.1		126.5
Change Period (Y+Rc), s	5.1	6.2		5.1		6.2
Max Green Setting (Gmax), s	9.4	105.8		18.4		120.3
Max Q Clear Time (g_c+I1), s	5.4	112.3		9.2		122.3
Green Ext Time (p_c), s	0.0	0.0		0.1		0.0

Intersection Summary	
HCM 7th Control Delay, s/veh	185.5
HCM 7th LOS	F



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	278	3616	15	40	3537	1105	0	0	0	937	10	515
Future Volume (vph)	278	3616	15	40	3537	1105	0	0	0	937	10	515
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.4	6.7		5.4	6.7	6.7				5.4	5.4	5.4
Lane Util. Factor	0.97	0.91		1.00	0.91	1.00				0.91	0.86	0.95
Frt	1.00	1.00		1.00	1.00	0.85				1.00	0.93	0.85
Flt Protected	0.95	1.00		0.95	1.00	1.00				0.95	0.98	1.00
Satd. Flow (prot)	3433	5082		1770	5085	1583				3221	1454	1504
Flt Permitted	0.95	1.00		0.95	1.00	1.00				0.95	0.98	1.00
Satd. Flow (perm)	3433	5082		1770	5085	1583				3221	1454	1504
Peak-hour factor, PHF	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Adj. Flow (vph)	296	3847	16	43	3763	1176	0	0	0	997	11	548
RTOR Reduction (vph)	0	0	0	0	0	124	0	0	0	0	19	163
Lane Group Flow (vph)	296	3863	0	43	3763	1052	0	0	0	798	372	204
Turn Type	Prot	NA		Prot	NA	Perm				Split	NA	pm+ov
Protected Phases	1	6		5	2			3		4	4	1
Permitted Phases						2	3					4
Actuated Green, G (s)	11.7	69.7		8.3	66.3	66.3				32.2	32.2	43.9
Effective Green, g (s)	11.7	69.7		8.3	66.3	66.3				32.2	32.2	43.9
Actuated g/C Ratio	0.09	0.55		0.06	0.52	0.52				0.25	0.25	0.34
Clearance Time (s)	5.4	6.7		5.4	6.7	6.7				5.4	5.4	5.4
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0				3.0	3.0	3.0
Lane Grp Cap (vph)	314	2773		115	2640	821				812	366	580
v/s Ratio Prot	0.09	c0.76		0.02	c0.74					0.25	c0.26	0.03
v/s Ratio Perm						0.66						0.10
v/c Ratio	0.94	1.39		0.37	1.43	1.28				0.98	1.02	0.35
Uniform Delay, d1	57.7	29.0		57.2	30.7	30.7				47.5	47.8	31.3
Progression Factor	1.00	1.00		1.00	1.00	1.00				1.00	1.00	1.00
Incremental Delay, d2	35.7	179.2		2.0	193.7	136.1				27.2	50.9	0.4
Delay (s)	93.4	208.2		59.3	224.4	166.8				74.6	98.7	31.6
Level of Service	F	F		E	F	F				E	F	C
Approach Delay (s/veh)		200.0			209.4			0.0			70.5	
Approach LOS		F			F			A			E	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	185.5	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	1.39		
Actuated Cycle Length (s)	127.7	Sum of lost time (s)	22.9
Intersection Capacity Utilization	114.1%	ICU Level of Service	H
Analysis Period (min)	15		

c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	227	4451	25	75	4506	151	0	0	0	151	10	151
Future Volume (veh/h)	227	4451	25	75	4506	151	0	0	0	151	10	151
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	241	4735	27	80	4794	161	0	0	0	161	11	161
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	48	2664	15	48	2613	1166	0	349	296	172	9	136
Arrive On Green	0.74	0.74	0.74	0.74	0.74	0.74	0.00	0.00	0.00	0.19	0.19	0.19
Sat Flow, veh/h	10	3623	21	13	3554	1585	0	1870	1585	728	50	728
Grp Volume(v), veh/h	241	2320	2442	80	4794	161	0	0	0	333	0	0
Grp Sat Flow(s),veh/h/ln	10	1777	1867	13	1777	1585	0	1870	1585	1507	0	0
Q Serve(g_s), s	0.0	110.3	110.3	0.0	110.3	4.5	0.0	0.0	0.0	28.0	0.0	0.0
Cycle Q Clear(g_c), s	110.3	110.3	110.3	110.3	110.3	4.5	0.0	0.0	0.0	28.0	0.0	0.0
Prop In Lane	1.00		0.01	1.00		1.00	0.00		1.00	0.48		0.48
Lane Grp Cap(c), veh/h	48	1307	1373	48	2613	1166	0	349	296	317	0	0
V/C Ratio(X)	5.02	1.78	1.78	1.67	1.83	0.14	0.00	0.00	0.00	1.05	0.00	0.00
Avail Cap(c_a), veh/h	48	1307	1373	48	2613	1166	0	349	296	317	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	0.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	75.0	19.8	19.9	75.0	19.8	5.8	0.0	0.0	0.0	62.6	0.0	0.0
Incr Delay (d2), s/veh	1855.0	352.1	353.6	375.0	377.1	0.1	0.0	0.0	0.0	64.6	0.0	0.0
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	26.6	164.6	173.5	6.8	173.7	1.4	0.0	0.0	0.0	17.7	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	1930.0	372.0	373.4	450.0	396.9	5.9	0.0	0.0	0.0	127.2	0.0	0.0
LnGrp LOS	F	F	F	F	F	A				F		
Approach Vol, veh/h		5003			5035			0			333	
Approach Delay, s/veh		447.7			385.3			0.0			127.2	
Approach LOS		F			F						F	

Timer - Assigned Phs	2	4	6	8
Phs Duration (G+Y+Rc), s	117.0	33.0	117.0	33.0
Change Period (Y+Rc), s	6.7	5.0	6.7	5.0
Max Green Setting (Gmax), s	110.3	28.0	110.3	28.0
Max Q Clear Time (g_c+I1), s	112.3	30.0	112.3	0.0
Green Ext Time (p_c), s	0.0	0.0	0.0	0.0

Intersection Summary	
HCM 7th Control Delay, s/veh	407.1
HCM 7th LOS	F

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	187	4331	0	0	4368	1202	0	0	0	1230	0	414
Future Volume (vph)	187	4331	0	0	4368	1202	0	0	0	1230	0	414
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.2	7.2			7.2	7.2				5.9		5.9
Lane Util. Factor	1.00	0.91			0.91	1.00				0.97		1.00
Frt	1.00	1.00			1.00	0.85				1.00		0.85
Flt Protected	0.95	1.00			1.00	1.00				0.95		1.00
Satd. Flow (prot)	1770	5085			5085	1583				3433		1583
Flt Permitted	0.95	1.00			1.00	1.00				0.95		1.00
Satd. Flow (perm)	1770	5085			5085	1583				3433		1583
Peak-hour factor, PHF	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Adj. Flow (vph)	199	4607	0	0	4647	1279	0	0	0	1309	0	440
RTOR Reduction (vph)	0	0	0	0	0	181	0	0	0	0	0	175
Lane Group Flow (vph)	199	4607	0	0	4647	1098	0	0	0	1309	0	265
Turn Type	Prot	NA		Prot	NA	Perm	Split		Perm	Split		Perm
Protected Phases	1	6		5	2		3	3		4	4	
Permitted Phases						2			3			4
Actuated Green, G (s)	11.8	89.7			72.7	72.7				31.1		31.1
Effective Green, g (s)	11.8	89.7			72.7	72.7				31.1		31.1
Actuated g/C Ratio	0.09	0.67			0.54	0.54				0.23		0.23
Clearance Time (s)	5.2	7.2			7.2	7.2				5.9		5.9
Vehicle Extension (s)	3.0	3.0			3.0	3.0				3.0		3.0
Lane Grp Cap (vph)	155	3406			2760	859				797		367
v/s Ratio Prot	0.11	c0.91			c0.91					c0.38		
v/s Ratio Perm						0.69						0.17
v/c Ratio	1.28	1.35			1.68	1.28				1.64		0.72
Uniform Delay, d1	61.1	22.1			30.6	30.6				51.4		47.4
Progression Factor	1.00	1.00			1.00	1.00				1.00		1.00
Incremental Delay, d2	167.7	160.7			309.3	134.0				294.7		6.9
Delay (s)	228.8	182.8			339.9	164.6				346.1		54.3
Level of Service	F	F			F	F				F		D
Approach Delay (s/veh)		184.7			302.0			0.0			272.7	
Approach LOS		F			F			A			F	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	252.7	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	1.75		
Actuated Cycle Length (s)	133.9	Sum of lost time (s)	23.4
Intersection Capacity Utilization	150.7%	ICU Level of Service	H
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL2	EBL	EBR	WBT	WBR	WBR2	SBR	SBR2	SEL2	SEL	SET	SER
Lane Configurations												
Traffic Volume (vph)	524	524	4514	4435	627	627	651	279	134	312	0	484
Future Volume (vph)	524	524	4514	4435	627	627	651	279	134	312	0	484
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		5.1	4.0	6.5	6.5		5.1	5.1	5.1		5.1	
Lane Util. Factor		1.00	0.76	0.91	1.00		0.88	1.00	0.95		0.95	
Frt		1.00	0.85	1.00	0.85		0.85	0.85	1.00		0.91	
Flt Protected		0.95	1.00	1.00	1.00		1.00	1.00	0.95		0.98	
Satd. Flow (prot)		1770	3610	5085	1583		2787	1583	1681		1579	
Flt Permitted		0.39	1.00	1.00	1.00		1.00	1.00	0.95		0.98	
Satd. Flow (perm)		723	3610	5085	1583		2787	1583	1681		1579	
Peak-hour factor, PHF	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Adj. Flow (vph)	557	557	4802	4718	667	667	693	297	143	332	0	515
RTOR Reduction (vph)	0	0	0	0	63	0	0	0	0	0	95	0
Lane Group Flow (vph)	0	1114	4802	4718	1271	0	693	297	129	0	766	0
Turn Type	D.Pm	D.Pm	Free	NA	Perm		Prot	Perm	Split	Split	NA	
Protected Phases				2			4!		1	1	1	
Permitted Phases	4!	4	Free		2			4				
Actuated Green, G (s)		10.3	75.0	30.0	30.0		10.3	10.3	18.0		18.0	
Effective Green, g (s)		10.3	75.0	30.0	30.0		10.3	10.3	18.0		18.0	
Actuated g/C Ratio		0.14	1.00	0.40	0.40		0.14	0.14	0.24		0.24	
Clearance Time (s)		5.1		6.5	6.5		5.1	5.1	5.1		5.1	
Vehicle Extension (s)		3.0		3.0	3.0		3.0	3.0	3.0		3.0	
Lane Grp Cap (vph)		99	3610	2034	633		382	217	403		378	
v/s Ratio Prot				c0.93			0.25		0.08		c0.49	
v/s Ratio Perm		c1.54	1.33		0.80			0.19				
v/c Ratio		11.25	1.33	2.32	2.01		1.81	1.37	0.32		2.03	
Uniform Delay, d1		32.4	37.5	22.5	22.5		32.4	32.4	23.5		28.5	
Progression Factor		1.00	1.00	1.00	1.00		1.00	1.00	1.00		1.00	
Incremental Delay, d2		4633.5	150.6	595.4	459.2		376.6	192.4	0.5		471.1	
Delay (s)		4665.9	188.1	617.9	481.7		408.9	224.8	23.9		499.6	
Level of Service		F	F	F	F		F	F	C		F	
Approach Delay (s/veh)				587.8							437.6	
Approach LOS				F							F	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	748.6	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	3.80		
Actuated Cycle Length (s)	75.0	Sum of lost time (s)	16.7
Intersection Capacity Utilization	211.0%	ICU Level of Service	H
Analysis Period (min)	15		

! Phase conflict between lane groups.
c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	69	5	28	11	5	24	19	464	7	36	458	63
Future Volume (veh/h)	69	5	28	11	5	24	19	464	7	36	458	63
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	73	5	30	12	5	26	20	494	7	38	487	67
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	208	10	42	113	37	100	43	715	10	814	2247	1002
Arrive On Green	0.10	0.10	0.10	0.10	0.10	0.10	0.02	0.20	0.20	0.46	0.63	0.63
Sat Flow, veh/h	1003	105	426	295	372	1021	1781	3587	51	1781	3554	1585
Grp Volume(v), veh/h	108	0	0	43	0	0	20	245	256	38	487	67
Grp Sat Flow(s),veh/h/ln	1534	0	0	1689	0	0	1781	1777	1861	1781	1777	1585
Q Serve(g_s), s	2.4	0.0	0.0	0.0	0.0	0.0	0.6	7.0	7.0	0.7	3.2	0.9
Cycle Q Clear(g_c), s	3.6	0.0	0.0	1.3	0.0	0.0	0.6	7.0	7.0	0.7	3.2	0.9
Prop In Lane	0.68		0.28	0.28		0.60	1.00		0.03	1.00		1.00
Lane Grp Cap(c), veh/h	261	0	0	250	0	0	43	354	371	814	2247	1002
V/C Ratio(X)	0.41	0.00	0.00	0.17	0.00	0.00	0.47	0.69	0.69	0.05	0.22	0.07
Avail Cap(c_a), veh/h	592	0	0	604	0	0	162	585	613	814	2247	1002
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	0.00	0.93	0.93	0.93	1.00	1.00	1.00
Uniform Delay (d), s/veh	23.9	0.0	0.0	22.9	0.0	0.0	26.5	20.4	20.5	8.3	4.3	3.9
Incr Delay (d2), s/veh	1.1	0.0	0.0	0.3	0.0	0.0	7.3	9.9	9.5	0.0	0.2	0.1
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.3	0.0	0.0	0.5	0.0	0.0	0.3	3.6	3.7	0.2	0.8	0.2
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	25.0	0.0	0.0	23.3	0.0	0.0	33.8	30.3	29.9	8.3	4.5	4.0
LnGrp LOS	C			C			C	C	C	A	A	A
Approach Vol, veh/h		108			43			521			592	
Approach Delay, s/veh		25.0			23.3			30.3			4.7	
Approach LOS		C			C			C			A	

Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	29.6	15.5		9.9	5.8	39.3		9.9				
Change Period (Y+Rc), s	4.5	4.5		4.5	4.5	4.5		4.5				
Max Green Setting (Gmax), s	5.4	18.1		18.0	5.0	18.5		18.0				
Max Q Clear Time (g_c+I1), s	2.7	9.0		5.6	2.6	5.2		3.3				
Green Ext Time (p_c), s	0.0	1.9		0.4	0.0	2.8		0.1				

Intersection Summary		
HCM 7th Control Delay, s/veh	17.6	
HCM 7th LOS	B	

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	34	2	50	23	2	11	81	472	5	5	485	54
Future Volume (veh/h)	34	2	50	23	2	11	81	472	5	5	485	54
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	36	2	53	24	2	12	86	502	5	5	516	57
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	249	146	844	166	21	37	809	2414	24	215	718	79
Arrive On Green	0.08	0.08	0.08	0.08	0.08	0.08	0.45	0.67	0.67	0.01	0.22	0.22
Sat Flow, veh/h	1400	1870	1585	755	266	472	1781	3605	36	1781	3228	355
Grp Volume(v), veh/h	36	2	53	38	0	0	86	247	260	5	283	290
Grp Sat Flow(s),veh/h/ln	1400	1870	1585	1493	0	0	1781	1777	1864	1781	1777	1806
Q Serve(g_s), s	0.0	0.1	0.0	0.5	0.0	0.0	1.5	2.9	2.9	0.1	8.1	8.2
Cycle Q Clear(g_c), s	1.0	0.1	0.0	1.2	0.0	0.0	1.5	2.9	2.9	0.1	8.1	8.2
Prop In Lane	1.00		1.00	0.63		0.32	1.00		0.02	1.00		0.20
Lane Grp Cap(c), veh/h	249	146	844	224	0	0	809	1190	1248	215	395	402
V/C Ratio(X)	0.14	0.01	0.06	0.17	0.00	0.00	0.11	0.21	0.21	0.02	0.72	0.72
Avail Cap(c_a), veh/h	597	612	1238	582	0	0	809	1190	1248	365	582	591
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	0.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	23.8	23.4	6.2	23.9	0.0	0.0	8.6	3.5	3.5	18.9	19.8	19.8
Incr Delay (d2), s/veh	0.3	0.0	0.0	0.4	0.0	0.0	0.1	0.4	0.4	0.0	10.7	10.7
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.4	0.0	0.3	0.5	0.0	0.0	0.5	0.7	0.7	0.0	4.1	4.2
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	24.1	23.4	6.3	24.2	0.0	0.0	8.7	3.9	3.9	18.9	30.4	30.5
LnGrp LOS	C	C	A	C			A	A	A	B	C	C
Approach Vol, veh/h		91			38			593			578	
Approach Delay, s/veh		13.7			24.2			4.6			30.4	
Approach LOS		B			C			A			C	

Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	4.9	41.3		8.8	29.5	16.7		8.8				
Change Period (Y+Rc), s	4.5	4.5		4.5	4.5	4.5		4.5				
Max Green Setting (Gmax), s	5.0	18.5		18.0	5.5	18.0		18.0				
Max Q Clear Time (g_c+I1), s	2.1	4.9		3.0	3.5	10.2		3.2				
Green Ext Time (p_c), s	0.0	2.4		0.2	0.0	2.1		0.1				

Intersection Summary												
HCM 7th Control Delay, s/veh			17.3									
HCM 7th LOS			B									

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	278	249	335	131	249	189
Future Volume (veh/h)	278	249	335	131	249	189
Initial Q (Qb), veh	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)	1.00			1.00	1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No	No		No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	296	265	356	139	265	201
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	2	2	2	2	2	2
Cap, veh/h	312	2485	1597	951	521	516
Arrive On Green	0.17	0.70	0.45	0.45	0.15	0.15
Sat Flow, veh/h	1781	3647	3647	1585	3456	1585
Grp Volume(v), veh/h	296	265	356	139	265	201
Grp Sat Flow(s),veh/h/ln	1781	1777	1777	1585	1728	1585
Q Serve(g_s), s	9.9	1.5	3.7	2.3	4.2	5.9
Cycle Q Clear(g_c), s	9.9	1.5	3.7	2.3	4.2	5.9
Prop In Lane	1.00			1.00	1.00	1.00
Lane Grp Cap(c), veh/h	312	2485	1597	951	521	516
V/C Ratio(X)	0.95	0.11	0.22	0.15	0.51	0.39
Avail Cap(c_a), veh/h	312	2485	1597	951	1037	753
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	24.5	2.9	10.1	5.3	23.4	15.6
Incr Delay (d2), s/veh	37.6	0.1	0.3	0.3	0.8	0.5
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	7.0	0.3	1.3	1.0	1.6	5.7
Unsig. Movement Delay, s/veh						
LnGrp Delay(d), s/veh	62.1	3.0	10.4	5.6	24.2	16.1
LnGrp LOS	E	A	B	A	C	B
Approach Vol, veh/h		561	495		466	
Approach Delay, s/veh		34.2	9.1		20.7	
Approach LOS		C	A		C	

Timer - Assigned Phs			4		6	7	8
Phs Duration (G+Y+Rc), s			46.5		13.5	15.0	31.5
Change Period (Y+Rc), s			4.5		4.5	4.5	4.5
Max Green Setting (Gmax), s			33.0		18.0	10.5	18.0
Max Q Clear Time (g_c+I1), s			3.5		7.9	11.9	5.7
Green Ext Time (p_c), s			1.7		1.2	0.0	2.1

Intersection Summary	
HCM 7th Control Delay, s/veh	21.9
HCM 7th LOS	C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	87	410	1	1	403	15	1	1	1	11	1	62
Future Volume (veh/h)	87	410	1	1	403	15	1	1	1	11	1	62
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	93	436	1	1	429	16	1	1	1	12	1	66
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	813	2651	6	818	2546	95	134	55	41	107	4	93
Arrive On Green	0.73	0.73	0.73	0.73	0.73	0.73	0.07	0.07	0.07	0.07	0.07	0.07
Sat Flow, veh/h	945	3637	8	952	3494	130	387	767	577	202	56	1311
Grp Volume(v), veh/h	93	213	224	1	218	227	3	0	0	79	0	0
Grp Sat Flow(s),veh/h/ln	945	1777	1869	952	1777	1847	1730	0	0	1569	0	0
Q Serve(g_s), s	1.5	1.7	1.7	0.0	1.7	1.7	0.0	0.0	0.0	1.7	0.0	0.0
Cycle Q Clear(g_c), s	3.2	1.7	1.7	1.7	1.7	1.7	0.1	0.0	0.0	2.2	0.0	0.0
Prop In Lane	1.00		0.00	1.00		0.07	0.33		0.33	0.15		0.84
Lane Grp Cap(c), veh/h	813	1295	1362	818	1295	1346	230	0	0	204	0	0
V/C Ratio(X)	0.11	0.16	0.16	0.00	0.17	0.17	0.01	0.00	0.00	0.39	0.00	0.00
Avail Cap(c_a), veh/h	813	1295	1362	818	1295	1346	745	0	0	717	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	2.4	1.9	1.9	2.1	1.9	1.9	19.4	0.0	0.0	20.4	0.0	0.0
Incr Delay (d2), s/veh	0.3	0.3	0.3	0.0	0.3	0.3	0.0	0.0	0.0	1.2	0.0	0.0
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.1	0.2	0.2	0.0	0.2	0.2	0.0	0.0	0.0	0.8	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	2.7	2.2	2.1	2.1	2.2	2.2	19.5	0.0	0.0	21.6	0.0	0.0
LnGrp LOS	A	A	A	A	A	A	B			C		
Approach Vol, veh/h		530			446			3			79	
Approach Delay, s/veh		2.2			2.2			19.5			21.6	
Approach LOS		A			A			B			C	

Timer - Assigned Phs		2		4		6		8				
Phs Duration (G+Y+Rc), s		7.7		37.3		7.7		37.3				
Change Period (Y+Rc), s		4.5		4.5		4.5		4.5				
Max Green Setting (Gmax), s		18.0		18.0		18.0		18.0				
Max Q Clear Time (g_c+I1), s		2.1		5.2		4.2		3.7				
Green Ext Time (p_c), s		0.0		2.4		0.3		2.1				

Intersection Summary												
HCM 7th Control Delay, s/veh			3.7									
HCM 7th LOS			A									

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	12	463	11	11	441	219	11	2	79	133	2	11
Future Volume (veh/h)	12	463	11	11	441	219	11	2	79	133	2	11
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	13	493	12	12	469	0	12	2	84	141	2	12
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	101	2247	54	100	2255		106	18	202	350	3	17
Arrive On Green	0.66	0.66	0.66	0.66	0.66	0.00	0.14	0.14	0.14	0.14	0.14	0.14
Sat Flow, veh/h	26	3423	82	25	3435	1585	110	125	1407	1373	19	117
Grp Volume(v), veh/h	271	0	247	257	224	0	98	0	0	155	0	0
Grp Sat Flow(s),veh/h/ln	1844	0	1687	1843	1617	1585	1642	0	0	1509	0	0
Q Serve(g_s), s	0.0	0.0	2.7	0.0	2.5	0.0	0.0	0.0	0.0	1.6	0.0	0.0
Cycle Q Clear(g_c), s	2.6	0.0	2.7	2.5	2.5	0.0	2.5	0.0	0.0	4.1	0.0	0.0
Prop In Lane	0.05		0.05	0.05		1.00	0.12		0.86	0.91		0.08
Lane Grp Cap(c), veh/h	1294	0	1108	1294	1061		325	0	0	369	0	0
V/C Ratio(X)	0.21	0.00	0.22	0.20	0.21		0.30	0.00	0.00	0.42	0.00	0.00
Avail Cap(c_a), veh/h	1294	0	1108	1294	1061		727	0	0	712	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	1.00	0.00	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	3.1	0.0	3.1	3.1	3.1	0.0	17.6	0.0	0.0	18.1	0.0	0.0
Incr Delay (d2), s/veh	0.4	0.0	0.5	0.3	0.5	0.0	0.5	0.0	0.0	0.8	0.0	0.0
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.5	0.0	0.5	0.5	0.4	0.0	0.9	0.0	0.0	1.4	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	3.5	0.0	3.6	3.4	3.5	0.0	18.1	0.0	0.0	18.9	0.0	0.0
LnGrp LOS	A		A	A	A		B			B		
Approach Vol, veh/h		518			481			98			155	
Approach Delay, s/veh		3.5			3.5			18.1			18.9	
Approach LOS		A			A			B			B	

Timer - Assigned Phs		2		4		6		8				
Phs Duration (G+Y+Rc), s		11.0		34.0		11.0		34.0				
Change Period (Y+Rc), s		4.5		4.5		4.5		4.5				
Max Green Setting (Gmax), s		18.0		18.0		18.0		18.0				
Max Q Clear Time (g_c+I1), s		4.5		4.7		6.1		4.5				
Green Ext Time (p_c), s		0.4		2.5		0.6		2.3				

Intersection Summary	
HCM 7th Control Delay, s/veh	6.5
HCM 7th LOS	A

Notes

Unsignalized Delay for [WBR] is excluded from calculations of the approach delay and intersection delay.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	12	737	11	44	725	35	11	2	35	46	2	12
Future Volume (veh/h)	12	737	11	44	725	35	11	2	35	46	2	12
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	13	784	12	47	771	37	12	2	37	49	2	13
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	587	2562	39	594	2469	118	123	14	100	241	5	27
Arrive On Green	0.72	0.72	0.72	0.72	0.72	0.72	0.08	0.08	0.08	0.08	0.08	0.08
Sat Flow, veh/h	675	3583	55	682	3452	166	286	159	1178	1175	58	314
Grp Volume(v), veh/h	13	389	407	47	397	411	51	0	0	64	0	0
Grp Sat Flow(s),veh/h/ln	675	1777	1860	682	1777	1841	1624	0	0	1547	0	0
Q Serve(g_s), s	0.3	3.6	3.6	1.2	3.7	3.7	0.0	0.0	0.0	0.3	0.0	0.0
Cycle Q Clear(g_c), s	4.0	3.6	3.6	4.8	3.7	3.7	1.3	0.0	0.0	1.6	0.0	0.0
Prop In Lane	1.00		0.03	1.00		0.09	0.24		0.73	0.77		0.20
Lane Grp Cap(c), veh/h	587	1271	1331	594	1271	1317	236	0	0	272	0	0
V/C Ratio(X)	0.02	0.31	0.31	0.08	0.31	0.31	0.22	0.00	0.00	0.24	0.00	0.00
Avail Cap(c_a), veh/h	587	1271	1331	594	1271	1317	724	0	0	720	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	0.94	0.94	0.94	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	3.1	2.3	2.3	3.2	2.3	2.3	19.4	0.0	0.0	19.5	0.0	0.0
Incr Delay (d2), s/veh	0.1	0.6	0.6	0.2	0.6	0.6	0.5	0.0	0.0	0.4	0.0	0.0
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	0.4	0.5	0.1	0.4	0.5	0.5	0.0	0.0	0.6	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	3.2	3.0	2.9	3.5	3.0	2.9	19.9	0.0	0.0	20.0	0.0	0.0
LnGrp LOS	A	A	A	A	A	A	B			B		
Approach Vol, veh/h		809			855			51			64	
Approach Delay, s/veh		2.9			3.0			19.9			20.0	
Approach LOS		A			A			B			B	

Timer - Assigned Phs		2		4		6		8				
Phs Duration (G+Y+Rc), s		8.3		36.7		8.3		36.7				
Change Period (Y+Rc), s		4.5		4.5		4.5		4.5				
Max Green Setting (Gmax), s		18.0		18.0		18.0		18.0				
Max Q Clear Time (g_c+I1), s		3.3		6.0		3.6		6.8				
Green Ext Time (p_c), s		0.2		3.9		0.2		4.0				

Intersection Summary												
HCM 7th Control Delay, s/veh			4.1									
HCM 7th LOS			A									



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	12	595	210	273	521	7	277	14	393	7	37	7
Future Volume (veh/h)	12	595	210	273	521	7	277	14	393	7	37	7
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	13	633	223	290	554	7	295	15	418	7	39	7
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	471	1571	922	502	2206	28	482	498	599	63	89	15
Arrive On Green	0.44	0.44	0.44	0.11	0.61	0.61	0.14	0.27	0.27	0.07	0.07	0.07
Sat Flow, veh/h	849	3554	1585	1781	3594	45	3456	1870	1585	134	1342	225
Grp Volume(v), veh/h	13	633	223	290	274	287	295	15	418	53	0	0
Grp Sat Flow(s),veh/h/ln	849	1777	1585	1781	1777	1862	1728	1870	1585	1701	0	0
Q Serve(g_s), s	0.7	9.1	2.1	6.1	5.3	5.3	6.0	0.4	16.7	0.2	0.0	0.0
Cycle Q Clear(g_c), s	0.7	9.1	2.1	6.1	5.3	5.3	6.0	0.4	16.7	2.1	0.0	0.0
Prop In Lane	1.00		1.00	1.00		0.02	1.00		1.00	0.13		0.13
Lane Grp Cap(c), veh/h	471	1571	922	502	1091	1143	482	498	599	168	0	0
V/C Ratio(X)	0.03	0.40	0.24	0.58	0.25	0.25	0.61	0.03	0.70	0.32	0.00	0.00
Avail Cap(c_a), veh/h	471	1571	922	576	1091	1143	482	773	832	450	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.97	0.97	0.97	1.00	1.00	1.00	0.97	0.97	0.97	1.00	0.00	0.00
Uniform Delay (d), s/veh	11.9	14.2	2.0	9.4	6.6	6.6	30.4	20.4	19.7	33.6	0.0	0.0
Incr Delay (d2), s/veh	0.1	0.7	0.6	1.1	0.6	0.5	2.2	0.0	1.5	1.1	0.0	0.0
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.1	3.4	0.8	2.1	1.8	1.8	2.5	0.2	5.8	0.9	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	12.0	14.9	2.6	10.4	7.2	7.1	32.6	20.4	21.2	34.7	0.0	0.0
LnGrp LOS	B	B	A	B	A	A	C	C	C	C		
Approach Vol, veh/h		869			851			728			53	
Approach Delay, s/veh		11.7			8.3			25.8			34.7	
Approach LOS		B			A			C			C	

Timer - Assigned Phs	2	3	4	5	6		8					
Phs Duration (G+Y+Rc), s	24.5	12.9	37.7	15.0	9.5		50.5					
Change Period (Y+Rc), s	4.5	4.5	4.5	4.5	4.5		4.5					
Max Green Setting (Gmax), s	31.0	11.5	19.0	8.5	18.0		35.0					
Max Q Clear Time (g_c+I1), s	18.7	8.1	11.1	8.0	4.1		7.3					
Green Ext Time (p_c), s	1.2	0.3	3.1	0.1	0.1		3.4					

Intersection Summary	
HCM 7th Control Delay, s/veh	15.1
HCM 7th LOS	B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	54	746	125	201	548	45	84	23	140	98	36	79
Future Volume (vph)	54	746	125	201	548	45	84	23	140	98	36	79
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.5	4.5		4.5	4.5			4.5		4.5	4.5	
Lane Util. Factor	1.00	0.95		1.00	0.95			1.00		1.00	1.00	
Frt	1.00	0.98		1.00	0.99			0.92		1.00	0.90	
Flt Protected	0.95	1.00		0.95	1.00			0.98		0.95	1.00	
Satd. Flow (prot)	1770	3463		1770	3499			1691		1770	1670	
Flt Permitted	0.41	1.00		0.28	1.00			0.84		0.47	1.00	
Satd. Flow (perm)	762	3463		528	3499			1443		881	1670	
Peak-hour factor, PHF	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Adj. Flow (vph)	57	794	133	214	583	48	89	24	149	104	38	84
RTOR Reduction (vph)	0	17	0	0	8	0	0	82	0	0	68	0
Lane Group Flow (vph)	57	910	0	214	623	0	0	180	0	104	54	0
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		6			2			4			8	
Permitted Phases	6			2			4			8		
Actuated Green, G (s)	43.5	43.5		43.5	43.5			12.5		12.5	12.5	
Effective Green, g (s)	43.5	43.5		43.5	43.5			12.5		12.5	12.5	
Actuated g/C Ratio	0.67	0.67		0.67	0.67			0.19		0.19	0.19	
Clearance Time (s)	4.5	4.5		4.5	4.5			4.5		4.5	4.5	
Vehicle Extension (s)	3.0	3.0		3.0	3.0			3.0		3.0	3.0	
Lane Grp Cap (vph)	509	2317		353	2341			277		169	321	
v/s Ratio Prot		0.26			0.18						0.03	
v/s Ratio Perm	0.07			c0.41				c0.13		0.12		
v/c Ratio	0.11	0.39		0.61	0.27			0.65		0.62	0.17	
Uniform Delay, d1	3.8	4.8		6.0	4.3			24.2		24.0	21.9	
Progression Factor	1.00	1.00		1.00	1.00			1.00		1.00	1.00	
Incremental Delay, d2	0.4	0.5		7.5	0.3			5.4		6.5	0.3	
Delay (s)	4.3	5.3		13.5	4.6			29.6		30.6	22.2	
Level of Service	A	A		B	A			C		C	C	
Approach Delay (s/veh)		5.3			6.9			29.6			26.0	
Approach LOS		A			A			C			C	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	10.6	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.62		
Actuated Cycle Length (s)	65.0	Sum of lost time (s)	9.0
Intersection Capacity Utilization	68.1%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	863	206	54	579	298	78
Future Volume (veh/h)	863	206	54	579	298	78
Initial Q (Qb), veh	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)		1.00	1.00		1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No	No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	918	0	57	616	317	0
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	2	2	2	2	2	2
Cap, veh/h	1153		565	2545	462	
Arrive On Green	0.32	0.00	0.32	0.72	0.13	0.00
Sat Flow, veh/h	3647	1585	1781	3647	3456	1585
Grp Volume(v), veh/h	918	0	57	616	317	0
Grp Sat Flow(s),veh/h/ln	1777	1585	1781	1777	1728	1585
Q Serve(g_s), s	14.1	0.0	1.4	3.6	5.2	0.0
Cycle Q Clear(g_c), s	14.1	0.0	1.4	3.6	5.2	0.0
Prop In Lane		1.00	1.00		1.00	1.00
Lane Grp Cap(c), veh/h	1153		565	2545	462	
V/C Ratio(X)	0.80		0.10	0.24	0.69	
Avail Cap(c_a), veh/h	1362		565	2545	1037	
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	18.5	0.0	14.5	2.9	24.8	0.0
Incr Delay (d2), s/veh	5.8	0.0	0.1	0.2	1.8	0.0
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	6.0	0.0	0.5	0.7	2.1	0.0
Unsig. Movement Delay, s/veh						
LnGrp Delay(d), s/veh	24.2	0.0	14.5	3.1	26.6	0.0
LnGrp LOS	C		B	A	C	
Approach Vol, veh/h	918			673	317	
Approach Delay, s/veh	24.2			4.1	26.6	
Approach LOS	C			A	C	

Timer - Assigned Phs	2	3	4		8
Phs Duration (G+Y+Rc), s	12.5	23.5	24.0		47.5
Change Period (Y+Rc), s	4.5	4.5	4.5		4.5
Max Green Setting (Gmax), s	18.0	5.5	23.0		33.0
Max Q Clear Time (g_c+I1), s	7.2	3.4	16.1		5.6
Green Ext Time (p_c), s	0.8	0.0	3.3		4.3

Intersection Summary	
HCM 7th Control Delay, s/veh	17.5
HCM 7th LOS	B

Notes

Unsignalized Delay for [NBR, EBR] is excluded from calculations of the approach delay and intersection delay.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	81	710	60	9	506	12	54	3	9	12	3	70
Future Volume (veh/h)	81	710	60	9	506	12	54	3	9	12	3	70
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	86	755	64	10	538	13	57	3	10	13	3	74
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	692	2172	184	23	2658	64	229	11	20	89	11	115
Arrive On Green	0.65	0.65	0.65	0.01	0.75	0.75	0.09	0.09	0.09	0.09	0.09	0.09
Sat Flow, veh/h	857	3316	281	1781	3546	86	1275	122	233	160	128	1330
Grp Volume(v), veh/h	86	404	415	10	269	282	70	0	0	90	0	0
Grp Sat Flow(s),veh/h/ln	857	1777	1820	1781	1777	1855	1631	0	0	1617	0	0
Q Serve(g_s), s	2.1	5.6	5.6	0.3	2.5	2.5	0.0	0.0	0.0	0.9	0.0	0.0
Cycle Q Clear(g_c), s	2.1	5.6	5.6	0.3	2.5	2.5	2.0	0.0	0.0	2.9	0.0	0.0
Prop In Lane	1.00		0.15	1.00		0.05	0.81		0.14	0.14		0.82
Lane Grp Cap(c), veh/h	692	1164	1192	23	1332	1391	260	0	0	215	0	0
V/C Ratio(X)	0.12	0.35	0.35	0.44	0.20	0.20	0.27	0.00	0.00	0.42	0.00	0.00
Avail Cap(c_a), veh/h	692	1164	1192	162	1332	1391	590	0	0	591	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	3.6	4.2	4.2	26.9	2.0	2.0	23.9	0.0	0.0	24.3	0.0	0.0
Incr Delay (d2), s/veh	0.4	0.8	0.8	12.5	0.3	0.3	0.5	0.0	0.0	1.3	0.0	0.0
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.3	1.4	1.4	0.2	0.4	0.4	0.9	0.0	0.0	1.2	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	4.0	5.1	5.0	39.4	2.4	2.4	24.4	0.0	0.0	25.5	0.0	0.0
LnGrp LOS	A	A	A	D	A	A	C			C		
Approach Vol, veh/h		905			561			70			90	
Approach Delay, s/veh		5.0			3.0			24.4			25.5	
Approach LOS		A			A			C			C	

Timer - Assigned Phs	2	3	4		6		8					
Phs Duration (G+Y+Rc), s	9.3	5.2	40.5		9.3		45.7					
Change Period (Y+Rc), s	4.5	4.5	4.5		4.5		4.5					
Max Green Setting (Gmax), s	18.0	5.0	18.5		18.0		28.0					
Max Q Clear Time (g_c+I1), s	4.0	2.3	7.6		4.9		4.5					
Green Ext Time (p_c), s	0.2	0.0	4.1		0.3		3.2					

Intersection Summary												
HCM 7th Control Delay, s/veh		6.3										
HCM 7th LOS		A										

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBU	SBL	SBT
Lane Configurations												
Traffic Volume (vph)	68	0	262	96	54	27	220	588	0	0	0	363
Future Volume (vph)	68	0	262	96	54	27	220	588	0	0	0	363
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.5		4.5		4.5		4.5	4.5				4.5
Lane Util. Factor	1.00		1.00		1.00		1.00	0.95				0.95
Frt	1.00		0.85		0.98		1.00	1.00				1.00
Flt Protected	0.95		1.00		0.97		0.95	1.00				1.00
Satd. Flow (prot)	1770		1583		1776		1770	3539				3539
Flt Permitted	0.65		1.00		0.97		0.52	1.00				1.00
Satd. Flow (perm)	1211		1583		1776		975	3539				3539
Peak-hour factor, PHF	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Adj. Flow (vph)	72	0	279	102	57	29	234	626	0	0	0	386
RTOR Reduction (vph)	0	0	225	0	15	0	0	0	0	0	0	0
Lane Group Flow (vph)	72	0	54	0	173	0	234	626	0	0	0	386
Turn Type	Perm		Perm	Perm	NA		pm+pt	NA		Perm		NA
Protected Phases					8		5	2				6
Permitted Phases	4		4	8			2			6		
Actuated Green, G (s)	10.6		10.6		10.6		35.4	35.4				24.3
Effective Green, g (s)	10.6		10.6		10.6		35.4	35.4				24.3
Actuated g/C Ratio	0.19		0.19		0.19		0.64	0.64				0.44
Clearance Time (s)	4.5		4.5		4.5		4.5	4.5				4.5
Vehicle Extension (s)	3.0		3.0		3.0		3.0	3.0				3.0
Lane Grp Cap (vph)	233		305		342		722	2277				1563
v/s Ratio Prot							c0.04	0.18				0.11
v/s Ratio Perm	0.06		0.03		0.10		c0.17					
v/c Ratio	0.31		0.18		0.51		0.32	0.27				0.25
Uniform Delay, d1	19.1		18.6		19.9		4.6	4.2				9.6
Progression Factor	1.00		1.00		1.00		1.00	1.00				1.00
Incremental Delay, d2	0.8		0.3		1.2		0.3	0.3				0.4
Delay (s)	19.8		18.8		21.0		4.9	4.5				10.0
Level of Service	B		B		C		A	A				A
Approach Delay (s/veh)		19.0			21.0			4.6				9.8
Approach LOS		B			C			A				A

Intersection Summary			
HCM 2000 Control Delay (s/veh)	10.3	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.40		
Actuated Cycle Length (s)	55.0	Sum of lost time (s)	13.5
Intersection Capacity Utilization	49.9%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group



Movement	SBR
Lane Configurations	
Traffic Volume (vph)	157
Future Volume (vph)	157
Ideal Flow (vphpl)	1900
Total Lost time (s)	4.5
Lane Util. Factor	1.00
Frt	0.85
Flt Protected	1.00
Satd. Flow (prot)	1583
Flt Permitted	1.00
Satd. Flow (perm)	1583
Peak-hour factor, PHF	0.94
Adj. Flow (vph)	167
RTOR Reduction (vph)	93
Lane Group Flow (vph)	74
Turn Type	Perm
Protected Phases	
Permitted Phases	6
Actuated Green, G (s)	24.3
Effective Green, g (s)	24.3
Actuated g/C Ratio	0.44
Clearance Time (s)	4.5
Vehicle Extension (s)	3.0
Lane Grp Cap (vph)	699
v/s Ratio Prot	
v/s Ratio Perm	0.05
v/c Ratio	0.11
Uniform Delay, d1	9.0
Progression Factor	1.00
Incremental Delay, d2	0.3
Delay (s)	9.3
Level of Service	A
Approach Delay (s/veh)	
Approach LOS	

Intersection Summary



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	3	1702	1238	66	99	55
Future Volume (veh/h)	3	1702	1238	66	99	55
Initial Q (Qb), veh	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)	1.00			1.00	1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No	No		No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	3	1811	1317	70	109	55
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	2	2	2	2	2	2
Cap, veh/h	9	2412	2046	913	372	166
Arrive On Green	0.00	0.68	0.58	0.58	0.10	0.10
Sat Flow, veh/h	1781	3647	3647	1585	3563	1585
Grp Volume(v), veh/h	3	1811	1317	70	109	55
Grp Sat Flow(s),veh/h/ln	1781	1777	1777	1585	1781	1585
Q Serve(g_s), s	0.1	17.4	13.0	1.0	1.5	1.7
Cycle Q Clear(g_c), s	0.1	17.4	13.0	1.0	1.5	1.7
Prop In Lane	1.00			1.00	1.00	1.00
Lane Grp Cap(c), veh/h	9	2412	2046	913	372	166
V/C Ratio(X)	0.34	0.75	0.64	0.08	0.29	0.33
Avail Cap(c_a), veh/h	205	2817	2060	919	1190	529
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	25.8	5.5	7.4	4.9	21.6	21.6
Incr Delay (d2), s/veh	21.8	1.0	0.7	0.0	0.4	1.2
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.1	2.4	2.9	0.2	0.6	0.6
Unsig. Movement Delay, s/veh						
LnGrp Delay(d), s/veh	47.6	6.5	8.1	4.9	22.0	22.8
LnGrp LOS	D	A	A	A	C	C
Approach Vol, veh/h		1814	1387		164	
Approach Delay, s/veh		6.5	8.0		22.3	
Approach LOS		A	A		C	

Timer - Assigned Phs	1	2		4		6
Phs Duration (G+Y+Rc), s	5.4	36.2		10.5		41.6
Change Period (Y+Rc), s	5.1	6.2		5.1		6.2
Max Green Setting (Gmax), s	6.0	30.2		17.4		41.3
Max Q Clear Time (g_c+I1), s	2.1	15.0		3.7		19.4
Green Ext Time (p_c), s	0.0	8.0		0.4		14.0

Intersection Summary	
HCM 7th Control Delay, s/veh	7.9
HCM 7th LOS	A

Notes

User approved volume balancing among the lanes for turning movement.



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	14	1773	1316	45	22	8
Future Volume (veh/h)	14	1773	1316	45	22	8
Initial Q (Qb), veh	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)	1.00			1.00	1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No	No		No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	15	1886	1400	48	23	9
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	2	2	2	2	2	2
Cap, veh/h	40	2589	2144	956	53	21
Arrive On Green	0.02	0.73	0.60	0.60	0.04	0.04
Sat Flow, veh/h	1781	3647	3647	1585	1203	471
Grp Volume(v), veh/h	15	1886	1400	48	33	0
Grp Sat Flow(s),veh/h/ln	1781	1777	1777	1585	1726	0
Q Serve(g_s), s	0.4	15.3	12.8	0.6	0.9	0.0
Cycle Q Clear(g_c), s	0.4	15.3	12.8	0.6	0.9	0.0
Prop In Lane	1.00			1.00	0.70	0.27
Lane Grp Cap(c), veh/h	40	2589	2144	956	76	0
V/C Ratio(X)	0.37	0.73	0.65	0.05	0.43	0.00
Avail Cap(c_a), veh/h	337	3238	2201	982	639	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	24.0	3.9	6.5	4.0	23.2	0.0
Incr Delay (d2), s/veh	5.6	0.6	0.7	0.0	3.8	0.0
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.2	0.6	2.4	0.1	0.4	0.0
Unsig. Movement Delay, s/veh						
LnGrp Delay(d), s/veh	29.6	4.5	7.1	4.1	27.0	0.0
LnGrp LOS	C	A	A	A	C	
Approach Vol, veh/h		1901	1448		33	
Approach Delay, s/veh		4.7	7.0		27.0	
Approach LOS		A	A		C	

Timer - Assigned Phs	1	2		4		6
Phs Duration (G+Y+Rc), s	6.2	36.2		7.3		42.4
Change Period (Y+Rc), s	5.1	6.2		5.1		6.2
Max Green Setting (Gmax), s	9.4	30.8		18.4		45.3
Max Q Clear Time (g_c+I1), s	2.4	14.8		2.9		17.3
Green Ext Time (p_c), s	0.0	8.7		0.0		17.3

Intersection Summary	
HCM 7th Control Delay, s/veh	5.9
HCM 7th LOS	A



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	173	1612	5	11	1229	312	0	0	0	378	2	117
Future Volume (vph)	173	1612	5	11	1229	312	0	0	0	378	2	117
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.4	6.7		5.4	6.7	6.7				5.4	5.4	5.4
Lane Util. Factor	0.97	0.91		1.00	0.91	1.00				0.91	0.86	0.95
Frt	1.00	1.00		1.00	1.00	0.85				1.00	0.99	0.85
Flt Protected	0.95	1.00		0.95	1.00	1.00				0.95	0.96	1.00
Satd. Flow (prot)	3433	5083		1770	5085	1583				3221	1513	1504
Flt Permitted	0.95	1.00		0.95	1.00	1.00				0.95	0.96	1.00
Satd. Flow (perm)	3433	5083		1770	5085	1583				3221	1513	1504
Peak-hour factor, PHF	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Adj. Flow (vph)	184	1715	5	12	1307	332	0	0	0	402	2	124
RTOR Reduction (vph)	0	0	0	0	0	119	0	0	0	0	3	72
Lane Group Flow (vph)	184	1720	0	12	1307	213	0	0	0	277	136	40
Turn Type	Prot	NA		Prot	NA	Perm				Split	NA	pm+ov
Protected Phases	1	6		5	2			3		4	4	1
Permitted Phases						2	3					4
Actuated Green, G (s)	15.4	48.6		1.6	34.8	34.8				13.3	13.3	28.7
Effective Green, g (s)	15.4	48.6		1.6	34.8	34.8				13.3	13.3	28.7
Actuated g/C Ratio	0.19	0.60		0.02	0.43	0.43				0.16	0.16	0.35
Clearance Time (s)	5.4	6.7		5.4	6.7	6.7				5.4	5.4	5.4
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0				3.0	3.0	3.0
Lane Grp Cap (vph)	652	3049		34	2184	680				528	248	633
v/s Ratio Prot	0.05	c0.34		0.01	c0.26					0.09	c0.09	0.01
v/s Ratio Perm						0.13						0.01
v/c Ratio	0.28	0.56		0.35	0.60	0.31				0.52	0.55	0.06
Uniform Delay, d1	28.1	9.8		39.2	17.7	15.2				31.0	31.1	17.3
Progression Factor	1.00	1.00		1.00	1.00	1.00				1.00	1.00	1.00
Incremental Delay, d2	0.2	0.2		6.2	0.4	0.3				0.9	2.6	0.0
Delay (s)	28.3	10.0		45.4	18.2	15.5				31.9	33.7	17.3
Level of Service	C	B		D	B	B				C	C	B
Approach Delay (s/veh)		11.8			17.8			0.0			29.3	
Approach LOS		B			B			A			C	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	16.5	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.65		
Actuated Cycle Length (s)	81.0	Sum of lost time (s)	22.9
Intersection Capacity Utilization	62.0%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	57	2012	7	23	1506	72	0	0	0	45	2	45
Future Volume (veh/h)	57	2012	7	23	1506	72	0	0	0	45	2	45
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	61	2140	7	24	1602	77	0	0	0	48	2	48
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	265	2668	9	178	2609	1164	0	154	131	140	8	61
Arrive On Green	0.73	0.73	0.73	0.73	0.73	0.73	0.00	0.00	0.00	0.08	0.08	0.08
Sat Flow, veh/h	294	3633	12	186	3554	1585	0	1870	1585	677	99	745
Grp Volume(v), veh/h	61	1046	1101	24	1602	77	0	0	0	98	0	0
Grp Sat Flow(s),veh/h/ln	294	1777	1868	186	1777	1585	0	1870	1585	1520	0	0
Q Serve(g_s), s	8.1	24.3	24.4	6.1	13.9	0.9	0.0	0.0	0.0	3.6	0.0	0.0
Cycle Q Clear(g_c), s	22.0	24.3	24.4	30.5	13.9	0.9	0.0	0.0	0.0	4.0	0.0	0.0
Prop In Lane	1.00		0.01	1.00		1.00	0.00		1.00	0.49		0.49
Lane Grp Cap(c), veh/h	265	1305	1372	178	2609	1164	0	154	131	209	0	0
V/C Ratio(X)	0.23	0.80	0.80	0.13	0.61	0.07	0.00	0.00	0.00	0.47	0.00	0.00
Avail Cap(c_a), veh/h	294	1483	1559	197	2965	1323	0	732	620	674	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	0.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	9.4	5.5	5.5	15.4	4.1	2.4	0.0	0.0	0.0	28.7	0.0	0.0
Incr Delay (d2), s/veh	0.4	2.9	2.8	0.3	0.3	0.0	0.0	0.0	0.0	1.6	0.0	0.0
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.4	4.0	4.2	0.2	1.8	0.1	0.0	0.0	0.0	1.4	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	9.9	8.4	8.3	15.7	4.4	2.4	0.0	0.0	0.0	30.3	0.0	0.0
LnGrp LOS	A	A	A	B	A	A				C		
Approach Vol, veh/h		2208			1703			0			98	
Approach Delay, s/veh		8.4			4.5			0.0			30.3	
Approach LOS		A			A						C	

Timer - Assigned Phs	2	4	6	8
Phs Duration (G+Y+Rc), s	53.6	10.3	53.6	10.3
Change Period (Y+Rc), s	6.7	5.0	6.7	5.0
Max Green Setting (Gmax), s	53.3	25.0	53.3	25.0
Max Q Clear Time (g_c+I1), s	32.5	6.0	26.4	0.0
Green Ext Time (p_c), s	12.8	0.4	20.5	0.0

Intersection Summary	
HCM 7th Control Delay, s/veh	7.3
HCM 7th LOS	A



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	173	2062	0	0	1680	634	0	0	0	556	0	165
Future Volume (vph)	173	2062	0	0	1680	634	0	0	0	556	0	165
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.2	7.2			7.2	7.2				5.9		5.9
Lane Util. Factor	1.00	0.91			0.91	1.00				0.97		1.00
Frt	1.00	1.00			1.00	0.85				1.00		0.85
Flt Protected	0.95	1.00			1.00	1.00				0.95		1.00
Satd. Flow (prot)	1770	5085			5085	1583				3433		1583
Flt Permitted	0.95	1.00			1.00	1.00				0.95		1.00
Satd. Flow (perm)	1770	5085			5085	1583				3433		1583
Peak-hour factor, PHF	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Adj. Flow (vph)	184	2194	0	0	1787	674	0	0	0	591	0	176
RTOR Reduction (vph)	0	0	0	0	0	291	0	0	0	0	0	142
Lane Group Flow (vph)	184	2194	0	0	1787	383	0	0	0	591	0	34
Turn Type	Prot	NA		Prot	NA	Perm	Split		Perm	Split		Perm
Protected Phases	1	6		5	2		3	3		4	4	
Permitted Phases						2			3			4
Actuated Green, G (s)	15.3	75.1			54.6	54.6				21.5		21.5
Effective Green, g (s)	15.3	75.1			54.6	54.6				21.5		21.5
Actuated g/C Ratio	0.14	0.68			0.50	0.50				0.20		0.20
Clearance Time (s)	5.2	7.2			7.2	7.2				5.9		5.9
Vehicle Extension (s)	3.0	3.0			3.0	3.0				3.0		3.0
Lane Grp Cap (vph)	246	3481			2530	787				672		310
v/s Ratio Prot	c0.10	0.43			c0.35					c0.17		
v/s Ratio Perm						0.24						0.02
v/c Ratio	0.75	0.63			0.71	0.49				0.88		0.11
Uniform Delay, d1	45.3	9.6			21.3	18.3				42.8		36.2
Progression Factor	1.00	1.00			1.00	1.00				1.00		1.00
Incremental Delay, d2	11.7	0.4			0.9	0.5				12.6		0.2
Delay (s)	57.1	10.0			22.3	18.7				55.4		36.4
Level of Service	E	A			C	B				E		D
Approach Delay (s/veh)		13.6			21.3			0.0			51.0	
Approach LOS		B			C			A			D	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	22.1	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.80		
Actuated Cycle Length (s)	109.7	Sum of lost time (s)	23.4
Intersection Capacity Utilization	87.6%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL2	EBL	EBR	WBT	WBR	WBR2	SBR	SBR2	SEL2	SEL	SET	SER
Lane Configurations												
Traffic Volume (vph)	171	171	2276	1849	314	165	220	105	22	198	0	105
Future Volume (vph)	171	171	2276	1849	314	165	220	105	22	198	0	105
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		5.1	4.0	6.5	6.5		5.1	5.1	5.1		5.1	
Lane Util. Factor		1.00	0.76	0.91	1.00		0.88	1.00	0.95		0.95	
Frt		1.00	0.85	1.00	0.85		0.85	0.85	1.00		0.95	
Flt Protected		0.95	1.00	1.00	1.00		1.00	1.00	0.95		0.97	
Satd. Flow (prot)		1770	3610	5085	1583		2787	1583	1681		1625	
Flt Permitted		0.39	1.00	1.00	1.00		1.00	1.00	0.95		0.97	
Satd. Flow (perm)		723	3610	5085	1583		2787	1583	1681		1625	
Peak-hour factor, PHF	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Adj. Flow (vph)	182	182	2421	1967	334	176	234	112	23	211	0	112
RTOR Reduction (vph)	0	0	0	0	61	0	0	0	0	0	100	0
Lane Group Flow (vph)	0	364	2421	1967	449	0	234	112	21	0	225	0
Turn Type	D.Pm	D.Pm	Free	NA	Perm		Prot	Perm	Split	Split	NA	
Protected Phases				2			4!		1	1	1	
Permitted Phases	4!	4	Free		2			4				
Actuated Green, G (s)		10.3	71.4	30.1	30.1		10.3	10.3	14.3		14.3	
Effective Green, g (s)		10.3	71.4	30.1	30.1		10.3	10.3	14.3		14.3	
Actuated g/C Ratio		0.14	1.00	0.42	0.42		0.14	0.14	0.20		0.20	
Clearance Time (s)		5.1		6.5	6.5		5.1	5.1	5.1		5.1	
Vehicle Extension (s)		3.0		3.0	3.0		3.0	3.0	3.0		3.0	
Lane Grp Cap (vph)		104	3610	2143	667		402	228	336		325	
v/s Ratio Prot				c0.39			0.08		0.01		0.14	
v/s Ratio Perm		c0.50	c0.67		0.28			0.07				
v/c Ratio		3.50	0.67	0.92	0.67		0.58	0.49	0.06		0.69	
Uniform Delay, d1		30.6	0.0	19.5	16.7		28.5	28.1	23.1		26.5	
Progression Factor		1.00	1.00	1.00	1.00		1.00	1.00	1.00		1.00	
Incremental Delay, d2		1148.7	1.0	6.8	2.7		2.1	1.7	0.1		6.3	
Delay (s)		1179.3	1.0	26.3	19.4		30.7	29.8	23.2		32.8	
Level of Service		F	A	C	B		C	C	C		C	
Approach Delay (s/veh)				24.9							32.2	
Approach LOS				C							C	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	86.5	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	1.40		
Actuated Cycle Length (s)	71.4	Sum of lost time (s)	16.7
Intersection Capacity Utilization	91.2%	ICU Level of Service	F
Analysis Period (min)	15		

! Phase conflict between lane groups.

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	68	7	40	23	7	34	41	557	32	61	618	63
Future Volume (veh/h)	68	7	40	23	7	34	41	557	32	61	618	63
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	72	7	43	24	7	36	44	593	34	65	657	67
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	198	18	61	135	39	99	79	806	46	729	2134	952
Arrive On Green	0.11	0.11	0.11	0.11	0.11	0.11	0.04	0.24	0.24	0.41	0.60	0.60
Sat Flow, veh/h	856	162	554	421	360	907	1781	3416	196	1781	3554	1585
Grp Volume(v), veh/h	122	0	0	67	0	0	44	308	319	65	657	67
Grp Sat Flow(s),veh/h/ln	1573	0	0	1688	0	0	1781	1777	1835	1781	1777	1585
Q Serve(g_s), s	2.0	0.0	0.0	0.0	0.0	0.0	1.3	8.8	8.8	1.2	5.0	1.0
Cycle Q Clear(g_c), s	4.0	0.0	0.0	2.0	0.0	0.0	1.3	8.8	8.8	1.2	5.0	1.0
Prop In Lane	0.59		0.35	0.36		0.54	1.00		0.11	1.00		1.00
Lane Grp Cap(c), veh/h	276	0	0	274	0	0	79	419	433	729	2134	952
V/C Ratio(X)	0.44	0.00	0.00	0.24	0.00	0.00	0.56	0.73	0.74	0.09	0.31	0.07
Avail Cap(c_a), veh/h	594	0	0	604	0	0	162	582	601	729	2134	952
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	0.00	0.85	0.85	0.85	1.00	1.00	1.00
Uniform Delay (d), s/veh	23.5	0.0	0.0	22.7	0.0	0.0	25.7	19.4	19.4	10.0	5.4	4.6
Incr Delay (d2), s/veh	1.1	0.0	0.0	0.5	0.0	0.0	5.1	9.4	9.2	0.1	0.4	0.1
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.5	0.0	0.0	0.8	0.0	0.0	0.6	4.3	4.4	0.4	1.3	0.2
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	24.6	0.0	0.0	23.2	0.0	0.0	30.8	28.8	28.6	10.0	5.8	4.7
LnGrp LOS	C			C			C	C	C	B	A	A
Approach Vol, veh/h		122			67			671			789	
Approach Delay, s/veh		24.6			23.2			28.8			6.0	
Approach LOS		C			C			C			A	

Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	27.0	17.5		10.5	6.9	37.5		10.5				
Change Period (Y+Rc), s	4.5	4.5		4.5	4.5	4.5		4.5				
Max Green Setting (Gmax), s	5.5	18.0		18.0	5.0	18.5		18.0				
Max Q Clear Time (g_c+I1), s	3.2	10.8		6.0	3.3	7.0		4.0				
Green Ext Time (p_c), s	0.0	2.1		0.4	0.0	3.5		0.2				

Intersection Summary		
HCM 7th Control Delay, s/veh		17.4
HCM 7th LOS		B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	52	5	52	45	5	23	90	522	21	7	661	41
Future Volume (veh/h)	52	5	52	45	5	23	90	522	21	7	661	41
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	55	5	55	48	5	24	96	555	22	7	703	44
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	270	162	774	178	15	39	715	2296	91	240	905	57
Arrive On Green	0.09	0.09	0.09	0.09	0.09	0.09	0.40	0.66	0.66	0.01	0.27	0.27
Sat Flow, veh/h	1381	1870	1585	832	174	456	1781	3484	138	1781	3396	212
Grp Volume(v), veh/h	55	5	55	77	0	0	96	283	294	7	368	379
Grp Sat Flow(s),veh/h/ln	1381	1870	1585	1462	0	0	1781	1777	1846	1781	1777	1832
Q Serve(g_s), s	0.0	0.1	0.0	2.4	0.0	0.0	1.9	3.5	3.6	0.2	10.5	10.5
Cycle Q Clear(g_c), s	1.6	0.1	0.0	2.8	0.0	0.0	1.9	3.5	3.6	0.2	10.5	10.5
Prop In Lane	1.00		1.00	0.62		0.31	1.00		0.07	1.00		0.12
Lane Grp Cap(c), veh/h	270	162	774	233	0	0	715	1171	1216	240	474	488
V/C Ratio(X)	0.20	0.03	0.07	0.33	0.00	0.00	0.13	0.24	0.24	0.03	0.78	0.78
Avail Cap(c_a), veh/h	603	612	1155	579	0	0	715	1171	1216	386	582	600
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	0.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	23.7	23.0	7.5	24.2	0.0	0.0	10.4	3.8	3.8	17.0	18.7	18.7
Incr Delay (d2), s/veh	0.4	0.1	0.0	0.8	0.0	0.0	0.1	0.5	0.5	0.0	11.8	11.5
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.7	0.1	0.3	1.0	0.0	0.0	0.6	0.9	0.9	0.1	5.3	5.4
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	24.1	23.1	7.5	25.0	0.0	0.0	10.5	4.3	4.3	17.1	30.4	30.2
LnGrp LOS	C	C	A	C			B	A	A	B	C	C
Approach Vol, veh/h		115			77			673			754	
Approach Delay, s/veh		16.1			25.0			5.2			30.2	
Approach LOS		B			C			A			C	

Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	5.0	40.7		9.3	26.6	19.2		9.3				
Change Period (Y+Rc), s	4.5	4.5		4.5	4.5	4.5		4.5				
Max Green Setting (Gmax), s	5.0	18.5		18.0	5.5	18.0		18.0				
Max Q Clear Time (g_c+I1), s	2.2	5.6		3.6	3.9	12.5		4.8				
Green Ext Time (p_c), s	0.0	2.8		0.2	0.0	2.1		0.3				

Intersection Summary			
HCM 7th Control Delay, s/veh		18.5	
HCM 7th LOS		B	



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	261	262	393	178	345	304
Future Volume (veh/h)	261	262	393	178	345	304
Initial Q (Qb), veh	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)	1.00			1.00	1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No	No		No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	278	279	418	189	367	323
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	2	2	2	2	2	2
Cap, veh/h	312	2260	1371	951	740	617
Arrive On Green	0.17	0.64	0.39	0.39	0.21	0.21
Sat Flow, veh/h	1781	3647	3647	1585	3456	1585
Grp Volume(v), veh/h	278	279	418	189	367	323
Grp Sat Flow(s),veh/h/ln	1781	1777	1777	1585	1728	1585
Q Serve(g_s), s	9.2	1.9	4.9	3.2	5.6	9.4
Cycle Q Clear(g_c), s	9.2	1.9	4.9	3.2	5.6	9.4
Prop In Lane	1.00			1.00	1.00	1.00
Lane Grp Cap(c), veh/h	312	2260	1371	951	740	617
V/C Ratio(X)	0.89	0.12	0.30	0.20	0.50	0.52
Avail Cap(c_a), veh/h	312	2260	1371	951	1037	753
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	24.2	4.3	12.8	5.4	20.7	14.1
Incr Delay (d2), s/veh	25.8	0.1	0.6	0.5	0.5	0.7
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	5.7	0.5	1.8	1.7	2.0	8.8
Unsig. Movement Delay, s/veh						
LnGrp Delay(d), s/veh	50.0	4.4	13.4	5.9	21.2	14.7
LnGrp LOS	D	A	B	A	C	B
Approach Vol, veh/h		557	607		690	
Approach Delay, s/veh		27.2	11.1		18.2	
Approach LOS		C	B		B	

Timer - Assigned Phs			4		6	7	8
Phs Duration (G+Y+Rc), s			42.7		17.3	15.0	27.7
Change Period (Y+Rc), s			4.5		4.5	4.5	4.5
Max Green Setting (Gmax), s			33.0		18.0	10.5	18.0
Max Q Clear Time (g_c+I1), s			3.9		11.4	11.2	6.9
Green Ext Time (p_c), s			1.8		1.5	0.0	2.5

Intersection Summary	
HCM 7th Control Delay, s/veh	18.6
HCM 7th LOS	B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	57	548	2	2	557	34	2	1	2	23	1	12
Future Volume (veh/h)	57	548	2	2	557	34	2	1	2	23	1	12
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	61	583	2	2	593	36	2	1	2	24	1	13
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	719	2738	9	747	2566	156	143	16	31	174	2	24
Arrive On Green	0.75	0.75	0.75	0.75	0.75	0.75	0.05	0.05	0.05	0.05	0.05	0.05
Sat Flow, veh/h	797	3632	12	830	3404	206	680	340	680	945	39	512
Grp Volume(v), veh/h	61	285	300	2	309	320	5	0	0	38	0	0
Grp Sat Flow(s),veh/h/ln	797	1777	1868	830	1777	1833	1701	0	0	1497	0	0
Q Serve(g_s), s	1.1	2.1	2.1	0.0	2.3	2.3	0.0	0.0	0.0	1.0	0.0	0.0
Cycle Q Clear(g_c), s	3.5	2.1	2.1	2.2	2.3	2.3	0.1	0.0	0.0	1.1	0.0	0.0
Prop In Lane	1.00		0.01	1.00		0.11	0.40		0.40	0.63		0.34
Lane Grp Cap(c), veh/h	719	1339	1408	747	1339	1382	191	0	0	200	0	0
V/C Ratio(X)	0.08	0.21	0.21	0.00	0.23	0.23	0.03	0.00	0.00	0.19	0.00	0.00
Avail Cap(c_a), veh/h	719	1339	1408	747	1339	1382	739	0	0	723	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	2.2	1.6	1.6	1.9	1.7	1.7	20.5	0.0	0.0	21.0	0.0	0.0
Incr Delay (d2), s/veh	0.2	0.4	0.3	0.0	0.4	0.4	0.1	0.0	0.0	0.5	0.0	0.0
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.1	0.1	0.1	0.0	0.1	0.2	0.0	0.0	0.0	0.4	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	2.4	2.0	2.0	1.9	2.1	2.0	20.6	0.0	0.0	21.4	0.0	0.0
LnGrp LOS	A	A	A	A	A	A	C			C		
Approach Vol, veh/h		646			631			5			38	
Approach Delay, s/veh		2.0			2.0			20.6			21.4	
Approach LOS		A			A			C			C	

Timer - Assigned Phs	2	4	6	8
Phs Duration (G+Y+Rc), s	6.6	38.4	6.6	38.4
Change Period (Y+Rc), s	4.5	4.5	4.5	4.5
Max Green Setting (Gmax), s	18.0	18.0	18.0	18.0
Max Q Clear Time (g_c+I1), s	2.1	5.5	3.1	4.3
Green Ext Time (p_c), s	0.0	3.1	0.1	3.1

Intersection Summary	
HCM 7th Control Delay, s/veh	2.7
HCM 7th LOS	A

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	23	507	23	17	594	132	23	5	124	121	5	23
Future Volume (veh/h)	23	507	23	17	594	132	23	5	124	121	5	23
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	24	539	24	18	632	0	24	5	132	129	5	24
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	125	2136	93	104	2237		115	20	197	331	9	35
Arrive On Green	0.65	0.65	0.65	0.65	0.65	0.00	0.15	0.15	0.15	0.15	0.15	0.15
Sat Flow, veh/h	59	3265	142	30	3421	1585	158	140	1352	1273	62	239
Grp Volume(v), veh/h	305	0	282	346	304	0	161	0	0	158	0	0
Grp Sat Flow(s),veh/h/ln	1791	0	1676	1834	1617	1585	1649	0	0	1575	0	0
Q Serve(g_s), s	0.0	0.0	3.2	0.0	3.6	0.0	0.2	0.0	0.0	0.0	0.0	0.0
Cycle Q Clear(g_c), s	3.0	0.0	3.2	3.5	3.6	0.0	4.0	0.0	0.0	3.8	0.0	0.0
Prop In Lane	0.08		0.08	0.05		1.00	0.15		0.82	0.82		0.15
Lane Grp Cap(c), veh/h	1257	0	1096	1284	1058		333	0	0	375	0	0
V/C Ratio(X)	0.24	0.00	0.26	0.27	0.29		0.48	0.00	0.00	0.42	0.00	0.00
Avail Cap(c_a), veh/h	1257	0	1096	1284	1058		728	0	0	707	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	1.00	0.00	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	3.2	0.0	3.2	3.3	3.3	0.0	18.2	0.0	0.0	18.0	0.0	0.0
Incr Delay (d2), s/veh	0.5	0.0	0.6	0.5	0.7	0.0	1.1	0.0	0.0	0.8	0.0	0.0
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.6	0.0	0.6	0.7	0.7	0.0	1.5	0.0	0.0	1.5	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	3.7	0.0	3.8	3.8	4.0	0.0	19.3	0.0	0.0	18.8	0.0	0.0
LnGrp LOS	A		A	A	A		B			B		
Approach Vol, veh/h		587			650			161			158	
Approach Delay, s/veh		3.7			3.9			19.3			18.8	
Approach LOS		A			A			B			B	

Timer - Assigned Phs	2	4	6	8
Phs Duration (G+Y+Rc), s	11.1	33.9	11.1	33.9
Change Period (Y+Rc), s	4.5	4.5	4.5	4.5
Max Green Setting (Gmax), s	18.0	18.0	18.0	18.0
Max Q Clear Time (g_c+I1), s	6.0	5.2	5.8	5.6
Green Ext Time (p_c), s	0.7	2.9	0.7	3.1

Intersection Summary	
HCM 7th Control Delay, s/veh	6.9
HCM 7th LOS	A

Notes

Unsignalized Delay for [WBR] is excluded from calculations of the approach delay and intersection delay.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	26	779	24	25	784	50	23	5	82	86	5	24
Future Volume (veh/h)	26	779	24	25	784	50	23	5	82	86	5	24
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	28	829	26	27	834	53	24	5	87	91	5	26
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	526	2413	76	540	2327	148	125	19	142	276	8	39
Arrive On Green	0.69	0.69	0.69	0.69	0.69	0.69	0.11	0.11	0.11	0.11	0.11	0.11
Sat Flow, veh/h	627	3517	110	646	3393	216	249	167	1247	1196	71	343
Grp Volume(v), veh/h	28	419	436	27	437	450	116	0	0	122	0	0
Grp Sat Flow(s),veh/h/ln	627	1777	1851	646	1777	1832	1663	0	0	1610	0	0
Q Serve(g_s), s	0.9	4.4	4.4	0.8	4.6	4.6	0.0	0.0	0.0	0.1	0.0	0.0
Cycle Q Clear(g_c), s	5.5	4.4	4.4	5.2	4.6	4.6	2.8	0.0	0.0	2.9	0.0	0.0
Prop In Lane	1.00		0.06	1.00		0.12	0.21		0.75	0.75		0.21
Lane Grp Cap(c), veh/h	526	1219	1269	540	1219	1256	286	0	0	323	0	0
V/C Ratio(X)	0.05	0.34	0.34	0.05	0.36	0.36	0.41	0.00	0.00	0.38	0.00	0.00
Avail Cap(c_a), veh/h	526	1219	1269	540	1219	1256	729	0	0	716	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	0.95	0.95	0.95	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	4.1	2.9	2.9	4.0	2.9	2.9	19.0	0.0	0.0	18.9	0.0	0.0
Incr Delay (d2), s/veh	0.2	0.8	0.7	0.2	0.8	0.8	0.9	0.0	0.0	0.7	0.0	0.0
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.1	0.7	0.7	0.1	0.7	0.8	1.1	0.0	0.0	1.2	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	4.3	3.7	3.6	4.1	3.7	3.7	19.9	0.0	0.0	19.7	0.0	0.0
LnGrp LOS	A	A	A	A	A	A	B			B		
Approach Vol, veh/h		883			914			116			122	
Approach Delay, s/veh		3.7			3.7			19.9			19.7	
Approach LOS		A			A			B			B	

Timer - Assigned Phs	2	4	6	8
Phs Duration (G+Y+Rc), s	9.6	35.4	9.6	35.4
Change Period (Y+Rc), s	4.5	4.5	4.5	4.5
Max Green Setting (Gmax), s	18.0	18.0	18.0	18.0
Max Q Clear Time (g_c+I1), s	4.8	7.5	4.9	7.2
Green Ext Time (p_c), s	0.5	4.0	0.5	4.2

Intersection Summary	
HCM 7th Control Delay, s/veh	5.6
HCM 7th LOS	A

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	12	607	328	248	707	11	141	20	349	11	34	11
Future Volume (veh/h)	12	607	328	248	707	11	141	20	349	11	34	11
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	13	646	349	264	752	12	150	21	371	12	36	12
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	429	1607	880	459	2191	35	357	466	539	83	84	25
Arrive On Green	0.45	0.45	0.45	0.09	0.61	0.61	0.10	0.25	0.25	0.08	0.08	0.08
Sat Flow, veh/h	703	3554	1585	1781	3580	57	3456	1870	1585	210	1091	325
Grp Volume(v), veh/h	13	646	349	264	373	391	150	21	371	60	0	0
Grp Sat Flow(s),veh/h/ln	703	1777	1585	1781	1777	1860	1728	1870	1585	1626	0	0
Q Serve(g_s), s	0.7	7.9	2.9	4.8	6.7	6.7	2.6	0.6	13.1	0.5	0.0	0.0
Cycle Q Clear(g_c), s	0.7	7.9	2.9	4.8	6.7	6.7	2.6	0.6	13.1	2.1	0.0	0.0
Prop In Lane	1.00		1.00	1.00		0.03	1.00		1.00	0.20		0.20
Lane Grp Cap(c), veh/h	429	1607	880	459	1088	1139	357	466	539	192	0	0
V/C Ratio(X)	0.03	0.40	0.40	0.57	0.34	0.34	0.42	0.05	0.69	0.31	0.00	0.00
Avail Cap(c_a), veh/h	429	1607	880	459	1088	1139	357	791	814	500	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.94	0.94	0.94	1.00	1.00	1.00	0.98	0.98	0.98	1.00	0.00	0.00
Uniform Delay (d), s/veh	9.9	11.9	2.0	8.4	6.2	6.2	27.3	18.5	18.5	28.7	0.0	0.0
Incr Delay (d2), s/veh	0.1	0.7	1.3	1.7	0.9	0.8	0.8	0.0	1.5	0.9	0.0	0.0
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.1	2.8	1.1	1.6	2.1	2.2	1.0	0.2	4.5	0.9	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	10.1	12.6	3.2	10.1	7.1	7.0	28.1	18.6	20.0	29.6	0.0	0.0
LnGrp LOS	B	B	A	B	A	A	C	B	C	C		
Approach Vol, veh/h		1008			1028			542			60	
Approach Delay, s/veh		9.3			7.8			22.2			29.6	
Approach LOS		A			A			C			C	

Timer - Assigned Phs		2	3	4	5	6		8				
Phs Duration (G+Y+Rc), s		20.7	10.4	33.9	11.2	9.5		44.3				
Change Period (Y+Rc), s		4.5	4.5	4.5	4.5	4.5		4.5				
Max Green Setting (Gmax), s		27.5	5.9	18.1	5.0	18.0		28.5				
Max Q Clear Time (g_c+I1), s		15.1	6.8	9.9	4.6	4.1		8.7				
Green Ext Time (p_c), s		1.1	0.0	3.5	0.0	0.2		4.5				

Intersection Summary												
HCM 7th Control Delay, s/veh			11.8									
HCM 7th LOS			B									

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	103	661	122	146	665	102	116	70	231	101	31	97
Future Volume (vph)	103	661	122	146	665	102	116	70	231	101	31	97
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.5	4.5		4.5	4.5			4.5		4.5	4.5	
Lane Util. Factor	1.00	0.95		1.00	0.95			1.00		1.00	1.00	
Frt	1.00	0.98		1.00	0.98			0.93		1.00	0.89	
Flt Protected	0.95	1.00		0.95	1.00			0.99		0.95	1.00	
Satd. Flow (prot)	1770	3456		1770	3468			1700		1770	1651	
Flt Permitted	0.30	1.00		0.30	1.00			0.86		0.40	1.00	
Satd. Flow (perm)	568	3456		554	3468			1481		753	1651	
Peak-hour factor, PHF	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Adj. Flow (vph)	110	703	130	155	707	109	123	74	246	107	33	103
RTOR Reduction (vph)	0	25	0	0	21	0	0	87	0	0	73	0
Lane Group Flow (vph)	110	808	0	155	795	0	0	356	0	107	63	0
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		6			2			4			8	
Permitted Phases	6			2			4			8		
Actuated Green, G (s)	29.8	29.8		29.8	29.8			16.2		16.2	16.2	
Effective Green, g (s)	29.8	29.8		29.8	29.8			16.2		16.2	16.2	
Actuated g/C Ratio	0.54	0.54		0.54	0.54			0.29		0.29	0.29	
Clearance Time (s)	4.5	4.5		4.5	4.5			4.5		4.5	4.5	
Vehicle Extension (s)	3.0	3.0		3.0	3.0			3.0		3.0	3.0	
Lane Grp Cap (vph)	307	1872		300	1879			436		221	486	
v/s Ratio Prot		0.23			0.23						0.04	
v/s Ratio Perm	0.19			c0.28				c0.24		0.14		
v/c Ratio	0.36	0.43		0.52	0.42			0.82		0.48	0.13	
Uniform Delay, d1	7.2	7.5		8.0	7.5			18.0		16.0	14.2	
Progression Factor	1.00	1.00		1.00	1.00			1.00		1.00	1.00	
Incremental Delay, d2	3.2	0.7		6.2	0.7			11.3		1.7	0.1	
Delay (s)	10.4	8.3		14.3	8.2			29.3		17.6	14.4	
Level of Service	B	A		B	A			C		B	B	
Approach Delay (s/veh)		8.5			9.2			29.3			15.8	
Approach LOS		A			A			C			B	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	13.0	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.62		
Actuated Cycle Length (s)	55.0	Sum of lost time (s)	9.0
Intersection Capacity Utilization	77.1%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	810	337	78	630	283	77
Future Volume (veh/h)	810	337	78	630	283	77
Initial Q (Qb), veh	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)		1.00	1.00		1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No	No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	862	0	83	670	301	0
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	2	2	2	2	2	2
Cap, veh/h	1090		605	2564	444	
Arrive On Green	0.31	0.00	0.34	0.72	0.13	0.00
Sat Flow, veh/h	3647	1585	1781	3647	3456	1585
Grp Volume(v), veh/h	862	0	83	670	301	0
Grp Sat Flow(s),veh/h/ln	1777	1585	1781	1777	1728	1585
Q Serve(g_s), s	13.3	0.0	1.9	3.9	5.0	0.0
Cycle Q Clear(g_c), s	13.3	0.0	1.9	3.9	5.0	0.0
Prop In Lane		1.00	1.00		1.00	1.00
Lane Grp Cap(c), veh/h	1090		605	2564	444	
V/C Ratio(X)	0.79		0.14	0.26	0.68	
Avail Cap(c_a), veh/h	1303		605	2564	1037	
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	19.0	0.0	13.7	2.9	25.0	0.0
Incr Delay (d2), s/veh	5.9	0.0	0.1	0.2	1.8	0.0
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	5.7	0.0	0.7	0.7	2.0	0.0
Unsig. Movement Delay, s/veh						
LnGrp Delay(d), s/veh	24.9	0.0	13.8	3.1	26.8	0.0
LnGrp LOS	C		B	A	C	
Approach Vol, veh/h	862			753	301	
Approach Delay, s/veh	24.9			4.3	26.8	
Approach LOS	C			A	C	

Timer - Assigned Phs		2	3	4		8
Phs Duration (G+Y+Rc), s		12.2	24.9	22.9		47.8
Change Period (Y+Rc), s		4.5	4.5	4.5		4.5
Max Green Setting (Gmax), s		18.0	6.5	22.0		33.0
Max Q Clear Time (g_c+I1), s		7.0	3.9	15.3		5.9
Green Ext Time (p_c), s		0.8	0.0	3.1		4.8

Intersection Summary	
HCM 7th Control Delay, s/veh	17.1
HCM 7th LOS	B

Notes

Unsignalized Delay for [NBR, EBR] is excluded from calculations of the approach delay and intersection delay.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	80	719	62	14	576	15	55	5	14	17	5	69
Future Volume (veh/h)	80	719	62	14	576	15	55	5	14	17	5	69
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	85	765	66	15	613	16	59	5	15	18	5	73
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	645	2135	184	33	2637	69	220	15	28	98	16	113
Arrive On Green	0.64	0.64	0.64	0.02	0.75	0.75	0.09	0.09	0.09	0.09	0.09	0.09
Sat Flow, veh/h	797	3310	286	1781	3538	92	1161	168	311	219	172	1242
Grp Volume(v), veh/h	85	411	420	15	308	321	79	0	0	96	0	0
Grp Sat Flow(s),veh/h/ln	797	1777	1819	1781	1777	1854	1640	0	0	1633	0	0
Q Serve(g_s), s	2.3	5.9	5.9	0.5	2.9	2.9	0.0	0.0	0.0	0.7	0.0	0.0
Cycle Q Clear(g_c), s	2.3	5.9	5.9	0.5	2.9	2.9	2.3	0.0	0.0	3.0	0.0	0.0
Prop In Lane	1.00		0.16	1.00		0.05	0.75		0.19	0.19		0.76
Lane Grp Cap(c), veh/h	645	1146	1173	33	1324	1382	264	0	0	226	0	0
V/C Ratio(X)	0.13	0.36	0.36	0.45	0.23	0.23	0.30	0.00	0.00	0.42	0.00	0.00
Avail Cap(c_a), veh/h	645	1146	1173	162	1324	1382	592	0	0	594	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	3.9	4.5	4.5	26.7	2.2	2.2	23.8	0.0	0.0	24.1	0.0	0.0
Incr Delay (d2), s/veh	0.4	0.9	0.9	9.3	0.4	0.4	0.6	0.0	0.0	1.3	0.0	0.0
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.3	1.5	1.6	0.3	0.5	0.5	1.0	0.0	0.0	1.2	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	4.3	5.4	5.4	36.0	2.6	2.6	24.4	0.0	0.0	25.3	0.0	0.0
LnGrp LOS	A	A	A	D	A	A	C			C		
Approach Vol, veh/h		916			644			79			96	
Approach Delay, s/veh		5.3			3.3			24.4			25.3	
Approach LOS		A			A			C			C	

Timer - Assigned Phs		2	3	4		6		8				
Phs Duration (G+Y+Rc), s		9.5	5.5	40.0		9.5		45.5				
Change Period (Y+Rc), s		4.5	4.5	4.5		4.5		4.5				
Max Green Setting (Gmax), s		18.0	5.0	18.5		18.0		28.0				
Max Q Clear Time (g_c+I1), s		4.3	2.5	7.9		5.0		4.9				
Green Ext Time (p_c), s		0.3	0.0	4.2		0.4		3.8				

Intersection Summary												
HCM 7th Control Delay, s/veh			6.5									
HCM 7th LOS			A									

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBU	SBL	SBT
Lane Configurations												
Traffic Volume (vph)	96	0	193	68	14	41	251	374	0	0	0	572
Future Volume (vph)	96	0	193	68	14	41	251	374	0	0	0	572
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.5		4.5		4.5		4.5	4.5				4.5
Lane Util. Factor	1.00		1.00		1.00		1.00	0.95				0.95
Frt	1.00		0.85		0.95		1.00	1.00				1.00
Flt Protected	0.95		1.00		0.97		0.95	1.00				1.00
Satd. Flow (prot)	1770		1583		1731		1770	3539				3539
Flt Permitted	0.73		1.00		0.97		0.39	1.00				1.00
Satd. Flow (perm)	1360		1583		1731		726	3539				3539
Peak-hour factor, PHF	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Adj. Flow (vph)	102	0	205	72	15	44	267	398	0	0	0	609
RTOR Reduction (vph)	0	0	170	0	36	0	0	0	0	0	0	0
Lane Group Flow (vph)	102	0	35	0	95	0	267	398	0	0	0	609
Turn Type	Perm		Perm	Perm	NA		pm+pt	NA		Perm		NA
Protected Phases					8		5	2				6
Permitted Phases	4		4	8			2			6		
Actuated Green, G (s)	9.4		9.4		9.4		36.6	36.6				24.2
Effective Green, g (s)	9.4		9.4		9.4		36.6	36.6				24.2
Actuated g/C Ratio	0.17		0.17		0.17		0.67	0.67				0.44
Clearance Time (s)	4.5		4.5		4.5		4.5	4.5				4.5
Vehicle Extension (s)	3.0		3.0		3.0		3.0	3.0				3.0
Lane Grp Cap (vph)	232		270		295		633	2355				1557
v/s Ratio Prot							c0.06	0.11				0.17
v/s Ratio Perm	c0.08		0.02		0.05		c0.22					
v/c Ratio	0.44		0.13		0.32		0.42	0.17				0.39
Uniform Delay, d1	20.4		19.3		20.0		5.8	3.5				10.4
Progression Factor	1.00		1.00		1.00		1.00	1.00				1.00
Incremental Delay, d2	1.3		0.2		0.6		0.5	0.2				0.7
Delay (s)	21.8		19.6		20.6		6.3	3.6				11.2
Level of Service	C		B		C		A	A				B
Approach Delay (s/veh)		20.3			20.6			4.7				11.0
Approach LOS		C			C			A				B

Intersection Summary			
HCM 2000 Control Delay (s/veh)	11.0	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.46		
Actuated Cycle Length (s)	55.0	Sum of lost time (s)	13.5
Intersection Capacity Utilization	54.6%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group



Movement	SBR
Lane Configurations	
Traffic Volume (vph)	37
Future Volume (vph)	37
Ideal Flow (vphpl)	1900
Total Lost time (s)	4.5
Lane Util. Factor	1.00
Frt	0.85
Flt Protected	1.00
Satd. Flow (prot)	1583
Flt Permitted	1.00
Satd. Flow (perm)	1583
Peak-hour factor, PHF	0.94
Adj. Flow (vph)	39
RTOR Reduction (vph)	22
Lane Group Flow (vph)	17
Turn Type	Perm
Protected Phases	
Permitted Phases	6
Actuated Green, G (s)	24.2
Effective Green, g (s)	24.2
Actuated g/C Ratio	0.44
Clearance Time (s)	4.5
Vehicle Extension (s)	3.0
Lane Grp Cap (vph)	696
v/s Ratio Prot	
v/s Ratio Perm	0.01
v/c Ratio	0.02
Uniform Delay, d1	8.7
Progression Factor	1.00
Incremental Delay, d2	0.1
Delay (s)	8.8
Level of Service	A
Approach Delay (s/veh)	
Approach LOS	

Intersection Summary



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	38	2747	2492	127	88	41
Future Volume (veh/h)	38	2747	2492	127	88	41
Initial Q (Qb), veh	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)	1.00			1.00	1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No	No		No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	40	2922	2651	135	94	44
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	2	2	2	2	2	2
Cap, veh/h	62	3097	2839	1266	158	70
Arrive On Green	0.03	0.87	0.80	0.80	0.04	0.04
Sat Flow, veh/h	1781	3647	3647	1585	3563	1585
Grp Volume(v), veh/h	40	2922	2651	135	94	44
Grp Sat Flow(s),veh/h/ln	1781	1777	1777	1585	1781	1585
Q Serve(g_s), s	3.0	79.9	79.3	2.5	3.5	3.7
Cycle Q Clear(g_c), s	3.0	79.9	79.3	2.5	3.5	3.7
Prop In Lane	1.00			1.00	1.00	1.00
Lane Grp Cap(c), veh/h	62	3097	2839	1266	158	70
V/C Ratio(X)	0.65	0.94	0.93	0.11	0.59	0.63
Avail Cap(c_a), veh/h	80	3198	2905	1296	472	210
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	64.0	6.2	10.7	3.0	63.0	63.1
Incr Delay (d2), s/veh	11.1	6.7	6.4	0.0	3.5	8.8
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.5	13.1	23.2	0.6	1.6	1.6
Unsig. Movement Delay, s/veh						
LnGrp Delay(d), s/veh	75.1	12.9	17.1	3.0	66.5	71.8
LnGrp LOS	E	B	B	A	E	E
Approach Vol, veh/h		2962	2786		138	
Approach Delay, s/veh		13.7	16.4		68.2	
Approach LOS		B	B		E	

Timer - Assigned Phs	1	2		4		6
Phs Duration (G+Y+Rc), s	9.8	113.5		11.1		123.3
Change Period (Y+Rc), s	5.1	6.2		5.1		6.2
Max Green Setting (Gmax), s	6.0	109.8		17.8		120.9
Max Q Clear Time (g_c+I1), s	5.0	81.3		5.7		81.9
Green Ext Time (p_c), s	0.0	25.1		0.3		35.2

Intersection Summary	
HCM 7th Control Delay, s/veh	16.3
HCM 7th LOS	B

Notes

User approved volume balancing among the lanes for turning movement.



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	18	2813	2633	124	30	8
Future Volume (veh/h)	18	2813	2633	124	30	8
Initial Q (Qb), veh	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)	1.00			1.00	1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No	No		No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	19	2993	2801	132	32	9
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	2	2	2	2	2	2
Cap, veh/h	40	3128	2912	1299	47	13
Arrive On Green	0.02	0.88	0.82	0.82	0.04	0.04
Sat Flow, veh/h	1781	3647	3647	1585	1324	372
Grp Volume(v), veh/h	19	2993	2801	132	42	0
Grp Sat Flow(s),veh/h/ln	1781	1777	1777	1585	1737	0
Q Serve(g_s), s	1.4	85.6	90.0	2.2	3.2	0.0
Cycle Q Clear(g_c), s	1.4	85.6	90.0	2.2	3.2	0.0
Prop In Lane	1.00			1.00	0.76	0.21
Lane Grp Cap(c), veh/h	40	3128	2912	1299	61	0
V/C Ratio(X)	0.47	0.96	0.96	0.10	0.68	0.00
Avail Cap(c_a), veh/h	125	3191	2912	1299	239	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	64.7	6.1	10.3	2.4	63.9	0.0
Incr Delay (d2), s/veh	8.2	8.1	9.4	0.0	12.5	0.0
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.7	12.2	24.7	0.5	1.6	0.0
Unsig. Movement Delay, s/veh						
LnGrp Delay(d), s/veh	72.9	14.2	19.7	2.4	76.4	0.0
LnGrp LOS	E	B	B	A	E	
Approach Vol, veh/h		3012	2933		42	
Approach Delay, s/veh		14.6	19.0		76.4	
Approach LOS		B	B		E	

Timer - Assigned Phs	1	2		4		6
Phs Duration (G+Y+Rc), s	8.1	116.0		9.8		124.1
Change Period (Y+Rc), s	5.1	6.2		5.1		6.2
Max Green Setting (Gmax), s	9.4	105.8		18.4		120.3
Max Q Clear Time (g_c+I1), s	3.4	92.0		5.2		87.6
Green Ext Time (p_c), s	0.0	13.1		0.0		30.3

Intersection Summary	
HCM 7th Control Delay, s/veh	17.2
HCM 7th LOS	B



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	125	2703	7	18	2500	497	0	0	0	444	5	232
Future Volume (vph)	125	2703	7	18	2500	497	0	0	0	444	5	232
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.4	6.7		5.4	6.7	6.7				5.4	5.4	5.4
Lane Util. Factor	0.97	0.91		1.00	0.91	1.00				0.91	0.86	0.95
Frt	1.00	1.00		1.00	1.00	0.85				1.00	0.94	0.85
Flt Protected	0.95	1.00		0.95	1.00	1.00				0.95	0.97	1.00
Satd. Flow (prot)	3433	5083		1770	5085	1583				3221	1460	1504
Flt Permitted	0.95	1.00		0.95	1.00	1.00				0.95	0.97	1.00
Satd. Flow (perm)	3433	5083		1770	5085	1583				3221	1460	1504
Peak-hour factor, PHF	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Adj. Flow (vph)	133	2876	7	19	2660	529	0	0	0	472	5	247
RTOR Reduction (vph)	0	0	0	0	0	71	0	0	0	0	18	123
Lane Group Flow (vph)	133	2883	0	19	2660	458	0	0	0	373	163	47
Turn Type	Prot	NA		Prot	NA	Perm				Split	NA	pm+ov
Protected Phases	1	6		5	2			3		4	4	1
Permitted Phases						2	3					4
Actuated Green, G (s)	13.3	78.5		3.8	69.0	69.0				19.7	19.7	33.0
Effective Green, g (s)	13.3	78.5		3.8	69.0	69.0				19.7	19.7	33.0
Actuated g/C Ratio	0.11	0.66		0.03	0.58	0.58				0.16	0.16	0.28
Clearance Time (s)	5.4	6.7		5.4	6.7	6.7				5.4	5.4	5.4
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0				3.0	3.0	3.0
Lane Grp Cap (vph)	382	3339		56	2936	914				530	240	483
v/s Ratio Prot	0.04	c0.57		0.01	c0.52					c0.12	0.11	0.01
v/s Ratio Perm						0.29						0.02
v/c Ratio	0.35	0.86		0.34	0.91	0.50				0.70	0.68	0.10
Uniform Delay, d1	49.1	16.3		56.6	22.4	15.0				47.1	46.9	32.2
Progression Factor	1.00	1.00		1.00	1.00	1.00				1.00	1.00	1.00
Incremental Delay, d2	0.6	2.5		3.6	4.5	0.4				4.2	7.4	0.1
Delay (s)	49.6	18.8		60.2	26.9	15.4				51.4	54.3	32.3
Level of Service	D	B		E	C	B				D	D	C
Approach Delay (s/veh)		20.2			25.2			0.0			47.6	
Approach LOS		C			C			A			D	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	25.3	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.92		
Actuated Cycle Length (s)	119.5	Sum of lost time (s)	22.9
Intersection Capacity Utilization	73.4%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	102	3170	11	34	2944	68	0	0	0	72	5	68
Future Volume (veh/h)	102	3170	11	34	2944	68	0	0	0	72	5	68
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	109	3372	12	36	3132	72	0	0	0	77	5	72
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	51	2908	10	51	2845	1269	0	218	185	121	11	83
Arrive On Green	0.80	0.80	0.80	0.80	0.80	0.80	0.00	0.00	0.00	0.12	0.12	0.12
Sat Flow, veh/h	64	3632	13	54	3554	1585	0	1870	1585	709	98	709
Grp Volume(v), veh/h	109	1649	1735	36	3132	72	0	0	0	154	0	0
Grp Sat Flow(s),veh/h/ln	64	1777	1868	54	1777	1585	0	1870	1585	1516	0	0
Q Serve(g_s), s	0.0	113.3	113.3	0.0	113.3	1.3	0.0	0.0	0.0	13.2	0.0	0.0
Cycle Q Clear(g_c), s	113.3	113.3	113.3	113.3	113.3	1.3	0.0	0.0	0.0	14.1	0.0	0.0
Prop In Lane	1.00		0.01	1.00		1.00	0.00		1.00	0.50		0.47
Lane Grp Cap(c), veh/h	51	1423	1496	51	2845	1269	0	218	185	215	0	0
V/C Ratio(X)	2.14	1.16	1.16	0.71	1.10	0.06	0.00	0.00	0.00	0.72	0.00	0.00
Avail Cap(c_a), veh/h	51	1423	1496	51	2845	1269	0	330	280	305	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	0.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	70.8	14.1	14.1	70.8	14.1	2.9	0.0	0.0	0.0	61.4	0.0	0.0
Incr Delay (d2), s/veh	573.4	79.7	80.0	36.3	51.4	0.0	0.0	0.0	0.0	4.6	0.0	0.0
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	9.9	62.2	65.5	1.8	51.0	0.3	0.0	0.0	0.0	5.6	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	644.2	93.8	94.1	107.1	65.5	3.0	0.0	0.0	0.0	65.9	0.0	0.0
LnGrp LOS	F	F	F	F	F	A				E		
Approach Vol, veh/h		3493			3240			0			154	
Approach Delay, s/veh		111.1			64.6			0.0			65.9	
Approach LOS		F			E						E	

Timer - Assigned Phs		2		4		6		8				
Phs Duration (G+Y+Rc), s		120.0		21.5		120.0		21.5				
Change Period (Y+Rc), s		6.7		5.0		6.7		5.0				
Max Green Setting (Gmax), s		113.3		25.0		113.3		25.0				
Max Q Clear Time (g_c+I1), s		115.3		16.1		115.3		0.0				
Green Ext Time (p_c), s		0.0		0.4		0.0		0.0				

Intersection Summary												
HCM 7th Control Delay, s/veh			88.2									
HCM 7th LOS			F									



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	84	3090	0	0	2951	541	0	0	0	647	0	186
Future Volume (vph)	84	3090	0	0	2951	541	0	0	0	647	0	186
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.2	7.2			7.2	7.2				5.9		5.9
Lane Util. Factor	1.00	0.91			0.91	1.00				0.97		1.00
Frt	1.00	1.00			1.00	0.85				1.00		0.85
Flt Protected	0.95	1.00			1.00	1.00				0.95		1.00
Satd. Flow (prot)	1770	5085			5085	1583				3433		1583
Flt Permitted	0.95	1.00			1.00	1.00				0.95		1.00
Satd. Flow (perm)	1770	5085			5085	1583				3433		1583
Peak-hour factor, PHF	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Adj. Flow (vph)	89	3287	0	0	3139	576	0	0	0	688	0	198
RTOR Reduction (vph)	0	0	0	0	0	118	0	0	0	0	0	155
Lane Group Flow (vph)	89	3287	0	0	3139	458	0	0	0	688	0	43
Turn Type	Prot	NA		Prot	NA	Perm	Split		Perm	Split		Perm
Protected Phases	1	6		5	2		3	3		4	4	
Permitted Phases						2			3			4
Actuated Green, G (s)	10.0	96.7			81.5	81.5				24.1		24.1
Effective Green, g (s)	10.0	96.7			81.5	81.5				24.1		24.1
Actuated g/C Ratio	0.07	0.72			0.61	0.61				0.18		0.18
Clearance Time (s)	5.2	7.2			7.2	7.2				5.9		5.9
Vehicle Extension (s)	3.0	3.0			3.0	3.0				3.0		3.0
Lane Grp Cap (vph)	132	3672			3095	963				617		284
v/s Ratio Prot	0.05	c0.65			c0.62					c0.20		
v/s Ratio Perm						0.29						0.03
v/c Ratio	0.67	0.90			1.01	0.48				1.12		0.15
Uniform Delay, d1	60.4	14.6			26.2	14.4				54.9		46.3
Progression Factor	1.00	1.00			1.00	1.00				1.00		1.00
Incremental Delay, d2	12.8	3.2			19.8	0.4				72.1		0.2
Delay (s)	73.1	17.8			46.0	14.8				127.0		46.5
Level of Service	E	B			D	B				F		D
Approach Delay (s/veh)		19.3			41.2			0.0			109.0	
Approach LOS		B			D			A			F	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	39.4	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	1.09		
Actuated Cycle Length (s)	133.9	Sum of lost time (s)	23.4
Intersection Capacity Utilization	99.2%	ICU Level of Service	F
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL2	EBL	EBR	WBT	WBR	WBR2	SBR	SBR2	SEL2	SEL	SET	SER
Lane Configurations												
Traffic Volume (vph)	236	236	3265	2776	282	282	293	125	60	289	0	218
Future Volume (vph)	236	236	3265	2776	282	282	293	125	60	289	0	218
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		5.1	4.0	6.5	6.5		5.1	5.1	5.1		5.1	
Lane Util. Factor		1.00	0.76	0.91	1.00		0.88	1.00	0.95		0.95	
Frt		1.00	0.85	1.00	0.85		0.85	0.85	1.00		0.94	
Flt Protected		0.95	1.00	1.00	1.00		1.00	1.00	0.95		0.97	
Satd. Flow (prot)		1770	3610	5085	1583		2787	1583	1681		1610	
Flt Permitted		0.39	1.00	1.00	1.00		1.00	1.00	0.95		0.97	
Satd. Flow (perm)		723	3610	5085	1583		2787	1583	1681		1610	
Peak-hour factor, PHF	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Adj. Flow (vph)	251	251	3473	2953	300	300	312	133	64	307	0	232
RTOR Reduction (vph)	0	0	0	0	63	0	0	0	0	0	95	0
Lane Group Flow (vph)	0	502	3473	2953	537	0	312	133	58	0	450	0
Turn Type	D.Pm	D.Pm	Free	NA	Perm		Prot	Perm	Split	Split	NA	
Protected Phases				2			4!		1	1	1	
Permitted Phases	4!	4	Free		2			4				
Actuated Green, G (s)		10.3	75.0	30.0	30.0		10.3	10.3	18.0		18.0	
Effective Green, g (s)		10.3	75.0	30.0	30.0		10.3	10.3	18.0		18.0	
Actuated g/C Ratio		0.14	1.00	0.40	0.40		0.14	0.14	0.24		0.24	
Clearance Time (s)		5.1		6.5	6.5		5.1	5.1	5.1		5.1	
Vehicle Extension (s)		3.0		3.0	3.0		3.0	3.0	3.0		3.0	
Lane Grp Cap (vph)		99	3610	2034	633		382	217	403		386	
v/s Ratio Prot				c0.58			0.11		0.03		0.28	
v/s Ratio Perm		c0.69	c0.96		0.34			0.08				
v/c Ratio		5.07	0.96	1.45	0.85		0.82	0.61	0.14		1.17	
Uniform Delay, d1		32.4	0.0	22.5	20.4		31.4	30.5	22.4		28.5	
Progression Factor		1.00	1.00	1.00	1.00		1.00	1.00	1.00		1.00	
Incremental Delay, d2		1854.2	8.5	206.1	10.3		12.7	5.1	0.2		99.3	
Delay (s)		1886.5	8.5	228.6	30.7		44.1	35.5	22.6		127.8	
Level of Service		F	A	F	C		D	D	C		F	
Approach Delay (s/veh)				195.2							117.6	
Approach LOS				F							F	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	205.2	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	2.02		
Actuated Cycle Length (s)	75.0	Sum of lost time (s)	16.7
Intersection Capacity Utilization	123.6%	ICU Level of Service	H
Analysis Period (min)	15		

! Phase conflict between lane groups.
c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	69	5	28	11	5	24	91	590	7	36	458	63
Future Volume (veh/h)	69	5	28	11	5	24	91	590	7	36	458	63
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	73	5	30	12	5	26	97	628	7	38	487	67
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	208	10	42	113	37	100	125	854	10	747	2082	929
Arrive On Green	0.10	0.10	0.10	0.10	0.10	0.10	0.07	0.24	0.24	0.42	0.59	0.59
Sat Flow, veh/h	1003	105	426	295	372	1021	1781	3600	40	1781	3554	1585
Grp Volume(v), veh/h	108	0	0	43	0	0	97	310	325	38	487	67
Grp Sat Flow(s),veh/h/ln	1534	0	0	1689	0	0	1781	1777	1863	1781	1777	1585
Q Serve(g_s), s	2.4	0.0	0.0	0.0	0.0	0.0	2.9	8.9	8.9	0.7	3.6	1.0
Cycle Q Clear(g_c), s	3.6	0.0	0.0	1.3	0.0	0.0	2.9	8.9	8.9	0.7	3.6	1.0
Prop In Lane	0.68		0.28	0.28		0.60	1.00		0.02	1.00		1.00
Lane Grp Cap(c), veh/h	261	0	0	250	0	0	125	421	442	747	2082	929
V/C Ratio(X)	0.41	0.00	0.00	0.17	0.00	0.00	0.78	0.74	0.74	0.05	0.23	0.07
Avail Cap(c_a), veh/h	592	0	0	604	0	0	178	585	613	747	2082	929
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	0.00	0.82	0.82	0.82	1.00	1.00	1.00
Uniform Delay (d), s/veh	23.9	0.0	0.0	22.9	0.0	0.0	25.1	19.4	19.4	9.5	5.5	4.9
Incr Delay (d2), s/veh	1.1	0.0	0.0	0.3	0.0	0.0	10.5	9.1	8.7	0.0	0.3	0.2
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.3	0.0	0.0	0.5	0.0	0.0	1.5	4.3	4.4	0.2	1.0	0.3
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	25.0	0.0	0.0	23.3	0.0	0.0	35.7	28.4	28.1	9.5	5.7	5.1
LnGrp LOS	C			C			D	C	C	A	A	A
Approach Vol, veh/h		108			43			732			592	
Approach Delay, s/veh		25.0			23.3			29.2			5.9	
Approach LOS		C			C			C			A	

Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	27.6	17.5		9.9	8.4	36.7		9.9				
Change Period (Y+Rc), s	4.5	4.5		4.5	4.5	4.5		4.5				
Max Green Setting (Gmax), s	5.4	18.1		18.0	5.5	18.0		18.0				
Max Q Clear Time (g_c+I1), s	2.7	10.9		5.6	4.9	5.6		3.3				
Green Ext Time (p_c), s	0.0	2.2		0.4	0.0	2.7		0.1				

Intersection Summary		
HCM 7th Control Delay, s/veh	19.4	
HCM 7th LOS	B	

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	34	2	50	23	2	11	81	598	5	5	485	54
Future Volume (veh/h)	34	2	50	23	2	11	81	598	5	5	485	54
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	36	2	53	24	2	12	86	636	5	5	516	57
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	249	146	844	166	21	37	809	2420	19	193	718	79
Arrive On Green	0.08	0.08	0.08	0.08	0.08	0.08	0.45	0.67	0.67	0.01	0.22	0.22
Sat Flow, veh/h	1400	1870	1585	755	266	472	1781	3614	28	1781	3228	355
Grp Volume(v), veh/h	36	2	53	38	0	0	86	313	328	5	283	290
Grp Sat Flow(s),veh/h/ln	1400	1870	1585	1493	0	0	1781	1777	1865	1781	1777	1806
Q Serve(g_s), s	0.0	0.1	0.0	0.5	0.0	0.0	1.5	3.9	3.9	0.1	8.1	8.2
Cycle Q Clear(g_c), s	1.0	0.1	0.0	1.2	0.0	0.0	1.5	3.9	3.9	0.1	8.1	8.2
Prop In Lane	1.00		1.00	0.63		0.32	1.00		0.02	1.00		0.20
Lane Grp Cap(c), veh/h	249	146	844	224	0	0	809	1190	1249	193	395	402
V/C Ratio(X)	0.14	0.01	0.06	0.17	0.00	0.00	0.11	0.26	0.26	0.03	0.72	0.72
Avail Cap(c_a), veh/h	597	612	1238	582	0	0	809	1190	1249	343	582	591
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	0.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	23.8	23.4	6.2	23.9	0.0	0.0	8.6	3.6	3.6	19.0	19.8	19.8
Incr Delay (d2), s/veh	0.3	0.0	0.0	0.4	0.0	0.0	0.1	0.5	0.5	0.1	10.7	10.7
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.4	0.0	0.3	0.5	0.0	0.0	0.5	0.9	0.9	0.1	4.1	4.2
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	24.1	23.4	6.3	24.2	0.0	0.0	8.7	4.2	4.2	19.1	30.4	30.5
LnGrp LOS	C	C	A	C			A	A	A	B	C	C
Approach Vol, veh/h		91			38			727			578	
Approach Delay, s/veh		13.7			24.2			4.7			30.4	
Approach LOS		B			C			A			C	

Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	4.9	41.3		8.8	29.5	16.7		8.8				
Change Period (Y+Rc), s	4.5	4.5		4.5	4.5	4.5		4.5				
Max Green Setting (Gmax), s	5.0	18.5		18.0	5.5	18.0		18.0				
Max Q Clear Time (g_c+I1), s	2.1	5.9		3.0	3.5	10.2		3.2				
Green Ext Time (p_c), s	0.0	3.1		0.2	0.0	2.1		0.1				

Intersection Summary			
HCM 7th Control Delay, s/veh		16.1	
HCM 7th LOS		B	



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	386	249	335	131	249	189
Future Volume (veh/h)	386	249	335	131	249	189
Initial Q (Qb), veh	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)	1.00			1.00	1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No	No		No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	411	265	356	139	265	201
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	2	2	2	2	2	2
Cap, veh/h	458	2622	1480	872	461	619
Arrive On Green	0.26	0.74	0.42	0.42	0.13	0.13
Sat Flow, veh/h	1781	3647	3647	1585	3456	1585
Grp Volume(v), veh/h	411	265	356	139	265	201
Grp Sat Flow(s),veh/h/ln	1781	1777	1777	1585	1728	1585
Q Serve(g_s), s	15.6	1.5	4.5	3.0	5.0	6.2
Cycle Q Clear(g_c), s	15.6	1.5	4.5	3.0	5.0	6.2
Prop In Lane	1.00			1.00	1.00	1.00
Lane Grp Cap(c), veh/h	458	2622	1480	872	461	619
V/C Ratio(X)	0.90	0.10	0.24	0.16	0.57	0.32
Avail Cap(c_a), veh/h	522	2622	1480	872	889	815
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	25.1	2.6	13.2	7.8	28.5	14.9
Incr Delay (d2), s/veh	16.8	0.1	0.4	0.4	1.1	0.3
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	8.2	0.3	1.7	1.3	2.0	6.3
Unsig. Movement Delay, s/veh						
LnGrp Delay(d), s/veh	41.9	2.7	13.6	8.2	29.6	15.2
LnGrp LOS	D	A	B	A	C	B
Approach Vol, veh/h		676	495		466	
Approach Delay, s/veh		26.5	12.1		23.4	
Approach LOS		C	B		C	

Timer - Assigned Phs			4		6	7	8
Phs Duration (G+Y+Rc), s			56.2		13.8	22.5	33.6
Change Period (Y+Rc), s			4.5		4.5	4.5	4.5
Max Green Setting (Gmax), s			43.0		18.0	20.5	18.0
Max Q Clear Time (g_c+I1), s			3.5		8.2	17.6	6.5
Green Ext Time (p_c), s			1.8		1.2	0.4	2.1

Intersection Summary	
HCM 7th Control Delay, s/veh	21.3
HCM 7th LOS	C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	87	410	1	1	403	15	1	1	1	11	1	62
Future Volume (veh/h)	87	410	1	1	403	15	1	1	1	11	1	62
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	93	436	1	1	429	16	1	1	1	12	1	66
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	813	2651	6	818	2546	95	134	55	41	107	4	93
Arrive On Green	0.73	0.73	0.73	0.73	0.73	0.73	0.07	0.07	0.07	0.07	0.07	0.07
Sat Flow, veh/h	945	3637	8	952	3494	130	387	767	577	202	56	1311
Grp Volume(v), veh/h	93	213	224	1	218	227	3	0	0	79	0	0
Grp Sat Flow(s),veh/h/ln	945	1777	1869	952	1777	1847	1730	0	0	1569	0	0
Q Serve(g_s), s	1.5	1.7	1.7	0.0	1.7	1.7	0.0	0.0	0.0	1.7	0.0	0.0
Cycle Q Clear(g_c), s	3.2	1.7	1.7	1.7	1.7	1.7	0.1	0.0	0.0	2.2	0.0	0.0
Prop In Lane	1.00		0.00	1.00		0.07	0.33		0.33	0.15		0.84
Lane Grp Cap(c), veh/h	813	1295	1362	818	1295	1346	230	0	0	204	0	0
V/C Ratio(X)	0.11	0.16	0.16	0.00	0.17	0.17	0.01	0.00	0.00	0.39	0.00	0.00
Avail Cap(c_a), veh/h	813	1295	1362	818	1295	1346	745	0	0	717	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	2.4	1.9	1.9	2.1	1.9	1.9	19.4	0.0	0.0	20.4	0.0	0.0
Incr Delay (d2), s/veh	0.3	0.3	0.3	0.0	0.3	0.3	0.0	0.0	0.0	1.2	0.0	0.0
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.1	0.2	0.2	0.0	0.2	0.2	0.0	0.0	0.0	0.8	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	2.7	2.2	2.1	2.1	2.2	2.2	19.5	0.0	0.0	21.6	0.0	0.0
LnGrp LOS	A	A	A	A	A	A	B			C		
Approach Vol, veh/h		530			446			3			79	
Approach Delay, s/veh		2.2			2.2			19.5			21.6	
Approach LOS		A			A			B			C	

Timer - Assigned Phs	2	4	6	8
Phs Duration (G+Y+Rc), s	7.7	37.3	7.7	37.3
Change Period (Y+Rc), s	4.5	4.5	4.5	4.5
Max Green Setting (Gmax), s	18.0	18.0	18.0	18.0
Max Q Clear Time (g_c+I1), s	2.1	5.2	4.2	3.7
Green Ext Time (p_c), s	0.0	2.4	0.3	2.1

Intersection Summary	
HCM 7th Control Delay, s/veh	3.7
HCM 7th LOS	A

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	12	463	11	11	837	219	11	2	79	133	2	11
Future Volume (veh/h)	12	463	11	11	837	219	11	2	79	133	2	11
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	13	493	12	12	890	0	12	2	84	141	2	12
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	100	2232	54	90	2272		106	18	202	350	3	17
Arrive On Green	0.66	0.66	0.66	0.66	0.66	0.00	0.14	0.14	0.14	0.14	0.14	0.14
Sat Flow, veh/h	25	3400	82	12	3462	1585	110	125	1407	1373	19	117
Grp Volume(v), veh/h	270	0	248	483	419	0	98	0	0	155	0	0
Grp Sat Flow(s),veh/h/ln	1820	0	1687	1857	1617	1585	1642	0	0	1509	0	0
Q Serve(g_s), s	0.0	0.0	2.7	0.0	5.4	0.0	0.0	0.0	0.0	1.6	0.0	0.0
Cycle Q Clear(g_c), s	2.6	0.0	2.7	5.4	5.4	0.0	2.5	0.0	0.0	4.1	0.0	0.0
Prop In Lane	0.05		0.05	0.02		1.00	0.12		0.86	0.91		0.08
Lane Grp Cap(c), veh/h	1279	0	1108	1301	1061		325	0	0	369	0	0
V/C Ratio(X)	0.21	0.00	0.22	0.37	0.40		0.30	0.00	0.00	0.42	0.00	0.00
Avail Cap(c_a), veh/h	1279	0	1108	1301	1061		727	0	0	712	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	1.00	0.00	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	3.1	0.0	3.1	3.6	3.6	0.0	17.6	0.0	0.0	18.1	0.0	0.0
Incr Delay (d2), s/veh	0.4	0.0	0.5	0.8	1.1	0.0	0.5	0.0	0.0	0.8	0.0	0.0
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.5	0.0	0.5	1.1	1.0	0.0	0.9	0.0	0.0	1.4	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	3.5	0.0	3.6	4.4	4.7	0.0	18.1	0.0	0.0	18.9	0.0	0.0
LnGrp LOS	A		A	A	A		B			B		
Approach Vol, veh/h		518			902			98			155	
Approach Delay, s/veh		3.5			4.5			18.1			18.9	
Approach LOS		A			A			B			B	

Timer - Assigned Phs		2		4		6		8				
Phs Duration (G+Y+Rc), s		11.0		34.0		11.0		34.0				
Change Period (Y+Rc), s		4.5		4.5		4.5		4.5				
Max Green Setting (Gmax), s		18.0		18.0		18.0		18.0				
Max Q Clear Time (g_c+I1), s		4.5		4.7		6.1		7.4				
Green Ext Time (p_c), s		0.4		2.5		0.6		4.1				

Intersection Summary	
HCM 7th Control Delay, s/veh	6.3
HCM 7th LOS	A

Notes

Unsignalized Delay for [WBR] is excluded from calculations of the approach delay and intersection delay.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	12	737	11	242	1292	107	11	2	35	46	2	12
Future Volume (veh/h)	12	737	11	242	1292	107	11	2	35	46	2	12
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	13	784	12	257	1374	114	12	2	37	49	2	13
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	340	2791	43	609	2588	214	94	12	85	191	3	23
Arrive On Green	0.78	0.78	0.78	0.78	0.78	0.78	0.07	0.07	0.07	0.07	0.07	0.07
Sat Flow, veh/h	354	3583	55	682	3323	275	285	167	1195	1204	49	319
Grp Volume(v), veh/h	13	389	407	257	732	756	51	0	0	64	0	0
Grp Sat Flow(s),veh/h/ln	354	1777	1860	682	1777	1821	1648	0	0	1572	0	0
Q Serve(g_s), s	0.9	3.7	3.7	10.3	9.3	9.4	0.0	0.0	0.0	0.4	0.0	0.0
Cycle Q Clear(g_c), s	10.3	3.7	3.7	14.0	9.3	9.4	1.7	0.0	0.0	2.2	0.0	0.0
Prop In Lane	1.00		0.03	1.00		0.15	0.24		0.73	0.77		0.20
Lane Grp Cap(c), veh/h	340	1384	1449	609	1384	1418	191	0	0	218	0	0
V/C Ratio(X)	0.04	0.28	0.28	0.42	0.53	0.53	0.27	0.00	0.00	0.29	0.00	0.00
Avail Cap(c_a), veh/h	340	1384	1449	609	1384	1418	545	0	0	543	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	0.66	0.66	0.66	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	4.4	1.9	1.9	3.9	2.5	2.5	26.7	0.0	0.0	26.8	0.0	0.0
Incr Delay (d2), s/veh	0.2	0.5	0.5	1.4	1.0	1.0	0.7	0.0	0.0	0.7	0.0	0.0
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.1	0.5	0.5	0.9	1.1	1.1	0.7	0.0	0.0	0.9	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	4.7	2.4	2.4	5.3	3.5	3.5	27.4	0.0	0.0	27.6	0.0	0.0
LnGrp LOS	A	A	A	A	A	A	C			C		
Approach Vol, veh/h		809			1745			51			64	
Approach Delay, s/veh		2.4			3.7			27.4			27.6	
Approach LOS		A			A			C			C	

Timer - Assigned Phs		2		4		6		8				
Phs Duration (G+Y+Rc), s		8.8		51.2		8.8		51.2				
Change Period (Y+Rc), s		4.5		4.5		4.5		4.5				
Max Green Setting (Gmax), s		18.0		33.0		18.0		33.0				
Max Q Clear Time (g_c+I1), s		3.7		12.3		4.2		16.0				
Green Ext Time (p_c), s		0.2		5.1		0.2		11.3				

Intersection Summary												
HCM 7th Control Delay, s/veh			4.4									
HCM 7th LOS			A									

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	12	595	210	273	521	7	1114	14	393	7	37	7
Future Volume (veh/h)	12	595	210	273	521	7	1114	14	393	7	37	7
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	13	633	223	290	554	7	1185	15	418	7	39	7
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	340	1148	1053	399	1751	22	1178	806	878	44	65	11
Arrive On Green	0.32	0.32	0.32	0.12	0.49	0.49	0.34	0.43	0.43	0.05	0.05	0.05
Sat Flow, veh/h	849	3554	1585	1781	3594	45	3456	1870	1585	139	1333	224
Grp Volume(v), veh/h	13	633	223	290	274	287	1185	15	418	53	0	0
Grp Sat Flow(s),veh/h/ln	849	1777	1585	1781	1777	1862	1728	1870	1585	1697	0	0
Q Serve(g_s), s	1.2	16.1	3.0	11.5	10.3	10.3	37.5	0.5	17.6	1.4	0.0	0.0
Cycle Q Clear(g_c), s	1.2	16.1	3.0	11.5	10.3	10.3	37.5	0.5	17.6	3.3	0.0	0.0
Prop In Lane	1.00		1.00	1.00		0.02	1.00		1.00	0.13		0.13
Lane Grp Cap(c), veh/h	340	1148	1053	399	866	907	1178	806	878	120	0	0
V/C Ratio(X)	0.04	0.55	0.21	0.73	0.32	0.32	1.01	0.02	0.48	0.44	0.00	0.00
Avail Cap(c_a), veh/h	340	1148	1053	414	866	907	1178	1020	1060	307	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.97	0.97	0.97	1.00	1.00	1.00	0.74	0.74	0.74	1.00	0.00	0.00
Uniform Delay (d), s/veh	25.6	30.7	2.2	21.6	17.1	17.1	36.2	18.0	14.8	51.2	0.0	0.0
Incr Delay (d2), s/veh	0.2	1.9	0.4	6.1	1.0	0.9	24.0	0.0	0.3	2.5	0.0	0.0
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.3	7.1	1.2	5.2	4.3	4.5	18.7	0.2	6.0	1.5	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	25.8	32.5	2.7	27.6	18.1	18.0	60.2	18.0	15.1	53.8	0.0	0.0
LnGrp LOS	C	C	A	C	B	B	F	B	B	D		
Approach Vol, veh/h		869			851			1618			53	
Approach Delay, s/veh		24.8			21.3			48.2			53.8	
Approach LOS		C			C			D			D	

Timer - Assigned Phs		2	3	4	5	6		8				
Phs Duration (G+Y+Rc), s		51.9	18.1	40.0	42.0	9.9		58.1				
Change Period (Y+Rc), s		4.5	4.5	4.5	4.5	4.5		4.5				
Max Green Setting (Gmax), s		60.0	14.5	22.0	37.5	18.0		41.0				
Max Q Clear Time (g_c+I1), s		19.6	13.5	18.1	39.5	5.3		12.3				
Green Ext Time (p_c), s		1.6	0.1	1.8	0.0	0.1		3.4				

Intersection Summary	
HCM 7th Control Delay, s/veh	35.5
HCM 7th LOS	D

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	54	746	125	633	548	45	84	23	140	98	36	79
Future Volume (vph)	54	746	125	633	548	45	84	23	140	98	36	79
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.5	4.5		4.5	4.5			4.5		4.5	4.5	
Lane Util. Factor	1.00	0.95		1.00	0.95			1.00		1.00	1.00	
Frt	1.00	0.98		1.00	0.99			0.92		1.00	0.90	
Flt Protected	0.95	1.00		0.95	1.00			0.98		0.95	1.00	
Satd. Flow (prot)	1770	3463		1770	3499			1691		1770	1670	
Flt Permitted	0.40	1.00		0.29	1.00			0.74		0.39	1.00	
Satd. Flow (perm)	753	3463		536	3499			1267		724	1670	
Peak-hour factor, PHF	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Adj. Flow (vph)	57	794	133	673	583	48	89	24	149	104	38	84
RTOR Reduction (vph)	0	12	0	0	6	0	0	43	0	0	70	0
Lane Group Flow (vph)	57	915	0	673	625	0	0	219	0	104	52	0
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		6			2			4			8	
Permitted Phases	6			2			4			8		
Actuated Green, G (s)	83.0	83.0		83.0	83.0			18.0		18.0	18.0	
Effective Green, g (s)	83.0	83.0		83.0	83.0			18.0		18.0	18.0	
Actuated g/C Ratio	0.75	0.75		0.75	0.75			0.16		0.16	0.16	
Clearance Time (s)	4.5	4.5		4.5	4.5			4.5		4.5	4.5	
Vehicle Extension (s)	3.0	3.0		3.0	3.0			3.0		3.0	3.0	
Lane Grp Cap (vph)	568	2612		404	2640			207		118	273	
v/s Ratio Prot		0.26			0.18						0.03	
v/s Ratio Perm	0.08			c1.26				c0.17		0.14		
v/c Ratio	0.10	0.35		1.67	0.24			1.06		0.88	0.19	
Uniform Delay, d1	3.6	4.5		13.5	4.0			46.0		45.0	39.7	
Progression Factor	0.59	0.44		1.00	1.00			1.00		1.00	1.00	
Incremental Delay, d2	0.3	0.3		310.4	0.2			78.0		48.1	0.3	
Delay (s)	2.4	2.3		323.9	4.2			124.0		93.1	40.0	
Level of Service	A	A		F	A			F		F	D	
Approach Delay (s/veh)		2.3			169.2			124.0			64.5	
Approach LOS		A			F			F			E	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	97.2	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	1.56		
Actuated Cycle Length (s)	110.0	Sum of lost time (s)	9.0
Intersection Capacity Utilization	92.0%	ICU Level of Service	F
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	863	206	54	579	1477	87
Future Volume (veh/h)	863	206	54	579	1477	87
Initial Q (Qb), veh	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)		1.00	1.00		1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No	No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	918	0	57	616	1571	0
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	2	2	2	2	2	2
Cap, veh/h	1021		146	1490	1661	
Arrive On Green	0.29	0.00	0.08	0.42	0.48	0.00
Sat Flow, veh/h	3647	1585	1781	3647	3456	1585
Grp Volume(v), veh/h	918	0	57	616	1571	0
Grp Sat Flow(s),veh/h/ln	1777	1585	1781	1777	1728	1585
Q Serve(g_s), s	22.3	0.0	2.7	11.0	39.0	0.0
Cycle Q Clear(g_c), s	22.3	0.0	2.7	11.0	39.0	0.0
Prop In Lane		1.00	1.00		1.00	1.00
Lane Grp Cap(c), veh/h	1021		146	1490	1661	
V/C Ratio(X)	0.90		0.39	0.41	0.95	
Avail Cap(c_a), veh/h	1066		146	1490	1709	
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	30.8	0.0	39.2	18.4	22.3	0.0
Incr Delay (d2), s/veh	12.4	0.0	1.7	0.8	11.3	0.0
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	10.9	0.0	1.2	4.4	16.8	0.0
Unsig. Movement Delay, s/veh						
LnGrp Delay(d), s/veh	43.2	0.0	40.8	19.2	33.6	0.0
LnGrp LOS	D		D	B	C	
Approach Vol, veh/h	918			673	1571	
Approach Delay, s/veh	43.2			21.0	33.6	
Approach LOS	D			C	C	

Timer - Assigned Phs		2	3	4		8
Phs Duration (G+Y+Rc), s		47.8	11.9	30.3		42.2
Change Period (Y+Rc), s		4.5	4.5	4.5		4.5
Max Green Setting (Gmax), s		44.5	5.0	27.0		36.5
Max Q Clear Time (g_c+I1), s		41.0	4.7	24.3		13.0
Green Ext Time (p_c), s		2.3	0.0	1.5		4.2

Intersection Summary	
HCM 7th Control Delay, s/veh	33.7
HCM 7th LOS	C

Notes
Unsignalized Delay for [NBR, EBR] is excluded from calculations of the approach delay and intersection delay.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	81	710	60	9	506	12	54	3	9	12	3	70
Future Volume (veh/h)	81	710	60	9	506	12	54	3	9	12	3	70
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	86	755	64	10	538	13	57	3	10	13	3	74
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	692	2172	184	23	2658	64	229	11	20	89	11	115
Arrive On Green	0.65	0.65	0.65	0.01	0.75	0.75	0.09	0.09	0.09	0.09	0.09	0.09
Sat Flow, veh/h	857	3316	281	1781	3546	86	1275	122	233	160	128	1330
Grp Volume(v), veh/h	86	404	415	10	269	282	70	0	0	90	0	0
Grp Sat Flow(s),veh/h/ln	857	1777	1820	1781	1777	1855	1631	0	0	1617	0	0
Q Serve(g_s), s	2.1	5.6	5.6	0.3	2.5	2.5	0.0	0.0	0.0	0.9	0.0	0.0
Cycle Q Clear(g_c), s	2.1	5.6	5.6	0.3	2.5	2.5	2.0	0.0	0.0	2.9	0.0	0.0
Prop In Lane	1.00		0.15	1.00		0.05	0.81		0.14	0.14		0.82
Lane Grp Cap(c), veh/h	692	1164	1192	23	1332	1391	260	0	0	215	0	0
V/C Ratio(X)	0.12	0.35	0.35	0.44	0.20	0.20	0.27	0.00	0.00	0.42	0.00	0.00
Avail Cap(c_a), veh/h	692	1164	1192	162	1332	1391	590	0	0	591	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	3.6	4.2	4.2	26.9	2.0	2.0	23.9	0.0	0.0	24.3	0.0	0.0
Incr Delay (d2), s/veh	0.4	0.8	0.8	12.5	0.3	0.3	0.5	0.0	0.0	1.3	0.0	0.0
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.3	1.4	1.4	0.2	0.4	0.4	0.9	0.0	0.0	1.2	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	4.0	5.1	5.0	39.4	2.4	2.4	24.4	0.0	0.0	25.5	0.0	0.0
LnGrp LOS	A	A	A	D	A	A	C			C		
Approach Vol, veh/h		905			561			70			90	
Approach Delay, s/veh		5.0			3.0			24.4			25.5	
Approach LOS		A			A			C			C	

Timer - Assigned Phs		2	3	4		6		8				
Phs Duration (G+Y+Rc), s		9.3	5.2	40.5		9.3		45.7				
Change Period (Y+Rc), s		4.5	4.5	4.5		4.5		4.5				
Max Green Setting (Gmax), s		18.0	5.0	18.5		18.0		28.0				
Max Q Clear Time (g_c+I1), s		4.0	2.3	7.6		4.9		4.5				
Green Ext Time (p_c), s		0.2	0.0	4.1		0.3		3.2				

Intersection Summary	
HCM 7th Control Delay, s/veh	6.3
HCM 7th LOS	A

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBU	SBL	SBT
Lane Configurations												
Traffic Volume (vph)	68	0	262	96	54	27	220	1425	0	0	0	363
Future Volume (vph)	68	0	262	96	54	27	220	1425	0	0	0	363
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.5		4.5		4.5		4.5	4.5				4.5
Lane Util. Factor	1.00		1.00		1.00		1.00	0.95				0.95
Frt	1.00		0.85		0.98		1.00	1.00				1.00
Flt Protected	0.95		1.00		0.97		0.95	1.00				1.00
Satd. Flow (prot)	1770		1583		1776		1770	3539				3539
Flt Permitted	0.64		1.00		0.97		0.52	1.00				1.00
Satd. Flow (perm)	1185		1583		1776		968	3539				3539
Peak-hour factor, PHF	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Adj. Flow (vph)	72	0	279	102	57	29	234	1516	0	0	0	386
RTOR Reduction (vph)	0	0	227	0	13	0	0	0	0	0	0	0
Lane Group Flow (vph)	72	0	52	0	175	0	234	1516	0	0	0	386
Turn Type	Perm		Perm	Perm	NA		pm+pt	NA		Perm		NA
Protected Phases					8		5	2				6
Permitted Phases	4		4	8			2			6		
Actuated Green, G (s)	11.1		11.1		11.1		39.9	39.9				23.1
Effective Green, g (s)	11.1		11.1		11.1		39.9	39.9				23.1
Actuated g/C Ratio	0.19		0.19		0.19		0.66	0.66				0.39
Clearance Time (s)	4.5		4.5		4.5		4.5	4.5				4.5
Vehicle Extension (s)	3.0		3.0		3.0		3.0	3.0				3.0
Lane Grp Cap (vph)	219		292		328		808	2353				1362
v/s Ratio Prot							0.06	c0.43				0.11
v/s Ratio Perm	0.06		0.03		0.10		0.13					
v/c Ratio	0.33		0.18		0.53		0.29	0.64				0.28
Uniform Delay, d1	21.2		20.6		22.1		4.5	5.9				12.7
Progression Factor	1.00		1.00		1.00		1.00	1.00				1.00
Incremental Delay, d2	0.9		0.3		1.7		0.2	1.4				0.5
Delay (s)	22.1		20.9		23.8		4.7	7.3				13.3
Level of Service	C		C		C		A	A				B
Approach Delay (s/veh)		21.1			23.8			6.9				12.9
Approach LOS		C			C			A				B

Intersection Summary			
HCM 2000 Control Delay (s/veh)	11.0	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.68		
Actuated Cycle Length (s)	60.0	Sum of lost time (s)	13.5
Intersection Capacity Utilization	71.3%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group



Movement	SBR
Lane Configurations	
Traffic Volume (vph)	157
Future Volume (vph)	157
Ideal Flow (vphpl)	1900
Total Lost time (s)	4.5
Lane Util. Factor	1.00
Frt	0.85
Flt Protected	1.00
Satd. Flow (prot)	1583
Flt Permitted	1.00
Satd. Flow (perm)	1583
Peak-hour factor, PHF	0.94
Adj. Flow (vph)	167
RTOR Reduction (vph)	103
Lane Group Flow (vph)	64
Turn Type	Perm
Protected Phases	
Permitted Phases	6
Actuated Green, G (s)	23.1
Effective Green, g (s)	23.1
Actuated g/C Ratio	0.39
Clearance Time (s)	4.5
Vehicle Extension (s)	3.0
Lane Grp Cap (vph)	609
v/s Ratio Prot	
v/s Ratio Perm	0.04
v/c Ratio	0.11
Uniform Delay, d1	11.8
Progression Factor	1.00
Incremental Delay, d2	0.3
Delay (s)	12.2
Level of Service	B
Approach Delay (s/veh)	
Approach LOS	

Intersection Summary



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	3	1702	1238	210	99	55
Future Volume (veh/h)	3	1702	1238	210	99	55
Initial Q (Qb), veh	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)	1.00			1.00	1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No	No		No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	3	1811	1317	223	109	55
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	2	2	2	2	2	2
Cap, veh/h	9	2412	2046	913	372	166
Arrive On Green	0.00	0.68	0.58	0.58	0.10	0.10
Sat Flow, veh/h	1781	3647	3647	1585	3563	1585
Grp Volume(v), veh/h	3	1811	1317	223	109	55
Grp Sat Flow(s),veh/h/ln	1781	1777	1777	1585	1781	1585
Q Serve(g_s), s	0.1	17.4	13.0	3.6	1.5	1.7
Cycle Q Clear(g_c), s	0.1	17.4	13.0	3.6	1.5	1.7
Prop In Lane	1.00			1.00	1.00	1.00
Lane Grp Cap(c), veh/h	9	2412	2046	913	372	166
V/C Ratio(X)	0.34	0.75	0.64	0.24	0.29	0.33
Avail Cap(c_a), veh/h	205	2817	2060	919	1190	529
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	25.8	5.5	7.4	5.5	21.6	21.6
Incr Delay (d2), s/veh	21.8	1.0	0.7	0.1	0.4	1.2
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.1	2.4	2.9	0.7	0.6	0.6
Unsig. Movement Delay, s/veh						
LnGrp Delay(d), s/veh	47.6	6.5	8.1	5.6	22.0	22.8
LnGrp LOS	D	A	A	A	C	C
Approach Vol, veh/h		1814	1540		164	
Approach Delay, s/veh		6.5	7.8		22.3	
Approach LOS		A	A		C	

Timer - Assigned Phs	1	2		4		6
Phs Duration (G+Y+Rc), s	5.4	36.2		10.5		41.6
Change Period (Y+Rc), s	5.1	6.2		5.1		6.2
Max Green Setting (Gmax), s	6.0	30.2		17.4		41.3
Max Q Clear Time (g_c+I1), s	2.1	15.0		3.7		19.4
Green Ext Time (p_c), s	0.0	8.4		0.4		14.0

Intersection Summary	
HCM 7th Control Delay, s/veh	7.8
HCM 7th LOS	A

Notes

User approved volume balancing among the lanes for turning movement.



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	14	1773	1460	45	22	8
Future Volume (veh/h)	14	1773	1460	45	22	8
Initial Q (Qb), veh	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)	1.00			1.00	1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No	No		No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	15	1886	1553	48	23	9
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	2	2	2	2	2	2
Cap, veh/h	40	2593	2150	959	53	21
Arrive On Green	0.02	0.73	0.60	0.60	0.04	0.04
Sat Flow, veh/h	1781	3647	3647	1585	1203	471
Grp Volume(v), veh/h	15	1886	1553	48	33	0
Grp Sat Flow(s),veh/h/ln	1781	1777	1777	1585	1726	0
Q Serve(g_s), s	0.4	15.3	15.3	0.6	0.9	0.0
Cycle Q Clear(g_c), s	0.4	15.3	15.3	0.6	0.9	0.0
Prop In Lane	1.00			1.00	0.70	0.27
Lane Grp Cap(c), veh/h	40	2593	2150	959	76	0
V/C Ratio(X)	0.37	0.73	0.72	0.05	0.43	0.00
Avail Cap(c_a), veh/h	335	3600	2569	1146	625	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	24.1	3.9	6.9	4.0	23.3	0.0
Incr Delay (d2), s/veh	5.6	0.5	0.8	0.0	3.8	0.0
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.2	0.6	2.9	0.1	0.4	0.0
Unsig. Movement Delay, s/veh						
LnGrp Delay(d), s/veh	29.7	4.4	7.7	4.0	27.1	0.0
LnGrp LOS	C	A	A	A	C	
Approach Vol, veh/h		1901	1601		33	
Approach Delay, s/veh		4.6	7.6		27.1	
Approach LOS		A	A		C	

Timer - Assigned Phs	1	2		4		6
Phs Duration (G+Y+Rc), s	6.2	36.4		7.3		42.6
Change Period (Y+Rc), s	5.1	6.2		5.1		6.2
Max Green Setting (Gmax), s	9.4	36.1		18.1		50.6
Max Q Clear Time (g_c+I1), s	2.4	17.3		2.9		17.3
Green Ext Time (p_c), s	0.0	10.8		0.0		19.2

Intersection Summary	
HCM 7th Control Delay, s/veh	6.2
HCM 7th LOS	A



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	173	1612	5	11	1373	510	0	0	0	378	2	117
Future Volume (vph)	173	1612	5	11	1373	510	0	0	0	378	2	117
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.4	6.7		5.4	6.7	6.7				5.4	5.4	5.4
Lane Util. Factor	0.97	0.91		1.00	0.91	1.00				0.91	0.86	0.95
Frt	1.00	1.00		1.00	1.00	0.85				1.00	0.99	0.85
Flt Protected	0.95	1.00		0.95	1.00	1.00				0.95	0.96	1.00
Satd. Flow (prot)	3433	5083		1770	5085	1583				3221	1513	1504
Flt Permitted	0.95	1.00		0.95	1.00	1.00				0.95	0.96	1.00
Satd. Flow (perm)	3433	5083		1770	5085	1583				3221	1513	1504
Peak-hour factor, PHF	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Adj. Flow (vph)	184	1715	5	12	1461	543	0	0	0	402	2	124
RTOR Reduction (vph)	0	0	0	0	0	169	0	0	0	0	3	75
Lane Group Flow (vph)	184	1720	0	12	1461	374	0	0	0	277	136	37
Turn Type	Prot	NA		Prot	NA	Perm				Split	NA	pm+ov
Protected Phases	1	6		5	2			3		4	4	1
Permitted Phases						2	3					4
Actuated Green, G (s)	14.9	53.1		1.7	39.9	39.9				13.6	13.6	28.5
Effective Green, g (s)	14.9	53.1		1.7	39.9	39.9				13.6	13.6	28.5
Actuated g/C Ratio	0.17	0.62		0.02	0.46	0.46				0.16	0.16	0.33
Clearance Time (s)	5.4	6.7		5.4	6.7	6.7				5.4	5.4	5.4
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0				3.0	3.0	3.0
Lane Grp Cap (vph)	595	3142		35	2361	735				509	239	593
v/s Ratio Prot	0.05	c0.34		0.01	c0.29					0.09	c0.09	0.01
v/s Ratio Perm						0.24						0.01
v/c Ratio	0.31	0.55		0.34	0.62	0.51				0.54	0.57	0.06
Uniform Delay, d1	31.0	9.5		41.5	17.3	16.1				33.3	33.5	19.6
Progression Factor	1.00	1.00		1.00	1.00	1.00				1.00	1.00	1.00
Incremental Delay, d2	0.3	0.2		5.8	0.5	0.6				1.2	3.3	0.0
Delay (s)	31.3	9.7		47.3	17.8	16.7				34.5	36.7	19.6
Level of Service	C	A		D	B	B				C	D	B
Approach Delay (s/veh)		11.8			17.7			0.0			31.9	
Approach LOS		B			B			A			C	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	16.8	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.65		
Actuated Cycle Length (s)	85.9	Sum of lost time (s)	22.9
Intersection Capacity Utilization	62.0%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	57	2012	7	23	1848	468	0	0	0	45	2	45
Future Volume (veh/h)	57	2012	7	23	1848	468	0	0	0	45	2	45
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	61	2140	7	24	1966	498	0	0	0	48	2	48
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	162	2734	9	176	2674	1193	0	154	130	131	9	61
Arrive On Green	0.75	0.75	0.75	0.75	0.75	0.75	0.00	0.00	0.00	0.08	0.08	0.08
Sat Flow, veh/h	136	3633	12	186	3554	1585	0	1870	1585	667	110	746
Grp Volume(v), veh/h	61	1046	1101	24	1966	498	0	0	0	98	0	0
Grp Sat Flow(s),veh/h/ln	136	1777	1868	186	1777	1585	0	1870	1585	1523	0	0
Q Serve(g_s), s	31.6	25.1	25.2	6.3	21.7	8.0	0.0	0.0	0.0	3.9	0.0	0.0
Cycle Q Clear(g_c), s	53.3	25.1	25.2	31.5	21.7	8.0	0.0	0.0	0.0	4.5	0.0	0.0
Prop In Lane	1.00		0.01	1.00		1.00	0.00		1.00	0.49		0.49
Lane Grp Cap(c), veh/h	162	1337	1406	176	2674	1193	0	154	130	201	0	0
V/C Ratio(X)	0.38	0.78	0.78	0.14	0.74	0.42	0.00	0.00	0.00	0.49	0.00	0.00
Avail Cap(c_a), veh/h	162	1337	1406	176	2674	1193	0	660	559	608	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	0.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	19.7	5.3	5.3	14.8	4.9	3.2	0.0	0.0	0.0	31.8	0.0	0.0
Incr Delay (d2), s/veh	1.4	3.1	3.0	0.3	1.1	0.2	0.0	0.0	0.0	1.8	0.0	0.0
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.9	4.5	4.7	0.2	3.3	1.0	0.0	0.0	0.0	1.6	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	21.1	8.4	8.2	15.1	5.9	3.4	0.0	0.0	0.0	33.7	0.0	0.0
LnGrp LOS	C	A	A	B	A	A				C		
Approach Vol, veh/h		2208			2488			0			98	
Approach Delay, s/veh		8.7			5.5			0.0			33.7	
Approach LOS		A			A						C	

Timer - Assigned Phs		2		4		6		8				
Phs Duration (G+Y+Rc), s		60.0		10.8		60.0		10.8				
Change Period (Y+Rc), s		6.7		5.0		6.7		5.0				
Max Green Setting (Gmax), s		53.3		25.0		53.3		25.0				
Max Q Clear Time (g_c+I1), s		33.5		6.5		55.3		0.0				
Green Ext Time (p_c), s		16.0		0.4		0.0		0.0				

Intersection Summary	
HCM 7th Control Delay, s/veh	7.5
HCM 7th LOS	A



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	173	2062	0	0	2202	1471	0	0	0	556	0	165
Future Volume (vph)	173	2062	0	0	2202	1471	0	0	0	556	0	165
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.2	7.2			7.2	7.2				5.9		5.9
Lane Util. Factor	1.00	0.91			0.91	1.00				0.97		1.00
Frt	1.00	1.00			1.00	0.85				1.00		0.85
Flt Protected	0.95	1.00			1.00	1.00				0.95		1.00
Satd. Flow (prot)	1770	5085			5085	1583				3433		1583
Flt Permitted	0.95	1.00			1.00	1.00				0.95		1.00
Satd. Flow (perm)	1770	5085			5085	1583				3433		1583
Peak-hour factor, PHF	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Adj. Flow (vph)	184	2194	0	0	2343	1565	0	0	0	591	0	176
RTOR Reduction (vph)	0	0	0	0	0	306	0	0	0	0	0	147
Lane Group Flow (vph)	184	2194	0	0	2343	1259	0	0	0	591	0	29
Turn Type	Prot	NA		Prot	NA	Perm	Split		Perm	Split		Perm
Protected Phases	1	6		5	2		3	3		4	4	
Permitted Phases						2			3			4
Actuated Green, G (s)	12.8	98.7			80.7	80.7				22.1		22.1
Effective Green, g (s)	12.8	98.7			80.7	80.7				22.1		22.1
Actuated g/C Ratio	0.10	0.74			0.60	0.60				0.17		0.17
Clearance Time (s)	5.2	7.2			7.2	7.2				5.9		5.9
Vehicle Extension (s)	3.0	3.0			3.0	3.0				3.0		3.0
Lane Grp Cap (vph)	169	3748			3064	954				566		261
v/s Ratio Prot	c0.10	0.43			0.46					c0.17		
v/s Ratio Perm						c0.79						0.02
v/c Ratio	1.09	0.59			0.76	1.32				1.04		0.11
Uniform Delay, d1	60.6	8.1			19.6	26.6				55.9		47.5
Progression Factor	1.00	1.00			1.00	1.00				1.00		1.00
Incremental Delay, d2	94.9	0.2			1.2	151.1				49.9		0.2
Delay (s)	155.5	8.4			20.8	177.7				105.8		47.7
Level of Service	F	A			C	F				F		D
Approach Delay (s/veh)		19.8			83.6			0.0			92.4	
Approach LOS		B			F			A			F	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	63.1	HCM 2000 Level of Service	E
HCM 2000 Volume to Capacity ratio	1.30		
Actuated Cycle Length (s)	133.9	Sum of lost time (s)	23.4
Intersection Capacity Utilization	111.0%	ICU Level of Service	H
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL2	EBL	EBR	WBT	WBR	WBR2	SBR	SBR2	SEL2	SEL	SET	SER
Lane Configurations												
Traffic Volume (vph)	171	171	2276	3208	1655	165	220	105	22	198	0	105
Future Volume (vph)	171	171	2276	3208	1655	165	220	105	22	198	0	105
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		5.1	4.0	6.5	6.5		5.1	5.1	5.1		5.1	
Lane Util. Factor		1.00	0.76	0.91	1.00		0.88	1.00	0.95		0.95	
Frt		1.00	0.85	1.00	0.85		0.85	0.85	1.00		0.95	
Flt Protected		0.95	1.00	1.00	1.00		1.00	1.00	0.95		0.97	
Satd. Flow (prot)		1770	3610	5085	1583		2787	1583	1681		1625	
Flt Permitted		0.31	1.00	1.00	1.00		1.00	1.00	0.95		0.97	
Satd. Flow (perm)		582	3610	5085	1583		2787	1583	1681		1625	
Peak-hour factor, PHF	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Adj. Flow (vph)	182	182	2421	3413	1761	176	234	112	23	211	0	112
RTOR Reduction (vph)	0	0	0	0	57	0	0	0	0	0	94	0
Lane Group Flow (vph)	0	364	2421	3413	1880	0	234	112	21	0	231	0
Turn Type	D.Pm	D.Pm	Free	NA	Perm		Prot	Perm	Split	Split	NA	
Protected Phases				2			4!		1	1	1	
Permitted Phases	4!	4	Free		2			4				
Actuated Green, G (s)		12.8	77.0	32.6	32.6		12.8	12.8	14.9		14.9	
Effective Green, g (s)		12.8	77.0	32.6	32.6		12.8	12.8	14.9		14.9	
Actuated g/C Ratio		0.17	1.00	0.42	0.42		0.17	0.17	0.19		0.19	
Clearance Time (s)		5.1		6.5	6.5		5.1	5.1	5.1		5.1	
Vehicle Extension (s)		3.0		3.0	3.0		3.0	3.0	3.0		3.0	
Lane Grp Cap (vph)		96	3610	2152	670		463	263	325		314	
v/s Ratio Prot				0.67			0.08		0.01		0.14	
v/s Ratio Perm		c0.63	c0.67		c1.19			0.07				
v/c Ratio		3.79	0.67	1.59	2.81		0.51	0.43	0.06		0.73	
Uniform Delay, d1		32.1	0.0	22.2	22.2		29.2	28.8	25.4		29.2	
Progression Factor		1.00	1.00	1.00	1.00		1.00	1.00	1.00		1.00	
Incremental Delay, d2		1281.2	1.0	265.9	817.2		0.9	1.1	0.1		8.6	
Delay (s)		1313.3	1.0	288.1	839.4		30.1	29.9	25.4		37.8	
Level of Service		F	A	F	F		C	C	C		D	
Approach Delay (s/veh)				487.7							37.1	
Approach LOS				F							D	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	352.7	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	2.54		
Actuated Cycle Length (s)	77.0	Sum of lost time (s)	16.7
Intersection Capacity Utilization	168.2%	ICU Level of Service	H
Analysis Period (min)	15		

! Phase conflict between lane groups.
c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	68	7	112	23	7	34	41	557	32	61	744	63
Future Volume (veh/h)	68	7	112	23	7	34	41	557	32	61	744	63
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	72	7	119	24	7	36	44	593	34	65	791	67
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	164	28	155	156	64	152	79	811	46	623	1929	861
Arrive On Green	0.17	0.17	0.17	0.17	0.17	0.17	0.04	0.24	0.24	0.35	0.54	0.54
Sat Flow, veh/h	449	167	928	399	384	910	1781	3416	196	1781	3554	1585
Grp Volume(v), veh/h	198	0	0	67	0	0	44	308	319	65	791	67
Grp Sat Flow(s),veh/h/ln	1545	0	0	1693	0	0	1781	1777	1835	1781	1777	1585
Q Serve(g_s), s	4.8	0.0	0.0	0.0	0.0	0.0	1.3	8.8	8.8	1.4	7.2	1.1
Cycle Q Clear(g_c), s	6.7	0.0	0.0	1.9	0.0	0.0	1.3	8.8	8.8	1.4	7.2	1.1
Prop In Lane	0.36		0.60	0.36		0.54	1.00		0.11	1.00		1.00
Lane Grp Cap(c), veh/h	347	0	0	372	0	0	79	422	436	623	1929	861
V/C Ratio(X)	0.57	0.00	0.00	0.18	0.00	0.00	0.56	0.73	0.73	0.10	0.41	0.08
Avail Cap(c_a), veh/h	588	0	0	608	0	0	162	598	617	623	1929	861
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	0.00	0.83	0.83	0.83	1.00	1.00	1.00
Uniform Delay (d), s/veh	21.8	0.0	0.0	19.9	0.0	0.0	25.7	19.3	19.4	12.1	7.4	6.0
Incr Delay (d2), s/veh	1.5	0.0	0.0	0.2	0.0	0.0	5.0	8.9	8.7	0.1	0.6	0.2
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.3	0.0	0.0	0.7	0.0	0.0	0.6	4.2	4.4	0.5	2.2	0.3
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	23.2	0.0	0.0	20.1	0.0	0.0	30.7	28.3	28.1	12.1	8.0	6.2
LnGrp LOS	C			C			C	C	C	B	A	A
Approach Vol, veh/h		198			67			671			923	
Approach Delay, s/veh		23.2			20.1			28.3			8.2	
Approach LOS		C			C			C			A	

Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	23.7	17.6		13.7	6.9	34.4		13.7				
Change Period (Y+Rc), s	4.5	4.5		4.5	4.5	4.5		4.5				
Max Green Setting (Gmax), s	5.0	18.5		18.0	5.0	18.5		18.0				
Max Q Clear Time (g_c+I1), s	3.4	10.8		8.7	3.3	9.2		3.9				
Green Ext Time (p_c), s	0.0	2.2		0.7	0.0	3.7		0.2				

Intersection Summary		
HCM 7th Control Delay, s/veh	17.5	
HCM 7th LOS	B	

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	52	5	52	45	5	23	90	522	21	7	787	41
Future Volume (veh/h)	52	5	52	45	5	23	90	522	21	7	787	41
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	55	5	55	48	5	24	96	555	22	7	837	44
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	256	158	752	167	15	38	695	2375	94	267	1033	54
Arrive On Green	0.08	0.08	0.08	0.08	0.08	0.08	0.39	0.68	0.68	0.01	0.30	0.30
Sat Flow, veh/h	1381	1870	1585	826	181	456	1781	3484	138	1781	3434	181
Grp Volume(v), veh/h	55	5	55	77	0	0	96	283	294	7	433	448
Grp Sat Flow(s),veh/h/ln	1381	1870	1585	1463	0	0	1781	1777	1846	1781	1777	1838
Q Serve(g_s), s	0.0	0.1	0.0	2.6	0.0	0.0	2.1	3.6	3.6	0.2	13.5	13.5
Cycle Q Clear(g_c), s	1.8	0.1	0.0	3.0	0.0	0.0	2.1	3.6	3.6	0.2	13.5	13.5
Prop In Lane	1.00		1.00	0.62		0.31	1.00		0.07	1.00		0.10
Lane Grp Cap(c), veh/h	256	158	752	221	0	0	695	1211	1258	267	534	553
V/C Ratio(X)	0.21	0.03	0.07	0.35	0.00	0.00	0.14	0.23	0.23	0.03	0.81	0.81
Avail Cap(c_a), veh/h	554	561	1094	531	0	0	695	1211	1258	399	622	643
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	0.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	26.0	25.2	8.6	26.5	0.0	0.0	11.8	3.6	3.6	16.8	19.4	19.4
Incr Delay (d2), s/veh	0.4	0.1	0.0	0.9	0.0	0.0	0.1	0.5	0.4	0.0	12.6	12.2
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.7	0.1	0.4	1.1	0.0	0.0	0.7	0.9	0.9	0.1	6.8	6.9
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	26.4	25.3	8.6	27.4	0.0	0.0	11.9	4.1	4.1	16.8	32.0	31.6
LnGrp LOS	C	C	A	C			B	A	A	B	C	C
Approach Vol, veh/h		115			77			673			888	
Approach Delay, s/veh		17.8			27.4			5.2			31.7	
Approach LOS		B			C			A			C	

Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	5.1	45.4		9.6	27.9	22.5		9.6				
Change Period (Y+Rc), s	4.5	4.5		4.5	4.5	4.5		4.5				
Max Green Setting (Gmax), s	5.0	23.5		18.0	7.5	21.0		18.0				
Max Q Clear Time (g_c+I1), s	2.2	5.6		3.8	4.1	15.5		5.0				
Green Ext Time (p_c), s	0.0	3.2		0.2	0.1	2.5		0.3				

Intersection Summary			
HCM 7th Control Delay, s/veh		20.4	
HCM 7th LOS		C	



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	261	262	393	178	345	412
Future Volume (veh/h)	261	262	393	178	345	412
Initial Q (Qb), veh	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)	1.00			1.00	1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No	No		No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	278	279	418	189	367	438
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	2	2	2	2	2	2
Cap, veh/h	312	2081	1192	951	914	697
Arrive On Green	0.17	0.59	0.34	0.34	0.26	0.26
Sat Flow, veh/h	1781	3647	3647	1585	3456	1585
Grp Volume(v), veh/h	278	279	418	189	367	438
Grp Sat Flow(s),veh/h/ln	1781	1777	1777	1585	1728	1585
Q Serve(g_s), s	9.2	2.1	5.3	3.2	5.2	12.8
Cycle Q Clear(g_c), s	9.2	2.1	5.3	3.2	5.2	12.8
Prop In Lane	1.00			1.00	1.00	1.00
Lane Grp Cap(c), veh/h	312	2081	1192	951	914	697
V/C Ratio(X)	0.89	0.13	0.35	0.20	0.40	0.63
Avail Cap(c_a), veh/h	312	2081	1192	951	1037	753
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	24.2	5.6	15.0	5.4	18.2	13.0
Incr Delay (d2), s/veh	25.8	0.1	0.8	0.5	0.3	1.5
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	5.7	0.6	2.0	1.8	1.8	11.7
Unsig. Movement Delay, s/veh						
LnGrp Delay(d), s/veh	50.0	5.7	15.8	5.9	18.4	14.5
LnGrp LOS	D	A	B	A	B	B
Approach Vol, veh/h		557	607		805	
Approach Delay, s/veh		27.8	12.7		16.3	
Approach LOS		C	B		B	

Timer - Assigned Phs	4	6	7	8
Phs Duration (G+Y+Rc), s	39.6	20.4	15.0	24.6
Change Period (Y+Rc), s	4.5	4.5	4.5	4.5
Max Green Setting (Gmax), s	33.0	18.0	10.5	18.0
Max Q Clear Time (g_c+I1), s	4.1	14.8	11.2	7.3
Green Ext Time (p_c), s	1.8	1.0	0.0	2.5

Intersection Summary	
HCM 7th Control Delay, s/veh	18.5
HCM 7th LOS	B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	57	548	2	2	557	34	2	1	2	23	1	12
Future Volume (veh/h)	57	548	2	2	557	34	2	1	2	23	1	12
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	61	583	2	2	593	36	2	1	2	24	1	13
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	719	2738	9	747	2566	156	143	16	31	174	2	24
Arrive On Green	0.75	0.75	0.75	0.75	0.75	0.75	0.05	0.05	0.05	0.05	0.05	0.05
Sat Flow, veh/h	797	3632	12	830	3404	206	680	340	680	945	39	512
Grp Volume(v), veh/h	61	285	300	2	309	320	5	0	0	38	0	0
Grp Sat Flow(s),veh/h/ln	797	1777	1868	830	1777	1833	1701	0	0	1497	0	0
Q Serve(g_s), s	1.1	2.1	2.1	0.0	2.3	2.3	0.0	0.0	0.0	1.0	0.0	0.0
Cycle Q Clear(g_c), s	3.5	2.1	2.1	2.2	2.3	2.3	0.1	0.0	0.0	1.1	0.0	0.0
Prop In Lane	1.00		0.01	1.00		0.11	0.40		0.40	0.63		0.34
Lane Grp Cap(c), veh/h	719	1339	1408	747	1339	1382	191	0	0	200	0	0
V/C Ratio(X)	0.08	0.21	0.21	0.00	0.23	0.23	0.03	0.00	0.00	0.19	0.00	0.00
Avail Cap(c_a), veh/h	719	1339	1408	747	1339	1382	739	0	0	723	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	2.2	1.6	1.6	1.9	1.7	1.7	20.5	0.0	0.0	21.0	0.0	0.0
Incr Delay (d2), s/veh	0.2	0.4	0.3	0.0	0.4	0.4	0.1	0.0	0.0	0.5	0.0	0.0
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.1	0.1	0.1	0.0	0.1	0.2	0.0	0.0	0.0	0.4	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	2.4	2.0	2.0	1.9	2.1	2.0	20.6	0.0	0.0	21.4	0.0	0.0
LnGrp LOS	A	A	A	A	A	A	C			C		
Approach Vol, veh/h		646			631			5			38	
Approach Delay, s/veh		2.0			2.0			20.6			21.4	
Approach LOS		A			A			C			C	

Timer - Assigned Phs		2		4		6		8				
Phs Duration (G+Y+Rc), s		6.6		38.4		6.6		38.4				
Change Period (Y+Rc), s		4.5		4.5		4.5		4.5				
Max Green Setting (Gmax), s		18.0		18.0		18.0		18.0				
Max Q Clear Time (g_c+I1), s		2.1		5.5		3.1		4.3				
Green Ext Time (p_c), s		0.0		3.1		0.1		3.1				

Intersection Summary												
HCM 7th Control Delay, s/veh			2.7									
HCM 7th LOS			A									

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	23	903	23	17	594	132	23	5	124	121	5	23
Future Volume (veh/h)	23	903	23	17	594	132	23	5	124	121	5	23
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	24	961	24	18	632	0	24	5	132	129	5	24
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	104	2225	55	103	2219		115	20	197	331	9	35
Arrive On Green	0.65	0.65	0.65	0.65	0.65	0.00	0.15	0.15	0.15	0.15	0.15	0.15
Sat Flow, veh/h	30	3402	84	29	3393	1585	158	140	1352	1273	62	239
Grp Volume(v), veh/h	526	0	483	344	306	0	161	0	0	158	0	0
Grp Sat Flow(s),veh/h/ln	1829	0	1687	1805	1617	1585	1649	0	0	1575	0	0
Q Serve(g_s), s	0.0	0.0	6.3	0.0	3.6	0.0	0.2	0.0	0.0	0.0	0.0	0.0
Cycle Q Clear(g_c), s	6.1	0.0	6.3	3.5	3.6	0.0	4.0	0.0	0.0	3.8	0.0	0.0
Prop In Lane	0.05		0.05	0.05		1.00	0.15		0.82	0.82		0.15
Lane Grp Cap(c), veh/h	1280	0	1103	1265	1058		333	0	0	375	0	0
V/C Ratio(X)	0.41	0.00	0.44	0.27	0.29		0.48	0.00	0.00	0.42	0.00	0.00
Avail Cap(c_a), veh/h	1280	0	1103	1265	1058		728	0	0	707	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	1.00	0.00	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	3.7	0.0	3.8	3.3	3.3	0.0	18.2	0.0	0.0	18.0	0.0	0.0
Incr Delay (d2), s/veh	1.0	0.0	1.3	0.5	0.7	0.0	1.1	0.0	0.0	0.8	0.0	0.0
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.2	0.0	1.2	0.7	0.7	0.0	1.5	0.0	0.0	1.5	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	4.7	0.0	5.0	3.8	4.0	0.0	19.3	0.0	0.0	18.8	0.0	0.0
LnGrp LOS	A		A	A	A		B			B		
Approach Vol, veh/h		1009			650			161			158	
Approach Delay, s/veh		4.9			3.9			19.3			18.8	
Approach LOS		A			A			B			B	

Timer - Assigned Phs	2	4	6	8
Phs Duration (G+Y+Rc), s	11.1	33.9	11.1	33.9
Change Period (Y+Rc), s	4.5	4.5	4.5	4.5
Max Green Setting (Gmax), s	18.0	18.0	18.0	18.0
Max Q Clear Time (g_c+I1), s	6.0	8.3	5.8	5.6
Green Ext Time (p_c), s	0.7	4.4	0.7	3.2

Intersection Summary	
HCM 7th Control Delay, s/veh	6.8
HCM 7th LOS	A

Notes

Unsignalized Delay for [WBR] is excluded from calculations of the approach delay and intersection delay.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	26	1346	24	25	784	50	23	5	280	158	5	24
Future Volume (veh/h)	26	1346	24	25	784	50	23	5	280	158	5	24
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	28	1432	26	27	834	53	24	5	298	168	5	26
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	409	2074	38	240	1970	125	87	21	392	315	16	32
Arrive On Green	0.58	0.58	0.58	0.58	0.58	0.58	0.26	0.26	0.26	0.26	0.26	0.26
Sat Flow, veh/h	627	3571	65	364	3393	216	66	84	1534	760	64	124
Grp Volume(v), veh/h	28	712	746	27	437	450	327	0	0	199	0	0
Grp Sat Flow(s),veh/h/ln	627	1777	1859	364	1777	1832	1684	0	0	948	0	0
Q Serve(g_s), s	1.4	15.4	15.5	3.1	7.5	7.5	0.0	0.0	0.0	1.6	0.0	0.0
Cycle Q Clear(g_c), s	8.9	15.4	15.5	18.5	7.5	7.5	9.9	0.0	0.0	11.5	0.0	0.0
Prop In Lane	1.00		0.03	1.00		0.12	0.07		0.91	0.84		0.13
Lane Grp Cap(c), veh/h	409	1032	1079	240	1032	1064	501	0	0	363	0	0
V/C Ratio(X)	0.07	0.69	0.69	0.11	0.42	0.42	0.65	0.00	0.00	0.55	0.00	0.00
Avail Cap(c_a), veh/h	409	1032	1079	240	1032	1064	628	0	0	455	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	0.87	0.87	0.87	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	8.9	8.1	8.1	14.6	6.4	6.4	19.1	0.0	0.0	19.6	0.0	0.0
Incr Delay (d2), s/veh	0.3	3.8	3.6	0.8	1.1	1.1	1.7	0.0	0.0	1.3	0.0	0.0
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.2	5.0	5.2	0.3	2.2	2.3	3.8	0.0	0.0	2.4	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	9.2	11.8	11.7	15.4	7.5	7.5	20.7	0.0	0.0	20.9	0.0	0.0
LnGrp LOS	A	B	B	B	A	A	C			C		
Approach Vol, veh/h		1486			914			327			199	
Approach Delay, s/veh		11.7			7.7			20.7			20.9	
Approach LOS		B			A			C			C	

Timer - Assigned Phs		2		4		6		8				
Phs Duration (G+Y+Rc), s		18.6		36.4		18.6		36.4				
Change Period (Y+Rc), s		4.5		4.5		4.5		4.5				
Max Green Setting (Gmax), s		18.5		27.5		18.5		27.5				
Max Q Clear Time (g_c+I1), s		11.9		17.5		13.5		20.5				
Green Ext Time (p_c), s		1.2		6.6		0.5		3.2				

Intersection Summary												
HCM 7th Control Delay, s/veh			12.1									
HCM 7th LOS			B									

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	12	607	1165	248	707	11	141	20	349	11	34	11
Future Volume (veh/h)	12	607	1165	248	707	11	141	20	349	11	34	11
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	13	646	1239	264	752	12	150	21	371	12	36	12
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	439	1698	940	330	2222	35	398	469	522	77	78	23
Arrive On Green	0.48	0.48	0.48	0.08	0.62	0.62	0.12	0.25	0.25	0.07	0.07	0.07
Sat Flow, veh/h	703	3554	1585	1781	3580	57	3456	1870	1585	213	1085	325
Grp Volume(v), veh/h	13	646	1239	264	373	391	150	21	371	60	0	0
Grp Sat Flow(s),veh/h/ln	703	1777	1585	1781	1777	1860	1728	1870	1585	1623	0	0
Q Serve(g_s), s	0.7	8.1	20.3	5.1	7.1	7.1	2.8	0.6	14.3	0.8	0.0	0.0
Cycle Q Clear(g_c), s	0.7	8.1	20.3	5.1	7.1	7.1	2.8	0.6	14.3	2.4	0.0	0.0
Prop In Lane	1.00		1.00	1.00		0.03	1.00		1.00	0.20		0.20
Lane Grp Cap(c), veh/h	439	1698	940	330	1103	1154	398	469	522	178	0	0
V/C Ratio(X)	0.03	0.38	1.32	0.80	0.34	0.34	0.38	0.04	0.71	0.34	0.00	0.00
Avail Cap(c_a), veh/h	439	1698	940	330	1103	1154	469	855	849	464	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.59	0.59	0.59	1.00	1.00	1.00	0.98	0.98	0.98	1.00	0.00	0.00
Uniform Delay (d), s/veh	9.7	11.7	4.7	11.9	6.4	6.4	28.7	19.9	20.6	31.2	0.0	0.0
Incr Delay (d2), s/veh	0.1	0.4	147.8	13.1	0.8	0.8	0.6	0.0	1.8	1.1	0.0	0.0
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.1	2.9	42.7	2.7	2.3	2.4	1.1	0.2	5.1	1.0	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	9.8	12.0	152.6	25.0	7.2	7.2	29.2	19.9	22.3	32.3	0.0	0.0
LnGrp LOS	A	B	F	C	A	A	C	B	C	C		
Approach Vol, veh/h		1898			1028			542			60	
Approach Delay, s/veh		103.8			11.8			24.1			32.3	
Approach LOS		F			B			C			C	

Timer - Assigned Phs	2	3	4	5	6	8
Phs Duration (G+Y+Rc), s	22.1	10.0	37.9	12.6	9.5	47.9
Change Period (Y+Rc), s	4.5	4.5	4.5	4.5	4.5	4.5
Max Green Setting (Gmax), s	32.0	5.5	19.0	9.5	18.0	29.0
Max Q Clear Time (g_c+I1), s	16.3	7.1	22.3	4.8	4.4	9.1
Green Ext Time (p_c), s	1.2	0.0	0.0	0.2	0.2	4.5

Intersection Summary	
HCM 7th Control Delay, s/veh	63.5
HCM 7th LOS	E

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	103	661	122	146	665	102	116	70	663	101	31	97
Future Volume (vph)	103	661	122	146	665	102	116	70	663	101	31	97
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.5	4.5		4.5	4.5			4.5		4.5	4.5	
Lane Util. Factor	1.00	0.95		1.00	0.95			1.00		1.00	1.00	
Frt	1.00	0.98		1.00	0.98			0.89		1.00	0.89	
Flt Protected	0.95	1.00		0.95	1.00			0.99		0.95	1.00	
Satd. Flow (prot)	1770	3456		1770	3468			1655		1770	1651	
Flt Permitted	0.22	1.00		0.21	1.00			0.93		0.26	1.00	
Satd. Flow (perm)	409	3456		394	3468			1553		491	1651	
Peak-hour factor, PHF	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Adj. Flow (vph)	110	703	130	155	707	109	123	74	705	107	33	103
RTOR Reduction (vph)	0	19	0	0	15	0	0	46	0	0	46	0
Lane Group Flow (vph)	110	814	0	155	801	0	0	856	0	107	90	0
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		6			2			4			8	
Permitted Phases	6			2			4			8		
Actuated Green, G (s)	30.5	30.5		30.5	30.5			40.5		40.5	40.5	
Effective Green, g (s)	30.5	30.5		30.5	30.5			40.5		40.5	40.5	
Actuated g/C Ratio	0.38	0.38		0.38	0.38			0.51		0.51	0.51	
Clearance Time (s)	4.5	4.5		4.5	4.5			4.5		4.5	4.5	
Vehicle Extension (s)	3.0	3.0		3.0	3.0			3.0		3.0	3.0	
Lane Grp Cap (vph)	155	1317		150	1322			786		248	835	
v/s Ratio Prot		0.24			0.23						0.05	
v/s Ratio Perm	0.27			c0.39				c0.55		0.22		
v/c Ratio	0.71	0.62		1.03	0.61			1.09		0.43	0.11	
Uniform Delay, d1	21.0	20.0		24.8	19.9			19.8		12.5	10.3	
Progression Factor	1.00	1.00		1.00	1.00			1.00		1.00	1.00	
Incremental Delay, d2	24.0	2.2		82.6	2.1			58.9		1.2	0.1	
Delay (s)	45.0	22.2		107.3	22.0			78.6		13.7	10.4	
Level of Service	D	C		F	C			E		B	B	
Approach Delay (s/veh)		24.9			35.6			78.6			11.8	
Approach LOS		C			D			E			B	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	43.1	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	1.06		
Actuated Cycle Length (s)	80.0	Sum of lost time (s)	9.0
Intersection Capacity Utilization	103.8%	ICU Level of Service	G
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	810	1516	87	630	283	77
Future Volume (veh/h)	810	1516	87	630	283	77
Initial Q (Qb), veh	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)		1.00	1.00		1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No	No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	862	0	93	670	301	0
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	2	2	2	2	2	2
Cap, veh/h	1029		925	2981	350	
Arrive On Green	0.29	0.00	0.52	0.84	0.10	0.00
Sat Flow, veh/h	3647	1585	1781	3647	3456	1585
Grp Volume(v), veh/h	862	0	93	670	301	0
Grp Sat Flow(s),veh/h/ln	1777	1585	1781	1777	1728	1585
Q Serve(g_s), s	34.1	0.0	4.0	5.6	12.9	0.0
Cycle Q Clear(g_c), s	34.1	0.0	4.0	5.6	12.9	0.0
Prop In Lane		1.00	1.00		1.00	1.00
Lane Grp Cap(c), veh/h	1029		925	2981	350	
V/C Ratio(X)	0.84		0.10	0.22	0.86	
Avail Cap(c_a), veh/h	2630		925	2981	415	
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	50.0	0.0	18.3	2.4	66.4	0.0
Incr Delay (d2), s/veh	8.1	0.0	0.0	0.2	14.7	0.0
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	16.2	0.0	1.7	1.6	6.4	0.0
Unsig. Movement Delay, s/veh						
LnGrp Delay(d), s/veh	58.1	0.0	18.3	2.6	81.0	0.0
LnGrp LOS	E		B	A	F	
Approach Vol, veh/h	862			763	301	
Approach Delay, s/veh	58.1			4.5	81.0	
Approach LOS	E			A	F	

Timer - Assigned Phs		2	3	4		8
Phs Duration (G+Y+Rc), s		19.7	82.4	47.9		130.3
Change Period (Y+Rc), s		4.5	4.5	4.5		4.5
Max Green Setting (Gmax), s		18.0	7.5	111.0		123.0
Max Q Clear Time (g_c+I1), s		14.9	6.0	36.1		7.6
Green Ext Time (p_c), s		0.3	0.0	7.3		5.2

Intersection Summary	
HCM 7th Control Delay, s/veh	40.5
HCM 7th LOS	D

Notes

Unsignalized Delay for [NBR, EBR] is excluded from calculations of the approach delay and intersection delay.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	80	719	62	14	576	15	55	5	14	17	5	69
Future Volume (veh/h)	80	719	62	14	576	15	55	5	14	17	5	69
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	85	765	66	15	613	16	59	5	15	18	5	73
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	645	2135	184	33	2637	69	220	15	28	98	16	113
Arrive On Green	0.64	0.64	0.64	0.02	0.75	0.75	0.09	0.09	0.09	0.09	0.09	0.09
Sat Flow, veh/h	797	3310	286	1781	3538	92	1161	168	311	219	172	1242
Grp Volume(v), veh/h	85	411	420	15	308	321	79	0	0	96	0	0
Grp Sat Flow(s),veh/h/ln	797	1777	1819	1781	1777	1854	1640	0	0	1633	0	0
Q Serve(g_s), s	2.3	5.9	5.9	0.5	2.9	2.9	0.0	0.0	0.0	0.7	0.0	0.0
Cycle Q Clear(g_c), s	2.3	5.9	5.9	0.5	2.9	2.9	2.3	0.0	0.0	3.0	0.0	0.0
Prop In Lane	1.00		0.16	1.00		0.05	0.75		0.19	0.19		0.76
Lane Grp Cap(c), veh/h	645	1146	1173	33	1324	1382	264	0	0	226	0	0
V/C Ratio(X)	0.13	0.36	0.36	0.45	0.23	0.23	0.30	0.00	0.00	0.42	0.00	0.00
Avail Cap(c_a), veh/h	645	1146	1173	162	1324	1382	592	0	0	594	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	3.9	4.5	4.5	26.7	2.2	2.2	23.8	0.0	0.0	24.1	0.0	0.0
Incr Delay (d2), s/veh	0.4	0.9	0.9	9.3	0.4	0.4	0.6	0.0	0.0	1.3	0.0	0.0
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.3	1.5	1.6	0.3	0.5	0.5	1.0	0.0	0.0	1.2	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	4.3	5.4	5.4	36.0	2.6	2.6	24.4	0.0	0.0	25.3	0.0	0.0
LnGrp LOS	A	A	A	D	A	A	C			C		
Approach Vol, veh/h		916			644			79			96	
Approach Delay, s/veh		5.3			3.3			24.4			25.3	
Approach LOS		A			A			C			C	

Timer - Assigned Phs	2	3	4		6		8					
Phs Duration (G+Y+Rc), s	9.5	5.5	40.0		9.5		45.5					
Change Period (Y+Rc), s	4.5	4.5	4.5		4.5		4.5					
Max Green Setting (Gmax), s	18.0	5.0	18.5		18.0		28.0					
Max Q Clear Time (g_c+I1), s	4.3	2.5	7.9		5.0		4.9					
Green Ext Time (p_c), s	0.3	0.0	4.2		0.4		3.8					

Intersection Summary												
HCM 7th Control Delay, s/veh		6.5										
HCM 7th LOS		A										

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBU	SBL	SBT
Lane Configurations												
Traffic Volume (vph)	96	0	193	68	14	41	251	374	0	0	0	1409
Future Volume (vph)	96	0	193	68	14	41	251	374	0	0	0	1409
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.5		4.5		4.5		4.5	4.5				4.5
Lane Util. Factor	1.00		1.00		1.00		1.00	0.95				0.95
Frt	1.00		0.85		0.95		1.00	1.00				1.00
Flt Protected	0.95		1.00		0.97		0.95	1.00				1.00
Satd. Flow (prot)	1770		1583		1731		1770	3539				3539
Flt Permitted	0.66		1.00		0.97		0.09	1.00				1.00
Satd. Flow (perm)	1227		1583		1731		167	3539				3539
Peak-hour factor, PHF	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Adj. Flow (vph)	102	0	205	72	15	44	267	398	0	0	0	1499
RTOR Reduction (vph)	0	0	175	0	25	0	0	0	0	0	0	0
Lane Group Flow (vph)	102	0	30	0	106	0	267	398	0	0	0	1499
Turn Type	Perm		Perm	Perm	NA		pm+pt	NA		Perm		NA
Protected Phases					8		5	2				6
Permitted Phases	4		4	8			2			6		
Actuated Green, G (s)	11.7		11.7		11.7		59.3	59.3				44.1
Effective Green, g (s)	11.7		11.7		11.7		59.3	59.3				44.1
Actuated g/C Ratio	0.15		0.15		0.15		0.74	0.74				0.55
Clearance Time (s)	4.5		4.5		4.5		4.5	4.5				4.5
Vehicle Extension (s)	3.0		3.0		3.0		3.0	3.0				3.0
Lane Grp Cap (vph)	179		231		253		338	2623				1950
v/s Ratio Prot							c0.11	0.11				0.42
v/s Ratio Perm	c0.08		0.02		0.06		c0.48					
v/c Ratio	0.57		0.13		0.42		0.79	0.15				0.77
Uniform Delay, d1	31.8		29.7		31.1		21.0	3.0				14.0
Progression Factor	1.00		1.00		1.00		1.00	1.00				1.00
Incremental Delay, d2	4.1		0.3		1.1		11.6	0.1				3.0
Delay (s)	35.9		30.0		32.2		32.6	3.1				17.0
Level of Service	D		C		C		C	A				B
Approach Delay (s/veh)		32.0			32.2			15.0				16.7
Approach LOS		C			C			B				B

Intersection Summary			
HCM 2000 Control Delay (s/veh)	18.8	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.78		
Actuated Cycle Length (s)	80.0	Sum of lost time (s)	13.5
Intersection Capacity Utilization	77.8%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group



Movement	SBR
Lane Configurations	
Traffic Volume (vph)	37
Future Volume (vph)	37
Ideal Flow (vphpl)	1900
Total Lost time (s)	4.5
Lane Util. Factor	1.00
Frt	0.85
Flt Protected	1.00
Satd. Flow (prot)	1583
Flt Permitted	1.00
Satd. Flow (perm)	1583
Peak-hour factor, PHF	0.94
Adj. Flow (vph)	39
RTOR Reduction (vph)	18
Lane Group Flow (vph)	21
Turn Type	Perm
Protected Phases	
Permitted Phases	6
Actuated Green, G (s)	44.1
Effective Green, g (s)	44.1
Actuated g/C Ratio	0.55
Clearance Time (s)	4.5
Vehicle Extension (s)	3.0
Lane Grp Cap (vph)	872
v/s Ratio Prot	
v/s Ratio Perm	0.01
v/c Ratio	0.02
Uniform Delay, d1	8.2
Progression Factor	1.00
Incremental Delay, d2	0.1
Delay (s)	8.2
Level of Service	A
Approach Delay (s/veh)	
Approach LOS	

Intersection Summary



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	38	2747	2492	127	232	41
Future Volume (veh/h)	38	2747	2492	127	232	41
Initial Q (Qb), veh	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)	1.00			1.00	1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No	No		No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	40	2922	2651	135	247	44
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	2	2	2	2	2	2
Cap, veh/h	59	2972	2728	1217	304	135
Arrive On Green	0.03	0.84	0.77	0.77	0.09	0.09
Sat Flow, veh/h	1781	3647	3647	1585	3563	1585
Grp Volume(v), veh/h	40	2922	2651	135	247	44
Grp Sat Flow(s),veh/h/ln	1781	1777	1777	1585	1781	1585
Q Serve(g_s), s	3.2	109.2	98.4	3.1	9.8	3.8
Cycle Q Clear(g_c), s	3.2	109.2	98.4	3.1	9.8	3.8
Prop In Lane	1.00			1.00	1.00	1.00
Lane Grp Cap(c), veh/h	59	2972	2728	1217	304	135
V/C Ratio(X)	0.68	0.98	0.97	0.11	0.81	0.33
Avail Cap(c_a), veh/h	74	2979	2728	1217	440	196
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	68.9	10.9	15.3	4.3	64.8	62.0
Incr Delay (d2), s/veh	15.9	12.8	11.4	0.0	7.4	1.4
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.7	30.2	34.4	0.9	4.7	1.5
Unsig. Movement Delay, s/veh						
LnGrp Delay(d), s/veh	84.8	23.7	26.7	4.3	72.2	63.4
LnGrp LOS	F	C	C	A	E	E
Approach Vol, veh/h		2962	2786		291	
Approach Delay, s/veh		24.5	25.7		70.8	
Approach LOS		C	C		E	

Timer - Assigned Phs	1	2		4		6
Phs Duration (G+Y+Rc), s	9.9	116.9		17.4		126.8
Change Period (Y+Rc), s	5.1	6.2		5.1		6.2
Max Green Setting (Gmax), s	6.0	109.8		17.8		120.9
Max Q Clear Time (g_c+I1), s	5.2	100.4		11.8		111.2
Green Ext Time (p_c), s	0.0	8.9		0.5		9.4

Intersection Summary	
HCM 7th Control Delay, s/veh	27.3
HCM 7th LOS	C

Notes
User approved volume balancing among the lanes for turning movement.



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	18	2957	2633	124	30	8
Future Volume (veh/h)	18	2957	2633	124	30	8
Initial Q (Qb), veh	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)	1.00			1.00	1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No	No		No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	19	3146	2801	132	32	9
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	2	2	2	2	2	2
Cap, veh/h	40	3135	2922	1303	46	13
Arrive On Green	0.02	0.88	0.82	0.82	0.04	0.04
Sat Flow, veh/h	1781	3647	3647	1585	1324	372
Grp Volume(v), veh/h	19	3146	2801	132	42	0
Grp Sat Flow(s),veh/h/ln	1781	1777	1777	1585	1737	0
Q Serve(g_s), s	1.4	120.3	90.3	2.2	3.3	0.0
Cycle Q Clear(g_c), s	1.4	120.3	90.3	2.2	3.3	0.0
Prop In Lane	1.00			1.00	0.76	0.21
Lane Grp Cap(c), veh/h	40	3135	2922	1303	61	0
V/C Ratio(X)	0.47	1.00	0.96	0.10	0.69	0.00
Avail Cap(c_a), veh/h	123	3135	2922	1303	234	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	65.8	8.0	10.2	2.4	65.1	0.0
Incr Delay (d2), s/veh	8.4	16.9	9.0	0.0	13.0	0.0
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.7	19.5	24.7	0.5	1.6	0.0
Unsig. Movement Delay, s/veh						
LnGrp Delay(d), s/veh	74.2	25.0	19.2	2.4	78.1	0.0
LnGrp LOS	E	F	B	A	E	
Approach Vol, veh/h		3165	2933		42	
Approach Delay, s/veh		25.3	18.4		78.1	
Approach LOS		C	B		E	

Timer - Assigned Phs	1	2		4		6
Phs Duration (G+Y+Rc), s	8.2	118.3		9.9		126.5
Change Period (Y+Rc), s	5.1	6.2		5.1		6.2
Max Green Setting (Gmax), s	9.4	105.8		18.4		120.3
Max Q Clear Time (g_c+I1), s	3.4	92.3		5.3		122.3
Green Ext Time (p_c), s	0.0	12.9		0.0		0.0

Intersection Summary	
HCM 7th Control Delay, s/veh	22.4
HCM 7th LOS	C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	125	2847	7	18	2500	497	0	0	0	642	5	232
Future Volume (vph)	125	2847	7	18	2500	497	0	0	0	642	5	232
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.4	6.7		5.4	6.7	6.7				5.4	5.4	5.4
Lane Util. Factor	0.97	0.91		1.00	0.91	1.00				0.91	0.86	0.95
Frt	1.00	1.00		1.00	1.00	0.85				1.00	0.98	0.85
Flt Protected	0.95	1.00		0.95	1.00	1.00				0.95	0.96	1.00
Satd. Flow (prot)	3433	5084		1770	5085	1583				3221	1508	1504
Flt Permitted	0.95	1.00		0.95	1.00	1.00				0.95	0.96	1.00
Satd. Flow (perm)	3433	5084		1770	5085	1583				3221	1508	1504
Peak-hour factor, PHF	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Adj. Flow (vph)	133	3029	7	19	2660	529	0	0	0	683	5	247
RTOR Reduction (vph)	0	0	0	0	0	76	0	0	0	0	3	150
Lane Group Flow (vph)	133	3036	0	19	2660	453	0	0	0	478	237	67
Turn Type	Prot	NA		Prot	NA	Perm				Split	NA	pm+ov
Protected Phases	1	6		5	2			3		4	4	1
Permitted Phases						2	3					4
Actuated Green, G (s)	13.3	78.5		3.8	69.0	69.0				25.0	25.0	38.3
Effective Green, g (s)	13.3	78.5		3.8	69.0	69.0				25.0	25.0	38.3
Actuated g/C Ratio	0.11	0.63		0.03	0.55	0.55				0.20	0.20	0.31
Clearance Time (s)	5.4	6.7		5.4	6.7	6.7				5.4	5.4	5.4
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0				3.0	3.0	3.0
Lane Grp Cap (vph)	365	3197		53	2811	875				645	302	526
v/s Ratio Prot	0.04	c0.60		0.01	c0.52					0.15	c0.16	0.01
v/s Ratio Perm						0.29						0.03
v/c Ratio	0.36	0.95		0.36	0.95	0.52				0.74	0.78	0.13
Uniform Delay, d1	51.8	21.3		59.3	26.2	17.5				46.9	47.3	31.2
Progression Factor	1.00	1.00		1.00	1.00	1.00				1.00	1.00	1.00
Incremental Delay, d2	0.6	7.3		4.1	7.7	0.5				4.6	12.5	0.1
Delay (s)	52.4	28.6		63.4	33.9	18.0				51.4	59.8	31.3
Level of Service	D	C		E	C	B				D	E	C
Approach Delay (s/veh)		29.6			31.4			0.0			48.9	
Approach LOS		C			C			A			D	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	32.9	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.99		
Actuated Cycle Length (s)	124.8	Sum of lost time (s)	22.9
Intersection Capacity Utilization	78.8%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	102	3512	11	34	2944	68	0	0	0	108	5	68
Future Volume (veh/h)	102	3512	11	34	2944	68	0	0	0	108	5	68
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	109	3736	12	36	3132	72	0	0	0	115	5	72
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	49	2823	9	49	2761	1231	0	267	227	166	7	80
Arrive On Green	0.78	0.78	0.78	0.78	0.78	0.78	0.00	0.00	0.00	0.14	0.14	0.14
Sat Flow, veh/h	64	3633	12	37	3554	1585	0	1870	1585	883	47	558
Grp Volume(v), veh/h	109	1826	1922	36	3132	72	0	0	0	192	0	0
Grp Sat Flow(s),veh/h/ln	64	1777	1868	37	1777	1585	0	1870	1585	1488	0	0
Q Serve(g_s), s	0.0	113.3	113.3	0.0	113.3	1.5	0.0	0.0	0.0	18.3	0.0	0.0
Cycle Q Clear(g_c), s	113.3	113.3	113.3	113.3	113.3	1.5	0.0	0.0	0.0	18.5	0.0	0.0
Prop In Lane	1.00		0.01	1.00		1.00	0.00		1.00	0.60		0.37
Lane Grp Cap(c), veh/h	49	1380	1451	49	2761	1231	0	267	227	252	0	0
V/C Ratio(X)	2.21	1.32	1.32	0.73	1.13	0.06	0.00	0.00	0.00	0.76	0.00	0.00
Avail Cap(c_a), veh/h	49	1380	1451	49	2761	1231	0	321	272	294	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	0.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	72.9	16.3	16.3	72.9	16.3	3.8	0.0	0.0	0.0	61.5	0.0	0.0
Incr Delay (d2), s/veh	603.6	150.4	150.9	42.0	65.6	0.0	0.0	0.0	0.0	9.5	0.0	0.0
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	10.1	91.7	96.5	1.9	59.1	0.4	0.0	0.0	0.0	7.5	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	676.5	166.7	167.1	114.9	81.9	3.8	0.0	0.0	0.0	71.0	0.0	0.0
LnGrp LOS	F	F	F	F	F	A				E		
Approach Vol, veh/h		3857			3240			0			192	
Approach Delay, s/veh		181.3			80.5			0.0			71.0	
Approach LOS		F			F						E	

Timer - Assigned Phs		2		4		6		8				
Phs Duration (G+Y+Rc), s		120.0		25.8		120.0		25.8				
Change Period (Y+Rc), s		6.7		5.0		6.7		5.0				
Max Green Setting (Gmax), s		113.3		25.0		113.3		25.0				
Max Q Clear Time (g_c+I1), s		115.3		20.5		115.3		0.0				
Green Ext Time (p_c), s		0.0		0.3		0.0		0.0				

Intersection Summary												
HCM 7th Control Delay, s/veh			133.6									
HCM 7th LOS			F									



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	84	3612	0	0	2951	541	0	0	0	1484	0	186
Future Volume (vph)	84	3612	0	0	2951	541	0	0	0	1484	0	186
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.2	7.2			7.2	7.2				5.9		5.9
Lane Util. Factor	1.00	0.91			0.91	1.00				0.97		1.00
Frt	1.00	1.00			1.00	0.85				1.00		0.85
Flt Protected	0.95	1.00			1.00	1.00				0.95		1.00
Satd. Flow (prot)	1770	5085			5085	1583				3433		1583
Flt Permitted	0.95	1.00			1.00	1.00				0.95		1.00
Satd. Flow (perm)	1770	5085			5085	1583				3433		1583
Peak-hour factor, PHF	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Adj. Flow (vph)	89	3843	0	0	3139	576	0	0	0	1579	0	198
RTOR Reduction (vph)	0	0	0	0	0	122	0	0	0	0	0	143
Lane Group Flow (vph)	89	3843	0	0	3139	454	0	0	0	1579	0	55
Turn Type	Prot	NA		Prot	NA	Perm	Split		Perm	Split		Perm
Protected Phases	1	6		5	2		3	3		4	4	
Permitted Phases						2			3			4
Actuated Green, G (s)	10.0	83.7			68.5	68.5				37.1		37.1
Effective Green, g (s)	10.0	83.7			68.5	68.5				37.1		37.1
Actuated g/C Ratio	0.07	0.63			0.51	0.51				0.28		0.28
Clearance Time (s)	5.2	7.2			7.2	7.2				5.9		5.9
Vehicle Extension (s)	3.0	3.0			3.0	3.0				3.0		3.0
Lane Grp Cap (vph)	132	3178			2601	809				951		438
v/s Ratio Prot	0.05	c0.76			0.62					c0.46		
v/s Ratio Perm						0.29						0.03
v/c Ratio	0.67	1.21			1.21	0.56				1.66		0.13
Uniform Delay, d1	60.4	25.1			32.7	22.4				48.4		36.2
Progression Factor	1.00	1.00			1.00	1.00				1.00		1.00
Incremental Delay, d2	12.8	97.3			97.0	0.9				301.8		0.1
Delay (s)	73.1	122.4			129.7	23.3				350.2		36.4
Level of Service	E	F			F	C				F		D
Approach Delay (s/veh)		121.3			113.2			0.0			315.3	
Approach LOS		F			F			A			F	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	154.7	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	1.47		
Actuated Cycle Length (s)	133.9	Sum of lost time (s)	23.4
Intersection Capacity Utilization	123.1%	ICU Level of Service	H
Analysis Period (min)	15		

c Critical Lane Group



Movement	EBL2	EBL	EBR	WBT	WBR	WBR2	SBR	SBR2	SEL2	SEL	SET	SER
Lane Configurations												
Traffic Volume (vph)	236	236	4624	2776	282	282	293	125	60	1630	0	218
Future Volume (vph)	236	236	4624	2776	282	282	293	125	60	1630	0	218
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		5.1	4.0	6.5	6.5		5.1	5.1	5.1		5.1	
Lane Util. Factor		1.00	0.76	0.91	1.00		0.88	1.00	0.95		0.95	
Frt		1.00	0.85	1.00	0.85		0.85	0.85	1.00		0.98	
Flt Protected		0.95	1.00	1.00	1.00		1.00	1.00	0.95		0.96	
Satd. Flow (prot)		1770	3610	5085	1583		2787	1583	1681		1665	
Flt Permitted		0.39	1.00	1.00	1.00		1.00	1.00	0.95		0.96	
Satd. Flow (perm)		723	3610	5085	1583		2787	1583	1681		1665	
Peak-hour factor, PHF	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Adj. Flow (vph)	251	251	4919	2953	300	300	312	133	64	1734	0	232
RTOR Reduction (vph)	0	0	0	0	63	0	0	0	0	0	95	0
Lane Group Flow (vph)	0	502	4919	2953	537	0	312	133	58	0	1877	0
Turn Type	D.Pm	D.Pm	Free	NA	Perm		Prot	Perm	Split	Split	NA	
Protected Phases				2			4!		1	1	1	
Permitted Phases	4!	4	Free		2			4				
Actuated Green, G (s)		10.3	75.0	30.0	30.0		10.3	10.3	18.0		18.0	
Effective Green, g (s)		10.3	75.0	30.0	30.0		10.3	10.3	18.0		18.0	
Actuated g/C Ratio		0.14	1.00	0.40	0.40		0.14	0.14	0.24		0.24	
Clearance Time (s)		5.1		6.5	6.5		5.1	5.1	5.1		5.1	
Vehicle Extension (s)		3.0		3.0	3.0		3.0	3.0	3.0		3.0	
Lane Grp Cap (vph)		99	3610	2034	633		382	217	403		399	
v/s Ratio Prot				0.58			0.11		0.03		c1.13	
v/s Ratio Perm		c0.69	c1.36		0.34			0.08				
v/c Ratio		5.07	1.36	1.45	0.85		0.82	0.61	0.14		4.70	
Uniform Delay, d1		32.4	37.5	22.5	20.4		31.4	30.5	22.4		28.5	
Progression Factor		1.00	1.00	1.00	1.00		1.00	1.00	1.00		1.00	
Incremental Delay, d2		1854.2	165.0	206.1	10.3		12.7	5.1	0.2		1672.6	
Delay (s)		1886.5	202.5	228.6	30.7		44.1	35.5	22.6		1701.1	
Level of Service		F	F	F	C		D	D	C		F	
Approach Delay (s/veh)				195.2							1653.2	
Approach LOS				F							F	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	525.0	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	3.20		
Actuated Cycle Length (s)	75.0	Sum of lost time (s)	16.7
Intersection Capacity Utilization	197.6%	ICU Level of Service	H
Analysis Period (min)	15		

! Phase conflict between lane groups.
c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	69	5	28	11	5	24	171	730	7	36	458	63
Future Volume (veh/h)	69	5	28	11	5	24	171	730	7	36	458	63
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	73	5	30	12	5	26	182	777	7	38	487	67
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	197	11	41	105	37	99	228	1023	9	703	1954	872
Arrive On Green	0.10	0.10	0.10	0.10	0.10	0.10	0.13	0.28	0.28	0.39	0.55	0.55
Sat Flow, veh/h	996	113	426	289	379	1021	1781	3609	33	1781	3554	1585
Grp Volume(v), veh/h	108	0	0	43	0	0	182	383	401	38	487	67
Grp Sat Flow(s),veh/h/ln	1535	0	0	1689	0	0	1781	1777	1865	1781	1777	1585
Q Serve(g_s), s	2.6	0.0	0.0	0.0	0.0	0.0	6.0	11.8	11.8	0.8	4.3	1.2
Cycle Q Clear(g_c), s	4.0	0.0	0.0	1.4	0.0	0.0	6.0	11.8	11.8	0.8	4.3	1.2
Prop In Lane	0.68		0.28	0.28		0.60	1.00		0.02	1.00		1.00
Lane Grp Cap(c), veh/h	250	0	0	241	0	0	228	504	528	703	1954	872
V/C Ratio(X)	0.43	0.00	0.00	0.18	0.00	0.00	0.80	0.76	0.76	0.05	0.25	0.08
Avail Cap(c_a), veh/h	544	0	0	554	0	0	312	681	715	703	1954	872
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	0.00	0.65	0.65	0.65	1.00	1.00	1.00
Uniform Delay (d), s/veh	26.2	0.0	0.0	25.1	0.0	0.0	25.4	19.6	19.6	11.2	7.0	6.3
Incr Delay (d2), s/veh	1.2	0.0	0.0	0.4	0.0	0.0	6.6	6.9	6.6	0.0	0.3	0.2
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.5	0.0	0.0	0.6	0.0	0.0	2.7	5.3	5.5	0.3	1.3	0.4
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	27.3	0.0	0.0	25.4	0.0	0.0	32.0	26.5	26.2	11.3	7.3	6.5
LnGrp LOS	C			C			C	C	C	B	A	A
Approach Vol, veh/h		108			43			966			592	
Approach Delay, s/veh		27.3			25.4			27.4			7.5	
Approach LOS		C			C			C			A	

Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	28.2	21.5		10.3	12.2	37.5		10.3				
Change Period (Y+Rc), s	4.5	4.5		4.5	4.5	4.5		4.5				
Max Green Setting (Gmax), s	5.5	23.0		18.0	10.5	18.0		18.0				
Max Q Clear Time (g_c+I1), s	2.8	13.8		6.0	8.0	6.3		3.4				
Green Ext Time (p_c), s	0.0	3.2		0.3	0.1	2.6		0.1				

Intersection Summary	
HCM 7th Control Delay, s/veh	20.5
HCM 7th LOS	C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	34	2	50	23	2	11	81	738	5	5	485	54
Future Volume (veh/h)	34	2	50	23	2	11	81	738	5	5	485	54
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	36	2	53	24	2	12	86	785	5	5	516	57
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	249	146	844	166	21	37	809	2424	15	172	718	79
Arrive On Green	0.08	0.08	0.08	0.08	0.08	0.08	0.45	0.67	0.67	0.01	0.22	0.22
Sat Flow, veh/h	1400	1870	1585	755	266	472	1781	3620	23	1781	3228	355
Grp Volume(v), veh/h	36	2	53	38	0	0	86	385	405	5	283	290
Grp Sat Flow(s),veh/h/ln	1400	1870	1585	1493	0	0	1781	1777	1866	1781	1777	1806
Q Serve(g_s), s	0.0	0.1	0.0	0.5	0.0	0.0	1.5	5.0	5.0	0.1	8.1	8.2
Cycle Q Clear(g_c), s	1.0	0.1	0.0	1.2	0.0	0.0	1.5	5.0	5.0	0.1	8.1	8.2
Prop In Lane	1.00		1.00	0.63		0.32	1.00		0.01	1.00		0.20
Lane Grp Cap(c), veh/h	249	146	844	224	0	0	809	1190	1250	172	395	402
V/C Ratio(X)	0.14	0.01	0.06	0.17	0.00	0.00	0.11	0.32	0.32	0.03	0.72	0.72
Avail Cap(c_a), veh/h	597	612	1238	582	0	0	809	1190	1250	322	582	591
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	0.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	23.8	23.4	6.2	23.9	0.0	0.0	8.6	3.8	3.8	19.1	19.8	19.8
Incr Delay (d2), s/veh	0.3	0.0	0.0	0.4	0.0	0.0	0.1	0.7	0.7	0.1	10.7	10.7
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.4	0.0	0.3	0.5	0.0	0.0	0.5	1.2	1.2	0.1	4.1	4.2
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	24.1	23.4	6.3	24.2	0.0	0.0	8.7	4.6	4.5	19.2	30.4	30.5
LnGrp LOS	C	C	A	C			A	A	A	B	C	C
Approach Vol, veh/h		91			38			876			578	
Approach Delay, s/veh		13.7			24.2			4.9			30.4	
Approach LOS		B			C			A			C	

Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	4.9	41.3		8.8	29.5	16.7		8.8				
Change Period (Y+Rc), s	4.5	4.5		4.5	4.5	4.5		4.5				
Max Green Setting (Gmax), s	5.0	18.5		18.0	5.5	18.0		18.0				
Max Q Clear Time (g_c+I1), s	2.1	7.0		3.0	3.5	10.2		3.2				
Green Ext Time (p_c), s	0.0	3.7		0.2	0.0	2.1		0.1				

Intersection Summary												
HCM 7th Control Delay, s/veh			15.2									
HCM 7th LOS			B									



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	506	249	335	131	249	189
Future Volume (veh/h)	506	249	335	131	249	189
Initial Q (Qb), veh	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)	1.00			1.00	1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No	No		No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	538	265	356	139	265	201
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	2	2	2	2	2	2
Cap, veh/h	577	2692	1327	786	424	708
Arrive On Green	0.32	0.76	0.37	0.37	0.12	0.12
Sat Flow, veh/h	1781	3647	3647	1585	3456	1585
Grp Volume(v), veh/h	538	265	356	139	265	201
Grp Sat Flow(s),veh/h/ln	1781	1777	1777	1585	1728	1585
Q Serve(g_s), s	21.9	1.5	5.2	3.6	5.5	6.0
Cycle Q Clear(g_c), s	21.9	1.5	5.2	3.6	5.5	6.0
Prop In Lane	1.00			1.00	1.00	1.00
Lane Grp Cap(c), veh/h	577	2692	1327	786	424	708
V/C Ratio(X)	0.93	0.10	0.27	0.18	0.63	0.28
Avail Cap(c_a), veh/h	606	2692	1327	786	829	894
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	24.6	2.4	16.4	10.4	31.3	13.2
Incr Delay (d2), s/veh	21.0	0.1	0.5	0.5	1.5	0.2
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	11.8	0.3	2.1	1.6	2.2	6.5
Unsig. Movement Delay, s/veh						
LnGrp Delay(d), s/veh	45.6	2.5	16.9	10.9	32.8	13.4
LnGrp LOS	D	A	B	B	C	B
Approach Vol, veh/h		803	495		466	
Approach Delay, s/veh		31.4	15.2		24.4	
Approach LOS		C	B		C	

Timer - Assigned Phs			4		6	7	8
Phs Duration (G+Y+Rc), s			61.3		13.7	28.8	32.5
Change Period (Y+Rc), s			4.5		4.5	4.5	4.5
Max Green Setting (Gmax), s			48.0		18.0	25.5	18.0
Max Q Clear Time (g_c+I1), s			3.5		8.0	23.9	7.2
Green Ext Time (p_c), s			1.8		1.2	0.3	2.0

Intersection Summary	
HCM 7th Control Delay, s/veh	25.0
HCM 7th LOS	C



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	87	410	1	1	403	15	1	1	1	11	1	62
Future Volume (veh/h)	87	410	1	1	403	15	1	1	1	11	1	62
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	93	436	1	1	429	16	1	1	1	12	1	66
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	813	2651	6	818	2546	95	134	55	41	107	4	93
Arrive On Green	0.73	0.73	0.73	0.73	0.73	0.73	0.07	0.07	0.07	0.07	0.07	0.07
Sat Flow, veh/h	945	3637	8	952	3494	130	387	767	577	202	56	1311
Grp Volume(v), veh/h	93	213	224	1	218	227	3	0	0	79	0	0
Grp Sat Flow(s),veh/h/ln	945	1777	1869	952	1777	1847	1730	0	0	1569	0	0
Q Serve(g_s), s	1.5	1.7	1.7	0.0	1.7	1.7	0.0	0.0	0.0	1.7	0.0	0.0
Cycle Q Clear(g_c), s	3.2	1.7	1.7	1.7	1.7	1.7	0.1	0.0	0.0	2.2	0.0	0.0
Prop In Lane	1.00		0.00	1.00		0.07	0.33		0.33	0.15		0.84
Lane Grp Cap(c), veh/h	813	1295	1362	818	1295	1346	230	0	0	204	0	0
V/C Ratio(X)	0.11	0.16	0.16	0.00	0.17	0.17	0.01	0.00	0.00	0.39	0.00	0.00
Avail Cap(c_a), veh/h	813	1295	1362	818	1295	1346	745	0	0	717	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	2.4	1.9	1.9	2.1	1.9	1.9	19.4	0.0	0.0	20.4	0.0	0.0
Incr Delay (d2), s/veh	0.3	0.3	0.3	0.0	0.3	0.3	0.0	0.0	0.0	1.2	0.0	0.0
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.1	0.2	0.2	0.0	0.2	0.2	0.0	0.0	0.0	0.8	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	2.7	2.2	2.1	2.1	2.2	2.2	19.5	0.0	0.0	21.6	0.0	0.0
LnGrp LOS	A	A	A	A	A	A	B			C		
Approach Vol, veh/h		530			446			3			79	
Approach Delay, s/veh		2.2			2.2			19.5			21.6	
Approach LOS		A			A			B			C	

Timer - Assigned Phs		2		4		6		8				
Phs Duration (G+Y+Rc), s		7.7		37.3		7.7		37.3				
Change Period (Y+Rc), s		4.5		4.5		4.5		4.5				
Max Green Setting (Gmax), s		18.0		18.0		18.0		18.0				
Max Q Clear Time (g_c+I1), s		2.1		5.2		4.2		3.7				
Green Ext Time (p_c), s		0.0		2.4		0.3		2.1				

Intersection Summary												
HCM 7th Control Delay, s/veh			3.7									
HCM 7th LOS			A									



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	12	463	11	11	1277	219	11	2	79	133	2	11
Future Volume (veh/h)	12	463	11	11	1277	219	11	2	79	133	2	11
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	13	493	12	12	1359	0	12	2	84	141	2	12
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	85	2387	58	67	2486		82	17	189	300	3	16
Arrive On Green	0.72	0.72	0.72	0.72	0.72	0.00	0.13	0.13	0.13	0.13	0.13	0.13
Sat Flow, veh/h	31	3332	80	9	3469	1585	107	129	1417	1387	20	118
Grp Volume(v), veh/h	266	0	252	734	637	0	98	0	0	155	0	0
Grp Sat Flow(s),veh/h/ln	1756	0	1688	1861	1617	1585	1653	0	0	1524	0	0
Q Serve(g_s), s	0.0	0.0	3.0	0.0	11.1	0.0	0.0	0.0	0.0	2.2	0.0	0.0
Cycle Q Clear(g_c), s	2.8	0.0	3.0	11.0	11.1	0.0	3.3	0.0	0.0	5.5	0.0	0.0
Prop In Lane	0.05		0.05	0.02		1.00	0.12		0.86	0.91		0.08
Lane Grp Cap(c), veh/h	1321	0	1209	1394	1159		288	0	0	318	0	0
V/C Ratio(X)	0.20	0.00	0.21	0.53	0.55		0.34	0.00	0.00	0.49	0.00	0.00
Avail Cap(c_a), veh/h	1321	0	1209	1394	1159		549	0	0	540	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	1.00	0.00	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	2.8	0.0	2.8	4.0	4.0	0.0	24.0	0.0	0.0	24.7	0.0	0.0
Incr Delay (d2), s/veh	0.3	0.0	0.4	1.4	1.9	0.0	0.7	0.0	0.0	1.2	0.0	0.0
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.6	0.0	0.6	2.5	2.3	0.0	1.3	0.0	0.0	2.1	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	3.2	0.0	3.2	5.4	5.9	0.0	24.7	0.0	0.0	25.9	0.0	0.0
LnGrp LOS	A		A	A	A		C			C		
Approach Vol, veh/h		518			1371			98			155	
Approach Delay, s/veh		3.2			5.6			24.7			25.9	
Approach LOS		A			A			C			C	

Timer - Assigned Phs		2		4		6		8				
Phs Duration (G+Y+Rc), s		12.5		47.5		12.5		47.5				
Change Period (Y+Rc), s		4.5		4.5		4.5		4.5				
Max Green Setting (Gmax), s		18.0		33.0		18.0		33.0				
Max Q Clear Time (g_c+I1), s		5.3		5.0		7.5		13.1				
Green Ext Time (p_c), s		0.4		3.3		0.6		9.5				

Intersection Summary	
HCM 7th Control Delay, s/veh	7.4
HCM 7th LOS	A

Notes

Unsignalized Delay for [WBR] is excluded from calculations of the approach delay and intersection delay.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	12	737	11	462	1922	187	11	2	35	46	2	12
Future Volume (veh/h)	12	737	11	462	1922	187	11	2	35	46	2	12
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	13	784	12	491	2045	199	12	2	37	49	2	13
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	170	3122	48	630	2856	273	52	10	66	120	3	18
Arrive On Green	0.87	0.87	0.87	0.87	0.87	0.87	0.05	0.05	0.05	0.05	0.05	0.05
Sat Flow, veh/h	169	3583	55	682	3277	314	280	185	1229	1243	51	330
Grp Volume(v), veh/h	13	389	407	491	1093	1151	51	0	0	64	0	0
Grp Sat Flow(s),veh/h/ln	169	1777	1860	682	1777	1814	1693	0	0	1624	0	0
Q Serve(g_s), s	3.5	4.3	4.3	50.7	24.7	26.8	0.0	0.0	0.0	1.0	0.0	0.0
Cycle Q Clear(g_c), s	30.3	4.3	4.3	55.0	24.7	26.8	3.4	0.0	0.0	4.4	0.0	0.0
Prop In Lane	1.00		0.03	1.00		0.17	0.24		0.73	0.77		0.20
Lane Grp Cap(c), veh/h	170	1548	1621	630	1548	1581	128	0	0	140	0	0
V/C Ratio(X)	0.08	0.25	0.25	0.78	0.71	0.73	0.40	0.00	0.00	0.46	0.00	0.00
Avail Cap(c_a), veh/h	170	1548	1621	630	1548	1581	277	0	0	277	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	0.09	0.09	0.09	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	8.0	1.3	1.3	5.8	2.6	2.7	55.4	0.0	0.0	55.7	0.0	0.0
Incr Delay (d2), s/veh	0.9	0.4	0.4	0.9	0.3	0.3	2.0	0.0	0.0	2.3	0.0	0.0
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.2	0.8	0.8	4.3	3.5	3.9	1.6	0.0	0.0	2.0	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	8.9	1.7	1.6	6.7	2.8	3.0	57.4	0.0	0.0	58.1	0.0	0.0
LnGrp LOS	A	A	A	A	A	A	E			E		
Approach Vol, veh/h		809			2735			51			64	
Approach Delay, s/veh		1.8			3.6			57.4			58.1	
Approach LOS		A			A			E			E	

Timer - Assigned Phs		2		4		6		8				
Phs Duration (G+Y+Rc), s		10.9		109.1		10.9		109.1				
Change Period (Y+Rc), s		4.5		4.5		4.5		4.5				
Max Green Setting (Gmax), s		18.0		93.0		18.0		93.0				
Max Q Clear Time (g_c+I1), s		5.4		32.3		6.4		57.0				
Green Ext Time (p_c), s		0.1		6.5		0.2		31.2				

Intersection Summary												
HCM 7th Control Delay, s/veh			4.9									
HCM 7th LOS			A									

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	12	595	210	273	521	7	2044	14	393	7	37	7
Future Volume (veh/h)	12	595	210	273	521	7	2044	14	393	7	37	7
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	13	633	223	290	554	7	2174	15	418	7	39	7
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	259	885	1161	288	1374	17	1670	1043	1047	33	59	10
Arrive On Green	0.25	0.25	0.25	0.10	0.38	0.38	0.48	0.56	0.56	0.04	0.04	0.04
Sat Flow, veh/h	849	3554	1585	1781	3594	45	3456	1870	1585	135	1341	225
Grp Volume(v), veh/h	13	633	223	290	274	287	2174	15	418	53	0	0
Grp Sat Flow(s),veh/h/ln	849	1777	1585	1781	1777	1862	1728	1870	1585	1701	0	0
Q Serve(g_s), s	1.8	24.4	3.3	15.5	16.9	16.9	72.5	0.5	18.2	2.1	0.0	0.0
Cycle Q Clear(g_c), s	1.8	24.4	3.3	15.5	16.9	16.9	72.5	0.5	18.2	4.5	0.0	0.0
Prop In Lane	1.00		1.00	1.00		0.02	1.00		1.00	0.13		0.13
Lane Grp Cap(c), veh/h	259	885	1161	288	680	712	1670	1043	1047	102	0	0
V/C Ratio(X)	0.05	0.71	0.19	1.01	0.40	0.40	1.30	0.01	0.40	0.52	0.00	0.00
Avail Cap(c_a), veh/h	259	885	1161	288	680	712	1670	1185	1168	226	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.98	0.98	0.98	1.00	1.00	1.00	0.24	0.24	0.24	1.00	0.00	0.00
Uniform Delay (d), s/veh	42.9	51.4	2.0	43.6	33.8	33.8	38.8	14.8	11.7	70.6	0.0	0.0
Incr Delay (d2), s/veh	0.4	4.8	0.4	55.0	1.8	1.7	136.8	0.0	0.1	4.0	0.0	0.0
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.4	11.4	1.3	7.8	7.7	8.0	60.8	0.2	6.3	2.1	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	43.3	56.3	2.4	98.6	35.6	35.5	175.6	14.8	11.8	74.6	0.0	0.0
LnGrp LOS	D	E	A	F	D	D	F	B	B	E		
Approach Vol, veh/h		869			851			2607			53	
Approach Delay, s/veh		42.2			57.0			148.4			74.6	
Approach LOS		D			E			F			E	

Timer - Assigned Phs	2	3	4	5	6	8
Phs Duration (G+Y+Rc), s	88.1	20.0	41.9	77.0	11.1	61.9
Change Period (Y+Rc), s	4.5	4.5	4.5	4.5	4.5	4.5
Max Green Setting (Gmax), s	95.0	15.5	26.0	72.5	18.0	46.0
Max Q Clear Time (g_c+I1), s	20.2	17.5	26.4	74.5	6.5	18.9
Green Ext Time (p_c), s	1.6	0.0	0.0	0.0	0.1	3.4

Intersection Summary	
HCM 7th Control Delay, s/veh	108.7
HCM 7th LOS	F

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	54	746	125	1113	548	45	84	23	140	98	36	79
Future Volume (vph)	54	746	125	1113	548	45	84	23	140	98	36	79
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.5	4.5		4.5	4.5			4.5		4.5	4.5	
Lane Util. Factor	1.00	0.95		1.00	0.95			1.00		1.00	1.00	
Frt	1.00	0.98		1.00	0.99			0.92		1.00	0.90	
Flt Protected	0.95	1.00		0.95	1.00			0.98		0.95	1.00	
Satd. Flow (prot)	1770	3463		1770	3499			1691		1770	1670	
Flt Permitted	0.40	1.00		0.29	1.00			0.68		0.37	1.00	
Satd. Flow (perm)	751	3463		538	3499			1166		681	1670	
Peak-hour factor, PHF	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Adj. Flow (vph)	57	794	133	1184	583	48	89	24	149	104	38	84
RTOR Reduction (vph)	0	10	0	0	4	0	0	34	0	0	57	0
Lane Group Flow (vph)	57	917	0	1184	627	0	0	228	0	104	65	0
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		6			2			4			8	
Permitted Phases	6			2			4			8		
Actuated Green, G (s)	109.5	109.5		109.5	109.5			21.5		21.5	21.5	
Effective Green, g (s)	109.5	109.5		109.5	109.5			21.5		21.5	21.5	
Actuated g/C Ratio	0.78	0.78		0.78	0.78			0.15		0.15	0.15	
Clearance Time (s)	4.5	4.5		4.5	4.5			4.5		4.5	4.5	
Vehicle Extension (s)	3.0	3.0		3.0	3.0			3.0		3.0	3.0	
Lane Grp Cap (vph)	587	2708		420	2736			179		104	256	
v/s Ratio Prot		0.26			0.18						0.04	
v/s Ratio Perm	0.08			c2.20				c0.20		0.15		
v/c Ratio	0.10	0.34		2.82	0.23			1.27		1.00	0.26	
Uniform Delay, d1	3.6	4.5		15.3	4.0			59.3		59.3	52.2	
Progression Factor	1.00	1.00		1.00	1.00			1.00		1.00	1.00	
Incremental Delay, d2	0.3	0.3		825.2	0.2			159.7		88.3	0.5	
Delay (s)	3.9	4.9		840.4	4.2			218.9		147.5	52.7	
Level of Service	A	A		F	A			F		F	D	
Approach Delay (s/veh)		4.8			549.7			218.9			96.3	
Approach LOS		A			F			F			F	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	329.0	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	2.56		
Actuated Cycle Length (s)	140.0	Sum of lost time (s)	9.0
Intersection Capacity Utilization	118.6%	ICU Level of Service	H
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	863	206	54	579	2787	97
Future Volume (veh/h)	863	206	54	579	2787	97
Initial Q (Qb), veh	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)		1.00	1.00		1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No	No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	918	0	57	616	2965	0
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	2	2	2	2	2	2
Cap, veh/h	782		59	1007	2269	
Arrive On Green	0.22	0.00	0.03	0.28	0.66	0.00
Sat Flow, veh/h	3647	1585	1781	3647	3456	1585
Grp Volume(v), veh/h	918	0	57	616	2965	0
Grp Sat Flow(s),veh/h/ln	1777	1585	1781	1777	1728	1585
Q Serve(g_s), s	33.0	0.0	4.8	22.5	98.5	0.0
Cycle Q Clear(g_c), s	33.0	0.0	4.8	22.5	98.5	0.0
Prop In Lane		1.00	1.00		1.00	1.00
Lane Grp Cap(c), veh/h	782		59	1007	2269	
V/C Ratio(X)	1.17		0.96	0.61	1.31	
Avail Cap(c_a), veh/h	782		59	1007	2269	
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	58.5	0.0	72.4	46.6	25.8	0.0
Incr Delay (d2), s/veh	91.7	0.0	102.1	2.8	141.3	0.0
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	24.7	0.0	3.9	10.3	81.5	0.0
Unsig. Movement Delay, s/veh						
LnGrp Delay(d), s/veh	150.2	0.0	174.5	49.4	167.0	0.0
LnGrp LOS	F		F	D	F	
Approach Vol, veh/h	918			673	2965	
Approach Delay, s/veh	150.2			60.0	167.0	
Approach LOS	F			E	F	

Timer - Assigned Phs		2	3	4		8
Phs Duration (G+Y+Rc), s		103.0	9.5	37.5		47.0
Change Period (Y+Rc), s		4.5	4.5	4.5		4.5
Max Green Setting (Gmax), s		98.5	5.0	33.0		42.5
Max Q Clear Time (g_c+I1), s		100.5	6.8	35.0		24.5
Green Ext Time (p_c), s		0.0	0.0	0.0		3.8

Intersection Summary	
HCM 7th Control Delay, s/veh	147.8
HCM 7th LOS	F

Notes

Unsignalized Delay for [NBR, EBR] is excluded from calculations of the approach delay and intersection delay.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	81	710	60	9	506	12	54	3	9	12	3	70
Future Volume (veh/h)	81	710	60	9	506	12	54	3	9	12	3	70
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	86	755	64	10	538	13	57	3	10	13	3	74
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	692	2172	184	23	2658	64	229	11	20	89	11	115
Arrive On Green	0.65	0.65	0.65	0.01	0.75	0.75	0.09	0.09	0.09	0.09	0.09	0.09
Sat Flow, veh/h	857	3316	281	1781	3546	86	1275	122	233	160	128	1330
Grp Volume(v), veh/h	86	404	415	10	269	282	70	0	0	90	0	0
Grp Sat Flow(s),veh/h/ln	857	1777	1820	1781	1777	1855	1631	0	0	1617	0	0
Q Serve(g_s), s	2.1	5.6	5.6	0.3	2.5	2.5	0.0	0.0	0.0	0.9	0.0	0.0
Cycle Q Clear(g_c), s	2.1	5.6	5.6	0.3	2.5	2.5	2.0	0.0	0.0	2.9	0.0	0.0
Prop In Lane	1.00		0.15	1.00		0.05	0.81		0.14	0.14		0.82
Lane Grp Cap(c), veh/h	692	1164	1192	23	1332	1391	260	0	0	215	0	0
V/C Ratio(X)	0.12	0.35	0.35	0.44	0.20	0.20	0.27	0.00	0.00	0.42	0.00	0.00
Avail Cap(c_a), veh/h	692	1164	1192	162	1332	1391	590	0	0	591	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	3.6	4.2	4.2	26.9	2.0	2.0	23.9	0.0	0.0	24.3	0.0	0.0
Incr Delay (d2), s/veh	0.4	0.8	0.8	12.5	0.3	0.3	0.5	0.0	0.0	1.3	0.0	0.0
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.3	1.4	1.4	0.2	0.4	0.4	0.9	0.0	0.0	1.2	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	4.0	5.1	5.0	39.4	2.4	2.4	24.4	0.0	0.0	25.5	0.0	0.0
LnGrp LOS	A	A	A	D	A	A	C			C		
Approach Vol, veh/h		905			561			70			90	
Approach Delay, s/veh		5.0			3.0			24.4			25.5	
Approach LOS		A			A			C			C	

Timer - Assigned Phs		2	3	4		6		8				
Phs Duration (G+Y+Rc), s		9.3	5.2	40.5		9.3		45.7				
Change Period (Y+Rc), s		4.5	4.5	4.5		4.5		4.5				
Max Green Setting (Gmax), s		18.0	5.0	18.5		18.0		28.0				
Max Q Clear Time (g_c+I1), s		4.0	2.3	7.6		4.9		4.5				
Green Ext Time (p_c), s		0.2	0.0	4.1		0.3		3.2				

Intersection Summary	
HCM 7th Control Delay, s/veh	6.3
HCM 7th LOS	A

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBU	SBL	SBT
Lane Configurations												
Traffic Volume (vph)	68	0	262	96	54	27	220	2355	0	0	0	363
Future Volume (vph)	68	0	262	96	54	27	220	2355	0	0	0	363
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.5		4.5		4.5		4.5	4.5				4.5
Lane Util. Factor	1.00		1.00		1.00		1.00	0.95				0.95
Frt	1.00		0.85		0.98		1.00	1.00				1.00
Flt Protected	0.95		1.00		0.97		0.95	1.00				1.00
Satd. Flow (prot)	1770		1583		1776		1770	3539				3539
Flt Permitted	0.59		1.00		0.97		0.43	1.00				1.00
Satd. Flow (perm)	1096		1583		1776		797	3539				3539
Peak-hour factor, PHF	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Adj. Flow (vph)	72	0	279	102	57	29	234	2505	0	0	0	386
RTOR Reduction (vph)	0	0	236	0	7	0	0	0	0	0	0	0
Lane Group Flow (vph)	72	0	43	0	181	0	234	2505	0	0	0	386
Turn Type	Perm		Perm	Perm	NA		pm+pt	NA		Perm		NA
Protected Phases					8		5	2				6
Permitted Phases	4		4	8			2			6		
Actuated Green, G (s)	14.0		14.0		14.0		67.0	67.0				19.8
Effective Green, g (s)	14.0		14.0		14.0		67.0	67.0				19.8
Actuated g/C Ratio	0.16		0.16		0.16		0.74	0.74				0.22
Clearance Time (s)	4.5		4.5		4.5		4.5	4.5				4.5
Vehicle Extension (s)	3.0		3.0		3.0		3.0	3.0				3.0
Lane Grp Cap (vph)	170		246		276		1054	2634				778
v/s Ratio Prot							0.11	c0.71				0.11
v/s Ratio Perm	0.07		0.03		0.10		0.06					
v/c Ratio	0.42		0.18		0.66		0.22	0.95				0.50
Uniform Delay, d1	34.4		33.0		35.7		5.5	10.1				30.7
Progression Factor	1.00		1.00		1.00		1.00	1.00				1.00
Incremental Delay, d2	1.7		0.3		5.5		0.1	9.3				2.3
Delay (s)	36.1		33.3		41.3		5.6	19.4				33.0
Level of Service	D		C		D		A	B				C
Approach Delay (s/veh)		33.9			41.3			18.2				31.7
Approach LOS		C			D			B				C

Intersection Summary			
HCM 2000 Control Delay (s/veh)	22.7	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.95		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	13.5
Intersection Capacity Utilization	97.0%	ICU Level of Service	F
Analysis Period (min)	15		

c Critical Lane Group



Movement	SBR
Lane Configurations	
Traffic Volume (vph)	157
Future Volume (vph)	157
Ideal Flow (vphpl)	1900
Total Lost time (s)	4.5
Lane Util. Factor	1.00
Frt	0.85
Flt Protected	1.00
Satd. Flow (prot)	1583
Flt Permitted	1.00
Satd. Flow (perm)	1583
Peak-hour factor, PHF	0.94
Adj. Flow (vph)	167
RTOR Reduction (vph)	130
Lane Group Flow (vph)	37
Turn Type	Perm
Protected Phases	
Permitted Phases	6
Actuated Green, G (s)	19.8
Effective Green, g (s)	19.8
Actuated g/C Ratio	0.22
Clearance Time (s)	4.5
Vehicle Extension (s)	3.0
Lane Grp Cap (vph)	348
v/s Ratio Prot	
v/s Ratio Perm	0.02
v/c Ratio	0.11
Uniform Delay, d1	28.0
Progression Factor	1.00
Incremental Delay, d2	0.6
Delay (s)	28.6
Level of Service	C
Approach Delay (s/veh)	
Approach LOS	

Intersection Summary



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	3	1702	1238	370	99	55
Future Volume (veh/h)	3	1702	1238	370	99	55
Initial Q (Qb), veh	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)	1.00			1.00	1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No	No		No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	3	1811	1317	394	109	55
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	2	2	2	2	2	2
Cap, veh/h	9	2412	2046	913	372	166
Arrive On Green	0.00	0.68	0.58	0.58	0.10	0.10
Sat Flow, veh/h	1781	3647	3647	1585	3563	1585
Grp Volume(v), veh/h	3	1811	1317	394	109	55
Grp Sat Flow(s),veh/h/ln	1781	1777	1777	1585	1781	1585
Q Serve(g_s), s	0.1	17.4	13.0	7.3	1.5	1.7
Cycle Q Clear(g_c), s	0.1	17.4	13.0	7.3	1.5	1.7
Prop In Lane	1.00			1.00	1.00	1.00
Lane Grp Cap(c), veh/h	9	2412	2046	913	372	166
V/C Ratio(X)	0.34	0.75	0.64	0.43	0.29	0.33
Avail Cap(c_a), veh/h	205	2817	2060	919	1190	529
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	25.8	5.5	7.4	6.2	21.6	21.6
Incr Delay (d2), s/veh	21.8	1.0	0.7	0.3	0.4	1.2
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.1	2.4	2.9	1.4	0.6	0.6
Unsig. Movement Delay, s/veh						
LnGrp Delay(d), s/veh	47.6	6.5	8.1	6.6	22.0	22.8
LnGrp LOS	D	A	A	A	C	C
Approach Vol, veh/h		1814	1711		164	
Approach Delay, s/veh		6.5	7.8		22.3	
Approach LOS		A	A		C	

Timer - Assigned Phs	1	2		4		6
Phs Duration (G+Y+Rc), s	5.4	36.2		10.5		41.6
Change Period (Y+Rc), s	5.1	6.2		5.1		6.2
Max Green Setting (Gmax), s	6.0	30.2		17.4		41.3
Max Q Clear Time (g_c+I1), s	2.1	15.0		3.7		19.4
Green Ext Time (p_c), s	0.0	9.0		0.4		14.0

Intersection Summary	
HCM 7th Control Delay, s/veh	7.8
HCM 7th LOS	A

Notes
User approved volume balancing among the lanes for turning movement.



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	14	1773	1620	45	22	8
Future Volume (veh/h)	14	1773	1620	45	22	8
Initial Q (Qb), veh	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)	1.00			1.00	1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No	No		No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	15	1886	1723	48	23	9
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	2	2	2	2	2	2
Cap, veh/h	40	2676	2269	1012	52	20
Arrive On Green	0.02	0.75	0.64	0.64	0.04	0.04
Sat Flow, veh/h	1781	3647	3647	1585	1203	471
Grp Volume(v), veh/h	15	1886	1723	48	33	0
Grp Sat Flow(s),veh/h/ln	1781	1777	1777	1585	1726	0
Q Serve(g_s), s	0.5	15.5	18.8	0.6	1.0	0.0
Cycle Q Clear(g_c), s	0.5	15.5	18.8	0.6	1.0	0.0
Prop In Lane	1.00			1.00	0.70	0.27
Lane Grp Cap(c), veh/h	40	2676	2269	1012	74	0
V/C Ratio(X)	0.38	0.70	0.76	0.05	0.44	0.00
Avail Cap(c_a), veh/h	302	3868	2938	1310	573	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	26.7	3.6	7.0	3.7	25.9	0.0
Incr Delay (d2), s/veh	5.8	0.3	0.9	0.0	4.1	0.0
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.2	0.6	3.6	0.1	0.5	0.0
Unsig. Movement Delay, s/veh						
LnGrp Delay(d), s/veh	32.5	4.0	7.9	3.8	30.0	0.0
LnGrp LOS	C	A	A	A	C	
Approach Vol, veh/h		1901	1771		33	
Approach Delay, s/veh		4.2	7.8		30.0	
Approach LOS		A	A		C	

Timer - Assigned Phs	1	2		4		6
Phs Duration (G+Y+Rc), s	6.3	41.6		7.5		47.9
Change Period (Y+Rc), s	5.1	6.2		5.1		6.2
Max Green Setting (Gmax), s	9.4	45.8		18.4		60.3
Max Q Clear Time (g_c+I1), s	2.5	20.8		3.0		17.5
Green Ext Time (p_c), s	0.0	14.5		0.0		21.9

Intersection Summary	
HCM 7th Control Delay, s/veh	6.1
HCM 7th LOS	A



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	173	1612	5	11	1533	730	0	0	0	378	2	117
Future Volume (vph)	173	1612	5	11	1533	730	0	0	0	378	2	117
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.4	6.7		5.4	6.7	6.7				5.4	5.4	5.4
Lane Util. Factor	0.97	0.91		1.00	0.91	1.00				0.91	0.86	0.95
Frt	1.00	1.00		1.00	1.00	0.85				1.00	0.99	0.85
Flt Protected	0.95	1.00		0.95	1.00	1.00				0.95	0.96	1.00
Satd. Flow (prot)	3433	5083		1770	5085	1583				3221	1513	1504
Flt Permitted	0.95	1.00		0.95	1.00	1.00				0.95	0.96	1.00
Satd. Flow (perm)	3433	5083		1770	5085	1583				3221	1513	1504
Peak-hour factor, PHF	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Adj. Flow (vph)	184	1715	5	12	1631	777	0	0	0	402	2	124
RTOR Reduction (vph)	0	0	0	0	0	202	0	0	0	0	3	77
Lane Group Flow (vph)	184	1720	0	12	1631	575	0	0	0	277	136	35
Turn Type	Prot	NA		Prot	NA	Perm				Split	NA	pm+ov
Protected Phases	1	6		5	2			3		4	4	1
Permitted Phases						2	3					4
Actuated Green, G (s)	14.6	58.7		1.8	45.9	45.9				13.7	13.7	28.3
Effective Green, g (s)	14.6	58.7		1.8	45.9	45.9				13.7	13.7	28.3
Actuated g/C Ratio	0.16	0.64		0.02	0.50	0.50				0.15	0.15	0.31
Clearance Time (s)	5.4	6.7		5.4	6.7	6.7				5.4	5.4	5.4
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0				3.0	3.0	3.0
Lane Grp Cap (vph)	546	3253		34	2545	792				481	226	552
v/s Ratio Prot	0.05	c0.34		0.01	0.32					0.09	c0.09	0.01
v/s Ratio Perm						c0.36						0.01
v/c Ratio	0.34	0.53		0.35	0.64	0.73				0.58	0.60	0.06
Uniform Delay, d1	34.2	9.0		44.4	16.8	18.0				36.3	36.5	22.3
Progression Factor	1.00	1.00		1.00	1.00	1.00				1.00	1.00	1.00
Incremental Delay, d2	0.4	0.2		6.2	0.6	3.3				1.7	4.5	0.0
Delay (s)	34.6	9.1		50.6	17.4	21.3				38.0	41.0	22.4
Level of Service	C	A		D	B	C				D	D	C
Approach Delay (s/veh)		11.6			18.8			0.0			35.5	
Approach LOS		B			B			A			D	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	17.8	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.73		
Actuated Cycle Length (s)	91.7	Sum of lost time (s)	22.9
Intersection Capacity Utilization	63.6%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	57	2012	7	23	2228	148	0	0	0	45	2	45
Future Volume (veh/h)	57	2012	7	23	2228	148	0	0	0	45	2	45
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	61	2140	7	24	2370	157	0	0	0	48	2	48
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	130	2816	9	172	2754	1228	0	153	130	120	10	61
Arrive On Green	0.77	0.77	0.77	0.77	0.77	0.77	0.00	0.00	0.00	0.08	0.08	0.08
Sat Flow, veh/h	128	3633	12	186	3554	1585	0	1870	1585	659	119	747
Grp Volume(v), veh/h	61	1046	1101	24	2370	157	0	0	0	98	0	0
Grp Sat Flow(s),veh/h/ln	128	1777	1868	186	1777	1585	0	1870	1585	1525	0	0
Q Serve(g_s), s	26.5	26.3	26.4	6.6	36.8	2.0	0.0	0.0	0.0	4.4	0.0	0.0
Cycle Q Clear(g_c), s	63.3	26.3	26.4	33.0	36.8	2.0	0.0	0.0	0.0	5.1	0.0	0.0
Prop In Lane	1.00		0.01	1.00		1.00	0.00		1.00	0.49		0.49
Lane Grp Cap(c), veh/h	130	1377	1448	172	2754	1228	0	153	130	190	0	0
V/C Ratio(X)	0.47	0.76	0.76	0.14	0.86	0.13	0.00	0.00	0.00	0.51	0.00	0.00
Avail Cap(c_a), veh/h	130	1377	1448	172	2754	1228	0	572	485	527	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	0.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	31.8	5.0	5.0	14.1	6.2	2.3	0.0	0.0	0.0	36.7	0.0	0.0
Incr Delay (d2), s/veh	2.6	2.5	2.4	0.4	3.0	0.0	0.0	0.0	0.0	2.1	0.0	0.0
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.3	4.9	5.1	0.3	6.7	0.3	0.0	0.0	0.0	1.9	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	34.5	7.5	7.4	14.4	9.2	2.3	0.0	0.0	0.0	38.9	0.0	0.0
LnGrp LOS	C	A	A	B	A	A				D		
Approach Vol, veh/h		2208			2551			0			98	
Approach Delay, s/veh		8.2			8.8			0.0			38.9	
Approach LOS		A			A						D	

Timer - Assigned Phs		2		4		6		8				
Phs Duration (G+Y+Rc), s		70.0		11.7		70.0		11.7				
Change Period (Y+Rc), s		6.7		5.0		6.7		5.0				
Max Green Setting (Gmax), s		63.3		25.0		63.3		25.0				
Max Q Clear Time (g_c+I1), s		38.8		7.1		65.3		0.0				
Green Ext Time (p_c), s		20.8		0.4		0.0		0.0				

Intersection Summary												
HCM 7th Control Delay, s/veh			9.2									
HCM 7th LOS			A									



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	173	2062	0	0	2782	2401	0	0	0	556	0	165
Future Volume (vph)	173	2062	0	0	2782	2401	0	0	0	556	0	165
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.2	7.2			7.2	7.2				5.9		5.9
Lane Util. Factor	1.00	0.91			0.91	1.00				0.97		1.00
Frt	1.00	1.00			1.00	0.85				1.00		0.85
Flt Protected	0.95	1.00			1.00	1.00				0.95		1.00
Satd. Flow (prot)	1770	5085			5085	1583				3433		1583
Flt Permitted	0.95	1.00			1.00	1.00				0.95		1.00
Satd. Flow (perm)	1770	5085			5085	1583				3433		1583
Peak-hour factor, PHF	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Adj. Flow (vph)	184	2194	0	0	2960	2554	0	0	0	591	0	176
RTOR Reduction (vph)	0	0	0	0	0	311	0	0	0	0	0	147
Lane Group Flow (vph)	184	2194	0	0	2960	2243	0	0	0	591	0	29
Turn Type	Prot	NA		Prot	NA	Perm	Split		Perm	Split		Perm
Protected Phases	1	6		5	2		3	3		4	4	
Permitted Phases						2			3			4
Actuated Green, G (s)	12.8	97.7			79.7	79.7				22.1		22.1
Effective Green, g (s)	12.8	97.7			79.7	79.7				22.1		22.1
Actuated g/C Ratio	0.10	0.74			0.60	0.60				0.17		0.17
Clearance Time (s)	5.2	7.2			7.2	7.2				5.9		5.9
Vehicle Extension (s)	3.0	3.0			3.0	3.0				3.0		3.0
Lane Grp Cap (vph)	170	3738			3049	949				570		263
v/s Ratio Prot	c0.10	0.43			0.58					c0.17		
v/s Ratio Perm						c1.42						0.02
v/c Ratio	1.08	0.59			0.97	2.36				1.04		0.11
Uniform Delay, d1	60.1	8.2			25.5	26.6				55.4		47.1
Progression Factor	1.00	1.00			1.00	1.00				1.00		1.00
Incremental Delay, d2	92.7	0.2			10.4	616.7				47.6		0.2
Delay (s)	152.7	8.4			35.9	643.3				103.0		47.2
Level of Service	F	A			D	F				F		D
Approach Delay (s/veh)		19.6			317.2			0.0			90.2	
Approach LOS		B			F			A			F	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	215.4	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	2.05		
Actuated Cycle Length (s)	132.9	Sum of lost time (s)	23.4
Intersection Capacity Utilization	168.6%	ICU Level of Service	H
Analysis Period (min)	15		

c Critical Lane Group



Movement	EBL2	EBL	EBR	WBT	WBR	WBR2	SBR	SBR2	SEL2	SEL	SET	SER
Lane Configurations												
Traffic Volume (vph)	171	171	2276	4718	3145	165	220	105	22	198	0	105
Future Volume (vph)	171	171	2276	4718	3145	165	220	105	22	198	0	105
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		5.1	4.0	6.5	6.5		5.1	5.1	5.1		5.1	
Lane Util. Factor		1.00	0.76	0.91	1.00		0.88	1.00	0.95		0.95	
Frt		1.00	0.85	1.00	0.85		0.85	0.85	1.00		0.95	
Flt Protected		0.95	1.00	1.00	1.00		1.00	1.00	0.95		0.97	
Satd. Flow (prot)		1770	3610	5085	1583		2787	1583	1681		1625	
Flt Permitted		0.31	1.00	1.00	1.00		1.00	1.00	0.95		0.97	
Satd. Flow (perm)		582	3610	5085	1583		2787	1583	1681		1625	
Peak-hour factor, PHF	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Adj. Flow (vph)	182	182	2421	5019	3346	176	234	112	23	211	0	112
RTOR Reduction (vph)	0	0	0	0	57	0	0	0	0	0	94	0
Lane Group Flow (vph)	0	364	2421	5019	3465	0	234	112	21	0	231	0
Turn Type	D.Pm	D.Pm	Free	NA	Perm		Prot	Perm	Split	Split	NA	
Protected Phases				2			4!		1	1	1	
Permitted Phases	4!	4	Free		2			4				
Actuated Green, G (s)		12.8	77.0	32.6	32.6		12.8	12.8	14.9		14.9	
Effective Green, g (s)		12.8	77.0	32.6	32.6		12.8	12.8	14.9		14.9	
Actuated g/C Ratio		0.17	1.00	0.42	0.42		0.17	0.17	0.19		0.19	
Clearance Time (s)		5.1		6.5	6.5		5.1	5.1	5.1		5.1	
Vehicle Extension (s)		3.0		3.0	3.0		3.0	3.0	3.0		3.0	
Lane Grp Cap (vph)		96	3610	2152	670		463	263	325		314	
v/s Ratio Prot				0.99			0.08		0.01		0.14	
v/s Ratio Perm		c0.63	c0.67		c2.19			0.07				
v/c Ratio		3.79	0.67	2.33	5.17		0.51	0.43	0.06		0.73	
Uniform Delay, d1		32.1	0.0	22.2	22.2		29.2	28.8	25.4		29.2	
Progression Factor		1.00	1.00	1.00	1.00		1.00	1.00	1.00		1.00	
Incremental Delay, d2		1281.2	1.0	601.0	1880.9		0.9	1.1	0.1		8.6	
Delay (s)		1313.3	1.0	623.2	1903.1		30.1	29.9	25.4		37.8	
Level of Service		F	A	F	F		C	C	C		D	
Approach Delay (s/veh)				1151.0							37.1	
Approach LOS				F							D	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	859.9	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	3.82		
Actuated Cycle Length (s)	77.0	Sum of lost time (s)	16.7
Intersection Capacity Utilization	260.5%	ICU Level of Service	H
Analysis Period (min)	15		

! Phase conflict between lane groups.
c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	68	7	192	23	7	34	41	557	32	61	884	63
Future Volume (veh/h)	68	7	192	23	7	34	41	557	32	61	884	63
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	72	7	204	24	7	36	44	593	34	65	940	67
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	141	29	245	167	69	180	77	815	47	567	1824	814
Arrive On Green	0.22	0.22	0.22	0.22	0.22	0.22	0.04	0.24	0.24	0.32	0.51	0.51
Sat Flow, veh/h	300	135	1122	392	318	824	1781	3416	196	1781	3554	1585
Grp Volume(v), veh/h	283	0	0	67	0	0	44	308	319	65	940	67
Grp Sat Flow(s),veh/h/ln	1557	0	0	1534	0	0	1781	1777	1835	1781	1777	1585
Q Serve(g_s), s	7.4	0.0	0.0	0.0	0.0	0.0	1.5	9.6	9.6	1.5	10.5	1.3
Cycle Q Clear(g_c), s	10.4	0.0	0.0	1.9	0.0	0.0	1.5	9.6	9.6	1.5	10.5	1.3
Prop In Lane	0.25		0.72	0.36		0.54	1.00		0.11	1.00		1.00
Lane Grp Cap(c), veh/h	415	0	0	417	0	0	77	424	438	567	1824	814
V/C Ratio(X)	0.68	0.00	0.00	0.16	0.00	0.00	0.57	0.73	0.73	0.11	0.52	0.08
Avail Cap(c_a), veh/h	540	0	0	533	0	0	163	652	673	567	1824	814
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	0.00	0.82	0.82	0.82	1.00	1.00	1.00
Uniform Delay (d), s/veh	22.3	0.0	0.0	19.1	0.0	0.0	28.2	21.0	21.1	14.5	9.7	7.4
Incr Delay (d2), s/veh	2.3	0.0	0.0	0.2	0.0	0.0	5.3	8.7	8.5	0.1	1.0	0.2
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.7	0.0	0.0	0.7	0.0	0.0	0.7	4.6	4.7	0.6	3.5	0.4
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	24.6	0.0	0.0	19.3	0.0	0.0	33.5	29.7	29.5	14.6	10.7	7.6
LnGrp LOS	C			B			C	C	C	B	B	A
Approach Vol, veh/h		283			67			671			1072	
Approach Delay, s/veh		24.6			19.3			29.9			10.7	
Approach LOS		C			B			C			B	

Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	23.6	18.8		17.6	7.1	35.3		17.6				
Change Period (Y+Rc), s	4.5	4.5		4.5	4.5	4.5		4.5				
Max Green Setting (Gmax), s	6.5	22.0		18.0	5.5	23.0		18.0				
Max Q Clear Time (g_c+I1), s	3.5	11.6		12.4	3.5	12.5		3.9				
Green Ext Time (p_c), s	0.0	2.7		0.8	0.0	4.8		0.2				

Intersection Summary	
HCM 7th Control Delay, s/veh	19.0
HCM 7th LOS	B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	52	5	52	45	5	23	90	522	21	7	927	41
Future Volume (veh/h)	52	5	52	45	5	23	90	522	21	7	927	41
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	55	5	55	48	5	24	96	555	22	7	986	44
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	256	158	695	167	15	38	632	2375	94	297	1165	52
Arrive On Green	0.08	0.08	0.08	0.08	0.08	0.08	0.35	0.68	0.68	0.01	0.34	0.34
Sat Flow, veh/h	1381	1870	1585	826	181	456	1781	3484	138	1781	3465	155
Grp Volume(v), veh/h	55	5	55	77	0	0	96	283	294	7	506	524
Grp Sat Flow(s),veh/h/ln	1381	1870	1585	1463	0	0	1781	1777	1846	1781	1777	1843
Q Serve(g_s), s	0.0	0.1	0.0	2.6	0.0	0.0	2.2	3.6	3.6	0.2	15.8	15.8
Cycle Q Clear(g_c), s	1.8	0.1	0.0	3.0	0.0	0.0	2.2	3.6	3.6	0.2	15.8	15.8
Prop In Lane	1.00		1.00	0.62		0.31	1.00		0.07	1.00		0.08
Lane Grp Cap(c), veh/h	256	158	695	221	0	0	632	1211	1258	297	597	620
V/C Ratio(X)	0.21	0.03	0.08	0.35	0.00	0.00	0.15	0.23	0.23	0.02	0.85	0.85
Avail Cap(c_a), veh/h	554	561	1037	531	0	0	632	1211	1258	429	652	676
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	0.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	26.0	25.2	9.8	26.5	0.0	0.0	13.2	3.6	3.6	15.3	18.5	18.5
Incr Delay (d2), s/veh	0.4	0.1	0.0	0.9	0.0	0.0	0.1	0.5	0.4	0.0	13.8	13.4
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.7	0.1	0.4	1.1	0.0	0.0	0.8	0.9	0.9	0.1	7.9	8.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	26.4	25.3	9.8	27.4	0.0	0.0	13.3	4.1	4.1	15.3	32.3	31.9
LnGrp LOS	C	C	A	C			B	A	A	B	C	C
Approach Vol, veh/h		115			77			673			1037	
Approach Delay, s/veh		18.4			27.4			5.4			32.0	
Approach LOS		B			C			A			C	

Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	5.1	45.4		9.6	25.8	24.7		9.6				
Change Period (Y+Rc), s	4.5	4.5		4.5	4.5	4.5		4.5				
Max Green Setting (Gmax), s	5.0	23.5		18.0	6.5	22.0		18.0				
Max Q Clear Time (g_c+I1), s	2.2	5.6		3.8	4.2	17.8		5.0				
Green Ext Time (p_c), s	0.0	3.2		0.2	0.0	2.3		0.3				

Intersection Summary			
HCM 7th Control Delay, s/veh		21.6	
HCM 7th LOS		C	



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	261	262	393	178	345	532
Future Volume (veh/h)	261	262	393	178	345	532
Initial Q (Qb), veh	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)	1.00			1.00	1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No	No		No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	278	279	418	189	367	566
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	2	2	2	2	2	2
Cap, veh/h	312	1955	1066	951	1037	753
Arrive On Green	0.17	0.55	0.30	0.30	0.30	0.30
Sat Flow, veh/h	1781	3647	3647	1585	3456	1585
Grp Volume(v), veh/h	278	279	418	189	367	566
Grp Sat Flow(s),veh/h/ln	1781	1777	1777	1585	1728	1585
Q Serve(g_s), s	9.2	2.3	5.6	3.2	5.0	17.5
Cycle Q Clear(g_c), s	9.2	2.3	5.6	3.2	5.0	17.5
Prop In Lane	1.00			1.00	1.00	1.00
Lane Grp Cap(c), veh/h	312	1955	1066	951	1037	753
V/C Ratio(X)	0.89	0.14	0.39	0.20	0.35	0.75
Avail Cap(c_a), veh/h	312	1955	1066	951	1037	753
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	24.2	6.6	16.7	5.4	16.4	12.9
Incr Delay (d2), s/veh	25.8	0.2	1.1	0.5	0.2	4.3
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	5.7	0.7	2.2	2.0	1.7	15.3
Unsig. Movement Delay, s/veh						
LnGrp Delay(d), s/veh	50.0	6.7	17.7	5.9	16.7	17.1
LnGrp LOS	D	A	B	A	B	B
Approach Vol, veh/h		557	607		933	
Approach Delay, s/veh		28.3	14.1		16.9	
Approach LOS		C	B		B	

Timer - Assigned Phs			4		6	7	8
Phs Duration (G+Y+Rc), s			37.5		22.5	15.0	22.5
Change Period (Y+Rc), s			4.5		4.5	4.5	4.5
Max Green Setting (Gmax), s			33.0		18.0	10.5	18.0
Max Q Clear Time (g_c+I1), s			4.3		19.5	11.2	7.6
Green Ext Time (p_c), s			1.8		0.0	0.0	2.4

Intersection Summary	
HCM 7th Control Delay, s/veh	19.1
HCM 7th LOS	B



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	57	548	2	2	557	34	2	1	2	23	1	12
Future Volume (veh/h)	57	548	2	2	557	34	2	1	2	23	1	12
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	61	583	2	2	593	36	2	1	2	24	1	13
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	719	2738	9	747	2566	156	143	16	31	174	2	24
Arrive On Green	0.75	0.75	0.75	0.75	0.75	0.75	0.05	0.05	0.05	0.05	0.05	0.05
Sat Flow, veh/h	797	3632	12	830	3404	206	680	340	680	945	39	512
Grp Volume(v), veh/h	61	285	300	2	309	320	5	0	0	38	0	0
Grp Sat Flow(s),veh/h/ln	797	1777	1868	830	1777	1833	1701	0	0	1497	0	0
Q Serve(g_s), s	1.1	2.1	2.1	0.0	2.3	2.3	0.0	0.0	0.0	1.0	0.0	0.0
Cycle Q Clear(g_c), s	3.5	2.1	2.1	2.2	2.3	2.3	0.1	0.0	0.0	1.1	0.0	0.0
Prop In Lane	1.00		0.01	1.00		0.11	0.40		0.40	0.63		0.34
Lane Grp Cap(c), veh/h	719	1339	1408	747	1339	1382	191	0	0	200	0	0
V/C Ratio(X)	0.08	0.21	0.21	0.00	0.23	0.23	0.03	0.00	0.00	0.19	0.00	0.00
Avail Cap(c_a), veh/h	719	1339	1408	747	1339	1382	739	0	0	723	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	2.2	1.6	1.6	1.9	1.7	1.7	20.5	0.0	0.0	21.0	0.0	0.0
Incr Delay (d2), s/veh	0.2	0.4	0.3	0.0	0.4	0.4	0.1	0.0	0.0	0.5	0.0	0.0
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.1	0.1	0.1	0.0	0.1	0.2	0.0	0.0	0.0	0.4	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	2.4	2.0	2.0	1.9	2.1	2.0	20.6	0.0	0.0	21.4	0.0	0.0
LnGrp LOS	A	A	A	A	A	A	C			C		
Approach Vol, veh/h		646			631			5			38	
Approach Delay, s/veh		2.0			2.0			20.6			21.4	
Approach LOS		A			A			C			C	

Timer - Assigned Phs		2		4		6		8				
Phs Duration (G+Y+Rc), s		6.6		38.4		6.6		38.4				
Change Period (Y+Rc), s		4.5		4.5		4.5		4.5				
Max Green Setting (Gmax), s		18.0		18.0		18.0		18.0				
Max Q Clear Time (g_c+I1), s		2.1		5.5		3.1		4.3				
Green Ext Time (p_c), s		0.0		3.1		0.1		3.1				

Intersection Summary												
HCM 7th Control Delay, s/veh			2.7									
HCM 7th LOS			A									

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	23	1343	23	17	594	132	23	5	124	121	5	23
Future Volume (veh/h)	23	1343	23	17	594	132	23	5	124	121	5	23
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	24	1429	24	18	632	0	24	5	132	129	5	24
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	78	2420	40	87	2322		92	22	205	272	12	31
Arrive On Green	0.70	0.70	0.70	0.70	0.70	0.00	0.15	0.15	0.15	0.15	0.15	0.15
Sat Flow, veh/h	23	3450	57	35	3311	1585	155	148	1379	1101	80	212
Grp Volume(v), veh/h	771	0	706	337	313	0	161	0	0	158	0	0
Grp Sat Flow(s),veh/h/ln	1839	0	1692	1728	1617	1585	1682	0	0	1393	0	0
Q Serve(g_s), s	0.0	0.0	12.8	0.0	4.3	0.0	0.0	0.0	0.0	1.0	0.0	0.0
Cycle Q Clear(g_c), s	12.6	0.0	12.8	3.9	4.3	0.0	5.3	0.0	0.0	6.4	0.0	0.0
Prop In Lane	0.03		0.03	0.05		1.00	0.15		0.82	0.82		0.15
Lane Grp Cap(c), veh/h	1352	0	1187	1276	1134		319	0	0	316	0	0
V/C Ratio(X)	0.57	0.00	0.59	0.26	0.28		0.51	0.00	0.00	0.50	0.00	0.00
Avail Cap(c_a), veh/h	1352	0	1187	1276	1134		555	0	0	514	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	1.00	0.00	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	4.5	0.0	4.6	3.3	3.3	0.0	24.1	0.0	0.0	24.4	0.0	0.0
Incr Delay (d2), s/veh	1.8	0.0	2.2	0.5	0.6	0.0	1.2	0.0	0.0	1.2	0.0	0.0
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.1	0.0	3.0	0.9	0.9	0.0	2.2	0.0	0.0	2.1	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	6.3	0.0	6.8	3.8	3.9	0.0	25.3	0.0	0.0	25.6	0.0	0.0
LnGrp LOS	A		A	A	A		C			C		
Approach Vol, veh/h		1477			650			161			158	
Approach Delay, s/veh		6.5			3.8			25.3			25.6	
Approach LOS		A			A			C			C	

Timer - Assigned Phs	2	4	6	8
Phs Duration (G+Y+Rc), s	13.4	46.6	13.4	46.6
Change Period (Y+Rc), s	4.5	4.5	4.5	4.5
Max Green Setting (Gmax), s	18.0	33.0	18.0	33.0
Max Q Clear Time (g_c+I1), s	7.3	14.8	8.4	6.3
Green Ext Time (p_c), s	0.6	10.0	0.6	4.4

Intersection Summary	
HCM 7th Control Delay, s/veh	8.3
HCM 7th LOS	A

Notes

Unsignalized Delay for [WBR] is excluded from calculations of the approach delay and intersection delay.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	26	1976	24	25	784	50	23	5	500	238	5	24
Future Volume (veh/h)	26	1976	24	25	784	50	23	5	500	238	5	24
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	28	2102	26	27	834	53	24	5	532	253	5	26
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	282	1842	23	60	1739	110	50	19	683	223	3	17
Arrive On Green	0.51	0.51	0.51	0.51	0.51	0.51	0.41	0.41	0.41	0.41	0.41	0.41
Sat Flow, veh/h	627	3595	44	190	3393	216	45	45	1656	403	8	41
Grp Volume(v), veh/h	28	1037	1091	27	437	450	561	0	0	284	0	0
Grp Sat Flow(s),veh/h/ln	627	1777	1862	190	1777	1832	1747	0	0	453	0	0
Q Serve(g_s), s	3.6	61.5	61.5	0.0	19.1	19.1	0.0	0.0	0.0	14.7	0.0	0.0
Cycle Q Clear(g_c), s	22.7	61.5	61.5	61.5	19.1	19.1	34.8	0.0	0.0	49.5	0.0	0.0
Prop In Lane	1.00		0.02	1.00		0.12	0.04		0.95	0.89		0.09
Lane Grp Cap(c), veh/h	282	911	954	60	911	939	752	0	0	243	0	0
V/C Ratio(X)	0.10	1.14	1.14	0.45	0.48	0.48	0.75	0.00	0.00	1.17	0.00	0.00
Avail Cap(c_a), veh/h	282	911	954	60	911	939	752	0	0	243	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	0.71	0.71	0.71	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	26.2	29.3	29.3	60.0	18.9	18.9	31.5	0.0	0.0	46.8	0.0	0.0
Incr Delay (d2), s/veh	0.7	75.7	77.1	16.3	1.3	1.2	4.1	0.0	0.0	110.3	0.0	0.0
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.6	43.7	46.2	1.1	7.9	8.2	15.1	0.0	0.0	14.9	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	26.9	104.9	106.3	76.3	20.2	20.2	35.6	0.0	0.0	157.1	0.0	0.0
LnGrp LOS	C	F	F	E	C	C	D			F		
Approach Vol, veh/h		2156			914			561			284	
Approach Delay, s/veh		104.6			21.8			35.6			157.1	
Approach LOS		F			C			D			F	

Timer - Assigned Phs		2		4		6		8				
Phs Duration (G+Y+Rc), s		54.0		66.0		54.0		66.0				
Change Period (Y+Rc), s		4.5		4.5		4.5		4.5				
Max Green Setting (Gmax), s		49.5		61.5		49.5		61.5				
Max Q Clear Time (g_c+I1), s		36.8		63.5		51.5		63.5				
Green Ext Time (p_c), s		3.5		0.0		0.0		0.0				

Intersection Summary	
HCM 7th Control Delay, s/veh	79.2
HCM 7th LOS	E

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	12	607	2095	248	707	11	141	20	349	11	34	11
Future Volume (veh/h)	12	607	2095	248	707	11	141	20	349	11	34	11
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	13	646	2229	264	752	12	150	21	371	12	36	12
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	473	2150	1205	219	2523	40	536	440	484	39	54	16
Arrive On Green	0.60	0.60	0.60	0.07	0.70	0.70	0.16	0.24	0.24	0.05	0.05	0.05
Sat Flow, veh/h	703	3554	1585	1781	3580	57	3456	1870	1585	214	1084	325
Grp Volume(v), veh/h	13	646	2229	264	373	391	150	21	371	60	0	0
Grp Sat Flow(s),veh/h/ln	703	1777	1585	1781	1777	1860	1728	1870	1585	1623	0	0
Q Serve(g_s), s	1.1	13.2	62.2	10.5	11.8	11.8	5.8	1.3	31.9	3.1	0.0	0.0
Cycle Q Clear(g_c), s	1.1	13.2	62.2	10.5	11.8	11.8	5.8	1.3	31.9	5.4	0.0	0.0
Prop In Lane	1.00		1.00	1.00		0.03	1.00		1.00	0.20		0.20
Lane Grp Cap(c), veh/h	473	2150	1205	219	1252	1311	536	440	484	110	0	0
V/C Ratio(X)	0.03	0.30	1.85	1.20	0.30	0.30	0.28	0.05	0.77	0.55	0.00	0.00
Avail Cap(c_a), veh/h	473	2150	1205	219	1252	1311	1808	1259	1178	218	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.09	0.09	0.09	1.00	1.00	1.00	0.97	0.97	0.97	1.00	0.00	0.00
Uniform Delay (d), s/veh	11.9	14.3	7.1	39.1	8.3	8.3	56.0	44.4	47.3	70.1	0.0	0.0
Incr Delay (d2), s/veh	0.0	0.0	382.9	126.9	0.6	0.6	0.3	0.0	2.5	4.2	0.0	0.0
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.2	5.3	139.9	16.1	4.6	4.8	2.5	0.6	12.9	2.4	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	11.9	14.3	390.0	166.0	8.9	8.9	56.2	44.4	49.8	74.3	0.0	0.0
LnGrp LOS	B	B	F	F	A	A	E	D	D	E		
Approach Vol, veh/h		2888			1028			542			60	
Approach Delay, s/veh		304.2			49.2			51.4			74.3	
Approach LOS		F			D			D			E	

Timer - Assigned Phs		2	3	4	5	6		8				
Phs Duration (G+Y+Rc), s		39.8	15.0	95.2	27.8	12.0		110.2				
Change Period (Y+Rc), s		4.5	4.5	4.5	4.5	4.5		4.5				
Max Green Setting (Gmax), s		101.0	10.5	25.0	78.5	18.0		40.0				
Max Q Clear Time (g_c+I1), s		33.9	12.5	64.2	7.8	7.4		13.8				
Green Ext Time (p_c), s		1.4	0.0	0.0	0.5	0.1		4.9				

Intersection Summary												
HCM 7th Control Delay, s/veh			212.8									
HCM 7th LOS			F									

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	103	661	122	146	665	102	116	70	1143	101	31	97
Future Volume (vph)	103	661	122	146	665	102	116	70	1143	101	31	97
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.5	4.5		4.5	4.5			4.5		4.5	4.5	
Lane Util. Factor	1.00	0.95		1.00	0.95			1.00		1.00	1.00	
Frt	1.00	0.98		1.00	0.98			0.88		1.00	0.89	
Flt Protected	0.95	1.00		0.95	1.00			1.00		0.95	1.00	
Satd. Flow (prot)	1770	3456		1770	3468			1639		1770	1651	
Flt Permitted	0.18	1.00		0.17	1.00			0.95		0.16	1.00	
Satd. Flow (perm)	331	3456		316	3468			1570		298	1651	
Peak-hour factor, PHF	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Adj. Flow (vph)	110	703	130	155	707	109	123	74	1216	107	33	103
RTOR Reduction (vph)	0	12	0	0	10	0	0	31	0	0	31	0
Lane Group Flow (vph)	110	821	0	155	806	0	0	1382	0	107	105	0
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		6			2			4			8	
Permitted Phases	6			2			4			8		
Actuated Green, G (s)	45.5	45.5		45.5	45.5			75.5		75.5	75.5	
Effective Green, g (s)	45.5	45.5		45.5	45.5			75.5		75.5	75.5	
Actuated g/C Ratio	0.35	0.35		0.35	0.35			0.58		0.58	0.58	
Clearance Time (s)	4.5	4.5		4.5	4.5			4.5		4.5	4.5	
Vehicle Extension (s)	3.0	3.0		3.0	3.0			3.0		3.0	3.0	
Lane Grp Cap (vph)	115	1209		110	1213			911		173	958	
v/s Ratio Prot		0.24			0.23						0.06	
v/s Ratio Perm	0.33			c0.49				c0.88		0.36		
v/c Ratio	0.96	0.68		1.41	0.66			1.52		0.62	0.11	
Uniform Delay, d1	41.3	36.0		42.3	35.8			27.2		17.8	12.2	
Progression Factor	1.00	1.00		1.00	1.00			1.00		1.00	1.00	
Incremental Delay, d2	72.9	3.1		229.3	2.9			238.1		6.4	0.1	
Delay (s)	114.2	39.1		271.6	38.7			265.4		24.3	12.3	
Level of Service	F	D		F	D			F		C	B	
Approach Delay (s/veh)		47.9			75.9			265.4			17.5	
Approach LOS		D			E			F			B	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	139.5	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	1.47		
Actuated Cycle Length (s)	130.0	Sum of lost time (s)	9.0
Intersection Capacity Utilization	133.5%	ICU Level of Service	H
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	810	2826	97	630	283	77
Future Volume (veh/h)	810	2826	97	630	283	77
Initial Q (Qb), veh	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)		1.00	1.00		1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No	No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	862	0	103	670	301	0
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	2	2	2	2	2	2
Cap, veh/h	1029		925	2981	350	
Arrive On Green	0.29	0.00	0.52	0.84	0.10	0.00
Sat Flow, veh/h	3647	1585	1781	3647	3456	1585
Grp Volume(v), veh/h	862	0	103	670	301	0
Grp Sat Flow(s),veh/h/ln	1777	1585	1781	1777	1728	1585
Q Serve(g_s), s	34.1	0.0	4.4	5.6	12.9	0.0
Cycle Q Clear(g_c), s	34.1	0.0	4.4	5.6	12.9	0.0
Prop In Lane		1.00	1.00		1.00	1.00
Lane Grp Cap(c), veh/h	1029		925	2981	350	
V/C Ratio(X)	0.84		0.11	0.22	0.86	
Avail Cap(c_a), veh/h	2630		925	2981	415	
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	50.0	0.0	18.4	2.4	66.4	0.0
Incr Delay (d2), s/veh	8.1	0.0	0.1	0.2	14.7	0.0
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	16.2	0.0	1.9	1.6	6.4	0.0
Unsig. Movement Delay, s/veh						
LnGrp Delay(d), s/veh	58.1	0.0	18.5	2.6	81.0	0.0
LnGrp LOS	E		B	A	F	
Approach Vol, veh/h	862			773	301	
Approach Delay, s/veh	58.1			4.7	81.0	
Approach LOS	E			A	F	

Timer - Assigned Phs	2	3	4		8
Phs Duration (G+Y+Rc), s	19.7	82.4	47.9		130.3
Change Period (Y+Rc), s	4.5	4.5	4.5		4.5
Max Green Setting (Gmax), s	18.0	7.5	111.0		123.0
Max Q Clear Time (g_c+I1), s	14.9	6.4	36.1		7.6
Green Ext Time (p_c), s	0.3	0.0	7.3		5.2

Intersection Summary	
HCM 7th Control Delay, s/veh	40.3
HCM 7th LOS	D

Notes

Unsignalized Delay for [NBR, EBR] is excluded from calculations of the approach delay and intersection delay.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	80	719	62	14	576	15	55	5	14	17	5	69
Future Volume (veh/h)	80	719	62	14	576	15	55	5	14	17	5	69
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	85	765	66	15	613	16	59	5	15	18	5	73
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	645	2135	184	33	2637	69	220	15	28	98	16	113
Arrive On Green	0.64	0.64	0.64	0.02	0.75	0.75	0.09	0.09	0.09	0.09	0.09	0.09
Sat Flow, veh/h	797	3310	286	1781	3538	92	1161	168	311	219	172	1242
Grp Volume(v), veh/h	85	411	420	15	308	321	79	0	0	96	0	0
Grp Sat Flow(s),veh/h/ln	797	1777	1819	1781	1777	1854	1640	0	0	1633	0	0
Q Serve(g_s), s	2.3	5.9	5.9	0.5	2.9	2.9	0.0	0.0	0.0	0.7	0.0	0.0
Cycle Q Clear(g_c), s	2.3	5.9	5.9	0.5	2.9	2.9	2.3	0.0	0.0	3.0	0.0	0.0
Prop In Lane	1.00		0.16	1.00		0.05	0.75		0.19	0.19		0.76
Lane Grp Cap(c), veh/h	645	1146	1173	33	1324	1382	264	0	0	226	0	0
V/C Ratio(X)	0.13	0.36	0.36	0.45	0.23	0.23	0.30	0.00	0.00	0.42	0.00	0.00
Avail Cap(c_a), veh/h	645	1146	1173	162	1324	1382	592	0	0	594	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	3.9	4.5	4.5	26.7	2.2	2.2	23.8	0.0	0.0	24.1	0.0	0.0
Incr Delay (d2), s/veh	0.4	0.9	0.9	9.3	0.4	0.4	0.6	0.0	0.0	1.3	0.0	0.0
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.3	1.5	1.6	0.3	0.5	0.5	1.0	0.0	0.0	1.2	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	4.3	5.4	5.4	36.0	2.6	2.6	24.4	0.0	0.0	25.3	0.0	0.0
LnGrp LOS	A	A	A	D	A	A	C			C		
Approach Vol, veh/h		916			644			79			96	
Approach Delay, s/veh		5.3			3.3			24.4			25.3	
Approach LOS		A			A			C			C	

Timer - Assigned Phs	2	3	4		6		8					
Phs Duration (G+Y+Rc), s	9.5	5.5	40.0		9.5		45.5					
Change Period (Y+Rc), s	4.5	4.5	4.5		4.5		4.5					
Max Green Setting (Gmax), s	18.0	5.0	18.5		18.0		28.0					
Max Q Clear Time (g_c+I1), s	4.3	2.5	7.9		5.0		4.9					
Green Ext Time (p_c), s	0.3	0.0	4.2		0.4		3.8					

Intersection Summary												
HCM 7th Control Delay, s/veh		6.5										
HCM 7th LOS		A										

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBU	SBL	SBT
Lane Configurations												
Traffic Volume (vph)	96	0	193	68	14	41	251	374	0	0	0	2339
Future Volume (vph)	96	0	193	68	14	41	251	374	0	0	0	2339
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.5		4.5		4.5		4.5	4.5				4.5
Lane Util. Factor	1.00		1.00		1.00		1.00	0.95				0.95
Frt	1.00		0.85		0.95		1.00	1.00				1.00
Flt Protected	0.95		1.00		0.97		0.95	1.00				1.00
Satd. Flow (prot)	1770		1583		1731		1770	3539				3539
Flt Permitted	0.60		1.00		0.97		0.04	1.00				1.00
Satd. Flow (perm)	1112		1583		1731		75	3539				3539
Peak-hour factor, PHF	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Adj. Flow (vph)	102	0	205	72	15	44	267	398	0	0	0	2488
RTOR Reduction (vph)	0	0	143	0	13	0	0	0	0	0	0	0
Lane Group Flow (vph)	102	0	62	0	118	0	267	398	0	0	0	2488
Turn Type	Perm		Perm	Perm	NA		pm+pt	NA		Perm		NA
Protected Phases					8		5	2				6
Permitted Phases	4		4	8			2			6		
Actuated Green, G (s)	15.9		15.9		15.9		115.1	115.1				95.1
Effective Green, g (s)	15.9		15.9		15.9		115.1	115.1				95.1
Actuated g/C Ratio	0.11		0.11		0.11		0.82	0.82				0.68
Clearance Time (s)	4.5		4.5		4.5		4.5	4.5				4.5
Vehicle Extension (s)	3.0		3.0		3.0		3.0	3.0				3.0
Lane Grp Cap (vph)	126		179		196		249	2909				2403
v/s Ratio Prot							c0.12	0.11				0.70
v/s Ratio Perm	c0.09		0.04		0.07		c0.76					
v/c Ratio	0.81		0.35		0.60		1.07	0.14				1.04
Uniform Delay, d1	60.6		57.3		59.0		58.6	2.5				22.5
Progression Factor	1.00		1.00		1.00		1.00	1.00				1.00
Incremental Delay, d2	30.5		1.2		5.1		77.5	0.1				28.3
Delay (s)	91.0		58.4		64.1		136.1	2.6				50.7
Level of Service	F		E		E		F	A				D
Approach Delay (s/veh)		69.3			64.1			56.2				50.0
Approach LOS		E			E			E				D

Intersection Summary			
HCM 2000 Control Delay (s/veh)	53.3	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	1.06		
Actuated Cycle Length (s)	140.0	Sum of lost time (s)	13.5
Intersection Capacity Utilization	103.5%	ICU Level of Service	G
Analysis Period (min)	15		

c Critical Lane Group



Movement	SBR
Lane Configurations	
Traffic Volume (vph)	37
Future Volume (vph)	37
Ideal Flow (vphpl)	1900
Total Lost time (s)	4.5
Lane Util. Factor	1.00
Frt	0.85
Flt Protected	1.00
Satd. Flow (prot)	1583
Flt Permitted	1.00
Satd. Flow (perm)	1583
Peak-hour factor, PHF	0.94
Adj. Flow (vph)	39
RTOR Reduction (vph)	13
Lane Group Flow (vph)	26
Turn Type	Perm
Protected Phases	
Permitted Phases	6
Actuated Green, G (s)	95.1
Effective Green, g (s)	95.1
Actuated g/C Ratio	0.68
Clearance Time (s)	4.5
Vehicle Extension (s)	3.0
Lane Grp Cap (vph)	1075
v/s Ratio Prot	
v/s Ratio Perm	0.02
v/c Ratio	0.02
Uniform Delay, d1	7.3
Progression Factor	1.00
Incremental Delay, d2	0.0
Delay (s)	7.4
Level of Service	A
Approach Delay (s/veh)	
Approach LOS	

Intersection Summary



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	38	2747	2492	127	392	41
Future Volume (veh/h)	38	2747	2492	127	392	41
Initial Q (Qb), veh	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)	1.00			1.00	1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No	No		No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	40	2922	2651	135	417	44
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	2	2	2	2	2	2
Cap, veh/h	58	2841	2604	1162	447	199
Arrive On Green	0.03	0.80	0.73	0.73	0.13	0.13
Sat Flow, veh/h	1781	3647	3647	1585	3563	1585
Grp Volume(v), veh/h	40	2922	2651	135	417	44
Grp Sat Flow(s),veh/h/ln	1781	1777	1777	1585	1781	1585
Q Serve(g_s), s	3.3	119.9	109.9	3.7	17.4	3.7
Cycle Q Clear(g_c), s	3.3	119.9	109.9	3.7	17.4	3.7
Prop In Lane	1.00			1.00	1.00	1.00
Lane Grp Cap(c), veh/h	58	2841	2604	1162	447	199
V/C Ratio(X)	0.69	1.03	1.02	0.12	0.93	0.22
Avail Cap(c_a), veh/h	71	2841	2604	1162	447	199
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	71.8	15.0	20.0	5.8	65.0	59.0
Incr Delay (d2), s/veh	19.2	24.8	22.3	0.0	26.8	0.6
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.8	43.7	45.0	1.1	9.4	1.5
Unsig. Movement Delay, s/veh						
LnGrp Delay(d), s/veh	91.0	39.8	42.3	5.9	91.8	59.6
LnGrp LOS	F	F	F	A	F	E
Approach Vol, veh/h		2962	2786		461	
Approach Delay, s/veh		40.5	40.5		88.7	
Approach LOS		D	D		F	

Timer - Assigned Phs	1	2		4		6
Phs Duration (G+Y+Rc), s	10.0	116.1		23.9		126.1
Change Period (Y+Rc), s	5.1	6.2		5.1		6.2
Max Green Setting (Gmax), s	6.0	108.8		18.8		119.9
Max Q Clear Time (g_c+I1), s	5.3	111.9		19.4		121.9
Green Ext Time (p_c), s	0.0	0.0		0.0		0.0

Intersection Summary	
HCM 7th Control Delay, s/veh	44.1
HCM 7th LOS	D

Notes
User approved volume balancing among the lanes for turning movement.



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	18	3117	2633	124	30	8
Future Volume (veh/h)	18	3117	2633	124	30	8
Initial Q (Qb), veh	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)	1.00			1.00	1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No	No		No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	19	3316	2801	132	32	9
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	2	2	2	2	2	2
Cap, veh/h	40	3131	2916	1300	47	13
Arrive On Green	0.02	0.88	0.82	0.82	0.04	0.04
Sat Flow, veh/h	1781	3647	3647	1585	1324	372
Grp Volume(v), veh/h	19	3316	2801	132	42	0
Grp Sat Flow(s),veh/h/ln	1781	1777	1777	1585	1737	0
Q Serve(g_s), s	1.4	118.8	90.1	2.2	3.2	0.0
Cycle Q Clear(g_c), s	1.4	118.8	90.1	2.2	3.2	0.0
Prop In Lane	1.00			1.00	0.76	0.21
Lane Grp Cap(c), veh/h	40	3131	2916	1300	61	0
V/C Ratio(X)	0.47	1.06	0.96	0.10	0.69	0.00
Avail Cap(c_a), veh/h	124	3131	2916	1300	256	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	65.1	8.0	10.3	2.4	64.3	0.0
Incr Delay (d2), s/veh	8.3	34.6	9.3	0.0	12.7	0.0
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.7	27.0	24.8	0.5	1.6	0.0
Unsig. Movement Delay, s/veh						
LnGrp Delay(d), s/veh	73.4	42.6	19.5	2.4	77.0	0.0
LnGrp LOS	E	F	B	A	E	
Approach Vol, veh/h		3335	2933		42	
Approach Delay, s/veh		42.8	18.8		77.0	
Approach LOS		D	B		E	

Timer - Assigned Phs	1	2		4		6
Phs Duration (G+Y+Rc), s	8.2	116.8		9.9		125.0
Change Period (Y+Rc), s	5.1	6.2		5.1		6.2
Max Green Setting (Gmax), s	9.4	104.3		19.9		118.8
Max Q Clear Time (g_c+I1), s	3.4	92.1		5.2		120.8
Green Ext Time (p_c), s	0.0	11.6		0.1		0.0

Intersection Summary	
HCM 7th Control Delay, s/veh	31.8
HCM 7th LOS	C



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	125	3007	7	18	2500	497	0	0	0	862	5	232
Future Volume (vph)	125	3007	7	18	2500	497	0	0	0	862	5	232
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.4	6.7		5.4	6.7	6.7				5.4	5.4	5.4
Lane Util. Factor	0.97	0.91		1.00	0.91	1.00				0.91	0.86	0.95
Frt	1.00	1.00		1.00	1.00	0.85				1.00	0.99	0.85
Flt Protected	0.95	1.00		0.95	1.00	1.00				0.95	0.96	1.00
Satd. Flow (prot)	3433	5084		1770	5085	1583				3221	1514	1504
Flt Permitted	0.95	1.00		0.95	1.00	1.00				0.95	0.96	1.00
Satd. Flow (perm)	3433	5084		1770	5085	1583				3221	1514	1504
Peak-hour factor, PHF	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Adj. Flow (vph)	133	3199	7	19	2660	529	0	0	0	917	5	247
RTOR Reduction (vph)	0	0	0	0	0	79	0	0	0	0	2	148
Lane Group Flow (vph)	133	3206	0	19	2660	450	0	0	0	633	312	74
Turn Type	Prot	NA		Prot	NA	Perm				Split	NA	pm+ov
Protected Phases	1	6		5	2			3		4	4	1
Permitted Phases						2	3					4
Actuated Green, G (s)	13.2	78.1		4.0	68.9	68.9				30.2	30.2	43.4
Effective Green, g (s)	13.2	78.1		4.0	68.9	68.9				30.2	30.2	43.4
Actuated g/C Ratio	0.10	0.60		0.03	0.53	0.53				0.23	0.23	0.33
Clearance Time (s)	5.4	6.7		5.4	6.7	6.7				5.4	5.4	5.4
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0				3.0	3.0	3.0
Lane Grp Cap (vph)	349	3059		54	2699	840				749	352	565
v/s Ratio Prot	0.04	c0.63		0.01	c0.52					0.20	c0.21	0.01
v/s Ratio Perm						0.28						0.04
v/c Ratio	0.38	1.05		0.35	0.99	0.54				0.85	0.89	0.13
Uniform Delay, d1	54.5	25.9		61.6	30.0	20.0				47.6	48.1	30.1
Progression Factor	1.00	1.00		1.00	1.00	1.00				1.00	1.00	1.00
Incremental Delay, d2	0.7	30.7		3.9	14.0	0.7				8.7	22.3	0.1
Delay (s)	55.2	56.5		65.6	43.9	20.6				56.2	70.4	30.2
Level of Service	E	E		E	D	C				E	E	C
Approach Delay (s/veh)		56.5			40.2			0.0			55.1	
Approach LOS		E			D			A			E	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	49.5	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	1.08		
Actuated Cycle Length (s)	129.8	Sum of lost time (s)	22.9
Intersection Capacity Utilization	85.9%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	102	3892	11	34	2944	68	0	0	0	148	5	68
Future Volume (veh/h)	102	3892	11	34	2944	68	0	0	0	148	5	68
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	109	4140	12	36	3132	72	0	0	0	157	5	72
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	48	2745	8	48	2684	1197	0	312	264	205	5	76
Arrive On Green	0.76	0.76	0.76	0.76	0.76	0.76	0.00	0.00	0.00	0.17	0.17	0.17
Sat Flow, veh/h	64	3635	11	24	3554	1585	0	1870	1585	988	31	453
Grp Volume(v), veh/h	109	2023	2129	36	3132	72	0	0	0	234	0	0
Grp Sat Flow(s),veh/h/ln	64	1777	1868	24	1777	1585	0	1870	1585	1473	0	0
Q Serve(g_s), s	0.0	113.3	113.3	0.0	113.3	1.7	0.0	0.0	0.0	23.6	0.0	0.0
Cycle Q Clear(g_c), s	113.3	113.3	113.3	113.3	113.3	1.7	0.0	0.0	0.0	23.6	0.0	0.0
Prop In Lane	1.00		0.01	1.00		1.00	0.00		1.00	0.67		0.31
Lane Grp Cap(c), veh/h	48	1342	1411	48	2684	1197	0	312	264	286	0	0
V/C Ratio(X)	2.27	1.51	1.51	0.75	1.17	0.06	0.00	0.00	0.00	0.82	0.00	0.00
Avail Cap(c_a), veh/h	48	1342	1411	48	2684	1197	0	312	264	286	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	0.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	75.0	18.3	18.4	75.0	18.3	4.7	0.0	0.0	0.0	61.9	0.0	0.0
Incr Delay (d2), s/veh	632.5	232.1	232.6	48.0	79.5	0.0	0.0	0.0	0.0	16.9	0.0	0.0
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	10.3	122.9	129.5	2.0	66.0	0.5	0.0	0.0	0.0	10.0	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	707.5	250.5	251.0	123.0	97.8	4.7	0.0	0.0	0.0	78.9	0.0	0.0
LnGrp LOS	F	F	F	F	F	A				E		
Approach Vol, veh/h		4261			3240			0			234	
Approach Delay, s/veh		262.4			96.1			0.0			78.9	
Approach LOS		F			F						E	

Timer - Assigned Phs		2		4		6		8				
Phs Duration (G+Y+Rc), s		120.0		30.0		120.0		30.0				
Change Period (Y+Rc), s		6.7		5.0		6.7		5.0				
Max Green Setting (Gmax), s		113.3		25.0		113.3		25.0				
Max Q Clear Time (g_c+I1), s		115.3		25.6		115.3		0.0				
Green Ext Time (p_c), s		0.0		0.0		0.0		0.0				

Intersection Summary												
HCM 7th Control Delay, s/veh			187.2									
HCM 7th LOS			F									



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	84	4192	0	0	2951	541	0	0	0	2414	0	186
Future Volume (vph)	84	4192	0	0	2951	541	0	0	0	2414	0	186
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.2	7.2			7.2	7.2				5.9		5.9
Lane Util. Factor	1.00	0.91			0.91	1.00				0.97		1.00
Frt	1.00	1.00			1.00	0.85				1.00		0.85
Flt Protected	0.95	1.00			1.00	1.00				0.95		1.00
Satd. Flow (prot)	1770	5085			5085	1583				3433		1583
Flt Permitted	0.95	1.00			1.00	1.00				0.95		1.00
Satd. Flow (perm)	1770	5085			5085	1583				3433		1583
Peak-hour factor, PHF	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Adj. Flow (vph)	89	4460	0	0	3139	576	0	0	0	2568	0	198
RTOR Reduction (vph)	0	0	0	0	0	124	0	0	0	0	0	134
Lane Group Flow (vph)	89	4460	0	0	3139	452	0	0	0	2568	0	64
Turn Type	Prot	NA		Prot	NA	Perm	Split		Perm	Split		Perm
Protected Phases	1	6		5	2		3	3		4	4	
Permitted Phases						2			3			4
Actuated Green, G (s)	10.0	77.7			62.5	62.5				43.1		43.1
Effective Green, g (s)	10.0	77.7			62.5	62.5				43.1		43.1
Actuated g/C Ratio	0.07	0.58			0.47	0.47				0.32		0.32
Clearance Time (s)	5.2	7.2			7.2	7.2				5.9		5.9
Vehicle Extension (s)	3.0	3.0			3.0	3.0				3.0		3.0
Lane Grp Cap (vph)	132	2950			2373	738				1105		509
v/s Ratio Prot	0.05	c0.88			0.62					c0.75		
v/s Ratio Perm						0.29						0.04
v/c Ratio	0.67	1.51			1.32	0.61				2.32		0.13
Uniform Delay, d1	60.4	28.1			35.7	26.7				45.4		32.1
Progression Factor	1.00	1.00			1.00	1.00				1.00		1.00
Incremental Delay, d2	12.8	232.1			148.3	1.5				598.6		0.1
Delay (s)	73.1	260.2			184.0	28.2				644.0		32.2
Level of Service	E	F			F	C				F		C
Approach Delay (s/veh)		256.6			159.8			0.0			600.2	
Approach LOS		F			F			A			F	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	310.2	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	1.97		
Actuated Cycle Length (s)	133.9	Sum of lost time (s)	23.4
Intersection Capacity Utilization	160.8%	ICU Level of Service	H
Analysis Period (min)	15		

c Critical Lane Group



Movement	EBL2	EBL	EBR	WBT	WBR	WBR2	SBR	SBR2	SEL2	SEL	SET	SER
Lane Configurations												
Traffic Volume (vph)	236	236	6134	2776	282	282	293	125	60	3120	0	218
Future Volume (vph)	236	236	6134	2776	282	282	293	125	60	3120	0	218
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		5.1	4.0	6.5	6.5		5.1	5.1	5.1		5.1	
Lane Util. Factor		1.00	0.76	0.91	1.00		0.88	1.00	0.95		0.95	
Frt		1.00	0.85	1.00	0.85		0.85	0.85	1.00		0.99	
Flt Protected		0.95	1.00	1.00	1.00		1.00	1.00	0.95		0.96	
Satd. Flow (prot)		1770	3610	5085	1583		2787	1583	1681		1674	
Flt Permitted		0.31	1.00	1.00	1.00		1.00	1.00	0.95		0.96	
Satd. Flow (perm)		578	3610	5085	1583		2787	1583	1681		1674	
Peak-hour factor, PHF	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Adj. Flow (vph)	251	251	6526	2953	300	300	312	133	64	3319	0	232
RTOR Reduction (vph)	0	0	0	0	61	0	0	0	0	0	88	0
Lane Group Flow (vph)	0	502	6526	2953	539	0	312	133	58	0	3469	0
Turn Type	D.Pm	D.Pm	Free	NA	Perm		Prot	Perm	Split	Split	NA	
Protected Phases				2			4!		1	1	1	
Permitted Phases	4!	4	Free		2			4				
Actuated Green, G (s)		12.9	80.0	30.5	30.5		12.9	12.9	19.9		19.9	
Effective Green, g (s)		12.9	80.0	30.5	30.5		12.9	12.9	19.9		19.9	
Actuated g/C Ratio		0.16	1.00	0.38	0.38		0.16	0.16	0.25		0.25	
Clearance Time (s)		5.1		6.5	6.5		5.1	5.1	5.1		5.1	
Vehicle Extension (s)		3.0		3.0	3.0		3.0	3.0	3.0		3.0	
Lane Grp Cap (vph)		93	3610	1938	603		449	255	418		416	
v/s Ratio Prot				0.58			0.11		0.03		c2.07	
v/s Ratio Perm		c0.87	c1.81		0.34			0.08				
v/c Ratio		5.40	1.81	1.52	0.89		0.69	0.52	0.14		8.34	
Uniform Delay, d1		33.6	40.0	24.8	23.2		31.7	30.7	23.4		30.1	
Progression Factor		1.00	1.00	1.00	1.00		1.00	1.00	1.00		1.00	
Incremental Delay, d2		2002.5	364.6	238.4	15.7		4.6	1.9	0.2		3307.5	
Delay (s)		2036.1	404.6	263.1	38.9		36.3	32.6	23.5		3337.6	
Level of Service		F	F	F	D		D	C	C		F	
Approach Delay (s/veh)				225.2							3284.4	
Approach LOS				F							F	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	1116.8	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	4.77		
Actuated Cycle Length (s)	80.0	Sum of lost time (s)	16.7
Intersection Capacity Utilization	280.1%	ICU Level of Service	H
Analysis Period (min)	15		

! Phase conflict between lane groups.
c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	158	10	64	26	10	55	25	1025	15	82	1043	144
Future Volume (veh/h)	158	10	64	26	10	55	25	1025	15	82	1043	144
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	168	11	68	28	11	59	27	1090	16	87	1110	153
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	298	19	82	138	72	202	54	1280	19	391	1942	866
Arrive On Green	0.20	0.20	0.20	0.20	0.20	0.20	0.03	0.36	0.36	0.22	0.55	0.55
Sat Flow, veh/h	996	98	416	308	365	1019	1781	3585	53	1781	3554	1585
Grp Volume(v), veh/h	247	0	0	98	0	0	27	540	566	87	1110	153
Grp Sat Flow(s),veh/h/ln	1510	0	0	1693	0	0	1781	1777	1861	1781	1777	1585
Q Serve(g_s), s	6.2	0.0	0.0	0.0	0.0	0.0	0.9	16.8	16.9	2.4	12.4	2.9
Cycle Q Clear(g_c), s	9.2	0.0	0.0	3.0	0.0	0.0	0.9	16.8	16.9	2.4	12.4	2.9
Prop In Lane	0.68		0.28	0.29		0.60	1.00		0.03	1.00		1.00
Lane Grp Cap(c), veh/h	400	0	0	413	0	0	54	635	665	391	1942	866
V/C Ratio(X)	0.62	0.00	0.00	0.24	0.00	0.00	0.50	0.85	0.85	0.22	0.57	0.18
Avail Cap(c_a), veh/h	544	0	0	568	0	0	148	687	720	391	1942	866
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	0.00	0.49	0.49	0.49	1.00	1.00	1.00
Uniform Delay (d), s/veh	22.7	0.0	0.0	20.5	0.0	0.0	28.6	17.8	17.8	19.2	9.0	6.8
Incr Delay (d2), s/veh	1.6	0.0	0.0	0.3	0.0	0.0	3.5	7.2	6.9	0.3	1.2	0.4
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.2	0.0	0.0	1.1	0.0	0.0	0.4	7.2	7.4	0.9	3.9	0.9
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	24.3	0.0	0.0	20.8	0.0	0.0	32.2	25.0	24.7	19.5	10.2	7.3
LnGrp LOS	C			C			C	C	C	B	B	A
Approach Vol, veh/h		247			98			1133			1350	
Approach Delay, s/veh		24.3			20.8			25.0			10.5	
Approach LOS		C			C			C			B	

Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	17.7	25.9		16.4	6.3	37.3		16.4				
Change Period (Y+Rc), s	4.5	4.5		4.5	4.5	4.5		4.5				
Max Green Setting (Gmax), s	5.3	23.2		18.0	5.0	23.5		18.0				
Max Q Clear Time (g_c+I1), s	4.4	18.9		11.2	2.9	14.4		5.0				
Green Ext Time (p_c), s	0.0	2.6		0.7	0.0	5.2		0.3				

Intersection Summary												
HCM 7th Control Delay, s/veh			17.9									
HCM 7th LOS			B									

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	77	5	113	51	5	26	185	1043	10	10	1105	123
Future Volume (veh/h)	77	5	113	51	5	26	185	1043	10	10	1105	123
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	82	5	120	54	5	28	197	1110	11	11	1176	131
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	236	167	654	147	17	41	577	2586	26	225	1313	146
Arrive On Green	0.09	0.09	0.09	0.09	0.09	0.09	0.32	0.72	0.72	0.01	0.41	0.41
Sat Flow, veh/h	1376	1870	1585	774	187	456	1781	3605	36	1781	3224	358
Grp Volume(v), veh/h	82	5	120	87	0	0	197	547	574	11	647	660
Grp Sat Flow(s),veh/h/ln	1376	1870	1585	1418	0	0	1781	1777	1864	1781	1777	1806
Q Serve(g_s), s	0.0	0.2	0.0	3.8	0.0	0.0	6.3	9.4	9.4	0.3	25.4	25.6
Cycle Q Clear(g_c), s	3.5	0.2	0.0	4.4	0.0	0.0	6.3	9.4	9.4	0.3	25.4	25.6
Prop In Lane	1.00		1.00	0.62		0.32	1.00		0.02	1.00		0.20
Lane Grp Cap(c), veh/h	236	167	654	204	0	0	577	1275	1337	225	724	736
V/C Ratio(X)	0.35	0.03	0.18	0.43	0.00	0.00	0.34	0.43	0.43	0.05	0.89	0.90
Avail Cap(c_a), veh/h	445	451	896	414	0	0	577	1275	1337	322	756	768
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	0.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	32.7	31.2	14.0	33.1	0.0	0.0	19.3	4.3	4.3	15.7	20.7	20.8
Incr Delay (d2), s/veh	0.9	0.1	0.1	1.4	0.0	0.0	0.3	1.1	1.0	0.1	15.7	15.9
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.5	0.1	1.3	1.6	0.0	0.0	2.5	2.6	2.7	0.1	12.6	12.9
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	33.6	31.3	14.1	34.5	0.0	0.0	19.6	5.4	5.3	15.8	36.5	36.7
LnGrp LOS	C	C	B	C			B	A	A	B	D	D
Approach Vol, veh/h		207			87			1318			1318	
Approach Delay, s/veh		22.3			34.5			7.5			36.4	
Approach LOS		C			C			A			D	

Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	5.5	58.3		11.2	28.8	35.0		11.2				
Change Period (Y+Rc), s	4.5	4.5		4.5	4.5	4.5		4.5				
Max Green Setting (Gmax), s	5.1	38.3		18.1	11.5	31.9		18.1				
Max Q Clear Time (g_c+I1), s	2.3	11.4		5.5	8.3	27.6		6.4				
Green Ext Time (p_c), s	0.0	8.2		0.5	0.2	2.9		0.3				

Intersection Summary			
HCM 7th Control Delay, s/veh		22.3	
HCM 7th LOS		C	



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	605	568	764	297	567	432
Future Volume (veh/h)	605	568	764	297	567	432
Initial Q (Qb), veh	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)	1.00			1.00	1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No	No		No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	644	604	813	316	603	460
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	2	2	2	2	2	2
Cap, veh/h	672	2495	976	749	684	912
Arrive On Green	0.38	0.70	0.27	0.27	0.20	0.20
Sat Flow, veh/h	1781	3647	3647	1585	3456	1585
Grp Volume(v), veh/h	644	604	813	316	603	460
Grp Sat Flow(s),veh/h/ln	1781	1777	1777	1585	1728	1585
Q Serve(g_s), s	31.7	5.5	19.4	11.8	15.3	15.6
Cycle Q Clear(g_c), s	31.7	5.5	19.4	11.8	15.3	15.6
Prop In Lane	1.00			1.00	1.00	1.00
Lane Grp Cap(c), veh/h	672	2495	976	749	684	912
V/C Ratio(X)	0.96	0.24	0.83	0.42	0.88	0.50
Avail Cap(c_a), veh/h	683	2495	976	749	691	915
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	27.3	4.8	30.7	15.6	35.1	11.4
Incr Delay (d2), s/veh	24.3	0.2	8.3	1.7	12.6	0.4
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	17.1	1.7	9.0	6.3	7.2	16.5
Unsig. Movement Delay, s/veh						
LnGrp Delay(d), s/veh	51.7	5.0	39.0	17.4	47.7	11.9
LnGrp LOS	D	A	D	B	D	B
Approach Vol, veh/h		1248	1129		1063	
Approach Delay, s/veh		29.1	32.9		32.2	
Approach LOS		C	C		C	

Timer - Assigned Phs	4	6	7	8
Phs Duration (G+Y+Rc), s	67.7	22.3	38.5	29.2
Change Period (Y+Rc), s	4.5	4.5	4.5	4.5
Max Green Setting (Gmax), s	63.0	18.0	34.5	24.0
Max Q Clear Time (g_c+I1), s	7.5	17.6	33.7	21.4
Green Ext Time (p_c), s	4.6	0.2	0.2	1.6

Intersection Summary	
HCM 7th Control Delay, s/veh	31.3
HCM 7th LOS	C



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	198	935	2	2	918	35	2	2	2	26	2	140
Future Volume (veh/h)	198	935	2	2	918	35	2	2	2	26	2	140
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	211	995	2	2	977	37	2	2	2	28	2	149
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	450	2653	5	457	2546	96	121	111	81	82	15	187
Arrive On Green	0.73	0.73	0.73	0.73	0.73	0.73	0.14	0.14	0.14	0.14	0.14	0.14
Sat Flow, veh/h	556	3639	7	565	3491	132	367	777	572	157	108	1317
Grp Volume(v), veh/h	211	486	511	2	497	517	6	0	0	179	0	0
Grp Sat Flow(s),veh/h/ln	556	1777	1869	565	1777	1847	1717	0	0	1582	0	0
Q Serve(g_s), s	16.1	7.1	7.1	0.1	7.4	7.4	0.0	0.0	0.0	4.1	0.0	0.0
Cycle Q Clear(g_c), s	23.5	7.1	7.1	7.2	7.4	7.4	0.2	0.0	0.0	7.6	0.0	0.0
Prop In Lane	1.00		0.00	1.00		0.07	0.33		0.33	0.16		0.83
Lane Grp Cap(c), veh/h	450	1296	1363	457	1296	1346	313	0	0	285	0	0
V/C Ratio(X)	0.47	0.38	0.38	0.00	0.38	0.38	0.02	0.00	0.00	0.63	0.00	0.00
Avail Cap(c_a), veh/h	450	1296	1363	457	1296	1346	487	0	0	464	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	8.0	3.5	3.5	4.9	3.6	3.6	25.8	0.0	0.0	29.0	0.0	0.0
Incr Delay (d2), s/veh	3.5	0.8	0.8	0.0	0.9	0.8	0.0	0.0	0.0	2.3	0.0	0.0
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.9	1.7	1.8	0.0	1.8	1.9	0.1	0.0	0.0	3.0	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	11.5	4.4	4.3	4.9	4.4	4.4	25.9	0.0	0.0	31.3	0.0	0.0
LnGrp LOS	B	A	A	A	A	A	C			C		
Approach Vol, veh/h		1208			1016			6			179	
Approach Delay, s/veh		5.6			4.4			25.9			31.3	
Approach LOS		A			A			C			C	

Timer - Assigned Phs		2		4		6		8				
Phs Duration (G+Y+Rc), s		14.5		55.5		14.5		55.5				
Change Period (Y+Rc), s		4.5		4.5		4.5		4.5				
Max Green Setting (Gmax), s		18.0		43.0		18.0		43.0				
Max Q Clear Time (g_c+I1), s		2.2		25.5		9.6		9.4				
Green Ext Time (p_c), s		0.0		8.2		0.6		7.6				

Intersection Summary												
HCM 7th Control Delay, s/veh			7.1									
HCM 7th LOS			A									

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	28	1054	26	26	904	499	26	5	179	303	5	26
Future Volume (veh/h)	28	1054	26	26	904	499	26	5	179	303	5	26
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	30	1121	28	28	962	0	28	5	190	322	5	28
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	94	1674	41	95	1667		117	45	462	502	6	32
Arrive On Green	0.50	0.50	0.50	0.50	0.50	0.00	0.32	0.32	0.32	0.32	0.32	0.32
Sat Flow, veh/h	38	3353	83	39	3339	1585	111	139	1439	1137	18	99
Grp Volume(v), veh/h	608	0	571	517	473	0	223	0	0	355	0	0
Grp Sat Flow(s),veh/h/ln	1787	0	1687	1761	1617	1585	1688	0	0	1254	0	0
Q Serve(g_s), s	0.0	0.0	12.8	0.0	10.3	0.0	0.0	0.0	0.0	7.9	0.0	0.0
Cycle Q Clear(g_c), s	12.1	0.0	12.8	9.6	10.3	0.0	5.4	0.0	0.0	13.3	0.0	0.0
Prop In Lane	0.05		0.05	0.05		1.00	0.13		0.85	0.91		0.08
Lane Grp Cap(c), veh/h	967	0	842	955	807		623	0	0	540	0	0
V/C Ratio(X)	0.63	0.00	0.68	0.54	0.59		0.36	0.00	0.00	0.66	0.00	0.00
Avail Cap(c_a), veh/h	967	0	842	955	807		699	0	0	599	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	1.00	0.00	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	9.3	0.0	9.5	8.7	8.9	0.0	13.4	0.0	0.0	15.9	0.0	0.0
Incr Delay (d2), s/veh	3.1	0.0	4.4	2.2	3.1	0.0	0.3	0.0	0.0	2.3	0.0	0.0
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	4.3	0.0	4.4	3.3	3.3	0.0	1.8	0.0	0.0	3.7	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	12.4	0.0	13.8	10.9	12.0	0.0	13.7	0.0	0.0	18.2	0.0	0.0
LnGrp LOS	B		B	B	B		B			B		
Approach Vol, veh/h		1179			990			223			355	
Approach Delay, s/veh		13.1			11.4			13.7			18.2	
Approach LOS		B			B			B			B	

Timer - Assigned Phs	2	4	6	8
Phs Duration (G+Y+Rc), s	20.5	29.5	20.5	29.5
Change Period (Y+Rc), s	4.5	4.5	4.5	4.5
Max Green Setting (Gmax), s	18.5	22.5	18.5	22.5
Max Q Clear Time (g_c+I1), s	7.4	14.8	15.3	12.3
Green Ext Time (p_c), s	1.0	4.4	0.7	4.6

Intersection Summary	
HCM 7th Control Delay, s/veh	13.2
HCM 7th LOS	B

Notes

Unsignalized Delay for [WBR] is excluded from calculations of the approach delay and intersection delay.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	27	1678	26	49	1508	63	26	5	79	105	5	28
Future Volume (veh/h)	27	1678	26	49	1508	63	26	5	79	105	5	28
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	29	1785	28	52	1604	67	28	5	84	112	5	30
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	265	2600	41	237	2524	105	109	25	150	254	9	40
Arrive On Green	0.73	0.73	0.73	0.73	0.73	0.73	0.12	0.12	0.12	0.12	0.12	0.12
Sat Flow, veh/h	297	3581	56	258	3476	145	277	198	1209	1197	70	325
Grp Volume(v), veh/h	29	884	929	52	817	854	117	0	0	147	0	0
Grp Sat Flow(s),veh/h/ln	297	1777	1860	258	1777	1844	1684	0	0	1592	0	0
Q Serve(g_s), s	3.3	16.3	16.4	8.3	14.0	14.2	0.0	0.0	0.0	1.2	0.0	0.0
Cycle Q Clear(g_c), s	17.5	16.3	16.4	24.7	14.0	14.2	3.8	0.0	0.0	5.0	0.0	0.0
Prop In Lane	1.00		0.03	1.00		0.08	0.24		0.72	0.76		0.20
Lane Grp Cap(c), veh/h	265	1290	1350	237	1290	1339	283	0	0	303	0	0
V/C Ratio(X)	0.11	0.69	0.69	0.22	0.63	0.64	0.41	0.00	0.00	0.48	0.00	0.00
Avail Cap(c_a), veh/h	265	1290	1350	237	1290	1339	554	0	0	544	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	0.72	0.72	0.72	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	8.7	4.5	4.5	11.3	4.2	4.2	24.7	0.0	0.0	25.1	0.0	0.0
Incr Delay (d2), s/veh	0.8	3.0	2.9	1.5	1.7	1.7	1.0	0.0	0.0	1.2	0.0	0.0
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.2	3.6	3.8	0.5	2.8	3.0	1.6	0.0	0.0	2.0	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	9.5	7.5	7.4	12.8	5.9	5.9	25.7	0.0	0.0	26.3	0.0	0.0
LnGrp LOS	A	A	A	B	A	A	C			C		
Approach Vol, veh/h		1842			1723			117			147	
Approach Delay, s/veh		7.5			6.1			25.7			26.3	
Approach LOS		A			A			C			C	

Timer - Assigned Phs		2		4		6		8				
Phs Duration (G+Y+Rc), s		11.9		48.1		11.9		48.1				
Change Period (Y+Rc), s		4.5		4.5		4.5		4.5				
Max Green Setting (Gmax), s		18.0		33.0		18.0		33.0				
Max Q Clear Time (g_c+I1), s		5.8		19.5		7.0		26.7				
Green Ext Time (p_c), s		0.4		10.2		0.6		5.2				

Intersection Summary	
HCM 7th Control Delay, s/veh	8.1
HCM 7th LOS	A

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	28	1356	479	621	1186	15	418	32	895	15	84	15
Future Volume (veh/h)	28	1356	479	621	1186	15	418	32	895	15	84	15
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	30	1443	510	661	1262	16	445	34	952	16	89	16
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	207	1303	804	553	2444	31	485	486	861	38	111	19
Arrive On Green	0.37	0.37	0.37	0.28	0.68	0.68	0.14	0.26	0.26	0.09	0.09	0.09
Sat Flow, veh/h	433	3554	1585	1781	3593	46	3456	1870	1585	119	1238	207
Grp Volume(v), veh/h	30	1443	510	661	624	654	445	34	952	121	0	0
Grp Sat Flow(s),veh/h/ln	433	1777	1585	1781	1777	1862	1728	1870	1585	1563	0	0
Q Serve(g_s), s	7.1	55.0	22.3	42.5	26.0	26.0	19.1	2.1	39.0	6.3	0.0	0.0
Cycle Q Clear(g_c), s	7.1	55.0	22.3	42.5	26.0	26.0	19.1	2.1	39.0	11.2	0.0	0.0
Prop In Lane	1.00		1.00	1.00		0.02	1.00		1.00	0.13		0.13
Lane Grp Cap(c), veh/h	207	1303	804	553	1208	1266	485	486	861	167	0	0
V/C Ratio(X)	0.15	1.11	0.63	1.20	0.52	0.52	0.92	0.07	1.11	0.72	0.00	0.00
Avail Cap(c_a), veh/h	207	1303	804	553	1208	1266	485	486	861	210	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.63	0.63	0.63	1.00	1.00	1.00	0.81	0.81	0.81	1.00	0.00	0.00
Uniform Delay (d), s/veh	32.3	47.5	12.4	47.5	11.8	11.8	63.6	41.8	34.2	66.9	0.0	0.0
Incr Delay (d2), s/veh	0.9	56.1	2.4	104.9	1.6	1.5	19.1	0.0	61.2	8.8	0.0	0.0
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.8	34.1	8.0	35.7	10.4	10.8	9.5	1.0	44.6	4.9	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	33.3	103.6	14.9	152.4	13.4	13.3	82.7	41.9	95.4	75.7	0.0	0.0
LnGrp LOS	C	F	B	F	B	B	F	D	F	E		
Approach Vol, veh/h		1983			1939			1431			121	
Approach Delay, s/veh		79.7			60.8			90.2			75.7	
Approach LOS		E			E			F			E	

Timer - Assigned Phs	2	3	4	5	6		8				
Phs Duration (G+Y+Rc), s	43.5	47.0	59.5	25.6	17.9		106.5				
Change Period (Y+Rc), s	4.5	4.5	4.5	4.5	4.5		4.5				
Max Green Setting (Gmax), s	39.0	42.5	55.0	16.5	18.0		102.0				
Max Q Clear Time (g_c+I1), s	41.0	44.5	57.0	21.1	13.2		28.0				
Green Ext Time (p_c), s	0.0	0.0	0.0	0.0	0.2		12.0				

Intersection Summary	
HCM 7th Control Delay, s/veh	75.7
HCM 7th LOS	E

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	124	1698	284	347	1248	104	191	53	318	223	83	179
Future Volume (vph)	124	1698	284	347	1248	104	191	53	318	223	83	179
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.5	4.5		4.5	4.5			4.5		4.5	4.5	
Lane Util. Factor	1.00	0.95		1.00	0.95			1.00		1.00	1.00	
Frt	1.00	0.98		1.00	0.99			0.92		1.00	0.90	
Flt Protected	0.95	1.00		0.95	1.00			0.98		0.95	1.00	
Satd. Flow (prot)	1770	3463		1770	3498			1692		1770	1672	
Flt Permitted	0.19	1.00		0.19	1.00			0.74		0.41	1.00	
Satd. Flow (perm)	347	3463		347	3498			1265		767	1672	
Peak-hour factor, PHF	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Adj. Flow (vph)	132	1806	302	369	1328	111	203	56	338	237	88	190
RTOR Reduction (vph)	0	27	0	0	13	0	0	2	0	0	10	0
Lane Group Flow (vph)	132	2081	0	369	1426	0	0	595	0	237	268	0
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		6			2			4			8	
Permitted Phases	6			2			4			8		
Actuated Green, G (s)	21.5	21.5		21.5	21.5			19.5		19.5	19.5	
Effective Green, g (s)	21.5	21.5		21.5	21.5			19.5		19.5	19.5	
Actuated g/C Ratio	0.43	0.43		0.43	0.43			0.39		0.39	0.39	
Clearance Time (s)	4.5	4.5		4.5	4.5			4.5		4.5	4.5	
Vehicle Extension (s)	3.0	3.0		3.0	3.0			3.0		3.0	3.0	
Lane Grp Cap (vph)	149	1489		149	1504			493		299	652	
v/s Ratio Prot		0.60			0.41						0.16	
v/s Ratio Perm	0.38			c1.06				c0.47		0.31		
v/c Ratio	0.89	1.40		2.48	0.95			1.21		0.79	0.41	
Uniform Delay, d1	13.1	14.3		14.3	13.7			15.3		13.5	11.1	
Progression Factor	1.00	1.00		1.00	1.00			1.00		1.00	1.00	
Incremental Delay, d2	48.3	183.1		684.1	13.8			111.1		13.4	0.4	
Delay (s)	61.4	197.4		698.4	27.5			126.4		26.9	11.5	
Level of Service	E	F		F	C			F		C	B	
Approach Delay (s/veh)		189.4			164.4			126.4			18.6	
Approach LOS		F			F			F			B	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	156.3	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	1.87		
Actuated Cycle Length (s)	50.0	Sum of lost time (s)	9.0
Intersection Capacity Utilization	138.5%	ICU Level of Service	H
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	1965	468	123	1319	380	175
Future Volume (veh/h)	1965	468	123	1319	380	175
Initial Q (Qb), veh	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)		1.00	1.00		1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No	No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	2090	0	131	1403	404	0
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	2	2	2	2	2	2
Cap, veh/h	2033		238	2687	498	
Arrive On Green	0.57	0.00	0.13	0.76	0.14	0.00
Sat Flow, veh/h	3647	1585	1781	3647	3456	1585
Grp Volume(v), veh/h	2090	0	131	1403	404	0
Grp Sat Flow(s),veh/h/ln	1777	1585	1781	1777	1728	1585
Q Serve(g_s), s	51.5	0.0	6.2	14.3	10.2	0.0
Cycle Q Clear(g_c), s	51.5	0.0	6.2	14.3	10.2	0.0
Prop In Lane		1.00	1.00		1.00	1.00
Lane Grp Cap(c), veh/h	2033		238	2687	498	
V/C Ratio(X)	1.03		0.55	0.52	0.81	
Avail Cap(c_a), veh/h	2033		238	2687	691	
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	19.2	0.0	36.4	4.4	37.3	0.0
Incr Delay (d2), s/veh	27.4	0.0	2.7	0.7	5.1	0.0
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	25.8	0.0	2.8	3.7	4.5	0.0
Unsig. Movement Delay, s/veh						
LnGrp Delay(d), s/veh	46.7	0.0	39.1	5.2	42.5	0.0
LnGrp LOS	F		D	A	D	
Approach Vol, veh/h	2090			1534	404	
Approach Delay, s/veh	46.7			8.1	42.5	
Approach LOS	D			A	D	

Timer - Assigned Phs	2	3	4	8
Phs Duration (G+Y+Rc), s	17.5	16.5	56.0	72.5
Change Period (Y+Rc), s	4.5	4.5	4.5	4.5
Max Green Setting (Gmax), s	18.0	7.0	51.5	63.0
Max Q Clear Time (g_c+I1), s	12.2	8.2	53.5	16.3
Green Ext Time (p_c), s	0.8	0.0	0.0	15.0

Intersection Summary	
HCM 7th Control Delay, s/veh	31.5
HCM 7th LOS	C

Notes

Unsignalized Delay for [NBR, EBR] is excluded from calculations of the approach delay and intersection delay.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	183	1616	136	19	1153	27	124	6	19	28	7	160
Future Volume (veh/h)	183	1616	136	19	1153	27	124	6	19	28	7	160
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	195	1719	145	20	1227	29	132	6	20	30	7	170
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	334	2156	180	39	2559	60	221	14	23	75	26	252
Arrive On Green	0.65	0.65	0.65	0.02	0.72	0.72	0.18	0.18	0.18	0.18	0.18	0.18
Sat Flow, veh/h	442	3321	277	1781	3548	84	828	77	131	163	144	1410
Grp Volume(v), veh/h	195	910	954	20	614	642	158	0	0	207	0	0
Grp Sat Flow(s),veh/h/ln	442	1777	1821	1781	1777	1855	1035	0	0	1717	0	0
Q Serve(g_s), s	30.3	33.1	34.7	1.0	13.3	13.3	3.7	0.0	0.0	0.0	0.0	0.0
Cycle Q Clear(g_c), s	37.1	33.1	34.7	1.0	13.3	13.3	13.9	0.0	0.0	10.2	0.0	0.0
Prop In Lane	1.00		0.15	1.00		0.05	0.84		0.13	0.14		0.82
Lane Grp Cap(c), veh/h	334	1154	1182	39	1282	1338	258	0	0	353	0	0
V/C Ratio(X)	0.58	0.79	0.81	0.51	0.48	0.48	0.61	0.00	0.00	0.59	0.00	0.00
Avail Cap(c_a), veh/h	334	1154	1182	99	1282	1338	292	0	0	395	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	14.6	11.3	11.6	43.5	5.3	5.3	36.4	0.0	0.0	34.7	0.0	0.0
Incr Delay (d2), s/veh	7.3	5.5	5.9	10.1	1.3	1.2	3.0	0.0	0.0	1.8	0.0	0.0
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.3	12.3	13.3	0.5	4.1	4.2	3.6	0.0	0.0	4.4	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	21.9	16.8	17.6	53.6	6.6	6.6	39.4	0.0	0.0	36.5	0.0	0.0
LnGrp LOS	C	B	B	D	A	A	D			D		
Approach Vol, veh/h		2059			1276			158			207	
Approach Delay, s/veh		17.7			7.3			39.4			36.5	
Approach LOS		B			A			D			D	

Timer - Assigned Phs		2	3	4		6		8				
Phs Duration (G+Y+Rc), s		20.6	6.5	62.9		20.6		69.4				
Change Period (Y+Rc), s		4.5	4.5	4.5		4.5		4.5				
Max Green Setting (Gmax), s		18.5	5.0	53.0		18.5		62.5				
Max Q Clear Time (g_c+I1), s		15.9	3.0	39.1		12.2		15.3				
Green Ext Time (p_c), s		0.2	0.0	11.6		0.6		11.2				

Intersection Summary	
HCM 7th Control Delay, s/veh	16.1
HCM 7th LOS	B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBU	SBL	SBT
Lane Configurations												
Traffic Volume (vph)	156	0	597	219	124	63	501	1126	0	0	0	826
Future Volume (vph)	156	0	597	219	124	63	501	1126	0	0	0	826
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.5		4.5		4.5		4.5	4.5				4.5
Lane Util. Factor	1.00		1.00		1.00		1.00	0.95				0.95
Frt	1.00		0.85		0.98		1.00	1.00				1.00
Flt Protected	0.95		1.00		0.97		0.95	1.00				1.00
Satd. Flow (prot)	1770		1583		1776		1770	3539				3539
Flt Permitted	0.53		1.00		0.97		0.16	1.00				1.00
Satd. Flow (perm)	995		1583		1776		299	3539				3539
Peak-hour factor, PHF	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Adj. Flow (vph)	166	0	635	233	132	67	533	1198	0	0	0	879
RTOR Reduction (vph)	0	0	385	0	9	0	0	0	0	0	0	0
Lane Group Flow (vph)	166	0	250	0	423	0	533	1198	0	0	0	879
Turn Type	Perm		Perm	Perm	NA		pm+pt	NA		Perm		NA
Protected Phases					8		5	2				6
Permitted Phases	4		4	8			2			6		
Actuated Green, G (s)	19.2		19.2		19.2		46.8	46.8				22.6
Effective Green, g (s)	19.2		19.2		19.2		46.8	46.8				22.6
Actuated g/C Ratio	0.26		0.26		0.26		0.62	0.62				0.30
Clearance Time (s)	4.5		4.5		4.5		4.5	4.5				4.5
Vehicle Extension (s)	3.0		3.0		3.0		3.0	3.0				3.0
Lane Grp Cap (vph)	254		405		454		572	2208				1066
v/s Ratio Prot							c0.24	0.34				0.25
v/s Ratio Perm	0.17		0.16		0.24		c0.34					
v/c Ratio	0.65		0.62		0.93		0.93	0.54				0.82
Uniform Delay, d1	24.9		24.7		27.3		20.1	8.0				24.4
Progression Factor	1.00		1.00		1.00		1.00	1.00				1.01
Incremental Delay, d2	5.9		2.8		26.0		22.2	1.0				3.0
Delay (s)	30.9		27.5		53.3		42.3	9.0				27.5
Level of Service	C		C		D		D	A				C
Approach Delay (s/veh)		28.2			53.3			19.2				25.9
Approach LOS		C			D			B				C

Intersection Summary			
HCM 2000 Control Delay (s/veh)	26.4	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.97		
Actuated Cycle Length (s)	75.0	Sum of lost time (s)	13.5
Intersection Capacity Utilization	93.5%	ICU Level of Service	F
Analysis Period (min)	15		

c Critical Lane Group



Movement	SBR
Lane Configurations	
Traffic Volume (vph)	358
Future Volume (vph)	358
Ideal Flow (vphpl)	1900
Total Lost time (s)	4.5
Lane Util. Factor	1.00
Frt	0.85
Flt Protected	1.00
Satd. Flow (prot)	1583
Flt Permitted	1.00
Satd. Flow (perm)	1583
Peak-hour factor, PHF	0.94
Adj. Flow (vph)	381
RTOR Reduction (vph)	213
Lane Group Flow (vph)	168
Turn Type	Perm
Protected Phases	
Permitted Phases	6
Actuated Green, G (s)	22.6
Effective Green, g (s)	22.6
Actuated g/C Ratio	0.30
Clearance Time (s)	4.5
Vehicle Extension (s)	3.0
Lane Grp Cap (vph)	477
v/s Ratio Prot	
v/s Ratio Perm	0.11
v/c Ratio	0.35
Uniform Delay, d1	20.5
Progression Factor	1.05
Incremental Delay, d2	0.8
Delay (s)	22.3
Level of Service	C
Approach Delay (s/veh)	
Approach LOS	

Intersection Summary



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	6	2698	1951	115	226	126
Future Volume (veh/h)	6	2698	1951	115	226	126
Initial Q (Qb), veh	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)	1.00			1.00	1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No	No		No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	6	2870	2076	122	249	125
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	2	2	2	2	2	2
Cap, veh/h	16	2940	2783	1241	339	151
Arrive On Green	0.01	0.83	0.78	0.78	0.10	0.10
Sat Flow, veh/h	1781	3647	3647	1585	3563	1585
Grp Volume(v), veh/h	6	2870	2076	122	249	125
Grp Sat Flow(s),veh/h/ln	1781	1777	1777	1585	1781	1585
Q Serve(g_s), s	0.5	105.4	44.3	2.6	9.9	11.3
Cycle Q Clear(g_c), s	0.5	105.4	44.3	2.6	9.9	11.3
Prop In Lane	1.00			1.00	1.00	1.00
Lane Grp Cap(c), veh/h	16	2940	2783	1241	339	151
V/C Ratio(X)	0.38	0.98	0.75	0.10	0.74	0.83
Avail Cap(c_a), veh/h	74	2955	2783	1241	439	195
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	71.6	11.3	8.2	3.7	64.0	64.6
Incr Delay (d2), s/veh	14.3	11.6	1.1	0.0	4.6	20.1
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.3	30.4	13.4	0.7	4.6	5.3
Unsig. Movement Delay, s/veh						
LnGrp Delay(d), s/veh	85.9	22.8	9.3	3.7	68.5	84.7
LnGrp LOS	F	C	A	A	E	F
Approach Vol, veh/h		2876	2198		374	
Approach Delay, s/veh		23.0	9.0		73.9	
Approach LOS		C	A		E	

Timer - Assigned Phs	1	2		4		6
Phs Duration (G+Y+Rc), s	6.4	120.0		18.9		126.4
Change Period (Y+Rc), s	5.1	6.2		5.1		6.2
Max Green Setting (Gmax), s	6.0	109.7		17.9		120.8
Max Q Clear Time (g_c+I1), s	2.5	46.3		13.3		107.4
Green Ext Time (p_c), s	0.0	32.5		0.6		12.8

Intersection Summary	
HCM 7th Control Delay, s/veh	20.9
HCM 7th LOS	C

Notes
User approved volume balancing among the lanes for turning movement.



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	32	2877	2068	104	49	17
Future Volume (veh/h)	32	2877	2068	104	49	17
Initial Q (Qb), veh	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)	1.00			1.00	1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No	No		No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	34	3061	2200	111	52	18
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	2	2	2	2	2	2
Cap, veh/h	56	3078	2835	1264	66	23
Arrive On Green	0.03	0.87	0.80	0.80	0.05	0.05
Sat Flow, veh/h	1781	3647	3647	1585	1266	438
Grp Volume(v), veh/h	34	3061	2200	111	71	0
Grp Sat Flow(s),veh/h/ln	1781	1777	1777	1585	1728	0
Q Serve(g_s), s	2.6	115.0	45.5	2.1	5.6	0.0
Cycle Q Clear(g_c), s	2.6	115.0	45.5	2.1	5.6	0.0
Prop In Lane	1.00			1.00	0.73	0.25
Lane Grp Cap(c), veh/h	56	3078	2835	1264	90	0
V/C Ratio(X)	0.60	0.99	0.78	0.09	0.79	0.00
Avail Cap(c_a), veh/h	121	3079	2835	1264	236	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	66.1	8.9	7.4	3.0	64.8	0.0
Incr Delay (d2), s/veh	9.9	14.9	1.4	0.0	14.0	0.0
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.3	24.1	12.7	0.5	2.8	0.0
Unsig. Movement Delay, s/veh						
LnGrp Delay(d), s/veh	76.0	23.8	8.8	3.1	78.8	0.0
LnGrp LOS	E	C	A	A	E	
Approach Vol, veh/h		3095	2311		71	
Approach Delay, s/veh		24.4	8.6		78.8	
Approach LOS		C	A		E	

Timer - Assigned Phs	1	2		4		6
Phs Duration (G+Y+Rc), s	9.5	116.5		12.3		126.0
Change Period (Y+Rc), s	5.1	6.2		5.1		6.2
Max Green Setting (Gmax), s	9.4	105.3		18.9		119.8
Max Q Clear Time (g_c+I1), s	4.6	47.5		7.6		117.0
Green Ext Time (p_c), s	0.0	34.4		0.1		2.8

Intersection Summary	
HCM 7th Control Delay, s/veh	18.4
HCM 7th LOS	B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	395	2522	10	26	1891	660	0	0	0	862	5	265
Future Volume (vph)	395	2522	10	26	1891	660	0	0	0	862	5	265
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.4	6.7		5.4	6.7	6.7				5.4	5.4	5.4
Lane Util. Factor	0.97	0.91		1.00	0.91	1.00				0.91	0.86	0.95
Frt	1.00	1.00		1.00	1.00	0.85				1.00	0.99	0.85
Flt Protected	0.95	1.00		0.95	1.00	1.00				0.95	0.96	1.00
Satd. Flow (prot)	3433	5082		1770	5085	1583				3221	1513	1504
Flt Permitted	0.95	1.00		0.95	1.00	1.00				0.95	0.96	1.00
Satd. Flow (perm)	3433	5082		1770	5085	1583				3221	1513	1504
Peak-hour factor, PHF	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Adj. Flow (vph)	420	2683	11	28	2012	702	0	0	0	917	5	282
RTOR Reduction (vph)	0	0	0	0	0	142	0	0	0	0	2	154
Lane Group Flow (vph)	420	2694	0	28	2012	560	0	0	0	633	315	100
Turn Type	Prot	NA		Prot	NA	Perm				Split	NA	pm+ov
Protected Phases	1	6		5	2			3		4	4	1
Permitted Phases						2	3					4
Actuated Green, G (s)	20.6	75.1		6.0	60.5	60.5				30.2	30.2	50.8
Effective Green, g (s)	20.6	75.1		6.0	60.5	60.5				30.2	30.2	50.8
Actuated g/C Ratio	0.16	0.58		0.05	0.47	0.47				0.23	0.23	0.39
Clearance Time (s)	5.4	6.7		5.4	6.7	6.7				5.4	5.4	5.4
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0				3.0	3.0	3.0
Lane Grp Cap (vph)	549	2963		82	2388	743				755	354	656
v/s Ratio Prot	0.12	c0.53		0.02	c0.40					0.20	c0.21	0.02
v/s Ratio Perm						0.35						0.04
v/c Ratio	0.77	0.91		0.34	0.84	0.75				0.84	0.89	0.15
Uniform Delay, d1	51.8	23.8		59.5	30.0	28.0				47.0	47.7	25.1
Progression Factor	1.00	1.00		1.00	1.00	1.00				1.00	1.00	1.00
Incremental Delay, d2	6.3	4.6		2.5	2.9	4.3				8.1	22.6	0.1
Delay (s)	58.1	28.4		62.0	32.9	32.4				55.1	70.3	25.2
Level of Service	E	C		E	C	C				E	E	C
Approach Delay (s/veh)		32.4			33.0			0.0			52.8	
Approach LOS		C			C			A			D	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	36.1	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.97		
Actuated Cycle Length (s)	128.8	Sum of lost time (s)	22.9
Intersection Capacity Utilization	89.7%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	129	3335	15	51	2458	154	0	0	0	103	5	104
Future Volume (veh/h)	129	3335	15	51	2458	154	0	0	0	103	5	104
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	137	3548	16	54	2615	164	0	0	0	110	5	111
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	57	2756	12	48	2700	1204	0	303	256	151	9	120
Arrive On Green	0.76	0.76	0.76	0.76	0.76	0.76	0.00	0.00	0.00	0.16	0.16	0.16
Sat Flow, veh/h	99	3628	16	45	3554	1585	0	1870	1585	714	54	741
Grp Volume(v), veh/h	137	1736	1828	54	2615	164	0	0	0	226	0	0
Grp Sat Flow(s),veh/h/ln	99	1777	1867	45	1777	1585	0	1870	1585	1509	0	0
Q Serve(g_s), s	13.5	113.3	113.3	0.0	99.8	4.1	0.0	0.0	0.0	21.4	0.0	0.0
Cycle Q Clear(g_c), s	113.3	113.3	113.3	113.3	99.8	4.1	0.0	0.0	0.0	22.0	0.0	0.0
Prop In Lane	1.00		0.01	1.00		1.00	0.00		1.00	0.49		0.49
Lane Grp Cap(c), veh/h	57	1350	1419	48	2700	1204	0	303	256	280	0	0
V/C Ratio(X)	2.39	1.29	1.29	1.12	0.97	0.14	0.00	0.00	0.00	0.81	0.00	0.00
Avail Cap(c_a), veh/h	57	1350	1419	48	2700	1204	0	314	266	289	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	0.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	73.5	17.9	17.9	74.6	16.3	4.8	0.0	0.0	0.0	61.6	0.0	0.0
Incr Delay (d2), s/veh	676.5	134.5	135.1	166.2	11.0	0.1	0.0	0.0	0.0	15.1	0.0	0.0
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	12.9	86.4	91.1	4.1	35.8	1.2	0.0	0.0	0.0	9.4	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	750.0	152.4	153.0	240.7	27.3	4.8	0.0	0.0	0.0	76.7	0.0	0.0
LnGrp LOS	F	F	F	F	C	A				E		
Approach Vol, veh/h		3701			2833			0			226	
Approach Delay, s/veh		174.8			30.0			0.0			76.7	
Approach LOS		F			C						E	

Timer - Assigned Phs	2	4	6	8
Phs Duration (G+Y+Rc), s	120.0	29.1	120.0	29.1
Change Period (Y+Rc), s	6.7	5.0	6.7	5.0
Max Green Setting (Gmax), s	113.3	25.0	113.3	25.0
Max Q Clear Time (g_c+I1), s	115.3	24.0	115.3	0.0
Green Ext Time (p_c), s	0.0	0.1	0.0	0.0

Intersection Summary	
HCM 7th Control Delay, s/veh	110.9
HCM 7th LOS	F



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	395	3226	0	0	2494	1233	0	0	0	1266	0	376
Future Volume (vph)	395	3226	0	0	2494	1233	0	0	0	1266	0	376
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.2	7.2			7.2	7.2				5.9		5.9
Lane Util. Factor	1.00	0.91			0.91	1.00				0.97		1.00
Frt	1.00	1.00			1.00	0.85				1.00		0.85
Flt Protected	0.95	1.00			1.00	1.00				0.95		1.00
Satd. Flow (prot)	1770	5085			5085	1583				3433		1583
Flt Permitted	0.95	1.00			1.00	1.00				0.95		1.00
Satd. Flow (perm)	1770	5085			5085	1583				3433		1583
Peak-hour factor, PHF	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Adj. Flow (vph)	420	3432	0	0	2653	1312	0	0	0	1347	0	400
RTOR Reduction (vph)	0	0	0	0	0	335	0	0	0	0	0	245
Lane Group Flow (vph)	420	3432	0	0	2653	977	0	0	0	1347	0	155
Turn Type	Prot	NA		Prot	NA	Perm	Split		Perm	Split		Perm
Protected Phases	1	6		5	2		3	3		4	4	
Permitted Phases						2			3			4
Actuated Green, G (s)	20.8	84.7			58.7	58.7				36.1		36.1
Effective Green, g (s)	20.8	84.7			58.7	58.7				36.1		36.1
Actuated g/C Ratio	0.16	0.63			0.44	0.44				0.27		0.27
Clearance Time (s)	5.2	7.2			7.2	7.2				5.9		5.9
Vehicle Extension (s)	3.0	3.0			3.0	3.0				3.0		3.0
Lane Grp Cap (vph)	274	3216			2229	693				925		426
v/s Ratio Prot	c0.24	0.67			0.52					c0.39		
v/s Ratio Perm						c0.62						0.10
v/c Ratio	1.53	1.07			1.19	1.41				1.46		0.36
Uniform Delay, d1	56.6	24.6			37.6	37.6				48.9		39.6
Progression Factor	1.00	1.00			1.00	1.00				1.00		1.00
Incremental Delay, d2	257.4	37.4			90.4	192.8				211.3		0.5
Delay (s)	313.9	62.0			128.0	230.4				260.2		40.1
Level of Service	F	E			F	F				F		D
Approach Delay (s/veh)		89.5			161.9			0.0			209.8	
Approach LOS		F			F			A			F	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	141.5	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	1.51		
Actuated Cycle Length (s)	133.9	Sum of lost time (s)	23.4
Intersection Capacity Utilization	130.4%	ICU Level of Service	H
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL2	EBL	EBR	WBT	WBR	WBR2	SBR	SBR2	SEL2	SEL	SET	SER
Lane Configurations												
Traffic Volume (vph)	391	391	3711	2988	377	377	500	239	50	450	0	239
Future Volume (vph)	391	391	3711	2988	377	377	500	239	50	450	0	239
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		5.1	4.0	6.5	6.5		5.1	5.1	5.1		5.1	
Lane Util. Factor		1.00	0.76	0.91	1.00		0.88	1.00	0.95		0.95	
Frt		1.00	0.85	1.00	0.85		0.85	0.85	1.00		0.95	
Flt Protected		0.95	1.00	1.00	1.00		1.00	1.00	0.95		0.97	
Satd. Flow (prot)		1770	3610	5085	1583		2787	1583	1681		1625	
Flt Permitted		0.39	1.00	1.00	1.00		1.00	1.00	0.95		0.97	
Satd. Flow (perm)		723	3610	5085	1583		2787	1583	1681		1625	
Peak-hour factor, PHF	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Adj. Flow (vph)	416	416	3948	3179	401	401	532	254	53	479	0	254
RTOR Reduction (vph)	0	0	0	0	63	0	0	0	0	0	95	0
Lane Group Flow (vph)	0	832	3948	3179	739	0	532	254	48	0	643	0
Turn Type	D.Pm	D.Pm	Free	NA	Perm		Prot	Perm	Split	Split	NA	
Protected Phases				2			4!		1	1	1	
Permitted Phases	4!	4	Free		2			4				
Actuated Green, G (s)		10.3	75.0	30.0	30.0		10.3	10.3	18.0		18.0	
Effective Green, g (s)		10.3	75.0	30.0	30.0		10.3	10.3	18.0		18.0	
Actuated g/C Ratio		0.14	1.00	0.40	0.40		0.14	0.14	0.24		0.24	
Clearance Time (s)		5.1		6.5	6.5		5.1	5.1	5.1		5.1	
Vehicle Extension (s)		3.0		3.0	3.0		3.0	3.0	3.0		3.0	
Lane Grp Cap (vph)		99	3610	2034	633		382	217	403		390	
v/s Ratio Prot				c0.63			0.19		0.03		c0.40	
v/s Ratio Perm		c1.15	1.09		0.47			0.16				
v/c Ratio		8.40	1.09	1.56	1.17		1.39	1.17	0.12		1.65	
Uniform Delay, d1		32.4	37.5	22.5	22.5		32.4	32.4	22.3		28.5	
Progression Factor		1.00	1.00	1.00	1.00		1.00	1.00	1.00		1.00	
Incremental Delay, d2		3352.3	47.3	255.8	91.7		192.1	114.8	0.1		303.2	
Delay (s)		3384.7	84.8	278.3	114.2		224.4	147.1	22.4		331.7	
Level of Service		F	F	F	F		F	F	C		F	
Approach Delay (s/veh)				245.2							312.8	
Approach LOS				F							F	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	438.4	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	2.79		
Actuated Cycle Length (s)	75.0	Sum of lost time (s)	16.7
Intersection Capacity Utilization	160.7%	ICU Level of Service	H
Analysis Period (min)	15		

! Phase conflict between lane groups.
c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	154	15	72	51	15	77	93	1268	72	138	1376	144
Future Volume (veh/h)	154	15	72	51	15	77	93	1268	72	138	1376	144
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	164	16	77	54	16	82	99	1349	77	147	1464	153
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	254	23	87	151	61	177	126	1536	88	316	1975	881
Arrive On Green	0.20	0.20	0.20	0.20	0.20	0.20	0.07	0.45	0.45	0.18	0.56	0.56
Sat Flow, veh/h	883	113	426	439	300	865	1781	3418	195	1781	3554	1585
Grp Volume(v), veh/h	257	0	0	152	0	0	99	700	726	147	1464	153
Grp Sat Flow(s),veh/h/ln	1421	0	0	1604	0	0	1781	1777	1835	1781	1777	1585
Q Serve(g_s), s	7.6	0.0	0.0	0.0	0.0	0.0	4.4	28.6	28.8	5.9	24.9	3.8
Cycle Q Clear(g_c), s	14.0	0.0	0.0	6.4	0.0	0.0	4.4	28.6	28.8	5.9	24.9	3.8
Prop In Lane	0.64		0.30	0.36		0.54	1.00		0.11	1.00		1.00
Lane Grp Cap(c), veh/h	364	0	0	389	0	0	126	799	825	316	1975	881
V/C Ratio(X)	0.71	0.00	0.00	0.39	0.00	0.00	0.78	0.88	0.88	0.47	0.74	0.17
Avail Cap(c_a), veh/h	402	0	0	429	0	0	158	855	883	316	1975	881
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	0.00	0.09	0.09	0.09	1.00	1.00	1.00
Uniform Delay (d), s/veh	30.8	0.0	0.0	27.8	0.0	0.0	36.6	20.0	20.1	29.5	13.4	8.7
Incr Delay (d2), s/veh	5.0	0.0	0.0	0.6	0.0	0.0	1.9	1.4	1.4	1.1	2.6	0.4
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	5.1	0.0	0.0	2.5	0.0	0.0	1.9	10.9	11.3	2.5	9.1	1.3
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	35.8	0.0	0.0	28.5	0.0	0.0	38.4	21.4	21.5	30.6	16.0	9.2
LnGrp LOS	D			C			D	C	C	C	B	A
Approach Vol, veh/h		257			152			1525			1764	
Approach Delay, s/veh		35.8			28.5			22.5			16.6	
Approach LOS		D			C			C			B	

Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	18.7	40.5		20.8	10.2	49.0		20.8				
Change Period (Y+Rc), s	4.5	4.5		4.5	4.5	4.5		4.5				
Max Green Setting (Gmax), s	9.5	38.5		18.5	7.1	40.9		18.5				
Max Q Clear Time (g_c+I1), s	7.9	30.8		16.0	6.4	26.9		8.4				
Green Ext Time (p_c), s	0.1	5.1		0.3	0.0	9.0		0.5				

Intersection Summary		
HCM 7th Control Delay, s/veh		20.9
HCM 7th LOS		C



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	118	10	118	103	10	51	204	1188	47	15	1473	92
Future Volume (veh/h)	118	10	118	103	10	51	204	1188	47	15	1473	92
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	126	11	126	110	11	54	217	1264	50	16	1567	98
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	267	279	558	187	21	64	362	2379	94	217	1691	105
Arrive On Green	0.15	0.15	0.15	0.15	0.15	0.15	0.20	0.68	0.68	0.02	0.50	0.50
Sat Flow, veh/h	1337	1870	1585	820	141	428	1781	3485	138	1781	3398	211
Grp Volume(v), veh/h	126	11	126	175	0	0	217	644	670	16	815	850
Grp Sat Flow(s),veh/h/ln	1337	1870	1585	1389	0	0	1781	1777	1846	1781	1777	1832
Q Serve(g_s), s	0.0	0.5	0.0	10.4	0.0	0.0	9.9	16.2	16.3	0.4	38.3	39.1
Cycle Q Clear(g_c), s	8.7	0.5	0.0	11.0	0.0	0.0	9.9	16.2	16.3	0.4	38.3	39.1
Prop In Lane	1.00		1.00	0.63		0.31	1.00		0.07	1.00		0.12
Lane Grp Cap(c), veh/h	267	279	558	272	0	0	362	1213	1260	217	884	912
V/C Ratio(X)	0.47	0.04	0.23	0.64	0.00	0.00	0.60	0.53	0.53	0.07	0.92	0.93
Avail Cap(c_a), veh/h	336	376	641	343	0	0	362	1213	1260	285	902	930
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	0.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	36.3	32.8	20.5	37.2	0.0	0.0	32.5	7.1	7.1	14.7	21.0	21.2
Incr Delay (d2), s/veh	1.3	0.1	0.2	2.7	0.0	0.0	2.7	1.7	1.6	0.1	16.4	17.2
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.7	0.2	1.9	3.9	0.0	0.0	4.4	5.4	5.6	0.2	18.3	19.3
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	37.6	32.8	20.7	39.9	0.0	0.0	35.3	8.8	8.7	14.8	37.4	38.4
LnGrp LOS	D	C	C	D			D	A	A	B	D	D
Approach Vol, veh/h		263			175			1531			1681	
Approach Delay, s/veh		29.3			39.9			12.5			37.7	
Approach LOS		C			D			B			D	

Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	6.1	65.9		17.9	22.8	49.3		17.9				
Change Period (Y+Rc), s	4.5	4.5		4.5	4.5	4.5		4.5				
Max Green Setting (Gmax), s	5.1	53.3		18.1	12.7	45.7		18.1				
Max Q Clear Time (g_c+I1), s	2.4	18.3		10.7	11.9	41.1		13.0				
Green Ext Time (p_c), s	0.0	11.3		0.5	0.0	3.7		0.4				

Intersection Summary												
HCM 7th Control Delay, s/veh			26.6									
HCM 7th LOS			C									



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	596	597	895	406	786	664
Future Volume (veh/h)	596	597	895	406	786	664
Initial Q (Qb), veh	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)	1.00			1.00	1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No	No		No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	634	635	952	432	836	706
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	2	2	2	2	2	2
Cap, veh/h	623	2377	974	816	833	937
Arrive On Green	0.35	0.67	0.27	0.27	0.24	0.24
Sat Flow, veh/h	1781	3647	3647	1585	3456	1585
Grp Volume(v), veh/h	634	635	952	432	836	706
Grp Sat Flow(s),veh/h/ln	1781	1777	1777	1585	1728	1585
Q Serve(g_s), s	35.0	7.2	26.6	18.2	24.1	24.1
Cycle Q Clear(g_c), s	35.0	7.2	26.6	18.2	24.1	24.1
Prop In Lane	1.00			1.00	1.00	1.00
Lane Grp Cap(c), veh/h	623	2377	974	816	833	937
V/C Ratio(X)	1.02	0.27	0.98	0.53	1.00	0.75
Avail Cap(c_a), veh/h	623	2377	974	816	833	937
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	32.5	6.7	36.0	16.2	38.0	15.1
Incr Delay (d2), s/veh	40.4	0.3	23.9	2.5	32.1	3.5
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	21.3	2.4	14.3	10.7	13.3	28.5
Unsig. Movement Delay, s/veh						
LnGrp Delay(d), s/veh	72.9	6.9	59.9	18.6	70.1	18.6
LnGrp LOS	F	A	E	B	F	B
Approach Vol, veh/h		1269	1384		1542	
Approach Delay, s/veh		39.9	47.0		46.5	
Approach LOS		D	D		D	

Timer - Assigned Phs	4	6	7	8
Phs Duration (G+Y+Rc), s	71.4	28.6	39.5	31.9
Change Period (Y+Rc), s	4.5	4.5	4.5	4.5
Max Green Setting (Gmax), s	66.9	24.1	35.0	27.4
Max Q Clear Time (g_c+I1), s	9.2	26.1	37.0	28.6
Green Ext Time (p_c), s	4.9	0.0	0.0	0.0

Intersection Summary	
HCM 7th Control Delay, s/veh	44.7
HCM 7th LOS	D

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	130	1247	5	5	1268	77	5	2	5	53	2	28
Future Volume (veh/h)	130	1247	5	5	1268	77	5	2	5	53	2	28
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	138	1327	5	5	1349	82	5	2	5	56	2	30
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	347	2945	11	379	2761	167	98	42	55	143	7	39
Arrive On Green	0.81	0.81	0.81	0.81	0.81	0.81	0.08	0.08	0.08	0.08	0.08	0.08
Sat Flow, veh/h	374	3631	14	411	3404	206	449	555	717	903	85	511
Grp Volume(v), veh/h	138	649	683	5	703	728	12	0	0	88	0	0
Grp Sat Flow(s),veh/h/ln	374	1777	1868	411	1777	1833	1722	0	0	1499	0	0
Q Serve(g_s), s	14.7	8.7	8.7	0.3	9.9	10.0	0.0	0.0	0.0	4.1	0.0	0.0
Cycle Q Clear(g_c), s	24.6	8.7	8.7	9.0	9.9	10.0	0.5	0.0	0.0	4.6	0.0	0.0
Prop In Lane	1.00		0.01	1.00		0.11	0.42		0.42	0.64		0.34
Lane Grp Cap(c), veh/h	347	1441	1515	379	1441	1487	195	0	0	188	0	0
V/C Ratio(X)	0.40	0.45	0.45	0.01	0.49	0.49	0.06	0.00	0.00	0.47	0.00	0.00
Avail Cap(c_a), veh/h	347	1441	1515	379	1441	1487	422	0	0	407	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	6.2	2.2	2.2	3.6	2.4	2.4	34.4	0.0	0.0	36.2	0.0	0.0
Incr Delay (d2), s/veh	3.4	1.0	1.0	0.1	1.2	1.2	0.1	0.0	0.0	1.8	0.0	0.0
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.2	1.5	1.6	0.0	1.8	1.8	0.2	0.0	0.0	1.8	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	9.6	3.3	3.2	3.7	3.5	3.5	34.5	0.0	0.0	38.0	0.0	0.0
LnGrp LOS	A	A	A	A	A	A	C			D		
Approach Vol, veh/h		1470			1436			12			88	
Approach Delay, s/veh		3.8			3.5			34.5			38.0	
Approach LOS		A			A			C			D	

Timer - Assigned Phs		2		4		6		8				
Phs Duration (G+Y+Rc), s		10.6		69.4		10.6		69.4				
Change Period (Y+Rc), s		4.5		4.5		4.5		4.5				
Max Green Setting (Gmax), s		18.0		53.0		18.0		53.0				
Max Q Clear Time (g_c+I1), s		2.5		26.6		6.6		12.0				
Green Ext Time (p_c), s		0.0		13.4		0.3		13.8				

Intersection Summary												
HCM 7th Control Delay, s/veh			4.8									
HCM 7th LOS			A									

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	51	1054	51	38	1352	301	51	10	282	275	10	51
Future Volume (veh/h)	51	1054	51	38	1352	301	51	10	282	275	10	51
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	54	1121	54	40	1438	0	54	11	300	293	11	54
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	52	1109	70	66	1482		122	49	550	375	11	54
Arrive On Green	0.51	0.51	0.51	0.51	0.51	0.00	0.38	0.38	0.38	0.38	0.38	0.38
Sat Flow, veh/h	6	2190	139	36	2927	1585	183	129	1441	768	29	141
Grp Volume(v), veh/h	577	0	652	679	799	0	365	0	0	358	0	0
Grp Sat Flow(s),veh/h/ln	658	0	1677	1345	1617	1585	1754	0	0	938	0	0
Q Serve(g_s), s	2.0	0.0	25.1	15.2	38.5	0.0	0.0	0.0	0.0	16.8	0.0	0.0
Cycle Q Clear(g_c), s	40.5	0.0	25.1	40.4	38.5	0.0	13.7	0.0	0.0	30.5	0.0	0.0
Prop In Lane	0.09		0.08	0.06		1.00	0.15		0.82	0.82		0.15
Lane Grp Cap(c), veh/h	382	0	849	729	819		720	0	0	439	0	0
V/C Ratio(X)	1.51	0.00	0.77	0.93	0.98		0.51	0.00	0.00	0.81	0.00	0.00
Avail Cap(c_a), veh/h	382	0	849	729	819		720	0	0	439	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	1.00	0.00	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	23.5	0.0	16.0	18.6	19.3	0.0	19.7	0.0	0.0	26.6	0.0	0.0
Incr Delay (d2), s/veh	242.6	0.0	6.6	20.4	26.0	0.0	0.6	0.0	0.0	11.3	0.0	0.0
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	30.9	0.0	9.9	15.5	18.3	0.0	5.3	0.0	0.0	7.9	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	266.1	0.0	22.5	39.0	45.3	0.0	20.3	0.0	0.0	37.8	0.0	0.0
LnGrp LOS	F		C	D	D		C			D		
Approach Vol, veh/h		1229			1478			365			358	
Approach Delay, s/veh		136.9			42.4			20.3			37.8	
Approach LOS		F			D			C			D	

Timer - Assigned Phs	2	4	6	8
Phs Duration (G+Y+Rc), s	35.0	45.0	35.0	45.0
Change Period (Y+Rc), s	4.5	4.5	4.5	4.5
Max Green Setting (Gmax), s	30.5	40.5	30.5	40.5
Max Q Clear Time (g_c+I1), s	15.7	42.5	32.5	42.4
Green Ext Time (p_c), s	2.2	0.0	0.0	0.0

Intersection Summary	
HCM 7th Control Delay, s/veh	73.4
HCM 7th LOS	E

Notes

Unsignalized Delay for [WBR] is excluded from calculations of the approach delay and intersection delay.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	59	1631	55	57	1787	114	52	11	136	178	11	55
Future Volume (veh/h)	59	1631	55	57	1787	114	52	11	136	178	11	55
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	63	1735	59	61	1901	121	55	12	145	189	12	59
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	131	2283	77	171	2210	139	132	50	271	284	18	66
Arrive On Green	0.65	0.65	0.65	0.65	0.65	0.65	0.24	0.24	0.24	0.24	0.24	0.24
Sat Flow, veh/h	211	3507	119	263	3395	214	318	212	1147	873	75	278
Grp Volume(v), veh/h	63	875	919	61	985	1037	212	0	0	260	0	0
Grp Sat Flow(s),veh/h/ln	211	1777	1849	263	1777	1832	1677	0	0	1227	0	0
Q Serve(g_s), s	15.6	27.1	27.6	16.7	34.8	36.4	0.0	0.0	0.0	7.8	0.0	0.0
Cycle Q Clear(g_c), s	52.1	27.1	27.6	44.3	34.8	36.4	8.8	0.0	0.0	16.6	0.0	0.0
Prop In Lane	1.00		0.06	1.00		0.12	0.26		0.68	0.73		0.23
Lane Grp Cap(c), veh/h	131	1156	1203	171	1156	1192	454	0	0	368	0	0
V/C Ratio(X)	0.48	0.76	0.76	0.36	0.85	0.87	0.47	0.00	0.00	0.71	0.00	0.00
Avail Cap(c_a), veh/h	131	1156	1203	171	1156	1192	483	0	0	394	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	0.59	0.59	0.59	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	34.9	9.6	9.7	25.1	10.9	11.2	26.7	0.0	0.0	29.9	0.0	0.0
Incr Delay (d2), s/veh	12.1	4.7	4.6	3.4	4.9	5.4	0.8	0.0	0.0	5.3	0.0	0.0
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.6	9.5	10.0	1.1	11.9	12.9	3.6	0.0	0.0	5.3	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	46.9	14.3	14.3	28.5	15.9	16.7	27.4	0.0	0.0	35.2	0.0	0.0
LnGrp LOS	D	B	B	C	B	B	C			D		
Approach Vol, veh/h		1857			2083			212			260	
Approach Delay, s/veh		15.4			16.6			27.4			35.2	
Approach LOS		B			B			C			D	

Timer - Assigned Phs	2	4	6	8
Phs Duration (G+Y+Rc), s	23.4	56.6	23.4	56.6
Change Period (Y+Rc), s	4.5	4.5	4.5	4.5
Max Green Setting (Gmax), s	20.5	50.5	20.5	50.5
Max Q Clear Time (g_c+I1), s	10.8	54.1	18.6	46.3
Green Ext Time (p_c), s	0.9	0.0	0.3	3.9

Intersection Summary	
HCM 7th Control Delay, s/veh	17.7
HCM 7th LOS	B



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	28	1383	535	564	1610	26	322	45	795	26	77	26
Future Volume (veh/h)	28	1383	535	564	1610	26	322	45	795	26	77	26
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	30	1471	569	600	1713	28	343	48	846	28	82	28
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	155	1374	785	541	2481	40	376	461	830	50	102	31
Arrive On Green	0.39	0.39	0.39	0.28	0.69	0.69	0.11	0.25	0.25	0.11	0.11	0.11
Sat Flow, veh/h	277	3554	1585	1781	3578	58	3456	1870	1585	193	947	290
Grp Volume(v), veh/h	30	1471	569	600	849	892	343	48	846	138	0	0
Grp Sat Flow(s),veh/h/ln	277	1777	1585	1781	1777	1860	1728	1870	1585	1430	0	0
Q Serve(g_s), s	11.2	58.0	25.8	41.5	42.1	42.4	14.7	3.0	37.0	9.8	0.0	0.0
Cycle Q Clear(g_c), s	11.2	58.0	25.8	41.5	42.1	42.4	14.7	3.0	37.0	14.1	0.0	0.0
Prop In Lane	1.00		1.00	1.00		0.03	1.00		1.00	0.20		0.20
Lane Grp Cap(c), veh/h	155	1374	785	541	1232	1289	376	461	830	183	0	0
V/C Ratio(X)	0.19	1.07	0.72	1.11	0.69	0.69	0.91	0.10	1.02	0.75	0.00	0.00
Avail Cap(c_a), veh/h	155	1374	785	541	1232	1289	376	461	830	199	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.50	0.50	0.50	1.00	1.00	1.00	0.85	0.85	0.85	1.00	0.00	0.00
Uniform Delay (d), s/veh	31.6	46.0	13.2	48.1	13.5	13.6	66.1	43.7	35.8	65.4	0.0	0.0
Incr Delay (d2), s/veh	1.4	39.7	2.9	72.2	3.2	3.1	23.2	0.1	33.9	13.9	0.0	0.0
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.8	32.7	9.2	30.1	16.8	17.6	7.6	1.4	37.0	5.8	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	33.0	85.7	16.2	120.3	16.7	16.6	89.3	43.8	69.7	79.3	0.0	0.0
LnGrp LOS	C	F	B	F	B	B	F	D	F	E		
Approach Vol, veh/h		2070			2341			1237			138	
Approach Delay, s/veh		65.8			43.2			74.1			79.3	
Approach LOS		E			D			E			E	

Timer - Assigned Phs	2	3	4	5	6	8
Phs Duration (G+Y+Rc), s	41.5	46.0	62.5	20.8	20.7	108.5
Change Period (Y+Rc), s	4.5	4.5	4.5	4.5	4.5	4.5
Max Green Setting (Gmax), s	37.0	41.5	58.0	14.5	18.0	104.0
Max Q Clear Time (g_c+I1), s	39.0	43.5	60.0	16.7	16.1	44.4
Green Ext Time (p_c), s	0.0	0.0	0.0	0.0	0.1	22.1

Intersection Summary	
HCM 7th Control Delay, s/veh	58.8
HCM 7th LOS	E

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	234	1506	277	333	1515	232	263	159	416	231	70	220
Future Volume (vph)	234	1506	277	333	1515	232	263	159	416	231	70	220
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.5	4.5		4.5	4.5			4.5		4.5	4.5	
Lane Util. Factor	1.00	0.95		1.00	0.95			1.00		1.00	1.00	
Frt	1.00	0.98		1.00	0.98			0.93		1.00	0.89	
Flt Protected	0.95	1.00		0.95	1.00			0.98		0.95	1.00	
Satd. Flow (prot)	1770	3457		1770	3469			1711		1770	1650	
Flt Permitted	0.19	1.00		0.19	1.00			0.71		0.33	1.00	
Satd. Flow (perm)	347	3457		347	3469			1231		619	1650	
Peak-hour factor, PHF	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Adj. Flow (vph)	249	1602	295	354	1612	247	280	169	443	246	74	234
RTOR Reduction (vph)	0	30	0	0	25	0	0	4	0	0	4	0
Lane Group Flow (vph)	249	1867	0	354	1834	0	0	888	0	246	304	0
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		6			2			4			8	
Permitted Phases	6			2			4			8		
Actuated Green, G (s)	21.5	21.5		21.5	21.5			19.5		19.5	19.5	
Effective Green, g (s)	21.5	21.5		21.5	21.5			19.5		19.5	19.5	
Actuated g/C Ratio	0.43	0.43		0.43	0.43			0.39		0.39	0.39	
Clearance Time (s)	4.5	4.5		4.5	4.5			4.5		4.5	4.5	
Vehicle Extension (s)	3.0	3.0		3.0	3.0			3.0		3.0	3.0	
Lane Grp Cap (vph)	149	1486		149	1491			480		241	643	
v/s Ratio Prot		0.54			0.53						0.18	
v/s Ratio Perm	0.72			c1.02				c0.72		0.40		
v/c Ratio	1.67	1.26		2.38	1.23			1.85		1.02	0.47	
Uniform Delay, d1	14.3	14.3		14.3	14.3			15.3		15.3	11.4	
Progression Factor	1.00	1.00		1.00	1.00			1.00		1.00	1.00	
Incremental Delay, d2	329.6	121.0		639.3	109.8			390.8		63.4	0.6	
Delay (s)	343.8	135.2		653.6	124.0			406.1		78.7	12.0	
Level of Service	F	F		F	F			F		E	B	
Approach Delay (s/veh)		159.4			208.7			406.1			41.6	
Approach LOS		F			F			F			D	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	204.9	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	2.12		
Actuated Cycle Length (s)	50.0	Sum of lost time (s)	9.0
Intersection Capacity Utilization	149.5%	ICU Level of Service	H
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	1846	469	174	1436	645	174
Future Volume (veh/h)	1846	469	174	1436	645	174
Initial Q (Qb), veh	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)		1.00	1.00		1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No	No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	1964	0	185	1528	686	0
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	2	2	2	2	2	2
Cap, veh/h	2004		194	2536	707	
Arrive On Green	0.56	0.00	0.11	0.71	0.20	0.00
Sat Flow, veh/h	3647	1585	1781	3647	3456	1585
Grp Volume(v), veh/h	1964	0	185	1528	686	0
Grp Sat Flow(s),veh/h/ln	1777	1585	1781	1777	1728	1585
Q Serve(g_s), s	59.3	0.0	11.4	23.8	21.7	0.0
Cycle Q Clear(g_c), s	59.3	0.0	11.4	23.8	21.7	0.0
Prop In Lane		1.00	1.00		1.00	1.00
Lane Grp Cap(c), veh/h	2004		194	2536	707	
V/C Ratio(X)	0.98		0.96	0.60	0.97	
Avail Cap(c_a), veh/h	2006		194	2536	707	
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	23.4	0.0	48.8	7.9	43.4	0.0
Incr Delay (d2), s/veh	15.9	0.0	51.7	1.1	26.6	0.0
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	26.8	0.0	7.8	7.9	11.7	0.0
Unsig. Movement Delay, s/veh						
LnGrp Delay(d), s/veh	39.3	0.0	100.4	9.0	70.0	0.0
LnGrp LOS	D		F	A	E	
Approach Vol, veh/h	1964			1713	686	
Approach Delay, s/veh	39.3			18.9	70.0	
Approach LOS	D			B	E	

Timer - Assigned Phs	2	3	4		8
Phs Duration (G+Y+Rc), s	27.0	16.5	66.5		83.0
Change Period (Y+Rc), s	4.5	4.5	4.5		4.5
Max Green Setting (Gmax), s	22.5	11.9	62.1		78.5
Max Q Clear Time (g_c+I1), s	23.7	13.4	61.3		25.8
Green Ext Time (p_c), s	0.0	0.0	0.8		17.9

Intersection Summary	
HCM 7th Control Delay, s/veh	36.1
HCM 7th LOS	D

Notes

Unsignalized Delay for [NBR, EBR] is excluded from calculations of the approach delay and intersection delay.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	182	1637	141	33	1313	35	125	11	31	38	12	157
Future Volume (veh/h)	182	1637	141	33	1313	35	125	11	31	38	12	157
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	194	1741	150	35	1397	37	133	12	33	40	13	167
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	272	2133	181	55	2545	67	204	23	37	85	36	247
Arrive On Green	0.64	0.64	0.64	0.03	0.72	0.72	0.19	0.19	0.19	0.19	0.19	0.19
Sat Flow, veh/h	373	3315	282	1781	3537	94	741	119	196	223	189	1297
Grp Volume(v), veh/h	194	923	968	35	701	733	178	0	0	220	0	0
Grp Sat Flow(s),veh/h/ln	373	1777	1820	1781	1777	1854	1056	0	0	1708	0	0
Q Serve(g_s), s	50.3	38.5	40.6	1.9	18.3	18.3	5.0	0.0	0.0	0.0	0.0	0.0
Cycle Q Clear(g_c), s	61.1	38.5	40.6	1.9	18.3	18.3	17.0	0.0	0.0	12.0	0.0	0.0
Prop In Lane	1.00		0.15	1.00		0.05	0.75		0.19	0.18		0.76
Lane Grp Cap(c), veh/h	272	1143	1171	55	1279	1334	264	0	0	368	0	0
V/C Ratio(X)	0.71	0.81	0.83	0.63	0.55	0.55	0.67	0.00	0.00	0.60	0.00	0.00
Avail Cap(c_a), veh/h	272	1143	1171	89	1279	1334	272	0	0	378	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	22.4	13.2	13.6	47.9	6.5	6.5	40.1	0.0	0.0	37.7	0.0	0.0
Incr Delay (d2), s/veh	14.8	6.1	6.8	11.3	1.7	1.6	6.2	0.0	0.0	2.5	0.0	0.0
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	5.1	15.0	16.3	1.0	6.0	6.3	4.7	0.0	0.0	5.3	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	37.2	19.4	20.3	59.2	8.2	8.1	46.3	0.0	0.0	40.2	0.0	0.0
LnGrp LOS	D	B	C	E	A	A	D			D		
Approach Vol, veh/h		2085			1469			178			220	
Approach Delay, s/veh		21.5			9.4			46.3			40.2	
Approach LOS		C			A			D			D	

Timer - Assigned Phs		2	3	4		6		8				
Phs Duration (G+Y+Rc), s		23.5	7.6	68.8		23.5		76.5				
Change Period (Y+Rc), s		4.5	4.5	4.5		4.5		4.5				
Max Green Setting (Gmax), s		19.7	5.0	61.8		19.7		71.3				
Max Q Clear Time (g_c+I1), s		19.0	3.9	63.1		14.0		20.3				
Green Ext Time (p_c), s		0.1	0.0	0.0		0.6		14.4				

Intersection Summary	
HCM 7th Control Delay, s/veh	19.1
HCM 7th LOS	B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBU	SBL	SBT
Lane Configurations												
Traffic Volume (vph)	218	0	440	155	31	92	572	852	0	0	0	1091
Future Volume (vph)	218	0	440	155	31	92	572	852	0	0	0	1091
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.5		4.5		4.5		4.5	4.5				4.5
Lane Util. Factor	1.00		1.00		1.00		1.00	0.95				0.95
Frt	1.00		0.85		0.96		1.00	1.00				1.00
Flt Protected	0.95		1.00		0.97		0.95	1.00				1.00
Satd. Flow (prot)	1770		1583		1731		1770	3539				3539
Flt Permitted	0.57		1.00		0.97		0.11	1.00				1.00
Satd. Flow (perm)	1056		1583		1731		210	3539				3539
Peak-hour factor, PHF	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Adj. Flow (vph)	232	0	468	165	33	98	609	906	0	0	0	1161
RTOR Reduction (vph)	0	0	366	0	20	0	0	0	0	0	0	0
Lane Group Flow (vph)	232	0	102	0	276	0	609	906	0	0	0	1161
Turn Type	Perm		Perm	Perm	NA		pm+pt	NA		Perm		NA
Protected Phases					8		5	2				6
Permitted Phases	4		4	8			2			6		
Actuated Green, G (s)	19.7		19.7		19.7		61.3	61.3				30.9
Effective Green, g (s)	19.7		19.7		19.7		61.3	61.3				30.9
Actuated g/C Ratio	0.22		0.22		0.22		0.68	0.68				0.34
Clearance Time (s)	4.5		4.5		4.5		4.5	4.5				4.5
Vehicle Extension (s)	3.0		3.0		3.0		3.0	3.0				3.0
Lane Grp Cap (vph)	231		346		378		591	2410				1215
v/s Ratio Prot							c0.30	0.26				0.33
v/s Ratio Perm	c0.22		0.06		0.16		c0.40					
v/c Ratio	1.00		0.30		0.73		1.03	0.38				0.96
Uniform Delay, d1	35.2		29.4		32.7		26.9	6.2				28.9
Progression Factor	1.00		1.00		1.00		1.00	1.00				1.00
Incremental Delay, d2	60.3		0.5		7.1		45.1	0.4				17.1
Delay (s)	95.5		29.8		39.8		71.9	6.6				46.0
Level of Service	F		C		D		E	A				D
Approach Delay (s/veh)		51.6			39.8			32.9				44.2
Approach LOS		D			D			C				D

Intersection Summary			
HCM 2000 Control Delay (s/veh)	40.7	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	1.05		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	13.5
Intersection Capacity Utilization	95.6%	ICU Level of Service	F
Analysis Period (min)	15		

c Critical Lane Group



Movement	SBR
Lane Configurations	
Traffic Volume (vph)	85
Future Volume (vph)	85
Ideal Flow (vphpl)	1900
Total Lost time (s)	4.5
Lane Util. Factor	1.00
Frt	0.85
Flt Protected	1.00
Satd. Flow (prot)	1583
Flt Permitted	1.00
Satd. Flow (perm)	1583
Peak-hour factor, PHF	0.94
Adj. Flow (vph)	90
RTOR Reduction (vph)	48
Lane Group Flow (vph)	42
Turn Type	Perm
Protected Phases	
Permitted Phases	6
Actuated Green, G (s)	30.9
Effective Green, g (s)	30.9
Actuated g/C Ratio	0.34
Clearance Time (s)	4.5
Vehicle Extension (s)	3.0
Lane Grp Cap (vph)	543
v/s Ratio Prot	
v/s Ratio Perm	0.03
v/c Ratio	0.08
Uniform Delay, d1	19.9
Progression Factor	1.00
Incremental Delay, d2	0.3
Delay (s)	20.2
Level of Service	C
Approach Delay (s/veh)	
Approach LOS	

Intersection Summary



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	86	3820	3602	290	164	93
Future Volume (veh/h)	86	3820	3602	290	164	93
Initial Q (Qb), veh	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)	1.00			1.00	1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No	No		No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	91	4064	3832	309	181	91
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	2	2	2	2	2	2
Cap, veh/h	86	3009	2710	1209	264	117
Arrive On Green	0.05	0.85	0.76	0.76	0.07	0.07
Sat Flow, veh/h	1781	3647	3647	1585	3563	1585
Grp Volume(v), veh/h	91	4064	3832	309	181	91
Grp Sat Flow(s),veh/h/ln	1781	1777	1777	1585	1781	1585
Q Serve(g_s), s	6.9	120.8	108.8	8.2	7.1	8.0
Cycle Q Clear(g_c), s	6.9	120.8	108.8	8.2	7.1	8.0
Prop In Lane	1.00			1.00	1.00	1.00
Lane Grp Cap(c), veh/h	86	3009	2710	1209	264	117
V/C Ratio(X)	1.06	1.35	1.41	0.26	0.69	0.77
Avail Cap(c_a), veh/h	86	3009	2710	1209	447	199
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	67.9	10.9	16.9	5.0	64.4	64.9
Incr Delay (d2), s/veh	113.1	160.1	188.6	0.1	3.1	10.3
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	5.8	91.7	104.4	2.3	3.3	3.5
Unsig. Movement Delay, s/veh						
LnGrp Delay(d), s/veh	181.0	171.0	205.5	5.1	67.6	75.2
LnGrp LOS	F	F	F	A	E	E
Approach Vol, veh/h		4155	4141		272	
Approach Delay, s/veh		171.2	190.5		70.1	
Approach LOS		F	F		E	

Timer - Assigned Phs	1	2		4		6
Phs Duration (G+Y+Rc), s	12.0	115.0		15.7		127.0
Change Period (Y+Rc), s	5.1	6.2		5.1		6.2
Max Green Setting (Gmax), s	6.9	108.8		17.9		120.8
Max Q Clear Time (g_c+I1), s	8.9	110.8		10.0		122.8
Green Ext Time (p_c), s	0.0	0.0		0.5		0.0

Intersection Summary	
HCM 7th Control Delay, s/veh	177.4
HCM 7th LOS	F

Notes

User approved volume balancing among the lanes for turning movement.



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	42	3938	3897	282	69	17
Future Volume (veh/h)	42	3938	3897	282	69	17
Initial Q (Qb), veh	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)	1.00			1.00	1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No	No		No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	45	4189	4146	300	73	18
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	2	2	2	2	2	2
Cap, veh/h	63	3036	2782	1241	90	22
Arrive On Green	0.04	0.85	0.78	0.78	0.07	0.07
Sat Flow, veh/h	1781	3647	3647	1585	1381	340
Grp Volume(v), veh/h	45	4189	4146	300	92	0
Grp Sat Flow(s),veh/h/ln	1781	1777	1777	1585	1740	0
Q Serve(g_s), s	3.5	120.3	110.2	7.1	7.3	0.0
Cycle Q Clear(g_c), s	3.5	120.3	110.2	7.1	7.3	0.0
Prop In Lane	1.00			1.00	0.79	0.20
Lane Grp Cap(c), veh/h	63	3036	2782	1241	114	0
V/C Ratio(X)	0.72	1.38	1.49	0.24	0.81	0.00
Avail Cap(c_a), veh/h	119	3036	2782	1241	227	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	67.2	10.3	15.3	4.1	64.9	0.0
Incr Delay (d2), s/veh	14.1	173.0	222.6	0.1	12.6	0.0
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.8	95.5	117.6	1.9	3.6	0.0
Unsig. Movement Delay, s/veh						
LnGrp Delay(d), s/veh	81.3	183.2	237.8	4.2	77.6	0.0
LnGrp LOS	F	F	F	A	E	
Approach Vol, veh/h		4234	4446		92	
Approach Delay, s/veh		182.2	222.1		77.6	
Approach LOS		F	F		E	

Timer - Assigned Phs	1	2		4		6
Phs Duration (G+Y+Rc), s	10.1	116.4		14.3		126.5
Change Period (Y+Rc), s	5.1	6.2		5.1		6.2
Max Green Setting (Gmax), s	9.4	105.8		18.4		120.3
Max Q Clear Time (g_c+I1), s	5.5	112.2		9.3		122.3
Green Ext Time (p_c), s	0.0	0.0		0.1		0.0

Intersection Summary	
HCM 7th Control Delay, s/veh	201.3
HCM 7th LOS	F



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	285	3706	15	41	3625	1133	0	0	0	960	10	528
Future Volume (vph)	285	3706	15	41	3625	1133	0	0	0	960	10	528
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.4	6.7		5.4	6.7	6.7				5.4	5.4	5.4
Lane Util. Factor	0.97	0.91		1.00	0.91	1.00				0.91	0.86	0.95
Frt	1.00	1.00		1.00	1.00	0.85				1.00	0.93	0.85
Flt Protected	0.95	1.00		0.95	1.00	1.00				0.95	0.98	1.00
Satd. Flow (prot)	3433	5082		1770	5085	1583				3221	1454	1504
Flt Permitted	0.95	1.00		0.95	1.00	1.00				0.95	0.98	1.00
Satd. Flow (perm)	3433	5082		1770	5085	1583				3221	1454	1504
Peak-hour factor, PHF	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Adj. Flow (vph)	303	3943	16	44	3856	1205	0	0	0	1021	11	562
RTOR Reduction (vph)	0	0	0	0	0	124	0	0	0	0	20	163
Lane Group Flow (vph)	303	3959	0	44	3856	1081	0	0	0	817	380	214
Turn Type	Prot	NA		Prot	NA	Perm				Split	NA	pm+ov
Protected Phases	1	6		5	2			3		4	4	1
Permitted Phases						2	3					4
Actuated Green, G (s)	11.7	68.7		8.3	65.3	65.3				33.2	33.2	44.9
Effective Green, g (s)	11.7	68.7		8.3	65.3	65.3				33.2	33.2	44.9
Actuated g/C Ratio	0.09	0.54		0.06	0.51	0.51				0.26	0.26	0.35
Clearance Time (s)	5.4	6.7		5.4	6.7	6.7				5.4	5.4	5.4
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0				3.0	3.0	3.0
Lane Grp Cap (vph)	314	2734		115	2600	809				837	378	592
v/s Ratio Prot	0.09	c0.78		0.02	c0.76					0.25	c0.26	0.03
v/s Ratio Perm						0.68						0.11
v/c Ratio	0.96	1.45		0.38	1.48	1.34				0.98	1.01	0.36
Uniform Delay, d1	57.8	29.5		57.2	31.2	31.2				46.9	47.3	30.7
Progression Factor	1.00	1.00		1.00	1.00	1.00				1.00	1.00	1.00
Incremental Delay, d2	41.0	203.7		2.1	219.5	159.6				25.1	47.6	0.4
Delay (s)	98.8	233.2		59.4	250.7	190.8				71.9	94.9	31.1
Level of Service	F	F		E	F	F				E	F	C
Approach Delay (s/veh)		223.7			234.9			0.0			68.0	
Approach LOS		F			F			A			E	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	206.3	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	1.43		
Actuated Cycle Length (s)	127.7	Sum of lost time (s)	22.9
Intersection Capacity Utilization	116.3%	ICU Level of Service	H
Analysis Period (min)	15		

c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	233	4562	26	77	4619	155	0	0	0	155	10	155
Future Volume (veh/h)	233	4562	26	77	4619	155	0	0	0	155	10	155
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	248	4853	28	82	4914	165	0	0	0	165	11	165
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	48	2640	15	48	2589	1155	0	362	306	177	9	141
Arrive On Green	0.73	0.73	0.73	0.73	0.73	0.73	0.00	0.00	0.00	0.19	0.19	0.19
Sat Flow, veh/h	9	3623	21	11	3554	1585	0	1870	1585	729	49	729
Grp Volume(v), veh/h	248	2378	2503	82	4914	165	0	0	0	341	0	0
Grp Sat Flow(s),veh/h/ln	9	1777	1867	11	1777	1585	0	1870	1585	1506	0	0
Q Serve(g_s), s	0.0	109.3	109.3	0.0	109.3	4.7	0.0	0.0	0.0	29.0	0.0	0.0
Cycle Q Clear(g_c), s	109.3	109.3	109.3	109.3	109.3	4.7	0.0	0.0	0.0	29.0	0.0	0.0
Prop In Lane	1.00		0.01	1.00		1.00	0.00		1.00	0.48		0.48
Lane Grp Cap(c), veh/h	48	1295	1360	48	2589	1155	0	362	306	327	0	0
V/C Ratio(X)	5.17	1.84	1.84	1.71	1.90	0.14	0.00	0.00	0.00	1.04	0.00	0.00
Avail Cap(c_a), veh/h	48	1295	1360	48	2589	1155	0	362	306	327	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	0.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	75.0	20.3	20.4	75.0	20.3	6.2	0.0	0.0	0.0	62.1	0.0	0.0
Incr Delay (d2), s/veh	1920.4	379.5	381.0	392.2	405.4	0.1	0.0	0.0	0.0	61.5	0.0	0.0
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	27.4	173.5	182.8	7.1	182.8	1.4	0.0	0.0	0.0	18.0	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	1995.4	399.9	401.4	467.2	425.8	6.2	0.0	0.0	0.0	123.6	0.0	0.0
LnGrp LOS	F	F	F	F	F	A				F		
Approach Vol, veh/h		5129			5161			0			341	
Approach Delay, s/veh		477.7			413.0			0.0			123.6	
Approach LOS		F			F						F	

Timer - Assigned Phs	2	4	6	8
Phs Duration (G+Y+Rc), s	116.0	34.0	116.0	34.0
Change Period (Y+Rc), s	6.7	5.0	6.7	5.0
Max Green Setting (Gmax), s	109.3	29.0	109.3	29.0
Max Q Clear Time (g_c+I1), s	111.3	31.0	111.3	0.0
Green Ext Time (p_c), s	0.0	0.0	0.0	0.0

Intersection Summary	
HCM 7th Control Delay, s/veh	435.0
HCM 7th LOS	F

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	192	4439	0	0	4477	1232	0	0	0	1261	0	424
Future Volume (vph)	192	4439	0	0	4477	1232	0	0	0	1261	0	424
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.2	7.2			7.2	7.2				5.9		5.9
Lane Util. Factor	1.00	0.91			0.91	1.00				0.97		1.00
Frt	1.00	1.00			1.00	0.85				1.00		0.85
Flt Protected	0.95	1.00			1.00	1.00				0.95		1.00
Satd. Flow (prot)	1770	5085			5085	1583				3433		1583
Flt Permitted	0.95	1.00			1.00	1.00				0.95		1.00
Satd. Flow (perm)	1770	5085			5085	1583				3433		1583
Peak-hour factor, PHF	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Adj. Flow (vph)	204	4722	0	0	4763	1311	0	0	0	1341	0	451
RTOR Reduction (vph)	0	0	0	0	0	181	0	0	0	0	0	175
Lane Group Flow (vph)	204	4722	0	0	4763	1130	0	0	0	1341	0	276
Turn Type	Prot	NA		Prot	NA	Perm	Split		Perm	Split		Perm
Protected Phases	1	6		5	2		3	3		4	4	
Permitted Phases						2			3			4
Actuated Green, G (s)	11.8	89.7			72.7	72.7				31.1		31.1
Effective Green, g (s)	11.8	89.7			72.7	72.7				31.1		31.1
Actuated g/C Ratio	0.09	0.67			0.54	0.54				0.23		0.23
Clearance Time (s)	5.2	7.2			7.2	7.2				5.9		5.9
Vehicle Extension (s)	3.0	3.0			3.0	3.0				3.0		3.0
Lane Grp Cap (vph)	155	3406			2760	859				797		367
v/s Ratio Prot	0.12	c0.93			c0.94					c0.39		
v/s Ratio Perm						0.71						0.17
v/c Ratio	1.32	1.39			1.73	1.31				1.68		0.75
Uniform Delay, d1	61.1	22.1			30.6	30.6				51.4		47.8
Progression Factor	1.00	1.00			1.00	1.00				1.00		1.00
Incremental Delay, d2	180.4	175.7			328.1	150.0				312.6		8.4
Delay (s)	241.4	197.8			358.7	180.6				364.0		56.2
Level of Service	F	F			F	F				F		E
Approach Delay (s/veh)		199.7			320.3			0.0			286.6	
Approach LOS		F			F			A			F	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	269.1	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	1.79		
Actuated Cycle Length (s)	133.9	Sum of lost time (s)	23.4
Intersection Capacity Utilization	153.7%	ICU Level of Service	H
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL2	EBL	EBR	WBT	WBR	WBR2	SBR	SBR2	SEL2	SEL	SET	SER
Lane Configurations												
Traffic Volume (vph)	537	537	4627	4546	643	643	667	286	137	320	0	496
Future Volume (vph)	537	537	4627	4546	643	643	667	286	137	320	0	496
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		5.1	4.0	6.5	6.5		5.1	5.1	5.1		5.1	
Lane Util. Factor		1.00	0.76	0.91	1.00		0.88	1.00	0.95		0.95	
Frt		1.00	0.85	1.00	0.85		0.85	0.85	1.00		0.91	
Flt Protected		0.95	1.00	1.00	1.00		1.00	1.00	0.95		0.98	
Satd. Flow (prot)		1770	3610	5085	1583		2787	1583	1681		1579	
Flt Permitted		0.39	1.00	1.00	1.00		1.00	1.00	0.95		0.98	
Satd. Flow (perm)		723	3610	5085	1583		2787	1583	1681		1579	
Peak-hour factor, PHF	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Adj. Flow (vph)	571	571	4922	4836	684	684	710	304	146	340	0	528
RTOR Reduction (vph)	0	0	0	0	63	0	0	0	0	0	95	0
Lane Group Flow (vph)	0	1142	4922	4836	1305	0	710	304	131	0	788	0
Turn Type	D.Pm	D.Pm	Free	NA	Perm		Prot	Perm	Split	Split	NA	
Protected Phases				2			4!		1	1	1	
Permitted Phases	4!	4	Free		2			4				
Actuated Green, G (s)		10.3	75.0	30.0	30.0		10.3	10.3	18.0		18.0	
Effective Green, g (s)		10.3	75.0	30.0	30.0		10.3	10.3	18.0		18.0	
Actuated g/C Ratio		0.14	1.00	0.40	0.40		0.14	0.14	0.24		0.24	
Clearance Time (s)		5.1		6.5	6.5		5.1	5.1	5.1		5.1	
Vehicle Extension (s)		3.0		3.0	3.0		3.0	3.0	3.0		3.0	
Lane Grp Cap (vph)		99	3610	2034	633		382	217	403		378	
v/s Ratio Prot				c0.95			0.25		0.08		c0.50	
v/s Ratio Perm		c1.58	1.36		0.82			0.19				
v/c Ratio		11.54	1.36	2.38	2.06		1.86	1.40	0.33		2.08	
Uniform Delay, d1		32.4	37.5	22.5	22.5		32.4	32.4	23.5		28.5	
Progression Factor		1.00	1.00	1.00	1.00		1.00	1.00	1.00		1.00	
Incremental Delay, d2		4760.7	165.4	621.4	483.2		396.3	205.8	0.5		497.1	
Delay (s)		4793.1	202.9	643.9	505.7		428.7	238.2	24.0		525.6	
Level of Service		F	F	F	F		F	F	C		F	
Approach Delay (s/veh)				613.5							460.8	
Approach LOS				F							F	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	778.0	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	3.90		
Actuated Cycle Length (s)	75.0	Sum of lost time (s)	16.7
Intersection Capacity Utilization	215.8%	ICU Level of Service	H
Analysis Period (min)	15		

! Phase conflict between lane groups.
c Critical Lane Group



Appendix A-2

Synchro 95th Percentile Queue Summary



Lane Group	EBT	WBT	NBL	NBT	SBL	SBT	SBR
Lane Group Flow (vph)	241	95	26	1080	85	1083	149
v/c Ratio	0.69	0.24	0.16	0.63	0.50	0.55	0.16
Control Delay (s/veh)	28.1	10.1	27.5	15.7	38.4	12.5	3.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	28.1	10.1	27.5	15.7	38.4	12.5	3.1
Queue Length 50th (ft)	67	11	9	154	30	100	0
Queue Length 95th (ft)	124	39	29	244	#81	243	29
Internal Link Dist (ft)	55	29		372		363	
Turn Bay Length (ft)			55		100		
Base Capacity (vph)	446	499	167	1705	169	1957	941
Starvation Cap Reductn	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	0.54	0.19	0.16	0.63	0.50	0.55	0.16

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.



Lane Group	EBL	EBT	EBR	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	80	5	117	85	191	1094	11	1275
v/c Ratio	0.41	0.02	0.21	0.40	0.78	0.41	0.04	0.65
Control Delay (s/veh)	33.3	24.4	6.1	25.1	53.3	5.9	9.1	13.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	33.3	24.4	6.1	25.1	53.3	5.9	9.1	13.6
Queue Length 50th (ft)	32	2	7	23	81	71	2	190
Queue Length 95th (ft)	66	10	35	58	#182	213	10	295
Internal Link Dist (ft)		82		162		266		28
Turn Bay Length (ft)	90		70		85		90	
Base Capacity (vph)	375	481	554	392	248	2644	304	1974
Starvation Cap Reductn	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.21	0.01	0.21	0.22	0.77	0.41	0.04	0.65

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Group Flow (vph)	628	589	793	309	588	448
v/c Ratio	0.95	0.24	0.80	0.35	0.88	0.45
Control Delay (s/veh)	53.2	5.1	37.9	8.5	50.8	10.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	53.2	5.1	37.9	8.5	50.8	10.1
Queue Length 50th (ft)	335	54	224	54	167	111
Queue Length 95th (ft)	#551	74	#317	108	#254	175
Internal Link Dist (ft)		979	153		377	
Turn Bay Length (ft)	165			400	250	250
Base Capacity (vph)	678	2492	991	898	686	1002
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.93	0.24	0.80	0.34	0.86	0.45

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.



Lane Group	EBL	EBT	WBL	WBT	NBT	SBT
Lane Group Flow (vph)	205	972	2	989	6	175
v/c Ratio	0.55	0.37	0.01	0.38	0.03	0.57
Control Delay (s/veh)	11.9	4.0	3.5	4.0	20.0	16.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	11.9	4.0	3.5	4.0	20.0	16.5
Queue Length 50th (ft)	25	51	0	52	1	18
Queue Length 95th (ft)	#117	107	2	110	10	64
Internal Link Dist (ft)		440		1362	42	10
Turn Bay Length (ft)	120		85			
Base Capacity (vph)	376	2601	383	2591	447	524
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.55	0.37	0.01	0.38	0.01	0.33

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.



Lane Group	EBT	WBT	WBR	NBT	SBT
Lane Group Flow (vph)	1150	965	518	218	347
v/c Ratio	0.74	0.63	0.50	0.41	0.87
Control Delay (s/veh)	15.2	12.6	3.0	14.9	39.4
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	15.2	12.6	3.0	14.9	39.4
Queue Length 50th (ft)	139	108	0	45	85
Queue Length 95th (ft)	#211	163	41	90	#212
Internal Link Dist (ft)	174	1594		273	31
Turn Bay Length (ft)			75		
Base Capacity (vph)	1545	1527	1026	568	431
Starvation Cap Reductn	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	0.74	0.63	0.50	0.38	0.81

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.



Lane Group	EBL	EBT	WBL	WBT	NBT	SBT
Lane Group Flow (vph)	28	1768	51	1630	114	143
v/c Ratio	0.20	0.69	0.39	0.64	0.40	0.55
Control Delay (s/veh)	9.7	9.3	20.0	8.0	22.2	25.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	9.7	9.3	20.0	8.0	22.2	25.9
Queue Length 50th (ft)	3	176	7	151	32	40
Queue Length 95th (ft)	20	#345	#58	292	65	79
Internal Link Dist (ft)		1320		1262	120	51
Turn Bay Length (ft)	50		95			
Base Capacity (vph)	142	2546	130	2538	472	427
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.20	0.69	0.39	0.64	0.24	0.33

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	NBR	SBT
Lane Group Flow (vph)	29	1407	497	645	1247	434	33	929	119
v/c Ratio	0.19	1.08	0.58	1.17	0.52	0.95	0.07	1.02	0.69
Control Delay (s/veh)	36.6	95.8	14.0	134.9	12.8	97.3	50.9	65.9	83.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	36.6	95.8	14.0	134.9	12.8	97.3	50.9	65.9	83.0
Queue Length 50th (ft)	19	~809	162	~700	295	221	28	~988	110
Queue Length 95th (ft)	48	#949	238	#947	346	m#365	m52	m#1255	178
Internal Link Dist (ft)		1262			1061		1265		196
Turn Bay Length (ft)	95		80			240		135	
Base Capacity (vph)	152	1297	855	551	2402	456	484	907	213
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.19	1.08	0.58	1.17	0.52	0.95	0.07	1.02	0.56

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.



Lane Group	EBL	EBT	WBL	WBT	NBT	SBL	SBT
Lane Group Flow (vph)	129	2058	361	1403	583	232	272
v/c Ratio	0.96	1.17	2.67	0.80	1.43	0.94	0.47
Control Delay (s/veh)	90.4	101.9	790.0	15.7	228.7	68.8	15.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	90.4	101.9	790.0	15.7	228.7	68.8	15.7
Queue Length 50th (ft)	37	~440	~170	180	~271	72	59
Queue Length 95th (ft)	#131	#571	#312	258	#442	#191	116
Internal Link Dist (ft)		840		2313	86		252
Turn Bay Length (ft)	50		55			90	
Base Capacity (vph)	135	1755	135	1761	408	246	583
Starvation Cap Reductn	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	0.96	1.17	2.67	0.80	1.43	0.94	0.47

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Group Flow (vph)	2039	486	128	1369	395	182
v/c Ratio	0.96	0.43	0.91	0.53	0.68	0.47
Control Delay (s/veh)	30.5	2.4	91.3	6.9	41.3	13.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	30.5	2.4	91.3	6.9	41.3	13.8
Queue Length 50th (ft)	531	5	63	141	109	20
Queue Length 95th (ft)	#785	46	m#171	241	152	76
Internal Link Dist (ft)	88			809	78	
Turn Bay Length (ft)			130			
Base Capacity (vph)	2128	1136	141	2588	686	429
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.96	0.43	0.91	0.53	0.58	0.42

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
m Volume for 95th percentile queue is metered by upstream signal.



Lane Group	EBL	EBT	WBL	WBT	NBT	SBT
Lane Group Flow (vph)	190	1819	20	1225	155	202
v/c Ratio	0.72	0.78	0.19	0.49	0.91	0.52
Control Delay (s/veh)	31.7	15.1	45.2	6.9	84.1	19.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	31.7	15.1	45.2	6.9	84.1	19.8
Queue Length 50th (ft)	54	294	11	146	82	44
Queue Length 95th (ft)	#218	547	34	188	#197	110
Internal Link Dist (ft)		824		2608	167	178
Turn Bay Length (ft)	110		100			
Base Capacity (vph)	265	2332	103	2498	182	410
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.72	0.78	0.19	0.49	0.85	0.49

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Lane Group	EBL	EBR	WBT	NBL	NBT	SBT	SBR
Lane Group Flow (vph)	162	619	422	520	1169	857	371
v/c Ratio	0.64	0.80	0.92	0.92	0.53	0.76	0.52
Control Delay (s/veh)	38.2	15.4	54.6	46.1	9.0	24.7	5.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	38.2	15.4	54.6	46.1	9.0	24.7	5.6
Queue Length 50th (ft)	67	46	184	164	143	237	47
Queue Length 95th (ft)	#144	#229	#349	#352	191	m243	m52
Internal Link Dist (ft)			154		4056	1265	
Turn Bay Length (ft)	50			250			110
Base Capacity (vph)	259	777	470	567	2216	1124	715
Starvation Cap Reductn	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	0.63	0.80	0.90	0.92	0.53	0.76	0.52

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
m Volume for 95th percentile queue is metered by upstream signal.



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Group Flow (vph)	6	2800	2024	119	252	113
v/c Ratio	0.08	0.98	0.72	0.09	0.67	0.49
Control Delay (s/veh)	66.3	25.4	9.8	1.0	66.9	25.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	66.3	25.4	9.8	1.0	66.9	25.8
Queue Length 50th (ft)	5	1008	354	0	110	26
Queue Length 95th (ft)	21	#1508	694	17	157	94
Internal Link Dist (ft)		642	2150		117	
Turn Bay Length (ft)	300			380		65
Base Capacity (vph)	77	2863	2807	1280	451	261
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.08	0.98	0.72	0.09	0.56	0.43

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.



Lane Group	EBL	EBT	WBT	WBR	SBL
Lane Group Flow (vph)	33	2986	2147	107	69
v/c Ratio	0.33	0.97	0.74	0.08	0.51
Control Delay (s/veh)	73.8	20.8	11.6	3.7	66.8
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	73.8	20.8	11.6	3.7	66.8
Queue Length 50th (ft)	30	1086	571	17	53
Queue Length 95th (ft)	68	#1694	799	38	105
Internal Link Dist (ft)		2150	969		135
Turn Bay Length (ft)	150			65	
Base Capacity (vph)	120	3089	2883	1294	244
Starvation Cap Reductn	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	0.28	0.97	0.74	0.08	0.28

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.



Lane Group	EBL	EBT	WBL	WBT	WBR	SBL	SBT	SBR
Lane Group Flow (vph)	410	2628	27	1963	685	618	310	248
v/c Ratio	0.81	0.87	0.19	0.81	0.77	0.80	0.85	0.32
Control Delay (s/veh)	65.3	27.3	58.2	31.9	22.9	54.5	68.2	3.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.4
Total Delay (s/veh)	65.3	27.3	58.2	31.9	22.9	54.5	68.2	4.1
Queue Length 50th (ft)	169	716	21	493	291	263	281	0
Queue Length 95th (ft)	#239	#805	53	559	466	338	#467	51
Internal Link Dist (ft)		515		322			372	
Turn Bay Length (ft)	455		200		150	150		
Base Capacity (vph)	513	3009	218	2413	891	769	363	778
Starvation Cap Reductn	0	0	0	0	0	0	0	202
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.80	0.87	0.12	0.81	0.77	0.80	0.85	0.43

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.



Lane Group	EBL	EBT	WBL	WBT	WBR	SBT
Lane Group Flow (vph)	134	3478	53	2551	160	218
v/c Ratio	2.73	1.29	1.08	0.95	0.13	0.90
Control Delay (s/veh)	840.9	154.2	177.0	24.5	2.3	94.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	840.9	154.2	177.0	24.5	2.3	94.9
Queue Length 50th (ft)	~175	~2298	~58	1026	15	200
Queue Length 95th (ft)	#319	#2385	#107	1206	34	#349
Internal Link Dist (ft)		2494		1684		204
Turn Bay Length (ft)	175		115		175	
Base Capacity (vph)	49	2697	49	2699	1229	256
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	2.73	1.29	1.08	0.95	0.13	0.85

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

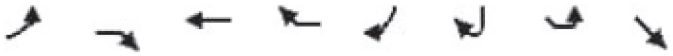


Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Group Flow (vph)	410	3348	2588	1280	1314	390
v/c Ratio	1.50	1.04	1.16	1.24	1.42	0.58
Control Delay (s/veh)	280.2	52.8	112.9	137.7	232.3	10.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	280.2	52.8	112.9	137.7	232.3	10.9
Queue Length 50th (ft)	~492	~1150	~973	~1077	~791	36
Queue Length 95th (ft)	#699	#1222	#1061	#1346	#928	136
Internal Link Dist (ft)		1540	5550			
Turn Bay Length (ft)	200			240	325	230
Base Capacity (vph)	274	3216	2229	1029	925	671
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	1.50	1.04	1.16	1.24	1.42	0.58

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.



Lane Group	EBL	EBR	WBT	WBR	SBR	SBR2	SEL2	SET
Lane Group Flow (vph)	810	3851	3101	782	519	248	47	720
v/c Ratio	8.18	1.07	1.52	1.12	1.36	1.14	0.12	1.49
Control Delay (s/veh)	Error	41.0	261.8	95.5	207.2	138.6	23.3	253.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	Error	41.0	261.8	95.5	207.2	138.6	23.3	253.0
Queue Length 50th (ft)	~738	~104	~753	~398	~183	~137	17	~450
Queue Length 95th (ft)	#952	#213	#847	#610	#285	#272	45	#667
Internal Link Dist (ft)			192					183
Turn Bay Length (ft)	550			150				
Base Capacity (vph)	99	3610	2034	696	382	217	403	484
Starvation Cap Reductn	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	8.18	1.07	1.52	1.12	1.36	1.14	0.12	1.49

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.



Lane Group	EBT	WBT	NBL	NBT	SBL	SBT	SBR
Lane Group Flow (vph)	250	149	97	1390	144	1428	149
v/c Ratio	0.85	0.40	0.61	0.81	0.72	0.75	0.16
Control Delay (s/veh)	51.4	16.6	50.9	21.4	54.8	17.9	2.5
Queue Delay	0.0	0.0	0.0	1.4	0.0	0.0	0.0
Total Delay (s/veh)	51.4	16.6	50.9	22.8	54.8	17.9	2.5
Queue Length 50th (ft)	97	28	45	284	66	281	0
Queue Length 95th (ft)	#213	77	#110	377	#151	372	26
Internal Link Dist (ft)	55	29		372		363	
Turn Bay Length (ft)			55		100		
Base Capacity (vph)	324	403	161	1726	203	1913	924
Starvation Cap Reductn	0	0	0	166	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	0.77	0.37	0.60	0.89	0.71	0.75	0.16

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.



Lane Group	EBL	EBT	EBR	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	122	11	122	170	212	1282	16	1625
v/c Ratio	0.66	0.04	0.20	0.71	0.83	0.50	0.07	0.84
Control Delay (s/veh)	52.0	30.1	9.2	46.3	64.4	7.3	16.8	28.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	52.0	30.1	9.2	46.3	64.4	7.3	16.8	28.6
Queue Length 50th (ft)	65	5	18	79	118	128	5	388
Queue Length 95th (ft)	119	19	51	142	#232	288	m7	m446
Internal Link Dist (ft)		82		162		266		28
Turn Bay Length (ft)	90		70		85		90	
Base Capacity (vph)	240	374	593	306	265	2547	231	1934
Starvation Cap Reductn	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.51	0.03	0.21	0.56	0.80	0.50	0.07	0.84

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
m Volume for 95th percentile queue is metered by upstream signal.



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Group Flow (vph)	618	619	929	421	816	689
v/c Ratio	1.02	0.26	0.98	0.46	1.00	0.69
Control Delay (s/veh)	71.7	9.0	59.0	10.6	65.9	15.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	71.7	9.0	59.0	10.6	65.9	15.1
Queue Length 50th (ft)	~369	57	275	98	239	226
Queue Length 95th (ft)	#591	188	#406	167	#364	356
Internal Link Dist (ft)		979	153		377	
Turn Bay Length (ft)	165			400	250	250
Base Capacity (vph)	607	2339	947	925	820	1004
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	1.02	0.26	0.98	0.46	1.00	0.69

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.



Lane Group	EBL	EBT	WBL	WBT	NBT	SBT
Lane Group Flow (vph)	135	1300	5	1396	12	86
v/c Ratio	0.52	0.45	0.02	0.49	0.07	0.48
Control Delay (s/veh)	13.7	3.7	3.0	4.0	24.7	31.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	13.7	3.7	3.0	4.0	24.7	31.7
Queue Length 50th (ft)	19	86	0	96	3	27
Queue Length 95th (ft)	#112	156	3	174	17	66
Internal Link Dist (ft)		440		1362	42	10
Turn Bay Length (ft)	120		85			
Base Capacity (vph)	259	2878	293	2857	364	341
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.52	0.45	0.02	0.49	0.03	0.25

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.



Lane Group	EBT	WBT	WBR	NBT	SBT
Lane Group Flow (vph)	1200	1442	313	357	349
v/c Ratio	0.98	0.96	0.36	0.62	1.02
Control Delay (s/veh)	41.1	35.1	6.3	23.5	78.3
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	41.1	35.1	6.3	23.5	78.3
Queue Length 50th (ft)	248	296	33	122	~147
Queue Length 95th (ft)	#405	#460	78	208	#312
Internal Link Dist (ft)	174	1594		273	31
Turn Bay Length (ft)			75		
Base Capacity (vph)	1223	1496	864	573	343
Starvation Cap Reductn	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	0.98	0.96	0.36	0.62	1.02

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.



Lane Group	EBL	EBT	WBL	WBT	NBT	SBT
Lane Group Flow (vph)	62	1750	60	1972	207	254
v/c Ratio	0.63	0.78	0.61	0.89	0.53	0.91
Control Delay (s/veh)	44.2	13.5	41.9	18.3	26.5	62.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	44.2	13.5	41.9	18.3	26.5	62.2
Queue Length 50th (ft)	16	285	15	367	71	105
Queue Length 95th (ft)	#87	381	#84	#537	135	#237
Internal Link Dist (ft)		1320		1262	120	51
Turn Bay Length (ft)	50		95			
Base Capacity (vph)	98	2235	98	2228	407	295
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.63	0.78	0.61	0.89	0.51	0.86

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.



Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	NBR	SBT
Lane Group Flow (vph)	29	1435	555	585	1698	334	47	826	134
v/c Ratio	0.30	1.09	0.65	1.08	0.70	0.85	0.10	0.93	0.72
Control Delay (s/veh)	41.0	92.8	15.3	101.4	15.8	80.4	40.3	46.1	78.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	41.0	92.8	15.3	101.4	15.8	80.4	40.3	46.1	78.6
Queue Length 50th (ft)	18	~769	168	~551	468	156	33	663	113
Queue Length 95th (ft)	51	#910	272	#787	550	#260	67	#971	185
Internal Link Dist (ft)		1262			1061		1265		196
Turn Bay Length (ft)	95		80			240		135	
Base Capacity (vph)	98	1322	849	542	2409	393	483	889	222
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.30	1.09	0.65	1.08	0.70	0.85	0.10	0.93	0.60

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.



Lane Group	EBL	EBT	WBL	WBT	NBT	SBL	SBT
Lane Group Flow (vph)	243	1850	346	1812	870	239	301
v/c Ratio	1.80	1.13	2.56	1.11	1.92	1.05	0.48
Control Delay (s/veh)	408.2	87.0	741.1	77.8	441.9	97.5	16.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	408.2	87.0	741.1	77.8	441.9	97.5	16.0
Queue Length 50th (ft)	~124	~383	~159	~370	~465	~88	70
Queue Length 95th (ft)	#203	#511	#299	#497	#661	#203	131
Internal Link Dist (ft)		840		2313	86		252
Turn Bay Length (ft)	50		55			90	
Base Capacity (vph)	135	1630	135	1629	453	228	621
Starvation Cap Reductn	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	1.80	1.13	2.56	1.11	1.92	1.05	0.48

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.



Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Group Flow (vph)	1916	487	181	1490	669	181
v/c Ratio	0.96	0.45	0.96	0.59	1.00	0.40
Control Delay (s/veh)	34.6	3.1	101.5	8.2	76.1	8.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	34.6	3.1	101.5	8.2	76.1	8.1
Queue Length 50th (ft)	575	13	117	212	221	0
Queue Length 95th (ft)	#784	59	#251	264	#341	56
Internal Link Dist (ft)	88			809	78	
Turn Bay Length (ft)			130			
Base Capacity (vph)	1992	1082	189	2530	669	454
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.96	0.45	0.96	0.59	1.00	0.40

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.



Lane Group	EBL	EBT	WBL	WBT	NBT	SBT
Lane Group Flow (vph)	189	1846	34	1399	174	215
v/c Ratio	0.94	0.82	0.34	0.56	0.95	0.58
Control Delay (s/veh)	70.5	17.5	50.5	7.7	89.8	26.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	70.5	17.5	50.5	7.7	89.8	26.9
Queue Length 50th (ft)	~100	431	19	176	92	67
Queue Length 95th (ft)	#245	556	50	225	#220	141
Internal Link Dist (ft)		824		2608	167	178
Turn Bay Length (ft)	110		100			
Base Capacity (vph)	202	2244	100	2481	187	375
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.94	0.82	0.34	0.56	0.93	0.57

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.



Lane Group	EBL	EBR	WBT	NBL	NBT	SBT	SBR
Lane Group Flow (vph)	227	456	289	594	884	1132	88
v/c Ratio	0.99	0.65	0.73	1.01	0.37	0.92	0.15
Control Delay (s/veh)	95.4	8.1	42.4	69.2	6.5	41.5	7.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	95.4	8.1	42.4	69.2	6.5	41.5	7.4
Queue Length 50th (ft)	130	0	141	~293	96	319	6
Queue Length 95th (ft)	#277	82	#253	#515	126	#449	36
Internal Link Dist (ft)			154		4056	1265	
Turn Bay Length (ft)	50			250			110
Base Capacity (vph)	229	700	394	588	2418	1238	601
Starvation Cap Reductn	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	0.99	0.65	0.73	1.01	0.37	0.91	0.15

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Group Flow (vph)	89	3965	3738	301	185	82
v/c Ratio	1.06	1.35	1.41	0.24	0.60	0.44
Control Delay (s/veh)	178.6	175.9	207.6	2.1	70.1	26.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	178.6	175.9	207.6	2.1	70.1	26.6
Queue Length 50th (ft)	~92	~2571	~2487	19	86	15
Queue Length 95th (ft)	#217	#2745	#2666	48	127	75
Internal Link Dist (ft)		642	2150		117	
Turn Bay Length (ft)	300			380		65
Base Capacity (vph)	84	2947	2654	1241	425	235
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	1.06	1.35	1.41	0.24	0.44	0.35

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.



Lane Group	EBL	EBT	WBT	WBR	SBL
Lane Group Flow (vph)	44	4087	4045	293	89
v/c Ratio	0.44	1.38	1.50	0.24	0.58
Control Delay (s/veh)	79.8	191.1	249.4	5.7	73.4
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	79.8	191.1	249.4	5.7	73.4
Queue Length 50th (ft)	40	~2662	~2795	66	75
Queue Length 95th (ft)	86	#2876	#3015	117	135
Internal Link Dist (ft)		2150	969		135
Turn Bay Length (ft)	150			65	
Base Capacity (vph)	115	2962	2691	1213	229
Starvation Cap Reductn	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	0.38	1.38	1.50	0.24	0.39

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.



Lane Group	EBL	EBT	WBL	WBT	WBR	SBL	SBT	SBR
Lane Group Flow (vph)	296	3863	43	3763	1176	798	391	367
v/c Ratio	1.03	1.38	0.30	1.41	1.24	0.97	1.01	0.51
Control Delay (s/veh)	117.6	200.5	60.6	215.9	139.2	72.7	91.0	11.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	3.8	0.0	0.6
Total Delay (s/veh)	117.6	200.5	60.6	215.9	139.2	76.5	91.0	12.5
Queue Length 50th (ft)	~133	~1572	34	~1517	~1091	357	~356	68
Queue Length 95th (ft)	#226	#1654	73	#1584	#1356	#497	#604	165
Internal Link Dist (ft)		515		322			372	
Turn Bay Length (ft)	455		200		150	150		
Base Capacity (vph)	287	2797	218	2662	951	819	389	726
Starvation Cap Reductn	0	0	0	0	0	16	0	126
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	1.03	1.38	0.20	1.41	1.24	0.99	1.01	0.61

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.



Lane Group	EBL	EBT	WBL	WBT	WBR	SBT
Lane Group Flow (vph)	241	4762	80	4794	161	333
v/c Ratio	4.92	1.83	1.63	1.84	0.14	1.22
Control Delay (s/veh)	Error	396.5	382.4	401.3	4.4	175.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	Error	396.5	382.4	401.3	4.4	175.2
Queue Length 50th (ft)	~395	~3726	~64	~3728	29	~397
Queue Length 95th (ft)	#576	#3753	#181	#3753	51	#597
Internal Link Dist (ft)		2494		1684		204
Turn Bay Length (ft)	175		115		175	
Base Capacity (vph)	49	2600	49	2602	1176	274
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	4.92	1.83	1.63	1.84	0.14	1.22

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

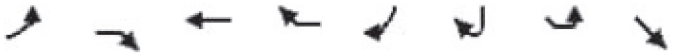


Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Group Flow (vph)	199	4607	4647	1279	1309	440
v/c Ratio	1.28	1.35	1.68	1.23	1.64	0.81
Control Delay (s/veh)	214.9	184.3	334.5	133.6	328.1	35.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	214.9	184.3	334.5	133.6	328.1	35.9
Queue Length 50th (ft)	~218	~1919	~2159	~1207	~846	184
Queue Length 95th (ft)	#377	#1959	#2197	#1476	#983	#353
Internal Link Dist (ft)		1540	5550			
Turn Bay Length (ft)	200			240	325	230
Base Capacity (vph)	155	3406	2760	1040	797	542
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	1.28	1.35	1.68	1.23	1.64	0.81

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.



Lane Group	EBL	EBR	WBT	WBR	SBR	SBR2	SEL2	SET
Lane Group Flow (vph)	1114	4802	4718	1334	693	297	129	861
v/c Ratio	11.25	1.33	2.32	1.92	1.81	1.37	0.32	1.82
Control Delay (s/veh)	Error	161.8	614.3	438.0	401.2	222.4	26.1	398.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	Error	161.8	614.3	438.0	401.2	222.4	26.1	398.6
Queue Length 50th (ft)	~1046	~515	~1337	~958	~281	~186	52	~607
Queue Length 95th (ft)	#1281	#615	#1421	#1202	#393	#331	101	#836
Internal Link Dist (ft)			192					183
Turn Bay Length (ft)	550			150				
Base Capacity (vph)	99	3610	2034	696	382	217	403	473
Starvation Cap Reductn	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	11.25	1.33	2.32	1.92	1.81	1.37	0.32	1.82

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Lane Group	EBT	WBT	NBL	NBT	SBL	SBT	SBR
Lane Group Flow (vph)	108	43	20	501	38	487	67
v/c Ratio	0.45	0.16	0.10	0.22	0.18	0.20	0.06
Control Delay (s/veh)	21.5	12.4	22.6	7.4	16.4	3.6	0.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	21.5	12.4	22.6	7.4	16.4	3.6	0.2
Queue Length 50th (ft)	23	5	6	24	12	22	0
Queue Length 95th (ft)	56	25	22	89	22	35	1
Internal Link Dist (ft)	55	29		372		363	
Turn Bay Length (ft)			55		100		
Base Capacity (vph)	472	529	199	2284	209	2440	1128
Starvation Cap Reductn	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	0.23	0.08	0.10	0.22	0.18	0.20	0.06

Intersection Summary



Lane Group	EBL	EBT	EBR	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	36	2	53	38	86	507	5	573
v/c Ratio	0.15	0.01	0.12	0.17	0.36	0.17	0.01	0.25
Control Delay (s/veh)	22.0	20.0	0.9	17.7	18.6	1.7	7.8	6.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	22.0	20.0	0.9	17.7	18.6	1.7	7.8	6.6
Queue Length 50th (ft)	11	1	0	8	26	0	1	26
Queue Length 95th (ft)	31	5	3	28	29	23	5	87
Internal Link Dist (ft)		82		162		266		28
Turn Bay Length (ft)	90		70		85		90	
Base Capacity (vph)	609	609	453	568	237	2952	574	2311
Starvation Cap Reductn	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.06	0.00	0.12	0.07	0.36	0.17	0.01	0.25

Intersection Summary



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Group Flow (vph)	296	265	356	139	265	201
v/c Ratio	0.60	0.11	0.30	0.15	0.47	0.22
Control Delay (s/veh)	24.2	3.7	17.0	2.6	25.0	1.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	24.2	3.7	17.0	2.6	25.0	1.7
Queue Length 50th (ft)	91	13	50	3	45	0
Queue Length 95th (ft)	154	27	90	24	71	20
Internal Link Dist (ft)		979	153		377	
Turn Bay Length (ft)	165			400	250	250
Base Capacity (vph)	491	2423	1214	1153	1029	916
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.60	0.11	0.29	0.12	0.26	0.22

Intersection Summary



Lane Group	EBL	EBT	WBL	WBT	NBT	SBT
Lane Group Flow (vph)	93	437	1	445	3	79
v/c Ratio	0.13	0.16	0.00	0.16	0.01	0.28
Control Delay (s/veh)	3.7	2.8	4.0	4.0	14.3	9.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	3.7	2.8	4.0	4.0	14.3	9.6
Queue Length 50th (ft)	6	15	0	34	1	3
Queue Length 95th (ft)	22	35	m1	57	5	28
Internal Link Dist (ft)		440		1362	42	10
Turn Bay Length (ft)	120		85			
Base Capacity (vph)	722	2778	728	2766	611	664
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.13	0.16	0.00	0.16	0.00	0.12

Intersection Summary

m Volume for 95th percentile queue is metered by upstream signal.

Lane Group	EBT	WBT	WBR	NBT	SBT
Lane Group Flow (vph)	518	481	233	98	155
v/c Ratio	0.25	0.23	0.21	0.27	0.51
Control Delay (s/veh)	7.5	6.4	2.7	14.6	19.0
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	7.5	6.4	2.7	14.6	19.0
Queue Length 50th (ft)	30	27	0	21	32
Queue Length 95th (ft)	94	62	32	42	63
Internal Link Dist (ft)	174	1594		273	31
Turn Bay Length (ft)			75		
Base Capacity (vph)	2109	2113	1088	625	515
Starvation Cap Reductn	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	0.25	0.23	0.21	0.16	0.30

Intersection Summary

Lane Group	EBL	EBT	WBL	WBT	NBT	SBT
Lane Group Flow (vph)	13	796	47	808	51	64
v/c Ratio	0.03	0.29	0.09	0.30	0.19	0.28
Control Delay (s/veh)	3.9	3.6	4.3	3.6	9.9	16.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	3.9	3.6	4.3	3.6	9.9	16.8
Queue Length 50th (ft)	1	37	4	37	3	12
Queue Length 95th (ft)	6	72	15	73	22	35
Internal Link Dist (ft)		1320		1262	120	51
Turn Bay Length (ft)	50		95			
Base Capacity (vph)	497	2723	504	2711	627	546
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.03	0.29	0.09	0.30	0.08	0.12

Intersection Summary

Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	NBR	SBT
Lane Group Flow (vph)	13	633	223	290	561	295	15	418	53
v/c Ratio	0.04	0.45	0.22	0.56	0.26	0.54	0.03	0.55	0.30
Control Delay (s/veh)	21.3	21.0	1.7	13.4	8.6	32.2	15.4	15.1	31.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	21.3	21.0	1.7	13.4	8.6	32.2	15.4	15.1	31.7
Queue Length 50th (ft)	4	123	1	64	64	65	5	111	20
Queue Length 95th (ft)	18	197	17	133	114	96	15	142	51
Internal Link Dist (ft)		1262			1061		1265		196
Turn Bay Length (ft)	95		80			240		135	
Base Capacity (vph)	325	1401	1008	530	2172	551	770	784	422
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.04	0.45	0.22	0.55	0.26	0.54	0.02	0.53	0.13

Intersection Summary



Lane Group	EBL	EBT	WBL	WBT	NBT	SBL	SBT
Lane Group Flow (vph)	57	927	214	631	262	104	122
v/c Ratio	0.11	0.40	0.61	0.27	0.73	0.62	0.31
Control Delay (s/veh)	5.9	5.9	18.5	5.2	26.4	38.5	10.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	5.9	5.9	18.5	5.2	26.4	38.5	10.4
Queue Length 50th (ft)	7	68	40	42	58	38	12
Queue Length 95th (ft)	24	128	#170	82	119	77	46
Internal Link Dist (ft)		840		2313	86		252
Turn Bay Length (ft)	50		55			90	
Base Capacity (vph)	509	2331	352	2348	472	243	523
Starvation Cap Reductn	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	0.11	0.40	0.61	0.27	0.56	0.43	0.23

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Group Flow (vph)	918	219	57	616	317	83
v/c Ratio	0.46	0.22	0.33	0.26	0.51	0.24
Control Delay (s/veh)	10.2	2.3	30.7	4.6	24.9	7.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	10.2	2.3	30.7	4.6	24.9	7.3
Queue Length 50th (ft)	114	0	19	37	54	0
Queue Length 95th (ft)	172	30	50	67	81	29
Internal Link Dist (ft)	88			809	78	
Turn Bay Length (ft)			130			
Base Capacity (vph)	1999	989	175	2371	1029	533
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.46	0.22	0.33	0.26	0.31	0.16

Intersection Summary



Lane Group	EBL	EBT	WBL	WBT	NBT	SBT
Lane Group Flow (vph)	86	819	10	551	70	90
v/c Ratio	0.15	0.33	0.05	0.21	0.30	0.31
Control Delay (s/veh)	7.0	5.9	22.4	3.4	21.3	10.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	7.0	5.9	22.4	3.4	21.3	10.7
Queue Length 50th (ft)	7	41	3	25	18	5
Queue Length 95th (ft)	43	142	14	51	45	34
Internal Link Dist (ft)		824		2608	167	178
Turn Bay Length (ft)	110		100			
Base Capacity (vph)	584	2465	190	2625	510	559
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.15	0.33	0.05	0.21	0.14	0.16

Intersection Summary

Lane Group	EBL	EBR	WBT	NBL	NBT	SBT	SBR
Lane Group Flow (vph)	72	279	188	234	626	386	167
v/c Ratio	0.31	0.53	0.53	0.32	0.27	0.25	0.21
Control Delay (s/veh)	21.4	6.7	22.8	7.2	5.1	11.2	3.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	21.4	6.7	22.8	7.2	5.1	11.2	3.4
Queue Length 50th (ft)	20	0	50	25	37	38	0
Queue Length 95th (ft)	46	46	91	63	74	76	32
Internal Link Dist (ft)			154		4056	1265	
Turn Bay Length (ft)	50			250			110
Base Capacity (vph)	396	705	593	722	2280	1567	794
Starvation Cap Reductn	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	0.18	0.40	0.32	0.32	0.27	0.25	0.21

Intersection Summary



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Group Flow (vph)	3	1811	1317	70	113	51
v/c Ratio	0.02	0.69	0.53	0.06	0.26	0.22
Control Delay (s/veh)	25.0	7.5	7.6	2.3	23.4	10.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	25.0	7.5	7.6	2.3	23.4	10.8
Queue Length 50th (ft)	1	170	95	0	18	0
Queue Length 95th (ft)	8	272	269	16	38	28
Internal Link Dist (ft)		642	2150		117	
Turn Bay Length (ft)	300			380		65
Base Capacity (vph)	187	2722	2490	1134	1057	478
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.02	0.67	0.53	0.06	0.11	0.11

Intersection Summary



Lane Group	EBL	EBT	WBT	WBR	SBL
Lane Group Flow (vph)	15	1886	1400	48	32
v/c Ratio	0.08	0.60	0.47	0.04	0.15
Control Delay (s/veh)	26.2	4.3	5.5	3.7	21.9
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	26.2	4.3	5.5	3.7	21.9
Queue Length 50th (ft)	4	0	0	0	7
Queue Length 95th (ft)	21	277	298	19	30
Internal Link Dist (ft)		2150	969		135
Turn Bay Length (ft)	150			65	
Base Capacity (vph)	296	2960	2988	1339	572
Starvation Cap Reductn	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	0.05	0.64	0.47	0.04	0.06

Intersection Summary



Lane Group	EBL	EBT	WBL	WBT	WBR	SBL	SBT	SBR
Lane Group Flow (vph)	184	1720	12	1307	332	277	139	112
v/c Ratio	0.38	0.53	0.05	0.57	0.40	0.49	0.52	0.17
Control Delay (s/veh)	34.6	10.0	35.1	16.8	7.0	32.6	37.0	3.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	34.6	10.0	35.1	16.8	7.0	32.6	37.0	3.8
Queue Length 50th (ft)	39	127	5	154	32	62	65	0
Queue Length 95th (ft)	87	323	24	236	96	121	152	30
Internal Link Dist (ft)		515		322			372	
Turn Bay Length (ft)	455		200		150	150		
Base Capacity (vph)	559	3220	365	3141	1057	1289	607	603
Starvation Cap Reductn	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.33	0.53	0.03	0.42	0.31	0.21	0.23	0.19

Intersection Summary



Lane Group	EBL	EBT	WBL	WBT	WBR	SBT
Lane Group Flow (vph)	61	2147	24	1602	77	98
v/c Ratio	0.34	0.79	0.24	0.59	0.06	0.49
Control Delay (s/veh)	11.0	10.4	11.3	6.2	1.3	30.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	11.0	10.4	11.3	6.2	1.3	30.9
Queue Length 50th (ft)	8	290	3	155	1	30
Queue Length 95th (ft)	39	510	20	263	12	74
Internal Link Dist (ft)		2494		1684		204
Turn Bay Length (ft)	175		115		175	
Base Capacity (vph)	182	2729	102	2729	1237	506
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.34	0.79	0.24	0.59	0.06	0.19

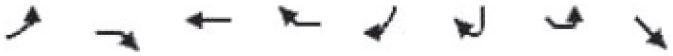
Intersection Summary



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Group Flow (vph)	184	2194	1787	674	591	176
v/c Ratio	0.75	0.63	0.71	0.63	0.88	0.31
Control Delay (s/veh)	65.2	10.5	23.3	5.7	59.4	1.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	65.2	10.5	23.3	5.7	59.4	1.4
Queue Length 50th (ft)	130	279	354	35	221	0
Queue Length 95th (ft)	#224	320	410	128	#323	0
Internal Link Dist (ft)		1540	5550			
Turn Bay Length (ft)	200			240	325	230
Base Capacity (vph)	273	3478	2668	1106	673	572
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.67	0.63	0.67	0.61	0.88	0.31

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.



Lane Group	EBL	EBR	WBT	WBR	SBR	SBR2	SEL2	SET
Lane Group Flow (vph)	364	2421	1967	510	234	112	21	325
v/c Ratio	3.50	0.67	0.92	0.70	0.58	0.49	0.06	0.77
Control Delay (s/veh)	Error	1.0	29.0	20.3	35.8	37.3	22.9	29.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	Error	1.0	29.0	20.3	35.8	37.3	22.9	29.0
Queue Length 50th (ft)	~293	0	290	142	55	46	8	86
Queue Length 95th (ft)	#467	0	#436	273	97	99	25	177
Internal Link Dist (ft)			192					183
Turn Bay Length (ft)	550			150				
Base Capacity (vph)	104	3610	2141	727	402	228	424	503
Starvation Cap Reductn	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	3.50	0.67	0.92	0.70	0.58	0.49	0.05	0.65

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.



Lane Group	EBT	WBT	NBL	NBT	SBL	SBT	SBR
Lane Group Flow (vph)	122	67	44	627	65	657	67
v/c Ratio	0.48	0.25	0.20	0.29	0.31	0.29	0.06
Control Delay (s/veh)	20.4	13.3	23.1	8.7	18.0	4.7	0.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	20.4	13.3	23.1	8.7	18.0	4.7	0.2
Queue Length 50th (ft)	24	9	13	63	10	27	0
Queue Length 95th (ft)	58	33	36	106	35	51	1
Internal Link Dist (ft)	55	29		372		363	
Turn Bay Length (ft)			55		100		
Base Capacity (vph)	481	523	222	2132	210	2259	1053
Starvation Cap Reductn	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	0.25	0.13	0.20	0.29	0.31	0.29	0.06

Intersection Summary



Lane Group	EBL	EBT	EBR	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	55	5	55	77	96	577	7	747
v/c Ratio	0.23	0.02	0.11	0.35	0.46	0.21	0.01	0.34
Control Delay (s/veh)	22.3	18.8	0.9	19.7	23.8	2.5	7.9	8.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	22.3	18.8	0.9	19.7	23.8	2.5	7.9	8.1
Queue Length 50th (ft)	16	2	0	16	30	13	1	80
Queue Length 95th (ft)	40	9	4	45	#72	33	6	120
Internal Link Dist (ft)		82		162		266		28
Turn Bay Length (ft)	90		70		85		90	
Base Capacity (vph)	551	609	507	487	207	2691	522	2193
Starvation Cap Reductn	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.10	0.01	0.11	0.16	0.46	0.21	0.01	0.34

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Group Flow (vph)	278	279	418	189	367	323
v/c Ratio	0.63	0.12	0.36	0.19	0.55	0.36
Control Delay (s/veh)	27.4	4.5	17.6	2.6	24.4	4.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	27.4	4.5	17.6	2.6	24.4	4.3
Queue Length 50th (ft)	87	16	61	8	62	25
Queue Length 95th (ft)	#168	34	101	27	90	54
Internal Link Dist (ft)		979	153		377	
Turn Bay Length (ft)	165			400	250	250
Base Capacity (vph)	440	2313	1215	1155	1029	907
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.63	0.12	0.34	0.16	0.36	0.36

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.



Lane Group	EBL	EBT	WBL	WBT	NBT	SBT
Lane Group Flow (vph)	61	585	2	629	5	38
v/c Ratio	0.09	0.19	0.00	0.21	0.02	0.14
Control Delay (s/veh)	3.1	2.2	3.5	3.3	14.0	14.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	3.1	2.2	3.5	3.3	14.0	14.0
Queue Length 50th (ft)	0	0	0	0	1	6
Queue Length 95th (ft)	15	45	m1	104	7	23
Internal Link Dist (ft)		440		1362	42	10
Turn Bay Length (ft)	120		85			
Base Capacity (vph)	656	3017	685	2995	658	718
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.09	0.19	0.00	0.21	0.01	0.05

Intersection Summary

m Volume for 95th percentile queue is metered by upstream signal.

Lane Group	EBT	WBT	WBR	NBT	SBT
Lane Group Flow (vph)	587	650	140	161	158
v/c Ratio	0.28	0.31	0.13	0.45	0.49
Control Delay (s/veh)	8.4	9.1	5.6	17.8	17.1
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	8.4	9.1	5.6	17.8	17.1
Queue Length 50th (ft)	32	37	0	36	30
Queue Length 95th (ft)	120	112	42	64	60
Internal Link Dist (ft)	174	1594		273	31
Turn Bay Length (ft)			75		
Base Capacity (vph)	2067	2107	1057	621	546
Starvation Cap Reductn	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	0.28	0.31	0.13	0.26	0.29

Intersection Summary

Lane Group	EBL	EBT	WBL	WBT	NBT	SBT
Lane Group Flow (vph)	28	855	27	887	116	122
v/c Ratio	0.07	0.36	0.07	0.38	0.33	0.40
Control Delay (s/veh)	7.3	6.0	5.5	5.4	9.8	16.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	7.3	6.0	5.5	5.4	9.8	16.0
Queue Length 50th (ft)	2	33	2	48	10	22
Queue Length 95th (ft)	19	127	12	102	37	50
Internal Link Dist (ft)		1320		1262	120	51
Turn Bay Length (ft)	50		95			
Base Capacity (vph)	380	2360	396	2353	657	605
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.07	0.36	0.07	0.38	0.18	0.20

Intersection Summary



Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	NBR	SBT
Lane Group Flow (vph)	13	646	349	264	764	150	21	371	60
v/c Ratio	0.05	0.47	0.34	0.53	0.35	0.34	0.05	0.49	0.30
Control Delay (s/veh)	18.2	18.7	1.7	13.5	8.5	27.4	14.2	13.0	25.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	18.2	18.7	1.7	13.5	8.5	27.4	14.2	13.0	25.6
Queue Length 50th (ft)	4	115	0	49	81	28	6	74	18
Queue Length 95th (ft)	16	170	17	#125	143	50	17	122	47
Internal Link Dist (ft)		1262			1061		1265		196
Turn Bay Length (ft)	95		80			240		135	
Base Capacity (vph)	260	1369	1019	502	2167	441	788	751	473
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.05	0.47	0.34	0.53	0.35	0.34	0.03	0.49	0.13

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Lane Group	EBL	EBT	WBL	WBT	NBT	SBL	SBT
Lane Group Flow (vph)	110	833	155	816	443	107	136
v/c Ratio	0.36	0.44	0.52	0.43	0.85	0.48	0.24
Control Delay (s/veh)	12.7	8.5	17.6	8.5	29.8	23.1	6.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	12.7	8.5	17.6	8.5	29.8	23.1	6.2
Queue Length 50th (ft)	20	78	32	77	90	26	7
Queue Length 95th (ft)	56	118	#107	116	#227	66	37
Internal Link Dist (ft)		840		2313	86		252
Turn Bay Length (ft)	50		55			90	
Base Capacity (vph)	308	1900	299	1900	580	253	623
Starvation Cap Reductn	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	0.36	0.44	0.52	0.43	0.76	0.42	0.22

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Group Flow (vph)	862	359	83	670	301	82
v/c Ratio	0.43	0.34	0.44	0.28	0.50	0.24
Control Delay (s/veh)	10.0	2.4	32.9	4.6	25.0	7.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	10.0	2.4	32.9	4.6	25.0	7.5
Queue Length 50th (ft)	102	0	29	41	51	0
Queue Length 95th (ft)	162	39	66	72	79	29
Internal Link Dist (ft)	88			809	78	
Turn Bay Length (ft)			130			
Base Capacity (vph)	1997	1049	195	2388	1029	532
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.43	0.34	0.43	0.28	0.29	0.15

Intersection Summary

Lane Group	EBL	EBT	WBL	WBT	NBT	SBT
Lane Group Flow (vph)	85	831	15	629	79	96
v/c Ratio	0.16	0.34	0.08	0.24	0.34	0.33
Control Delay (s/veh)	7.5	6.1	22.4	3.6	21.0	11.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	7.5	6.1	22.4	3.6	21.0	11.5
Queue Length 50th (ft)	7	42	5	30	19	7
Queue Length 95th (ft)	45	148	18	60	47	37
Internal Link Dist (ft)		824		2608	167	178
Turn Bay Length (ft)	110		100			
Base Capacity (vph)	538	2451	195	2616	504	555
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.16	0.34	0.08	0.24	0.16	0.17

Intersection Summary



Lane Group	EBL	EBR	WBT	NBL	NBT	SBT	SBR
Lane Group Flow (vph)	102	205	131	267	398	609	39
v/c Ratio	0.44	0.46	0.39	0.42	0.17	0.39	0.05
Control Delay (s/veh)	25.4	7.1	16.9	9.1	4.2	12.0	0.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	25.4	7.1	16.9	9.1	4.2	12.0	0.1
Queue Length 50th (ft)	30	0	25	27	20	74	0
Queue Length 95th (ft)	62	41	59	66	43	106	0
Internal Link Dist (ft)			154		4056	1265	
Turn Bay Length (ft)	50			250			110
Base Capacity (vph)	445	655	596	631	2352	1557	762
Starvation Cap Reductn	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	0.23	0.31	0.22	0.42	0.17	0.39	0.05

Intersection Summary



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Group Flow (vph)	40	2922	2651	135	98	40
v/c Ratio	0.53	0.97	0.95	0.11	0.43	0.30
Control Delay (s/veh)	92.2	20.0	22.5	0.8	68.1	23.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	92.2	20.0	22.5	0.8	68.1	23.8
Queue Length 50th (ft)	37	897	994	0	44	0
Queue Length 95th (ft)	#90	#1584	#1455	15	75	42
Internal Link Dist (ft)		642	2150		117	
Turn Bay Length (ft)	300			380		65
Base Capacity (vph)	75	3023	2801	1281	432	216
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.53	0.97	0.95	0.11	0.23	0.19

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.



Lane Group	EBL	EBT	WBT	WBR	SBL
Lane Group Flow (vph)	19	2993	2801	132	41
v/c Ratio	0.21	0.96	0.95	0.10	0.37
Control Delay (s/veh)	69.2	17.9	23.1	3.3	62.4
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	69.2	17.9	23.1	3.3	62.4
Queue Length 50th (ft)	17	955	~1418	20	29
Queue Length 95th (ft)	46	#1638	#1627	43	70
Internal Link Dist (ft)		2150	969		135
Turn Bay Length (ft)	150			65	
Base Capacity (vph)	121	3132	2936	1317	239
Starvation Cap Reductn	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	0.16	0.96	0.95	0.10	0.17

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.



Lane Group	EBL	EBT	WBL	WBT	WBR	SBL	SBT	SBR
Lane Group Flow (vph)	133	2883	19	2660	529	373	181	170
v/c Ratio	0.45	0.84	0.13	0.88	0.52	0.68	0.68	0.30
Control Delay (s/veh)	56.8	19.7	53.2	25.3	11.7	52.0	53.1	5.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	56.8	19.7	53.2	25.3	11.7	52.0	53.1	5.6
Queue Length 50th (ft)	49	432	13	580	143	145	131	0
Queue Length 95th (ft)	87	#983	40	781	276	199	220	50
Internal Link Dist (ft)		515		322			372	
Turn Bay Length (ft)	455		200		150	150		
Base Capacity (vph)	295	3434	237	3019	1008	838	395	572
Starvation Cap Reductn	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.45	0.84	0.08	0.88	0.52	0.45	0.46	0.30

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.



Lane Group	EBL	EBT	WBL	WBT	WBR	SBT
Lane Group Flow (vph)	109	3384	36	3132	72	154
v/c Ratio	2.18	1.22	0.72	1.13	0.06	0.77
Control Delay (s/veh)	601.2	121.4	81.4	80.9	2.5	84.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	601.2	121.4	81.4	80.9	2.5	84.2
Queue Length 50th (ft)	~116	~2075	14	~1805	7	139
Queue Length 95th (ft)	#257	#2287	#56	#2016	21	221
Internal Link Dist (ft)		2494		1684		204
Turn Bay Length (ft)	175		115		175	
Base Capacity (vph)	50	2775	50	2777	1250	256
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	2.18	1.22	0.72	1.13	0.06	0.60

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

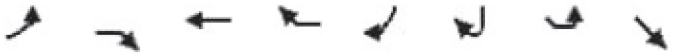


Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Group Flow (vph)	89	3287	3139	576	688	198
v/c Ratio	0.67	0.90	1.01	0.53	1.12	0.45
Control Delay (s/veh)	85.0	19.0	46.1	8.5	121.6	11.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	85.0	19.0	46.1	8.5	121.6	11.0
Queue Length 50th (ft)	77	738	~1005	120	~352	7
Queue Length 95th (ft)	#155	813	#1128	211	#476	76
Internal Link Dist (ft)		1540	5550			
Turn Bay Length (ft)	200			240	325	230
Base Capacity (vph)	132	3672	3095	1081	617	439
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.67	0.90	1.01	0.53	1.12	0.45

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.



Lane Group	EBL	EBR	WBT	WBR	SBR	SBR2	SEL2	SET
Lane Group Flow (vph)	502	3473	2953	600	312	133	58	545
v/c Ratio	5.07	0.96	1.45	0.86	0.82	0.61	0.14	1.13
Control Delay (s/veh)	Error	10.1	229.7	31.9	50.5	44.2	23.7	106.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	Error	10.1	229.7	31.9	50.5	44.2	23.7	106.9
Queue Length 50th (ft)	~446	0	~699	209	81	59	22	~266
Queue Length 95th (ft)	#623	#52	#794	#407	#151	#128	52	#463
Internal Link Dist (ft)			192					183
Turn Bay Length (ft)	550			150				
Base Capacity (vph)	99	3610	2034	696	382	217	403	481
Starvation Cap Reductn	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	5.07	0.96	1.45	0.86	0.82	0.61	0.14	1.13

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Lane Group	EBT	WBT	NBL	NBT	SBL	SBT	SBR
Lane Group Flow (vph)	108	43	97	635	38	487	67
v/c Ratio	0.45	0.16	0.36	0.28	0.19	0.26	0.07
Control Delay (s/veh)	21.5	12.4	23.9	7.3	17.5	6.1	0.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	21.5	12.4	23.9	7.3	17.5	6.1	0.3
Queue Length 50th (ft)	23	5	29	32	12	22	0
Queue Length 95th (ft)	56	25	61	107	29	37	1
Internal Link Dist (ft)	55	29		372		363	
Turn Bay Length (ft)			55		100		
Base Capacity (vph)	472	529	271	2308	197	1891	901
Starvation Cap Reductn	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	0.23	0.08	0.36	0.28	0.19	0.26	0.07

Intersection Summary



Lane Group	EBL	EBT	EBR	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	36	2	53	38	86	641	5	573
v/c Ratio	0.15	0.01	0.12	0.17	0.36	0.22	0.01	0.25
Control Delay (s/veh)	22.0	20.0	0.9	17.7	18.3	2.0	7.8	6.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	22.0	20.0	0.9	17.7	18.3	2.0	7.8	6.6
Queue Length 50th (ft)	11	1	0	8	26	0	1	26
Queue Length 95th (ft)	31	5	3	28	31	33	5	87
Internal Link Dist (ft)		82		162		266		28
Turn Bay Length (ft)	90		70		85		90	
Base Capacity (vph)	609	609	453	568	237	2952	527	2311
Starvation Cap Reductn	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.06	0.00	0.12	0.07	0.36	0.22	0.01	0.25

Intersection Summary



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Group Flow (vph)	411	265	356	139	265	201
v/c Ratio	0.76	0.10	0.29	0.15	0.51	0.22
Control Delay (s/veh)	31.3	3.4	19.2	2.4	30.3	2.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	31.3	3.4	19.2	2.4	30.3	2.0
Queue Length 50th (ft)	157	14	57	0	54	4
Queue Length 95th (ft)	228	28	106	24	84	23
Internal Link Dist (ft)		979	153		377	
Turn Bay Length (ft)	165			400	250	250
Base Capacity (vph)	576	2544	1252	1107	882	939
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.71	0.10	0.28	0.13	0.30	0.21

Intersection Summary



Lane Group	EBL	EBT	WBL	WBT	NBT	SBT
Lane Group Flow (vph)	93	437	1	445	3	79
v/c Ratio	0.13	0.16	0.00	0.16	0.01	0.28
Control Delay (s/veh)	3.7	2.8	3.0	2.8	14.3	9.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	3.7	2.8	3.0	2.8	14.3	9.6
Queue Length 50th (ft)	6	15	0	15	1	3
Queue Length 95th (ft)	22	35	1	35	5	28
Internal Link Dist (ft)		440		1362	42	10
Turn Bay Length (ft)	120		85			
Base Capacity (vph)	722	2778	728	2766	611	664
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.13	0.16	0.00	0.16	0.00	0.12

Intersection Summary

Lane Group	EBT	WBT	WBR	NBT	SBT
Lane Group Flow (vph)	518	902	233	98	155
v/c Ratio	0.25	0.42	0.21	0.27	0.51
Control Delay (s/veh)	7.3	7.1	1.9	14.6	19.0
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	7.3	7.1	1.9	14.6	19.0
Queue Length 50th (ft)	30	60	0	21	32
Queue Length 95th (ft)	90	127	26	42	63
Internal Link Dist (ft)	174	1594		273	31
Turn Bay Length (ft)			75		
Base Capacity (vph)	2085	2124	1088	625	515
Starvation Cap Reductn	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	0.25	0.42	0.21	0.16	0.30

Intersection Summary



Lane Group	EBL	EBT	WBL	WBT	NBT	SBT
Lane Group Flow (vph)	13	796	257	1488	51	64
v/c Ratio	0.06	0.27	0.48	0.52	0.23	0.35
Control Delay (s/veh)	3.8	2.9	8.0	4.2	13.6	24.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	3.8	2.9	8.0	4.2	13.6	24.6
Queue Length 50th (ft)	1	39	31	97	5	17
Queue Length 95th (ft)	6	73	109	178	29	46
Internal Link Dist (ft)		1320		1262	120	51
Turn Bay Length (ft)	50		95			
Base Capacity (vph)	229	2897	536	2874	485	413
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.06	0.27	0.48	0.52	0.11	0.15

Intersection Summary

Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	NBR	SBT
Lane Group Flow (vph)	13	633	223	290	561	1185	15	418	53
v/c Ratio	0.07	0.80	0.20	0.92	0.39	0.83	0.02	0.38	0.38
Control Delay (s/veh)	37.3	50.1	1.3	66.2	29.2	34.9	11.6	7.8	51.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	37.3	50.1	1.3	66.2	29.2	34.9	11.6	7.8	51.1
Queue Length 50th (ft)	8	231	3	168	166	368	5	99	32
Queue Length 95th (ft)	25	#332	17	m#315	m216	482	14	146	71
Internal Link Dist (ft)		1262			1061		1265		196
Turn Bay Length (ft)	95		80			240		135	
Base Capacity (vph)	184	792	1097	314	1423	1430	1016	1098	290
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.07	0.80	0.20	0.92	0.39	0.83	0.01	0.38	0.18

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
m Volume for 95th percentile queue is metered by upstream signal.



Lane Group	EBL	EBT	WBL	WBT	NBT	SBL	SBT
Lane Group Flow (vph)	57	927	673	631	262	104	122
v/c Ratio	0.10	0.35	1.67	0.24	1.05	0.88	0.36
Control Delay (s/veh)	2.5	2.2	329.6	4.1	106.8	102.6	18.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	2.5	2.2	329.6	4.1	106.8	102.6	18.4
Queue Length 50th (ft)	4	33	~407	56	~168	73	23
Queue Length 95th (ft)	m9	57	#635	74	#335	#178	77
Internal Link Dist (ft)		840		2313	86		252
Turn Bay Length (ft)	50		55			90	
Base Capacity (vph)	568	2623	404	2646	250	118	343
Starvation Cap Reductn	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	0.10	0.35	1.67	0.24	1.05	0.88	0.36

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Group Flow (vph)	918	219	57	616	1571	93
v/c Ratio	0.79	0.33	0.56	0.42	0.94	0.11
Control Delay (s/veh)	34.8	5.0	64.2	20.2	33.7	3.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	34.8	5.0	64.2	20.2	33.7	3.1
Queue Length 50th (ft)	258	0	32	129	409	0
Queue Length 95th (ft)	#364	50	#87	175	#576	23
Internal Link Dist (ft)	88			809	78	
Turn Bay Length (ft)			130			
Base Capacity (vph)	1155	664	101	1455	1697	829
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.79	0.33	0.56	0.42	0.93	0.11

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Lane Group	EBL	EBT	WBL	WBT	NBT	SBT
Lane Group Flow (vph)	86	819	10	551	70	90
v/c Ratio	0.15	0.33	0.05	0.21	0.30	0.31
Control Delay (s/veh)	7.0	5.9	22.4	3.4	21.3	10.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	7.0	5.9	22.4	3.4	21.3	10.7
Queue Length 50th (ft)	7	41	3	25	18	5
Queue Length 95th (ft)	43	142	14	51	45	34
Internal Link Dist (ft)		824		2608	167	178
Turn Bay Length (ft)	110		100			
Base Capacity (vph)	584	2465	190	2625	510	559
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.15	0.33	0.05	0.21	0.14	0.16

Intersection Summary



Lane Group	EBL	EBR	WBT	NBL	NBT	SBT	SBR
Lane Group Flow (vph)	72	279	188	234	1516	386	167
v/c Ratio	0.33	0.54	0.55	0.29	0.64	0.28	0.23
Control Delay (s/veh)	24.1	7.1	25.7	6.7	8.2	15.0	4.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	24.1	7.1	25.7	6.7	8.2	15.0	4.1
Queue Length 50th (ft)	23	0	57	26	136	54	0
Queue Length 95th (ft)	50	49	101	63	251	86	35
Internal Link Dist (ft)			154		4056	1265	
Turn Bay Length (ft)	50			250			110
Base Capacity (vph)	355	670	544	820	2353	1382	720
Starvation Cap Reductn	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	0.20	0.42	0.35	0.29	0.64	0.28	0.23

Intersection Summary



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Group Flow (vph)	3	1811	1317	223	113	51
v/c Ratio	0.02	0.69	0.53	0.19	0.26	0.22
Control Delay (s/veh)	25.0	7.5	7.6	1.7	23.4	10.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	25.0	7.5	7.6	1.7	23.4	10.8
Queue Length 50th (ft)	1	170	95	0	18	0
Queue Length 95th (ft)	8	272	269	28	38	28
Internal Link Dist (ft)		642	2150		117	
Turn Bay Length (ft)	300			380		65
Base Capacity (vph)	187	2722	2490	1180	1057	478
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.02	0.67	0.53	0.19	0.11	0.11

Intersection Summary



Lane Group	EBL	EBT	WBT	WBR	SBL
Lane Group Flow (vph)	15	1886	1553	48	32
v/c Ratio	0.08	0.60	0.51	0.04	0.15
Control Delay (s/veh)	28.4	4.0	5.6	3.5	23.5
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	28.4	4.0	5.6	3.5	23.5
Queue Length 50th (ft)	4	0	0	0	6
Queue Length 95th (ft)	22	275	353	19	33
Internal Link Dist (ft)		2150	969		135
Turn Bay Length (ft)	150			65	
Base Capacity (vph)	289	3116	3027	1357	551
Starvation Cap Reductn	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	0.05	0.61	0.51	0.04	0.06

Intersection Summary



Lane Group	EBL	EBT	WBL	WBT	WBR	SBL	SBT	SBR
Lane Group Flow (vph)	184	1720	12	1461	543	277	139	112
v/c Ratio	0.43	0.52	0.05	0.59	0.58	0.52	0.55	0.18
Control Delay (s/veh)	39.1	9.6	37.6	16.1	8.5	35.7	40.7	4.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	39.1	9.6	37.6	16.1	8.5	35.7	40.7	4.3
Queue Length 50th (ft)	45	128	5	182	65	71	74	0
Queue Length 95th (ft)	90	323	24	259	175	123	153	31
Internal Link Dist (ft)		515		322			372	
Turn Bay Length (ft)	455		200		150	150		
Base Capacity (vph)	436	3306	344	3088	1085	1213	571	578
Starvation Cap Reductn	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.42	0.52	0.03	0.47	0.50	0.23	0.24	0.19

Intersection Summary



Lane Group	EBL	EBT	WBL	WBT	WBR	SBT
Lane Group Flow (vph)	61	2147	24	1966	498	98
v/c Ratio	0.60	0.79	0.24	0.73	0.38	0.50
Control Delay (s/veh)	39.9	11.0	11.8	8.9	2.1	35.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	39.9	11.0	11.8	8.9	2.1	35.7
Queue Length 50th (ft)	12	305	3	247	14	38
Queue Length 95th (ft)	#48	#536	20	424	49	82
Internal Link Dist (ft)		2494		1684		204
Turn Bay Length (ft)	175		115		175	
Base Capacity (vph)	101	2707	101	2707	1299	491
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.60	0.79	0.24	0.73	0.38	0.20

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

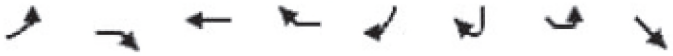


Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Group Flow (vph)	184	2194	2343	1565	591	176
v/c Ratio	1.09	0.59	0.76	1.24	1.04	0.40
Control Delay (s/veh)	150.0	8.9	21.7	131.9	103.3	5.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	150.0	8.9	21.7	131.9	103.3	5.0
Queue Length 50th (ft)	~179	287	521	~1411	~286	0
Queue Length 95th (ft)	#335	320	581	#1680	#404	30
Internal Link Dist (ft)		1540	5550			
Turn Bay Length (ft)	200			240	325	230
Base Capacity (vph)	169	3748	3064	1260	566	444
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	1.09	0.59	0.76	1.24	1.04	0.40

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.



Lane Group	EBL	EBR	WBT	WBR	SBR	SBR2	SEL2	SET
Lane Group Flow (vph)	364	2421	3413	1937	234	112	21	325
v/c Ratio	3.79	0.67	1.59	2.67	0.50	0.43	0.06	0.80
Control Delay (s/veh)	Error	1.0	289.1	771.6	34.2	35.4	25.2	34.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	Error	1.0	289.1	771.6	34.2	35.4	25.2	34.2
Queue Length 50th (ft)	~326	0	~888	~1629	59	50	8	100
Queue Length 95th (ft)	#498	0	#1013	#1942	100	101	27	#218
Internal Link Dist (ft)			192					183
Turn Bay Length (ft)	550			150				
Base Capacity (vph)	96	3610	2151	726	464	263	394	470
Starvation Cap Reductn	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	3.79	0.67	1.59	2.67	0.50	0.43	0.05	0.69

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.



Lane Group	EBT	WBT	NBL	NBT	SBL	SBT	SBR
Lane Group Flow (vph)	198	67	44	627	65	791	67
v/c Ratio	0.58	0.25	0.20	0.32	0.32	0.39	0.07
Control Delay (s/veh)	16.2	12.9	23.1	9.3	26.9	9.6	1.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	16.2	12.9	23.1	9.3	26.9	9.6	1.3
Queue Length 50th (ft)	24	9	13	63	20	43	0
Queue Length 95th (ft)	66	32	36	110	52	165	8
Internal Link Dist (ft)	55	29		372		363	
Turn Bay Length (ft)			55		100		
Base Capacity (vph)	557	497	222	1936	205	2052	968
Starvation Cap Reductn	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	0.36	0.13	0.20	0.32	0.32	0.39	0.07

Intersection Summary



Lane Group	EBL	EBT	EBR	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	55	5	55	77	96	577	7	881
v/c Ratio	0.25	0.02	0.11	0.36	0.45	0.21	0.01	0.39
Control Delay (s/veh)	25.2	21.0	1.3	22.0	31.4	4.4	9.1	10.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	25.2	21.0	1.3	22.0	31.4	4.4	9.1	10.5
Queue Length 50th (ft)	18	2	0	18	32	27	2	124
Queue Length 95th (ft)	44	9	6	48	72	91	m4	178
Internal Link Dist (ft)		82		162		266		28
Turn Bay Length (ft)	90		70		85		90	
Base Capacity (vph)	489	558	503	448	227	2748	533	2245
Starvation Cap Reductn	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.11	0.01	0.11	0.17	0.42	0.21	0.01	0.39

Intersection Summary

m Volume for 95th percentile queue is metered by upstream signal.



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Group Flow (vph)	278	279	418	189	367	438
v/c Ratio	0.63	0.12	0.36	0.19	0.55	0.48
Control Delay (s/veh)	26.9	7.3	17.6	2.6	24.4	6.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	26.9	7.3	17.6	2.6	24.4	6.6
Queue Length 50th (ft)	96	14	61	8	62	48
Queue Length 95th (ft)	#171	76	101	27	90	92
Internal Link Dist (ft)		979	153		377	
Turn Bay Length (ft)	165			400	250	250
Base Capacity (vph)	440	2313	1215	1155	1029	907
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.63	0.12	0.34	0.16	0.36	0.48

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.



Lane Group	EBL	EBT	WBL	WBT	NBT	SBT
Lane Group Flow (vph)	61	585	2	629	5	38
v/c Ratio	0.09	0.19	0.00	0.21	0.02	0.14
Control Delay (s/veh)	3.1	2.2	2.5	2.8	14.0	14.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	3.1	2.2	2.5	2.8	14.0	14.0
Queue Length 50th (ft)	0	0	0	0	1	6
Queue Length 95th (ft)	15	45	m0	108	7	23
Internal Link Dist (ft)		440		1362	42	10
Turn Bay Length (ft)	120		85			
Base Capacity (vph)	656	3017	685	2995	658	718
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.09	0.19	0.00	0.21	0.01	0.05

Intersection Summary

m Volume for 95th percentile queue is metered by upstream signal.

Lane Group	EBT	WBT	WBR	NBT	SBT
Lane Group Flow (vph)	1009	650	140	161	158
v/c Ratio	0.48	0.31	0.13	0.45	0.49
Control Delay (s/veh)	8.9	6.3	2.1	17.8	17.1
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	8.9	6.3	2.1	17.8	17.1
Queue Length 50th (ft)	68	38	0	36	30
Queue Length 95th (ft)	183	86	20	64	60
Internal Link Dist (ft)	174	1594		273	31
Turn Bay Length (ft)			75		
Base Capacity (vph)	2097	2073	1057	621	546
Starvation Cap Reductn	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	0.48	0.31	0.13	0.26	0.29

Intersection Summary



Lane Group	EBL	EBT	WBL	WBT	NBT	SBT
Lane Group Flow (vph)	28	1458	27	887	327	199
v/c Ratio	0.10	0.74	0.20	0.45	0.72	0.83
Control Delay (s/veh)	8.2	13.3	12.4	8.7	25.6	46.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	8.2	13.3	12.4	8.7	25.6	46.4
Queue Length 50th (ft)	4	179	4	83	85	53
Queue Length 95th (ft)	16	#279	20	133	152	#143
Internal Link Dist (ft)		1320		1262	120	51
Turn Bay Length (ft)	50		95			
Base Capacity (vph)	290	1972	135	1965	546	286
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.10	0.74	0.20	0.45	0.60	0.70

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.



Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	NBR	SBT
Lane Group Flow (vph)	13	646	1239	264	764	150	21	371	60
v/c Ratio	0.08	0.74	0.97	1.04	0.55	0.12	0.02	0.38	0.32
Control Delay (s/veh)	20.6	29.6	27.4	87.9	18.0	18.1	10.6	8.3	28.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	20.6	29.6	27.4	87.9	18.0	18.1	10.6	8.3	28.1
Queue Length 50th (ft)	4	131	~145	~78	126	24	5	73	19
Queue Length 95th (ft)	17	184	#742	#208	173	47	16	125	50
Internal Link Dist (ft)		1262			1061		1265		196
Turn Bay Length (ft)	95		80			240		135	
Base Capacity (vph)	182	960	1275	255	1465	1264	895	987	440
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.07	0.67	0.97	1.04	0.52	0.12	0.02	0.38	0.14

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.



Lane Group	EBL	EBT	WBL	WBT	NBT	SBL	SBT
Lane Group Flow (vph)	110	833	155	816	902	107	136
v/c Ratio	0.71	0.62	1.04	0.61	1.08	0.43	0.15
Control Delay (s/veh)	48.9	21.8	115.0	21.7	77.0	19.3	4.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	48.9	21.8	115.0	21.7	77.0	19.3	4.6
Queue Length 50th (ft)	45	167	~85	163	~489	32	10
Queue Length 95th (ft)	#132	227	#199	222	#715	78	37
Internal Link Dist (ft)		840		2313	86		252
Turn Bay Length (ft)	50		55			90	
Base Capacity (vph)	156	1337	149	1337	832	249	881
Starvation Cap Reductn	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	0.71	0.62	1.04	0.61	1.08	0.43	0.15

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.



Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Group Flow (vph)	862	1613	93	670	301	82
v/c Ratio	0.33	1.17	1.06	0.23	0.78	0.33
Control Delay (s/veh)	6.8	95.7	177.0	3.0	79.6	15.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	6.8	95.7	177.0	3.0	79.6	15.2
Queue Length 50th (ft)	137	~1664	~99	63	148	0
Queue Length 95th (ft)	165	#1932	#223	78	202	53
Internal Link Dist (ft)	88			809	78	
Turn Bay Length (ft)			130			
Base Capacity (vph)	2646	1384	88	2929	411	262
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.33	1.17	1.06	0.23	0.73	0.31

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.



Lane Group	EBL	EBT	WBL	WBT	NBT	SBT
Lane Group Flow (vph)	85	831	15	629	79	96
v/c Ratio	0.16	0.34	0.08	0.24	0.34	0.33
Control Delay (s/veh)	7.5	6.1	22.4	3.6	21.0	11.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	7.5	6.1	22.4	3.6	21.0	11.5
Queue Length 50th (ft)	7	42	5	30	19	7
Queue Length 95th (ft)	45	148	18	60	47	37
Internal Link Dist (ft)		824		2608	167	178
Turn Bay Length (ft)	110		100			
Base Capacity (vph)	538	2451	195	2616	504	555
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.16	0.34	0.08	0.24	0.16	0.17

Intersection Summary



Lane Group	EBL	EBR	WBT	NBL	NBT	SBT	SBR
Lane Group Flow (vph)	102	205	131	267	398	1499	39
v/c Ratio	0.57	0.50	0.47	0.79	0.15	0.77	0.04
Control Delay (s/veh)	43.3	9.1	28.8	42.2	3.6	18.1	0.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	43.3	9.1	28.8	42.2	3.6	18.1	0.6
Queue Length 50th (ft)	48	0	47	73	24	273	0
Queue Length 95th (ft)	90	52	91	#215	48	422	4
Internal Link Dist (ft)			154		4056	1265	
Turn Bay Length (ft)	50			250			110
Base Capacity (vph)	276	515	411	339	2623	1949	908
Starvation Cap Reductn	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	0.37	0.40	0.32	0.79	0.15	0.77	0.04

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Group Flow (vph)	40	2922	2651	135	251	40
v/c Ratio	0.56	1.01	0.99	0.11	0.70	0.22
Control Delay (s/veh)	98.7	32.9	32.9	1.0	74.4	27.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	98.7	32.9	32.9	1.0	74.4	27.8
Queue Length 50th (ft)	39	~1404	~1310	0	121	8
Queue Length 95th (ft)	#95	#1703	#1562	18	170	50
Internal Link Dist (ft)		642	2150		117	
Turn Bay Length (ft)	300			380		65
Base Capacity (vph)	71	2898	2686	1234	415	201
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.56	1.01	0.99	0.11	0.60	0.20

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.



Lane Group	EBL	EBT	WBT	WBR	SBL
Lane Group Flow (vph)	19	3146	2801	132	41
v/c Ratio	0.21	1.00	0.95	0.10	0.37
Control Delay (s/veh)	69.2	28.1	23.1	3.3	62.4
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	69.2	28.1	23.1	3.3	62.4
Queue Length 50th (ft)	17	~1610	~1418	20	29
Queue Length 95th (ft)	46	#1788	#1627	43	70
Internal Link Dist (ft)		2150	969		135
Turn Bay Length (ft)	150			65	
Base Capacity (vph)	121	3132	2936	1317	239
Starvation Cap Reductn	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	0.16	1.00	0.95	0.10	0.17

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.



Lane Group	EBL	EBT	WBL	WBT	WBR	SBL	SBT	SBR
Lane Group Flow (vph)	133	3036	19	2660	529	478	240	217
v/c Ratio	0.47	0.92	0.13	0.92	0.54	0.72	0.77	0.34
Control Delay (s/veh)	60.2	26.9	56.0	31.0	13.6	51.7	61.5	5.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	60.2	26.9	56.0	31.0	13.6	51.7	61.5	5.1
Queue Length 50th (ft)	52	612	14	671	167	193	204	0
Queue Length 95th (ft)	89	#1112	40	#843	289	256	313	54
Internal Link Dist (ft)		515		322			372	
Turn Bay Length (ft)	455		200		150	150		
Base Capacity (vph)	283	3286	227	2888	972	802	378	644
Starvation Cap Reductn	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.47	0.92	0.08	0.92	0.54	0.60	0.63	0.34

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.



Lane Group	EBL	EBT	WBL	WBT	WBR	SBT
Lane Group Flow (vph)	109	3748	36	3132	72	192
v/c Ratio	2.18	1.38	0.72	1.15	0.06	0.86
Control Delay (s/veh)	613.4	193.8	84.1	92.9	2.8	93.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	613.4	193.8	84.1	92.9	2.8	93.5
Queue Length 50th (ft)	~124	~2590	17	~1916	8	180
Queue Length 95th (ft)	#257	#2664	#56	#2016	21	#308
Internal Link Dist (ft)		2494		1684		204
Turn Bay Length (ft)	175		115		175	
Base Capacity (vph)	50	2718	50	2718	1224	246
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	2.18	1.38	0.72	1.15	0.06	0.78

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

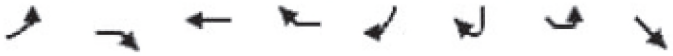


Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Group Flow (vph)	89	3843	3139	576	1579	198
v/c Ratio	0.67	1.21	1.21	0.62	1.66	0.33
Control Delay (s/veh)	85.0	123.1	127.9	15.6	333.8	4.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	85.0	123.1	127.9	15.6	333.8	4.7
Queue Length 50th (ft)	77	~1490	~1215	195	~1026	0
Queue Length 95th (ft)	#155	#1550	#1291	318	#1163	43
Internal Link Dist (ft)		1540	5550			
Turn Bay Length (ft)	200			240	325	230
Base Capacity (vph)	132	3178	2601	931	951	597
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.67	1.21	1.21	0.62	1.66	0.33

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.



Lane Group	EBL	EBR	WBT	WBR	SBR	SBR2	SEL2	SET
Lane Group Flow (vph)	502	4919	2953	600	312	133	58	1972
v/c Ratio	5.07	1.36	1.45	0.86	0.82	0.61	0.14	3.99
Control Delay (s/veh)	Error	176.7	229.7	31.9	50.5	44.2	23.7	Error
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	Error	176.7	229.7	31.9	50.5	44.2	23.7	Error
Queue Length 50th (ft)	~446	~566	~699	209	81	59	22	~1782
Queue Length 95th (ft)	#623	#664	#794	#407	#151	#128	52	#2057
Internal Link Dist (ft)			192					183
Turn Bay Length (ft)	550			150				
Base Capacity (vph)	99	3610	2034	696	382	217	403	494
Starvation Cap Reductn	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	5.07	1.36	1.45	0.86	0.82	0.61	0.14	3.99

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Lane Group	EBT	WBT	NBL	NBT	SBL	SBT	SBR
Lane Group Flow (vph)	108	43	182	784	38	487	67
v/c Ratio	0.47	0.17	0.54	0.33	0.21	0.29	0.08
Control Delay (s/veh)	23.9	13.7	27.6	7.3	27.6	12.8	1.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	23.9	13.7	27.6	7.3	27.6	12.8	1.9
Queue Length 50th (ft)	26	5	60	43	13	56	0
Queue Length 95th (ft)	62	27	104	136	38	112	12
Internal Link Dist (ft)	55	29		372		363	
Turn Bay Length (ft)			55		100		
Base Capacity (vph)	435	490	359	2394	183	1669	804
Starvation Cap Reductn	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	0.25	0.09	0.51	0.33	0.21	0.29	0.08

Intersection Summary



Lane Group	EBL	EBT	EBR	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	36	2	53	38	86	790	5	573
v/c Ratio	0.15	0.01	0.12	0.17	0.37	0.27	0.01	0.25
Control Delay (s/veh)	22.0	20.0	0.9	17.7	26.2	3.9	7.8	6.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	22.0	20.0	0.9	17.7	26.2	3.9	7.8	6.6
Queue Length 50th (ft)	11	1	0	8	26	0	1	26
Queue Length 95th (ft)	31	5	3	28	61	123	5	87
Internal Link Dist (ft)		82		162		266		28
Turn Bay Length (ft)	90		70		85		90	
Base Capacity (vph)	609	609	452	568	235	2952	468	2313
Starvation Cap Reductn	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.06	0.00	0.12	0.07	0.37	0.27	0.01	0.25

Intersection Summary



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Group Flow (vph)	538	265	356	139	265	201
v/c Ratio	0.82	0.10	0.33	0.16	0.52	0.21
Control Delay (s/veh)	32.8	3.3	23.0	3.0	33.0	2.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	32.8	3.3	23.0	3.0	33.0	2.1
Queue Length 50th (ft)	213	14	69	1	59	8
Queue Length 95th (ft)	#331	28	114	28	90	27
Internal Link Dist (ft)		979	153		377	
Turn Bay Length (ft)	165			400	250	250
Base Capacity (vph)	673	2592	1080	1007	823	994
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.80	0.10	0.33	0.14	0.32	0.20

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.



Lane Group	EBL	EBT	WBL	WBT	NBT	SBT
Lane Group Flow (vph)	93	437	1	445	3	79
v/c Ratio	0.13	0.16	0.00	0.16	0.01	0.28
Control Delay (s/veh)	3.7	2.8	3.0	2.8	14.3	9.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	3.7	2.8	3.0	2.8	14.3	9.6
Queue Length 50th (ft)	6	15	0	15	1	3
Queue Length 95th (ft)	22	35	1	35	5	28
Internal Link Dist (ft)		440		1362	42	10
Turn Bay Length (ft)	120		85			
Base Capacity (vph)	722	2778	728	2766	611	664
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.13	0.16	0.00	0.16	0.00	0.12

Intersection Summary

Lane Group	EBT	WBT	WBR	NBT	SBT
Lane Group Flow (vph)	518	1371	233	98	155
v/c Ratio	0.23	0.58	0.20	0.32	0.55
Control Delay (s/veh)	4.9	6.0	1.7	22.1	27.2
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	4.9	6.0	1.7	22.1	27.2
Queue Length 50th (ft)	33	125	7	31	48
Queue Length 95th (ft)	67	326	m42	60	88
Internal Link Dist (ft)	174	1594		273	31
Turn Bay Length (ft)			75		
Base Capacity (vph)	2286	2376	1168	473	429
Starvation Cap Reductn	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	0.23	0.58	0.20	0.21	0.36

Intersection Summary

m Volume for 95th percentile queue is metered by upstream signal.



Lane Group	EBL	EBT	WBL	WBT	NBT	SBT
Lane Group Flow (vph)	13	796	491	2244	51	64
v/c Ratio	0.14	0.26	0.88	0.74	0.31	0.51
Control Delay (s/veh)	6.0	2.2	27.4	6.2	26.7	58.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	6.0	2.2	27.4	6.2	26.7	58.4
Queue Length 50th (ft)	1	48	182	292	10	41
Queue Length 95th (ft)	8	82	#583	487	48	85
Internal Link Dist (ft)		1320		1262	120	51
Turn Bay Length (ft)	50		95			
Base Capacity (vph)	91	3060	561	3029	266	221
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.14	0.26	0.88	0.74	0.19	0.29

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	NBR	SBT
Lane Group Flow (vph)	13	633	223	290	561	2174	15	418	53
v/c Ratio	0.09	1.03	0.19	1.18	0.51	1.16	0.01	0.34	0.46
Control Delay (s/veh)	54.2	104.3	1.0	154.9	44.2	109.9	10.2	6.4	74.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	54.2	104.3	1.0	154.9	44.2	109.9	10.2	6.4	74.8
Queue Length 50th (ft)	11	~348	3	~299	238	~1304	5	115	47
Queue Length 95th (ft)	33	#475	16	#493	299	#1475	14	158	93
Internal Link Dist (ft)		1262			1061		1265		196
Turn Bay Length (ft)	95		80			240		135	
Base Capacity (vph)	142	613	1203	245	1107	1877	1179	1213	213
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.09	1.03	0.19	1.18	0.51	1.16	0.01	0.34	0.25

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.



Lane Group	EBL	EBT	WBL	WBT	NBT	SBL	SBT
Lane Group Flow (vph)	57	927	1184	631	262	104	122
v/c Ratio	0.10	0.34	2.82	0.23	1.24	1.00	0.39
Control Delay (s/veh)	4.0	4.7	840.8	4.1	180.4	146.7	29.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	4.0	4.7	840.8	4.1	180.4	146.7	29.1
Queue Length 50th (ft)	11	106	~1466	66	~262	96	44
Queue Length 95th (ft)	21	130	#1735	83	#444	#223	108
Internal Link Dist (ft)		840		2313	86		252
Turn Bay Length (ft)	50		55			90	
Base Capacity (vph)	587	2716	420	2741	212	104	313
Starvation Cap Reductn	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	0.10	0.34	2.82	0.23	1.24	1.00	0.39

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Group Flow (vph)	918	219	57	616	2965	103
v/c Ratio	1.18	0.47	0.97	0.61	1.32	0.10
Control Delay (s/veh)	143.7	19.6	177.4	49.8	171.0	5.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	143.7	19.6	177.4	49.8	171.0	5.0
Queue Length 50th (ft)	~564	53	57	276	~1921	17
Queue Length 95th (ft)	#701	136	#155	343	#2025	39
Internal Link Dist (ft)	88			809	78	
Turn Bay Length (ft)			130			
Base Capacity (vph)	778	467	59	1002	2254	1057
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	1.18	0.47	0.97	0.61	1.32	0.10

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.



Lane Group	EBL	EBT	WBL	WBT	NBT	SBT
Lane Group Flow (vph)	86	819	10	551	70	90
v/c Ratio	0.15	0.33	0.05	0.21	0.30	0.31
Control Delay (s/veh)	7.0	5.9	22.4	3.4	21.3	10.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	7.0	5.9	22.4	3.4	21.3	10.7
Queue Length 50th (ft)	7	41	3	25	18	5
Queue Length 95th (ft)	43	142	14	51	45	34
Internal Link Dist (ft)		824		2608	167	178
Turn Bay Length (ft)	110		100			
Base Capacity (vph)	584	2465	190	2625	510	559
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.15	0.33	0.05	0.21	0.14	0.16

Intersection Summary



Lane Group	EBL	EBR	WBT	NBL	NBT	SBT	SBR
Lane Group Flow (vph)	72	279	188	234	2505	386	167
v/c Ratio	0.42	0.58	0.67	0.22	0.95	0.50	0.35
Control Delay (s/veh)	41.0	9.4	45.4	5.7	21.5	33.1	7.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	41.0	9.4	45.4	5.7	21.5	33.1	7.0
Queue Length 50th (ft)	37	0	97	33	546	102	0
Queue Length 95th (ft)	76	65	159	65	#933	142	48
Internal Link Dist (ft)			154		4056	1265	
Turn Bay Length (ft)	50			250			110
Base Capacity (vph)	219	539	361	1054	2634	1997	966
Starvation Cap Reductn	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	0.33	0.52	0.52	0.22	0.95	0.19	0.17

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Group Flow (vph)	3	1811	1317	394	113	51
v/c Ratio	0.02	0.69	0.53	0.32	0.26	0.22
Control Delay (s/veh)	25.0	7.5	7.6	1.8	23.4	10.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	25.0	7.5	7.6	1.8	23.4	10.8
Queue Length 50th (ft)	1	170	95	0	18	0
Queue Length 95th (ft)	8	272	269	37	38	28
Internal Link Dist (ft)		642	2150		117	
Turn Bay Length (ft)	300			380		65
Base Capacity (vph)	187	2722	2490	1230	1057	478
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.02	0.67	0.53	0.32	0.11	0.11

Intersection Summary



Lane Group	EBL	EBT	WBT	WBR	SBL
Lane Group Flow (vph)	15	1886	1723	48	32
v/c Ratio	0.08	0.59	0.56	0.03	0.16
Control Delay (s/veh)	31.0	3.8	5.8	3.2	25.6
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	31.0	3.8	5.8	3.2	25.6
Queue Length 50th (ft)	4	0	0	0	7
Queue Length 95th (ft)	25	269	423	19	36
Internal Link Dist (ft)		2150	969		135
Turn Bay Length (ft)	150			65	
Base Capacity (vph)	281	3271	2914	1306	545
Starvation Cap Reductn	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	0.05	0.58	0.59	0.04	0.06

Intersection Summary



Lane Group	EBL	EBT	WBL	WBT	WBR	SBL	SBT	SBR
Lane Group Flow (vph)	184	1720	12	1631	777	277	139	112
v/c Ratio	0.46	0.50	0.06	0.61	0.76	0.55	0.58	0.19
Control Delay (s/veh)	42.2	9.2	38.5	15.9	13.3	38.8	44.4	4.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	42.2	9.2	38.5	15.9	13.3	38.8	44.4	4.4
Queue Length 50th (ft)	51	128	6	212	144	81	84	0
Queue Length 95th (ft)	90	323	24	300	351	123	153	31
Internal Link Dist (ft)		515		322			372	
Turn Bay Length (ft)	455		200		150	150		
Base Capacity (vph)	396	3412	318	2870	1069	1122	529	584
Starvation Cap Reductn	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.46	0.50	0.04	0.57	0.73	0.25	0.26	0.19

Intersection Summary



Lane Group	EBL	EBT	WBL	WBT	WBR	SBT
Lane Group Flow (vph)	61	2147	24	2370	157	98
v/c Ratio	0.70	0.77	0.28	0.85	0.12	0.53
Control Delay (s/veh)	55.7	10.0	14.3	13.3	1.8	43.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	55.7	10.0	14.3	13.3	1.8	43.7
Queue Length 50th (ft)	15	323	3	426	7	47
Queue Length 95th (ft)	#61	545	25	#848	26	95
Internal Link Dist (ft)		2494		1684		204
Turn Bay Length (ft)	175		115		175	
Base Capacity (vph)	87	2778	87	2778	1264	429
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.70	0.77	0.28	0.85	0.12	0.23

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

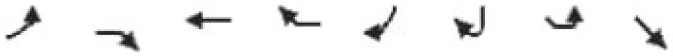


Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Group Flow (vph)	184	2194	2960	2554	591	176
v/c Ratio	1.08	0.59	0.97	2.03	1.04	0.39
Control Delay (s/veh)	147.8	9.0	36.5	482.4	100.9	4.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	147.8	9.0	36.5	482.4	100.9	4.4
Queue Length 50th (ft)	~177	287	851	~3193	~281	0
Queue Length 95th (ft)	#331	321	#967	#3437	#400	24
Internal Link Dist (ft)		1540	5550			
Turn Bay Length (ft)	200			240	325	230
Base Capacity (vph)	170	3738	3049	1260	570	454
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	1.08	0.59	0.97	2.03	1.04	0.39

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.



Lane Group	EBL	EBR	WBT	WBR	SBR	SBR2	SEL2	SET
Lane Group Flow (vph)	364	2421	5019	3522	234	112	21	325
v/c Ratio	3.79	0.67	2.33	4.85	0.50	0.43	0.06	0.80
Control Delay (s/veh)	Error	1.0	620.4	Error	34.2	35.4	25.2	34.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	Error	1.0	620.4	Error	34.2	35.4	25.2	34.2
Queue Length 50th (ft)	~326	0	~1494	~3304	59	50	8	100
Queue Length 95th (ft)	#498	0	#1620	#3652	100	101	27	#218
Internal Link Dist (ft)			192					183
Turn Bay Length (ft)	550			150				
Base Capacity (vph)	96	3610	2151	726	464	263	394	470
Starvation Cap Reductn	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	3.79	0.67	2.33	4.85	0.50	0.43	0.05	0.69

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.



Lane Group	EBT	WBT	NBL	NBT	SBL	SBT	SBR
Lane Group Flow (vph)	283	67	44	627	65	940	67
v/c Ratio	0.69	0.30	0.22	0.32	0.29	0.44	0.07
Control Delay (s/veh)	16.1	14.7	26.9	10.2	15.8	4.4	0.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	16.1	14.7	26.9	10.2	15.8	4.4	0.5
Queue Length 50th (ft)	26	10	15	65	9	29	0
Queue Length 95th (ft)	79	34	40	125	m35	71	m0
Internal Link Dist (ft)	55	29		372		363	
Turn Bay Length (ft)			55		100		
Base Capacity (vph)	592	388	197	1957	231	2154	1006
Starvation Cap Reductn	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	0.48	0.17	0.22	0.32	0.28	0.44	0.07

Intersection Summary

m Volume for 95th percentile queue is metered by upstream signal.



Lane Group	EBL	EBT	EBR	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	55	5	55	77	96	577	7	1030
v/c Ratio	0.25	0.02	0.12	0.36	0.51	0.21	0.01	0.45
Control Delay (s/veh)	25.2	21.0	1.3	22.0	25.0	1.9	8.3	9.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	25.2	21.0	1.3	22.0	25.0	1.9	8.3	9.8
Queue Length 50th (ft)	18	2	0	18	34	7	1	135
Queue Length 95th (ft)	44	9	6	48	#50	30	m3	187
Internal Link Dist (ft)		82		162		266		28
Turn Bay Length (ft)	90		70		85		90	
Base Capacity (vph)	489	558	477	448	196	2749	544	2295
Starvation Cap Reductn	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.11	0.01	0.12	0.17	0.49	0.21	0.01	0.45

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
m Volume for 95th percentile queue is metered by upstream signal.



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Group Flow (vph)	278	279	418	189	367	566
v/c Ratio	0.62	0.12	0.36	0.19	0.55	0.62
Control Delay (s/veh)	21.8	6.2	17.7	2.6	24.4	9.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	21.8	6.2	17.7	2.6	24.4	9.5
Queue Length 50th (ft)	95	31	62	8	62	77
Queue Length 95th (ft)	#170	53	101	27	90	148
Internal Link Dist (ft)		979	153		377	
Turn Bay Length (ft)	165			400	250	250
Base Capacity (vph)	445	2313	1207	1151	1029	911
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.62	0.12	0.35	0.16	0.36	0.62

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.



Lane Group	EBL	EBT	WBL	WBT	NBT	SBT
Lane Group Flow (vph)	61	585	2	629	5	38
v/c Ratio	0.09	0.19	0.00	0.21	0.02	0.14
Control Delay (s/veh)	3.1	2.2	3.0	2.2	14.0	14.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	3.1	2.2	3.0	2.2	14.0	14.0
Queue Length 50th (ft)	0	0	0	0	1	6
Queue Length 95th (ft)	15	45	2	47	7	23
Internal Link Dist (ft)		440		1362	42	10
Turn Bay Length (ft)	120		85			
Base Capacity (vph)	656	3017	685	2995	658	718
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.09	0.19	0.00	0.21	0.01	0.05

Intersection Summary

Lane Group	EBT	WBT	WBR	NBT	SBT
Lane Group Flow (vph)	1477	650	140	161	158
v/c Ratio	0.64	0.29	0.12	0.50	0.64
Control Delay (s/veh)	9.1	2.9	0.6	25.6	30.9
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	9.1	2.9	0.6	25.6	30.9
Queue Length 50th (ft)	147	42	0	52	47
Queue Length 95th (ft)	288	m73	m10	90	89
Internal Link Dist (ft)	174	1594		273	31
Turn Bay Length (ft)			75		
Base Capacity (vph)	2322	2227	1147	470	357
Starvation Cap Reductn	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	0.64	0.29	0.12	0.34	0.44

Intersection Summary

m Volume for 95th percentile queue is metered by upstream signal.



Lane Group	EBL	EBT	WBL	WBT	NBT	SBT
Lane Group Flow (vph)	28	2128	27	887	561	284
v/c Ratio	0.12	1.18	0.44	0.49	0.85	1.23
Control Delay (s/veh)	17.1	114.0	44.8	20.0	46.0	167.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	17.1	114.0	44.8	20.0	46.0	167.4
Queue Length 50th (ft)	11	~1041	13	225	386	~270
Queue Length 95th (ft)	29	#1181	#58	281	#592	#447
Internal Link Dist (ft)		1320		1262	120	51
Turn Bay Length (ft)	50		95			
Base Capacity (vph)	226	1810	62	1801	657	231
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.12	1.18	0.44	0.49	0.85	1.23

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.



Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	NBR	SBT
Lane Group Flow (vph)	13	646	2229	264	764	150	21	371	60
v/c Ratio	0.19	1.10	1.71	1.31	0.77	0.08	0.02	0.30	0.51
Control Delay (s/veh)	62.0	122.7	339.6	209.7	56.1	14.7	8.2	5.8	73.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	62.0	122.7	339.6	209.7	56.1	14.7	8.2	5.8	73.6
Queue Length 50th (ft)	11	~374	~3163	~307	370	32	6	94	51
Queue Length 95th (ft)	35	#503	#3440	#496	450	53	16	131	99
Internal Link Dist (ft)		1262			1061		1265		196
Turn Bay Length (ft)	95		80			240		135	
Base Capacity (vph)	67	589	1305	201	994	1976	1254	1224	208
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.19	1.10	1.71	1.31	0.77	0.08	0.02	0.30	0.29

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.



Lane Group	EBL	EBT	WBL	WBT	NBT	SBL	SBT
Lane Group Flow (vph)	110	833	155	816	1413	107	136
v/c Ratio	0.95	0.68	1.41	0.67	1.50	0.62	0.14
Control Delay (s/veh)	113.7	38.7	263.1	38.4	254.4	36.8	6.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	113.7	38.7	263.1	38.4	254.4	36.8	6.2
Queue Length 50th (ft)	90	307	~175	300	~1632	56	22
Queue Length 95th (ft)	#215	382	#318	373	#1901	#158	51
Internal Link Dist (ft)		840		2313	86		252
Turn Bay Length (ft)	50		55			90	
Base Capacity (vph)	116	1222	110	1223	943	173	989
Starvation Cap Reductn	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	0.95	0.68	1.41	0.67	1.50	0.62	0.14

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.



Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Group Flow (vph)	862	3006	103	670	301	82
v/c Ratio	0.33	2.18	1.17	0.23	0.78	0.33
Control Delay (s/veh)	6.8	547.5	207.1	3.0	79.6	15.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	6.8	547.5	207.1	3.0	79.6	15.2
Queue Length 50th (ft)	137	~4532	~119	63	148	0
Queue Length 95th (ft)	165	#4731	#249	78	202	53
Internal Link Dist (ft)	88			809	78	
Turn Bay Length (ft)			130			
Base Capacity (vph)	2646	1382	88	2929	411	262
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.33	2.18	1.17	0.23	0.73	0.31

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.



Lane Group	EBL	EBT	WBL	WBT	NBT	SBT
Lane Group Flow (vph)	85	831	15	629	79	96
v/c Ratio	0.16	0.34	0.08	0.24	0.34	0.33
Control Delay (s/veh)	7.5	6.1	22.4	3.6	21.0	11.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	7.5	6.1	22.4	3.6	21.0	11.5
Queue Length 50th (ft)	7	42	5	30	19	7
Queue Length 95th (ft)	45	148	18	60	47	37
Internal Link Dist (ft)		824		2608	167	178
Turn Bay Length (ft)	110		100			
Base Capacity (vph)	538	2451	195	2616	504	555
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.16	0.34	0.08	0.24	0.16	0.17

Intersection Summary



Lane Group	EBL	EBR	WBT	NBL	NBT	SBT	SBR
Lane Group Flow (vph)	102	205	131	267	398	2488	39
v/c Ratio	0.81	0.64	0.62	1.07	0.14	1.04	0.04
Control Delay (s/veh)	101.4	24.3	65.2	124.1	2.8	51.5	1.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	101.4	24.3	65.2	124.1	2.8	51.5	1.8
Queue Length 50th (ft)	91	36	100	~220	34	~1305	0
Queue Length 95th (ft)	#181	121	171	#404	45	#1430	10
Internal Link Dist (ft)			154		4056	1265	
Turn Bay Length (ft)	50			250			110
Base Capacity (vph)	142	343	235	249	2908	2402	1090
Starvation Cap Reductn	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	0.72	0.60	0.56	1.07	0.14	1.04	0.04

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Group Flow (vph)	40	2922	2651	135	421	40
v/c Ratio	0.57	1.03	1.01	0.11	0.97	0.20
Control Delay (s/veh)	100.4	42.2	40.9	1.1	101.7	39.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	100.4	42.2	40.9	1.1	101.7	39.0
Queue Length 50th (ft)	39	~1609	~1460	0	214	20
Queue Length 95th (ft)	#95	#1716	#1575	18	#326	62
Internal Link Dist (ft)		642	2150		117	
Turn Bay Length (ft)	300			380		65
Base Capacity (vph)	70	2828	2618	1206	432	197
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.57	1.03	1.01	0.11	0.97	0.20

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.



Lane Group	EBL	EBT	WBT	WBR	SBL
Lane Group Flow (vph)	19	3316	2801	132	41
v/c Ratio	0.21	1.06	0.96	0.10	0.37
Control Delay (s/veh)	68.3	47.0	23.3	3.3	61.7
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	68.3	47.0	23.3	3.3	61.7
Queue Length 50th (ft)	17	~1758	~1404	20	29
Queue Length 95th (ft)	45	#1937	#1613	43	69
Internal Link Dist (ft)		2150	969		135
Turn Bay Length (ft)	150			65	
Base Capacity (vph)	122	3129	2931	1315	261
Starvation Cap Reductn	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	0.16	1.06	0.96	0.10	0.16

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.



Lane Group	EBL	EBT	WBL	WBT	WBR	SBL	SBT	SBR
Lane Group Flow (vph)	133	3206	19	2660	529	633	314	222
v/c Ratio	0.49	1.02	0.14	0.96	0.56	0.82	0.87	0.33
Control Delay (s/veh)	62.4	46.6	56.8	38.1	14.9	55.9	69.5	4.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.2
Total Delay (s/veh)	62.4	46.6	56.8	38.1	14.9	55.9	69.5	5.1
Queue Length 50th (ft)	54	802	15	733	184	271	286	0
Queue Length 95th (ft)	89	#1216	40	#843	289	#348	#475	55
Internal Link Dist (ft)		515		322			372	
Turn Bay Length (ft)	455		200		150	150		
Base Capacity (vph)	271	3138	218	2767	938	768	363	683
Starvation Cap Reductn	0	0	0	0	0	0	0	118
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.49	1.02	0.09	0.96	0.56	0.82	0.87	0.39

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.



Lane Group	EBL	EBT	WBL	WBT	WBR	SBT
Lane Group Flow (vph)	109	4152	36	3132	72	234
v/c Ratio	2.22	1.55	0.73	1.17	0.06	0.98
Control Delay (s/veh)	629.7	272.2	87.1	102.5	2.8	113.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	629.7	272.2	87.1	102.5	2.8	113.5
Queue Length 50th (ft)	~124	~3026	17	~1916	8	228
Queue Length 95th (ft)	#257	#3083	#56	#2016	21	#408
Internal Link Dist (ft)		2494		1684		204
Turn Bay Length (ft)	175		115		175	
Base Capacity (vph)	49	2673	49	2673	1204	239
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	2.22	1.55	0.73	1.17	0.06	0.98

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

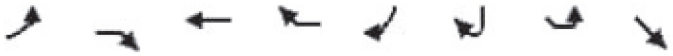


Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Group Flow (vph)	89	4460	3139	576	2568	198
v/c Ratio	0.67	1.51	1.32	0.67	2.32	0.30
Control Delay (s/veh)	85.0	257.8	179.8	20.1	621.7	2.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	85.0	257.8	179.8	20.1	621.7	2.9
Queue Length 50th (ft)	77	~1973	~1290	230	~1875	0
Queue Length 95th (ft)	#155	#2017	#1367	368	#1997	29
Internal Link Dist (ft)		1540	5550			
Turn Bay Length (ft)	200			240	325	230
Base Capacity (vph)	132	2950	2373	862	1105	670
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.67	1.51	1.32	0.67	2.32	0.30

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.



Lane Group	EBL	EBR	WBT	WBR	SBR	SBR2	SEL2	SET
Lane Group Flow (vph)	502	6526	2953	600	312	133	58	3557
v/c Ratio	5.40	1.81	1.52	0.90	0.69	0.52	0.14	7.06
Control Delay (s/veh)	Error	379.4	262.5	39.3	40.9	38.9	24.5	Error
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	Error	379.4	262.5	39.3	40.9	38.9	24.5	Error
Queue Length 50th (ft)	~481	~1350	~767	238	84	62	24	~3711
Queue Length 95th (ft)	#643	#1419	#862	#446	#134	117	54	#3982
Internal Link Dist (ft)			192					183
Turn Bay Length (ft)	550			150				
Base Capacity (vph)	93	3610	1938	664	449	255	418	504
Starvation Cap Reductn	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	5.40	1.81	1.52	0.90	0.69	0.52	0.14	7.06

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.



Lane Group	EBT	WBT	NBL	NBT	SBL	SBT	SBR
Lane Group Flow (vph)	247	98	27	1106	87	1110	153
v/c Ratio	0.70	0.25	0.16	0.65	0.51	0.57	0.16
Control Delay (s/veh)	28.5	10.0	27.7	16.2	38.9	12.8	3.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	28.5	10.0	27.7	16.2	38.9	12.8	3.1
Queue Length 50th (ft)	69	11	9	160	31	104	0
Queue Length 95th (ft)	127	39	30	#257	#83	252	29
Internal Link Dist (ft)	55	29		372		363	
Turn Bay Length (ft)			55		100		
Base Capacity (vph)	447	500	165	1697	170	1953	942
Starvation Cap Reductn	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	0.55	0.20	0.16	0.65	0.51	0.57	0.16

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.



Lane Group	EBL	EBT	EBR	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	82	5	120	87	197	1121	11	1307
v/c Ratio	0.45	0.02	0.22	0.41	0.75	0.42	0.04	0.66
Control Delay (s/veh)	36.9	26.2	7.0	26.8	50.4	5.8	9.8	14.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	36.9	26.2	7.0	26.8	50.4	5.8	9.8	14.5
Queue Length 50th (ft)	36	2	10	25	89	75	2	215
Queue Length 95th (ft)	72	10	40	62	#183	221	10	329
Internal Link Dist (ft)		82		162		266		28
Turn Bay Length (ft)	90		70		85		90	
Base Capacity (vph)	341	449	562	368	273	2688	296	1993
Starvation Cap Reductn	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.24	0.01	0.21	0.24	0.72	0.42	0.04	0.66

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Group Flow (vph)	644	604	813	316	603	460
v/c Ratio	0.96	0.24	0.84	0.36	0.89	0.46
Control Delay (s/veh)	55.8	5.1	40.2	9.0	52.4	10.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	55.8	5.1	40.2	9.0	52.4	10.2
Queue Length 50th (ft)	348	55	231	59	172	116
Queue Length 95th (ft)	#571	76	#331	114	#263	183
Internal Link Dist (ft)		979	153		377	
Turn Bay Length (ft)	165			400	250	250
Base Capacity (vph)	678	2487	972	886	686	1004
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.95	0.24	0.84	0.36	0.88	0.46

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.



Lane Group	EBL	EBT	WBL	WBT	NBT	SBT
Lane Group Flow (vph)	211	997	2	1014	6	179
v/c Ratio	0.56	0.37	0.01	0.38	0.03	0.59
Control Delay (s/veh)	12.4	3.8	3.0	3.8	22.0	17.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	12.4	3.8	3.0	3.8	22.0	17.4
Queue Length 50th (ft)	27	53	0	54	2	18
Queue Length 95th (ft)	#131	112	2	114	11	67
Internal Link Dist (ft)		440		1362	42	10
Turn Bay Length (ft)	120		85			
Base Capacity (vph)	375	2662	382	2652	401	500
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.56	0.37	0.01	0.38	0.01	0.36

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.



Lane Group	EBT	WBT	WBR	NBT	SBT
Lane Group Flow (vph)	1179	990	531	223	355
v/c Ratio	0.77	0.66	0.52	0.42	0.88
Control Delay (s/veh)	16.3	13.2	3.1	14.8	41.1
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	16.3	13.2	3.1	14.8	41.1
Queue Length 50th (ft)	145	112	0	46	88
Queue Length 95th (ft)	#231	169	42	92	#220
Internal Link Dist (ft)	174	1594		273	31
Turn Bay Length (ft)			75		
Base Capacity (vph)	1524	1505	1027	567	428
Starvation Cap Reductn	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	0.77	0.66	0.52	0.39	0.83

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.



Lane Group	EBL	EBT	WBL	WBT	NBT	SBT
Lane Group Flow (vph)	29	1813	52	1671	117	147
v/c Ratio	0.22	0.71	0.40	0.66	0.41	0.56
Control Delay (s/veh)	10.9	10.0	21.0	8.5	22.3	26.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	10.9	10.0	21.0	8.5	22.3	26.4
Queue Length 50th (ft)	3	188	7	160	33	42
Queue Length 95th (ft)	22	#400	#60	310	67	81
Internal Link Dist (ft)		1320		1262	120	51
Turn Bay Length (ft)	50		95			
Base Capacity (vph)	132	2537	129	2529	471	422
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.22	0.71	0.40	0.66	0.25	0.35

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.



Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	NBR	SBT
Lane Group Flow (vph)	30	1443	510	661	1278	445	34	952	121
v/c Ratio	0.20	1.11	0.60	1.20	0.53	0.98	0.07	1.05	0.70
Control Delay (s/veh)	37.1	105.5	14.4	145.7	13.0	103.6	50.5	73.3	83.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	37.1	105.5	14.4	145.7	13.0	103.6	50.5	73.3	83.2
Queue Length 50th (ft)	20	~847	170	~733	307	~229	29	~1037	112
Queue Length 95th (ft)	50	#987	249	#980	359	m#377	m52	m#1301	181
Internal Link Dist (ft)		1262			1061		1265		196
Turn Bay Length (ft)	95		80			240		135	
Base Capacity (vph)	148	1297	854	551	2402	454	484	907	213
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.20	1.11	0.60	1.20	0.53	0.98	0.07	1.05	0.57

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.



Lane Group	EBL	EBT	WBL	WBT	NBT	SBL	SBT
Lane Group Flow (vph)	132	2108	369	1439	597	237	278
v/c Ratio	0.89	1.39	2.49	0.95	1.21	0.79	0.42
Control Delay (s/veh)	73.1	199.1	708.4	29.8	131.3	37.4	12.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	73.1	199.1	708.4	29.8	131.3	37.4	12.9
Queue Length 50th (ft)	33	~457	~152	197	~226	59	53
Queue Length 95th (ft)	#121	#586	#288	#342	#390	#165	104
Internal Link Dist (ft)		840		2313	86		252
Turn Bay Length (ft)	50		55			90	
Base Capacity (vph)	148	1516	148	1516	495	299	661
Starvation Cap Reductn	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	0.89	1.39	2.49	0.95	1.21	0.79	0.42

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.



Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Group Flow (vph)	2090	498	131	1403	404	186
v/c Ratio	0.98	0.44	0.96	0.54	0.69	0.49
Control Delay (s/veh)	34.8	2.6	102.7	7.3	41.4	14.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	34.8	2.6	102.7	7.3	41.4	14.9
Queue Length 50th (ft)	564	7	66	153	111	24
Queue Length 95th (ft)	#815	49	m#177	m253	155	82
Internal Link Dist (ft)	88			809	78	
Turn Bay Length (ft)			130			
Base Capacity (vph)	2129	1138	137	2581	686	426
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.98	0.44	0.96	0.54	0.59	0.44

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.



Lane Group	EBL	EBT	WBL	WBT	NBT	SBT
Lane Group Flow (vph)	195	1864	20	1256	158	207
v/c Ratio	0.77	0.80	0.20	0.50	0.92	0.53
Control Delay (s/veh)	33.3	22.4	45.5	7.1	88.0	21.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	33.3	22.4	45.5	7.1	88.0	21.3
Queue Length 50th (ft)	117	589	11	152	84	50
Queue Length 95th (ft)	m126	m610	34	195	#202	118
Internal Link Dist (ft)		824		2608	167	178
Turn Bay Length (ft)	110		100			
Base Capacity (vph)	253	2324	100	2490	180	405
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.77	0.80	0.20	0.50	0.88	0.51

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.



Lane Group	EBL	EBR	WBT	NBL	NBT	SBT	SBR
Lane Group Flow (vph)	166	635	432	533	1198	879	381
v/c Ratio	0.65	0.80	0.93	0.93	0.54	0.82	0.55
Control Delay (s/veh)	38.9	14.9	56.6	49.0	9.2	27.8	6.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	38.9	14.9	56.6	49.0	9.2	27.8	6.1
Queue Length 50th (ft)	69	44	190	182	148	251	51
Queue Length 95th (ft)	#151	#229	#361	#374	197	m253	m55
Internal Link Dist (ft)			154		4056	1265	
Turn Bay Length (ft)	50			250			110
Base Capacity (vph)	258	794	470	572	2206	1067	690
Starvation Cap Reductn	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	0.64	0.80	0.92	0.93	0.54	0.82	0.55

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Group Flow (vph)	6	2870	2076	122	257	117
v/c Ratio	0.08	0.99	0.73	0.09	0.71	0.53
Control Delay (s/veh)	72.0	28.5	9.8	0.9	73.9	32.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	72.0	28.5	9.8	0.9	73.9	32.5
Queue Length 50th (ft)	6	1196	395	0	123	38
Queue Length 95th (ft)	22	#1651	728	17	172	113
Internal Link Dist (ft)		642	2150		117	
Turn Bay Length (ft)	300			380		65
Base Capacity (vph)	71	2894	2842	1295	417	243
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.08	0.99	0.73	0.09	0.62	0.48

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.



Lane Group	EBL	EBT	WBT	WBR	SBL
Lane Group Flow (vph)	34	3061	2200	111	70
v/c Ratio	0.34	0.99	0.78	0.09	0.51
Control Delay (s/veh)	74.1	25.9	13.6	4.0	67.1
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	74.1	25.9	13.6	4.0	67.1
Queue Length 50th (ft)	31	~1569	612	18	54
Queue Length 95th (ft)	70	#1773	857	40	106
Internal Link Dist (ft)		2150	969		135
Turn Bay Length (ft)	150			65	
Base Capacity (vph)	120	3088	2819	1267	244
Starvation Cap Reductn	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	0.28	0.99	0.78	0.09	0.29

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.



Lane Group	EBL	EBT	WBL	WBT	WBR	SBL	SBT	SBR
Lane Group Flow (vph)	420	2694	28	2012	702	633	317	254
v/c Ratio	0.84	0.89	0.20	0.83	0.78	0.82	0.87	0.32
Control Delay (s/veh)	68.8	28.6	58.4	32.3	23.7	55.9	70.6	3.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.4
Total Delay (s/veh)	68.8	28.6	58.4	32.3	23.7	55.9	70.6	4.2
Queue Length 50th (ft)	175	754	22	509	306	271	289	0
Queue Length 95th (ft)	#255	#905	53	576	487	#348	#483	52
Internal Link Dist (ft)		515		322			372	
Turn Bay Length (ft)	455		200		150	150		
Base Capacity (vph)	498	3011	218	2430	896	768	363	787
Starvation Cap Reductn	0	0	0	0	0	0	0	197
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.84	0.89	0.13	0.83	0.78	0.82	0.87	0.43

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.



Lane Group	EBL	EBT	WBL	WBT	WBR	SBT
Lane Group Flow (vph)	137	3564	54	2615	164	226
v/c Ratio	2.80	1.33	1.10	0.97	0.13	0.93
Control Delay (s/veh)	872.6	170.6	184.7	29.0	2.4	99.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	872.6	170.6	184.7	29.0	2.4	99.7
Queue Length 50th (ft)	~181	~2392	~60	1125	16	212
Queue Length 95th (ft)	#327	#2475	#109	#1481	34	#371
Internal Link Dist (ft)		2494		1684		204
Turn Bay Length (ft)	175		115		175	
Base Capacity (vph)	49	2688	49	2690	1225	254
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	2.80	1.33	1.10	0.97	0.13	0.89

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

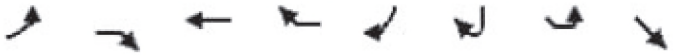


Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Group Flow (vph)	420	3432	2653	1312	1347	400
v/c Ratio	1.53	1.07	1.19	1.28	1.46	0.60
Control Delay (s/veh)	295.0	62.5	125.0	151.3	247.3	11.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	295.0	62.5	125.0	151.3	247.3	11.8
Queue Length 50th (ft)	~510	~1205	~1017	~1135	~822	43
Queue Length 95th (ft)	#719	#1276	#1102	#1405	#959	149
Internal Link Dist (ft)		1540	5550			
Turn Bay Length (ft)	200			240	325	230
Base Capacity (vph)	274	3216	2229	1029	925	671
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	1.53	1.07	1.19	1.28	1.46	0.60

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.



Lane Group	EBL	EBR	WBT	WBR	SBR	SBR2	SEL2	SET
Lane Group Flow (vph)	832	3948	3179	802	532	254	48	738
v/c Ratio	8.40	1.09	1.56	1.15	1.39	1.17	0.12	1.52
Control Delay (s/veh)	Error	52.6	278.8	106.6	221.2	147.9	23.3	269.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	Error	52.6	278.8	106.6	221.2	147.9	23.3	269.1
Queue Length 50th (ft)	~760	~146	~781	~418	~190	~143	18	~470
Queue Length 95th (ft)	#976	#254	#875	#632	#294	#280	45	#688
Internal Link Dist (ft)			192					183
Turn Bay Length (ft)	550			150				
Base Capacity (vph)	99	3610	2034	696	382	217	403	484
Starvation Cap Reductn	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	8.40	1.09	1.56	1.15	1.39	1.17	0.12	1.52

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.



Lane Group	EBT	WBT	NBL	NBT	SBL	SBT	SBR
Lane Group Flow (vph)	257	152	99	1426	147	1464	153
v/c Ratio	0.88	0.41	0.65	0.81	0.73	0.75	0.16
Control Delay (s/veh)	59.1	18.6	56.1	22.2	56.0	18.0	2.4
Queue Delay	0.0	0.0	0.0	3.7	0.0	0.0	0.0
Total Delay (s/veh)	59.1	18.6	56.1	25.8	56.0	18.0	2.4
Queue Length 50th (ft)	112	34	49	309	72	302	0
Queue Length 95th (ft)	#243	86	#116	405	#156	394	26
Internal Link Dist (ft)	55	29		372		363	
Turn Bay Length (ft)			55		100		
Base Capacity (vph)	306	385	157	1753	210	1956	943
Starvation Cap Reductn	0	0	0	242	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	0.84	0.39	0.63	0.94	0.70	0.75	0.16

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.



Lane Group	EBL	EBT	EBR	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	126	11	126	175	217	1314	16	1665
v/c Ratio	0.67	0.04	0.21	0.72	0.88	0.52	0.07	0.86
Control Delay (s/veh)	52.2	29.9	9.7	47.2	73.1	7.6	11.3	23.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	52.2	29.9	9.7	47.2	73.1	7.6	11.3	23.9
Queue Length 50th (ft)	68	5	20	83	123	136	4	404
Queue Length 95th (ft)	123	19	54	147	#249	299	14	#621
Internal Link Dist (ft)		82		162		266		28
Turn Bay Length (ft)	90		70		85		90	
Base Capacity (vph)	240	374	585	305	249	2537	223	1941
Starvation Cap Reductn	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.53	0.03	0.22	0.57	0.87	0.52	0.07	0.86

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Group Flow (vph)	634	635	952	432	836	706
v/c Ratio	1.02	0.27	0.98	0.46	1.01	0.70
Control Delay (s/veh)	76.0	7.0	61.9	11.7	72.7	16.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	76.0	7.0	61.9	11.7	72.7	16.5
Queue Length 50th (ft)	~433	76	317	115	~280	265
Queue Length 95th (ft)	#647	102	#453	190	#409	404
Internal Link Dist (ft)		979	153		377	
Turn Bay Length (ft)	165			400	250	250
Base Capacity (vph)	619	2367	969	930	827	1010
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	1.02	0.27	0.98	0.46	1.01	0.70

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.



Lane Group	EBL	EBT	WBL	WBT	NBT	SBT
Lane Group Flow (vph)	138	1332	5	1431	12	88
v/c Ratio	0.56	0.46	0.02	0.50	0.07	0.48
Control Delay (s/veh)	16.3	3.9	0.6	1.5	24.6	31.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	16.3	3.9	0.6	1.5	24.6	31.6
Queue Length 50th (ft)	20	90	0	4	3	28
Queue Length 95th (ft)	#138	163	m0	m7	17	68
Internal Link Dist (ft)		440		1362	42	10
Turn Bay Length (ft)	120		85			
Base Capacity (vph)	248	2874	280	2854	364	343
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.56	0.46	0.02	0.50	0.03	0.26

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

Lane Group	EBT	WBT	WBR	NBT	SBT
Lane Group Flow (vph)	1229	1478	320	365	358
v/c Ratio	1.01	0.98	0.37	0.63	1.08
Control Delay (s/veh)	46.0	28.3	3.3	26.3	97.7
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	46.0	28.3	3.3	26.3	97.7
Queue Length 50th (ft)	~312	418	33	145	~198
Queue Length 95th (ft)	#471	m#518	m34	238	#363
Internal Link Dist (ft)	174	1594		273	31
Turn Bay Length (ft)			75		
Base Capacity (vph)	1222	1503	875	575	333
Starvation Cap Reductn	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	1.01	0.98	0.37	0.63	1.08

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.



Lane Group	EBL	EBT	WBL	WBT	NBT	SBT
Lane Group Flow (vph)	63	1794	61	2022	212	260
v/c Ratio	0.68	0.80	0.66	0.90	0.54	0.94
Control Delay (s/veh)	34.6	11.1	49.8	19.7	28.5	71.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	34.6	11.1	49.8	19.7	28.5	71.8
Queue Length 50th (ft)	18	335	17	405	79	118
Queue Length 95th (ft)	m29	m392	#91	#585	147	#262
Internal Link Dist (ft)		1320		1262	120	51
Turn Bay Length (ft)	50		95			
Base Capacity (vph)	92	2251	92	2244	401	283
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.68	0.80	0.66	0.90	0.53	0.92

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
m Volume for 95th percentile queue is metered by upstream signal.



Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	NBR	SBT
Lane Group Flow (vph)	30	1471	569	600	1741	343	48	846	138
v/c Ratio	0.31	1.08	0.66	1.11	0.71	0.89	0.10	0.97	0.77
Control Delay (s/veh)	42.9	90.8	16.3	115.3	15.9	89.6	44.6	55.8	87.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	42.9	90.8	16.3	115.3	15.9	89.6	44.6	55.8	87.8
Queue Length 50th (ft)	20	~840	197	~620	501	175	37	771	126
Queue Length 95th (ft)	55	#980	305	#861	580	#289	74	#1083	#206
Internal Link Dist (ft)		1262			1061		1265		196
Turn Bay Length (ft)	95		80			240		135	
Base Capacity (vph)	97	1368	862	539	2449	386	459	875	207
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.31	1.08	0.66	1.11	0.71	0.89	0.10	0.97	0.67

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.



Lane Group	EBL	EBT	WBL	WBT	NBT	SBL	SBT
Lane Group Flow (vph)	249	1897	354	1859	892	246	308
v/c Ratio	1.68	1.25	2.39	1.23	1.85	1.02	0.48
Control Delay (s/veh)	355.5	137.0	663.7	126.9	408.3	86.9	14.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	355.5	137.0	663.7	126.9	408.3	86.9	14.2
Queue Length 50th (ft)	~112	~383	~142	~371	~426	~72	63
Queue Length 95th (ft)	#188	#508	#276	#496	#617	#191	120
Internal Link Dist (ft)		840		2313	86		252
Turn Bay Length (ft)	50		55			90	
Base Capacity (vph)	148	1517	148	1515	483	241	647
Starvation Cap Reductn	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	1.68	1.25	2.39	1.23	1.85	1.02	0.48

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.



Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Group Flow (vph)	1964	499	185	1528	686	185
v/c Ratio	0.98	0.47	0.97	0.61	0.98	0.39
Control Delay (s/veh)	40.7	4.3	107.4	9.2	72.9	8.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	40.7	4.3	107.4	9.2	72.9	8.4
Queue Length 50th (ft)	675	31	132	251	250	1
Queue Length 95th (ft)	#886	89	#274	307	#370	60
Internal Link Dist (ft)	88			809	78	
Turn Bay Length (ft)			130			
Base Capacity (vph)	1997	1067	191	2525	702	469
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.98	0.47	0.97	0.61	0.98	0.39

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.



Lane Group	EBL	EBT	WBL	WBT	NBT	SBT
Lane Group Flow (vph)	194	1891	35	1434	178	220
v/c Ratio	0.99	0.82	0.40	0.57	1.01	0.60
Control Delay (s/veh)	86.7	17.7	59.5	8.0	110.9	30.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	86.7	17.7	59.5	8.0	110.9	30.4
Queue Length 50th (ft)	~136	479	22	199	~111	80
Queue Length 95th (ft)	#158	605	55	250	#252	159
Internal Link Dist (ft)		824		2608	167	178
Turn Bay Length (ft)	110		100			
Base Capacity (vph)	195	2299	88	2515	176	369
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.99	0.82	0.40	0.57	1.01	0.60

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.



Lane Group	EBL	EBR	WBT	NBL	NBT	SBT	SBR
Lane Group Flow (vph)	232	468	296	609	906	1161	90
v/c Ratio	1.00	0.66	0.74	1.03	0.38	0.96	0.15
Control Delay (s/veh)	98.3	8.0	42.9	74.5	6.7	47.1	7.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	98.3	8.0	42.9	74.5	6.7	47.1	7.7
Queue Length 50th (ft)	~134	0	145	~323	101	335	6
Queue Length 95th (ft)	#281	83	#262	#531	132	#475	38
Internal Link Dist (ft)			154		4056	1265	
Turn Bay Length (ft)	50			250			110
Base Capacity (vph)	231	712	398	591	2410	1215	591
Starvation Cap Reductn	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	1.00	0.66	0.74	1.03	0.38	0.96	0.15

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Group Flow (vph)	91	4064	3832	309	188	85
v/c Ratio	1.08	1.38	1.45	0.25	0.60	0.45
Control Delay (s/veh)	186.0	191.7	224.0	2.2	70.1	27.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	186.0	191.7	224.0	2.2	70.1	27.8
Queue Length 50th (ft)	~96	~2676	~2587	21	87	18
Queue Length 95th (ft)	#222	#2851	#2766	51	129	80
Internal Link Dist (ft)		642	2150		117	
Turn Bay Length (ft)	300			380		65
Base Capacity (vph)	84	2944	2651	1240	425	235
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	1.08	1.38	1.45	0.25	0.44	0.36

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.



Lane Group	EBL	EBT	WBT	WBR	SBL
Lane Group Flow (vph)	45	4189	4146	300	91
v/c Ratio	0.45	1.42	1.54	0.25	0.59
Control Delay (s/veh)	80.4	207.4	267.1	5.8	73.7
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	80.4	207.4	267.1	5.8	73.7
Queue Length 50th (ft)	41	~2772	~2905	69	77
Queue Length 95th (ft)	87	#2987	#3126	121	137
Internal Link Dist (ft)		2150	969		135
Turn Bay Length (ft)	150			65	
Base Capacity (vph)	115	2959	2687	1211	228
Starvation Cap Reductn	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	0.39	1.42	1.54	0.25	0.40

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.



Lane Group	EBL	EBT	WBL	WBT	WBR	SBL	SBT	SBR
Lane Group Flow (vph)	303	3959	44	3856	1205	817	400	377
v/c Ratio	1.06	1.44	0.31	1.47	1.28	0.97	1.00	0.51
Control Delay (s/veh)	123.4	225.0	60.7	241.1	159.5	70.4	88.1	11.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	8.8	0.0	0.7
Total Delay (s/veh)	123.4	225.0	60.7	241.1	159.5	79.2	88.1	12.6
Queue Length 50th (ft)	~139	~1645	35	~1587	~1152	365	361	72
Queue Length 95th (ft)	#234	#1726	74	#1653	#1418	#504	#611	169
Internal Link Dist (ft)		515		322			372	
Turn Bay Length (ft)	455		200		150	150		
Base Capacity (vph)	287	2756	218	2622	939	844	401	738
Starvation Cap Reductn	0	0	0	0	0	35	0	134
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	1.06	1.44	0.20	1.47	1.28	1.01	1.00	0.62

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.



Lane Group	EBL	EBT	WBL	WBT	WBR	SBT
Lane Group Flow (vph)	248	4881	82	4914	165	341
v/c Ratio	4.96	1.89	1.64	1.91	0.14	1.20
Control Delay (s/veh)	Error	424.7	384.3	429.8	4.7	169.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	Error	424.7	384.3	429.8	4.7	169.0
Queue Length 50th (ft)	~407	~3868	~66	~3869	31	~403
Queue Length 95th (ft)	#592	#3888	#185	#3887	54	#606
Internal Link Dist (ft)		2494		1684		204
Turn Bay Length (ft)	175		115		175	
Base Capacity (vph)	50	2576	50	2578	1165	284
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	4.96	1.89	1.64	1.91	0.14	1.20

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

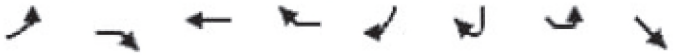


Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Group Flow (vph)	204	4722	4763	1311	1341	451
v/c Ratio	1.32	1.39	1.73	1.26	1.68	0.83
Control Delay (s/veh)	226.4	199.3	353.0	146.8	345.2	38.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	226.4	199.3	353.0	146.8	345.2	38.1
Queue Length 50th (ft)	~227	~1995	~2236	~1266	~876	196
Queue Length 95th (ft)	#388	#2032	#2272	#1535	#1013	#375
Internal Link Dist (ft)		1540	5550			
Turn Bay Length (ft)	200			240	325	230
Base Capacity (vph)	155	3406	2760	1040	797	542
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	1.32	1.39	1.73	1.26	1.68	0.83

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.



Lane Group	EBL	EBR	WBT	WBR	SBR	SBR2	SEL2	SET
Lane Group Flow (vph)	1142	4922	4836	1368	710	304	131	883
v/c Ratio	11.54	1.36	2.38	1.97	1.86	1.40	0.33	1.87
Control Delay (s/veh)	Error	177.1	640.0	459.6	420.6	235.3	26.2	419.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	Error	177.1	640.0	459.6	420.6	235.3	26.2	419.0
Queue Length 50th (ft)	~1075	~567	~1380	~992	~290	~193	52	~630
Queue Length 95th (ft)	#1310	#666	#1463	#1239	#404	#340	102	#862
Internal Link Dist (ft)			192					183
Turn Bay Length (ft)	550			150				
Base Capacity (vph)	99	3610	2034	696	382	217	403	473
Starvation Cap Reductn	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	11.54	1.36	2.38	1.97	1.86	1.40	0.33	1.87

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.



Appendix B-1

Draft Vehicle Trips Per Residential Build Logistics

Table A.1: Vehicle Trips per residential Build - Palisades Average Lot

Neighborhood Assumptions:	
Average Lot Size	8,000 sqft
Average Home Size	3,500 sqft
Bedrooms	4
Bath	3
Kitchen / Dining / Other	1
ADU/Garage Size (*permits require garage)	600 sqft
Bedrooms	0
Bath	0
Courtyard/Patio/Walk	400 sqft
Driveway	360 sqft
Pool	200 sqft
Landscape	3,140 sqft

Typical Home Style Assumption: Single story Mediterranean, Modern, or Spanish

Building Materials	Material			Labor				
	Quantity	Units	Truck Trips	Crew Size	Production	Crew Days	Total Labor Days	Vehicle Trips*
Earthwork								
Mobilize / Demobilize Earthwork Equipment	4,100	sqft	2.00					
Overex / Recompact Existing	4,100	sqft						
Foundation Excavation / Backfill	4,100	sqft		3	1250.00	3.28	9.84	7.38
Rough Grading	8,000	sqft		3	1500.00	2.73	8.20	6.15
Import / Export	49	cyds	4.12	3	4000.00	2.00	6.00	4.50
Trench / Backfill Incoming Utilites	4,100	sqft		3				
Factor (homes with pool or subteranean garage)	4,100	sqft		3	1500.00	2.73	8.20	6.15
Factor (export pool or subteranean garage)	59	cyds	1.98	3	1500.00	1.09	3.28	2.46
Concrete								
Total Cubic Yards	119.38	cyds	11.94	6	40.00	2.98	17.91	13.43
Foundations	43.94	cyds						
SOG	55.00	cyds						
Courtyard/Patio	3.47	cyds						
Driveway	5.56	cyds						
Pool	2.77	cyds						
Other/Waste Factor/Contingency	8.64	cyds						
Reinforcing Steel	11,938	lbs	1.19	3	3000.00	3.98	11.94	8.95
Concrete Finishing	4,229	sqft		3	2000.00	2.11	6.34	4.76
Misc Masonry Walls / Curbs	678	sqft	0.678	2	400.00	1.70	3.39	2.54
Lumber / Framing								
Foundation Formwork	68	10' lenghts	0.27	3	25.00	2.72	8.16	6.12
SOG edge formwork	34	10' lenghts	0.13	3	25.00	1.36	4.08	3.06
Other Edge Form	10	10' lenghts	0.04	3	25.00	0.40	1.20	0.90
Pool Wall Form	6	sheets	0.07	5	20.00	0.30	1.50	1.13

Building Materials	Material			Labor				
	Quantity	Units	Truck Trips	Crew Size	Production	Crew Days	Total Labor Days	Vehicle Trips*
Pool Wall Form	32	10' lenghts	0.13	5	20.00	1.60	8.00	6.00
Exterior Partition Framing	255	10' lenghts	1.00	4	25.00	10.20	40.80	30.60
Interior Partition Framing - House	136.5	10' lenghts	0.33	4	25.00	5.46	21.84	16.38
Interior Partition Framing - ADU	0	10' lenghts	0.00	4	25.00	0.00	0.00	0.00
Second Story Framing	59.06	20' lenghts	0.46	5	15.00	3.94	19.69	14.77
Second Story Deck	98.44	sheets	1.12	5	50.00	1.97	9.84	7.38
Roof Joist Framing - House	131.25	20' lenghts	1.03	5	15.00	8.75	43.75	32.81
Roof Joist Framing - ADU	22.5	20' lenghts	0.18	5	15.00	1.50	7.50	5.63
Plywood - Roof House + ADU	256.25	sheets	2.91	5	50.00	5.13	25.63	19.22
Exterior Materials								
Roofing Materials	4100	sqft	1.03	4	650.00	6.31	25.23	18.92
Exterior Finish (Plaster / Siding)	2074	sqft	1.38	4	250.00	8.30	33.18	24.89
Exterior Sheething	51.85	sheets	0.54	4	12.00	4.32	17.28	12.96
Waterproofing / Vapor Barrier	4372	sqft	w crew	3	1500.00	2.91	8.74	6.56
Stone / Brick	340	sqft	0.68	3	200.00	1.70	5.10	3.83
Windows	680	sqft	2.72	4	200.00	3.40	13.60	10.20
Sliding / Operable / Doors	170	sqft	1	3	100.00	1.70	5.10	3.83
Garage Doors	136	sqft	1	3	100.00	1.36	4.08	3.06
Interior Finishes								
Drywall								
Walls - Exterior	68	sheets	0.71	4	16.00	4.25	17.00	12.75
Walls - Interior House	78.5	sheets	0.82	4	16.00	4.91	19.63	14.72
Walls - Interior ADU	0	sheets	0.00	4	16.00	0.00	0.00	0.00
Ceilings	102.5	sheets	1.07	4	10.00	10.25	41.00	30.75
Drywall Mud/Tape	9960	sqft	w crew	2	2500.00	3.98	7.97	5.98
Wall Finish - Tile	879	sqft	0.44	2	500.00	1.76	3.52	2.64
Wall Finish - Paint	4981	sqft	w crew	3	2500.00	1.99	5.98	4.48
Ceiling Finish - Paint	4100	sqft	w crew	3	2500.00	1.64	4.92	3.69
Doors, Frames, Hardware	16	ea	1.6	2	2.67	6.00	12.00	9.00
Flooring - wood	1750	sqft	0.875	2	500.00	3.50	7.00	5.25
Flooring - tile	875	sqft	w crew	2	200.00	4.38	8.75	6.56
Flooring - sealed concrete	1475	sqft	w crew	2	1000.00	1.48	2.95	2.21
Millwork / Kitchen Cabinets / Island	410	sqft	1.64	3	150.00	2.73	8.20	6.15
Millwork / Shelves / Built Ins	102.5	sqft	0.41	3	150.00	0.68	2.05	1.54
Custom Veneers or Stone	102.5	sqft	0.41	3	100.00	1.03	3.08	2.31
Kitchen / Bath Counters	82	sqft	1.64	3	50.00	1.64	4.92	3.69
Mirrors	41	sqft	0.41	2	50.00	0.82	1.64	1.23
Residential Appliances								
Kitchen Appliances	3	ea	1.5	2	3.00	1.00	2.00	1.50
Laundry Appliances	2	ea	1	2	2.00	1.00	2.00	1.50
Plumbing / Mechanical								
Fixtures	4	bath/kitchen	1.6	3	1.00	4.00	12.00	9.00

Building Materials	Material			Labor				
	Quantity	Units	Truck Trips	Crew Size	Production	Crew Days	Total Labor Days	Vehicle Trips*
Water Heater / Equipment	1	ea	1	3	1.00	1.00	3.00	2.25
UG Utilites - Storm, Water, Sanitary, Gas	4100	sqft	w crew	3	1000.00	4.10	12.30	9.23
Piping - Below Grade	4100	sqft	w crew	3	1000.00	4.10	12.30	9.23
Piping - In Wall	4	bath/kitchen	w crew	3	0.50	8.00	24.00	18.00
Air Conditioner	4100	sqft	1	3	3000.00	1.37	4.10	3.08
Ductwork	4100	sqft	1	3	2000.00	2.05	6.15	4.61
Gas Piping/Meter	4100	sqft	w crew	3	2000.00	2.05	6.15	4.61
Pool Piping/Equipment	80	sqft	1	3	50.00	1.60	4.80	3.60
Electrical								
Incoming Service	4100	sqft	w crew	3	1250.00	3.28	9.84	7.38
Conduit / Outlets / Switches	4100	sqft	w crew	3	750.00	5.47	16.40	12.30
Wiring	4100	sqft	w crew	3	1250.00	3.28	9.84	7.38
Panels/Breakers/Disconnects	4100	sqft	1.37	3	1250.00	3.28	9.84	7.38
Meter	4100	sqft	w crew	3	2500.00	1.64	4.92	3.69
Lighting	4100	sqft	1.37	3	1250.00	3.28	9.84	7.38
Lighting / AV Wiring / Control	4100	sqft	w crew	3	1250.00	3.28	9.84	7.38
PV	4100	sqft	1.64	3	1000.00	4.10	12.30	9.23
Exterior / Landscape Lighting	3900	sqft	1.30	3	2000.00	1.95	5.85	4.39
Landscape / Hardscape								
Planting Soil	38.77	cyds	3.23	4	20.00	1.94	7.75	5.81
Stone	9.69	cyds	0.81	4	10.00	0.97	3.88	2.91
Irrigation	2512	sqft	w crew	2	1500.00	1.67	3.35	2.51
Plants / Trees / Grass / Turf	2512	sqft	2.512	4	750.00	3.35	13.40	10.05
Pavers	628	sqft	0.628	4	300.00	2.09	8.37	6.28
Fence / Gates / Others	252	lf	1.26	3	100.00	2.52	7.56	5.67
Dumpsters / Waste Management**	4100	sqft	5.13					
Temp Toilet Cleaning***			44.13					
Subtotal Vehicle Round Trips			**121.05**					**567.56**
Total Vehicle Round Trips								**688.62**

Notes:
* Assumes 1 in 4 carpools
** 1 Dumpster per 800 sqft
*** 1 clean per crew week Vehicle Trips per residential Build - Alphabet Streets Neighborhood

Neighborhood Assumptions:	
Average Lot Size	5,950 sqft
Average Home Size	3,060 sqft
Bedrooms	3 each
Bath	2.5 each
Kitchen / Dining / Other	1 each
ADU/Garage Size (*permits require garage)	504 sqft
Bedrooms	0 each
Bath	0 each
Courtyard/Patio/Walk	225 sqft
Driveway	360 sqft
Pool	200 sqft
Landscape	1,801 sqft

Typical Home Style Assumption: Single story Mediterranean, Modern, or Spanish

Building Materials	Material			Labor				
	Quantity	Units	Truck Trips	Crew Size	Production	Crew Days	Total Labor Days	Vehicle Trips*
Earthwork								
Mobilize / Demobilize Earthwork Equipment	3,564	sqft	2.00					
Overex / Recompact Existing	3,564	sqft		3	1250.00	2.85	8.55	6.42
Foundation Excavation / Backfill	3,564	sqft		3	1500.00	2.38	7.13	5.35
Rough Grading	5,950	sqft		3	4000.00	1.49	4.46	3.35
Import / Export	37	cyds	3.06	3				
Trench / Backfill Incoming Utilites	3,564	sqft		3	1500.00	2.38	7.13	5.35
Factor (homes with pool or subteranean garage)	3,564	sqft		3	1500.00	0.95	2.85	2.14
Factor (export pool or subteranean garage)	59	cyds	1.98					
Earthwork								
Mobilize / Demobilize Earthwork Equipment	3,564	sqft	2.00					
Overex / Recompact Existing	3,564	sqft		3	1250.00	2.85	8.55	6.42
Foundation Excavation / Backfill	3,564	sqft		3	1500.00	2.38	7.13	5.35
Rough Grading	5,950	sqft		3	4000.00	1.49	4.46	3.35
Import / Export	37	cyds	3.06	3				
Trench / Backfill Incoming Utilites	3,564	sqft		3	1500.00	2.38	7.13	5.35
Factor (homes with pool or subteranean garage)	3,564	sqft		3	1500.00	0.95	2.85	2.14
Factor (export pool or subteranean garage)	59	cyds	1.98					
Concrete Finishing	4,229	sqft		3	2000.00	2.11	6.34	4.76
Misc Masonry Walls / Curbs	678	sqft	0.678	2	400.00	1.70	3.39	2.54
Lumber / Framing								
Foundation Formwork	63.6	10' lenghts	0.25	3	25.00	2.54	7.63	5.72
SOG edge formwork	31.8	10' lenghts	0.12	3	25.00	1.27	3.82	2.86
Other Edge Form	9	10' lenghts	0.04	3	25.00	0.36	1.08	0.81
Pool Wall Form	6	sheets	0.07	5	20.00	0.30	1.50	1.13
Pool Wall Form	32	10' lenghts	0.13	5	20.00	1.60	8.00	6.00

Building Materials	Material			Labor				
	Quantity	Units	Truck Trips	Crew Size	Production	Crew Days	Total Labor Days	Vehicle Trips*
Exterior Partition Framing	238.5	10' lenghts	0.93	4	25.00	9.54	38.16	28.62
Interior Partition Framing - House	114.375	10' lenghts	0.27	4	25.00	4.58	18.30	13.73
Interior Partition Framing - ADU	0	10' lenghts	0.00	4	25.00	0.00	0.00	0.00
Second Story Framing	51.64	20' lenghts	0.40	5	15.00	3.44	17.21	12.91
Second Story Deck	86.06	sheets	0.98	5	50.00	1.72	8.61	6.45
Roof Joist Framing - House	114.75	20' lenghts	0.90	5	15.00	7.65	38.25	28.69
Roof Joist Framing - ADU	18.9	20' lenghts	0.15	5	15.00	1.26	6.30	4.73
Plywood - Roof House + ADU	222.75	sheets	2.53	5	50.00	4.46	22.28	16.71
Exterior Materials								
Roofing Materials	3564	sqft	0.89	4	650.00	5.48	21.93	16.45
Exterior Finish (Plaster / Siding)	1939.8	sqft	1.29	4	250.00	7.76	31.04	23.28
Exterior Sheething	48.495	sheets	0.51	4	12.00	4.04	16.17	12.12
Waterproofing / Vapor Barrier	3836	sqft	w crew	3	1500.00	2.56	7.67	5.75
Stone / Brick	318	sqft	0.64	3	200.00	1.59	4.77	3.58
Windows	636	sqft	2.544	4	200.00	3.18	12.72	9.54
Sliding / Operable / Doors	159	sqft	1	3	100.00	1.59	4.77	3.58
Garage Doors	127.2	sqft	1	3	100.00	1.27	3.82	2.86
Exterior Materials								
Roofing Materials	3564	sqft	0.89	4	650.00	5.48	21.93	16.45
Exterior Finish (Plaster / Siding)	1939.8	sqft	1.29	4	250.00	7.76	31.04	23.28
Exterior Sheething	48.495	sheets	0.51	4	12.00	4.04	16.17	12.12
Waterproofing / Vapor Barrier	3836	sqft	w crew	3	1500.00	2.56	7.67	5.75
Stone / Brick	318	sqft	0.64	3	200.00	1.59	4.77	3.58
Windows	636	sqft	2.544	4	200.00	3.18	12.72	9.54
Sliding / Operable / Doors	159	sqft	1	3	100.00	1.59	4.77	3.58
Garage Doors	127.2	sqft	1	3	100.00	1.27	3.82	2.86
Ceiling Finish - Paint	4100	sqft	w crew	3	2500.00	1.64	4.92	3.69
Doors, Frames, Hardware	16	ea	1.6	2	2.67	6.00	12.00	9.00
Flooring - wood	1750	sqft	0.875	2	500.00	3.50	7.00	5.25
Flooring - tile	875	sqft	w crew	2	200.00	4.38	8.75	6.56
Flooring - sealed concrete	1475	sqft	w crew	2	1000.00	1.48	2.95	2.21
Millwork / Kitchen Cabinets / Island	410	sqft	1.64	3	150.00	2.73	8.20	6.15
Millwork / Shelves / Built Ins	102.5	sqft	0.41	3	150.00	0.68	2.05	1.54
Custom Veneers or Stone	102.5	sqft	0.41	3	100.00	1.03	3.08	2.31
Kitchen / Bath Counters	82	sqft	1.64	3	50.00	1.64	4.92	3.69
Mirrors	41	sqft	0.41	2	50.00	0.82	1.64	1.23
Residential Appliances								
Kitchen Appliances	3	ea	1.5	2	3.00	1.00	2.00	1.50
Laundry Appliances	2	ea	1	2	2.00	1.00	2.00	1.50
Plumbing / Mechanical								
Fixtures	3.5	bath/kitchen	1.4	3	1.00	3.50	10.50	7.88
Water Heater / Equipment	1	ea	1	3	1.00	1.00	3.00	2.25

Building Materials	Material			Labor				
	Quantity	Units	Truck Trips	Crew Size	Production	Crew Days	Total Labor Days	Vehicle Trips*
UG Utilites - Storm, Water, Sanitary, Gas	3564	sqft	w crew	3	1000.00	3.56	10.69	8.02
Piping - Below Grade	3564	sqft	w crew	3	1000.00	3.56	10.69	8.02
Piping - In Wall	3.5	bath/kitchen	w crew	3	0.50	7.00	21.00	15.75
Air Conditioner	3564	sqft	1	3	3000.00	1.19	3.56	2.67
Ductwork	3564	sqft	1	3	2000.00	1.78	5.35	4.01
Gas Piping/Meter	3564	sqft	w crew	3	2000.00	1.78	5.35	4.01
Pool Piping/Equipment	80	sqft	1	3	50.00	1.60	4.80	3.60
Electrical								
Incoming Service	3564	sqft	w crew	3	1250.00	2.85	8.55	6.42
Conduit / Outlets / Switches	3564	sqft	w crew	3	750.00	4.75	14.26	10.69
Wiring	3564	sqft	w crew	3	1250.00	2.85	8.55	6.42
Panels/Breakers/Disconnects	3564	sqft	1.19	3	1250.00	2.85	8.55	6.42
Meter	3564	sqft	w crew	3	2500.00	1.43	4.28	3.21
Lighting	3564	sqft	1.19	3	1250.00	2.85	8.55	6.42
Lighting / AV Wiring / Control	3564	sqft	w crew	3	1250.00	2.85	8.55	6.42
PV	3564	sqft	1.4256	3	1000.00	3.56	10.69	8.02
Exterior / Landscape Lighting	2386	sqft	0.80	3	2000.00	1.19	3.58	2.68
Landscape / Hardscape								
Planting Soil	22.23	cyds	1.85	4	20.00	1.11	4.45	3.34
Stone	5.56	cyds	0.46	4	10.00	0.56	2.22	1.67
Irrigation	1440.8	sqft	w crew	2	1500.00	0.96	1.92	1.44
Plants / Trees / Grass / Turf	1440.8	sqft	1.4408	4	750.00	1.92	7.68	5.76
Pavers	360.2	sqft	0.3602	4	300.00	1.20	4.80	3.60
Fence / Gates / Others	217	lf	1.085	3	100.00	2.17	6.51	4.88
Dumpsters / Waste Management**	3564	sqft	4.46					
Temp Toilet Cleaning***			38.45					
Subtotal Vehicle Round Trips			**104.76**					**493.76**
Total Vehicle Round Trips								**598.52**

Notes:
* Assumes 1 in 4 carpools
** 1 Dumpster per 800 sqft
*** 1 clean per crew week

Table A.2: Vehicle Trips per residential Build - Via Bluffs Neighborhood

Neighborhood Assumptions:	
Average Lot Size	5,950 sqft
Average Home Size	3,060 sqft
Bedrooms	3 each
Bath	2.5 each
Kitchen / Dining / Other	1 each
ADU/Garage Size (*permits require garage)	504 sqft
Bedrooms	0 each
Bath	0 each
Courtyard/Patio/Walk	225 sqft
Driveway	360 sqft
Pool	200 sqft
Landscape	1,801 sqft

Typical Home Style Assumption: Single story Mediterranean, Modern, or Spanish

Building Materials	Material			Labor				
	Quantity	Units	Truck Trips	Crew Size	Production	Crew Days	Total Labor Days	Vehicle Trips*
Earthwork								
Mobilize / Demobilize Earthwork Equipment	3,564	sqft	2.00					
Overex / Recompact Existing	3,564	sqft		3	1250.00	2.85	8.55	6.42
Foundation Excavation / Backfill	3,564	sqft		3	1500.00	2.38	7.13	5.35
Rough Grading	5,950	sqft		3	4000.00	1.49	4.46	3.35
Import / Export	37	cyds	3.06	3				
Trench / Backfill Incoming Utilites	3,564	sqft		3	1500.00	2.38	7.13	5.35
Factor (homes with pool or subteranean garage)	3,564	sqft		3	1500.00	0.95	2.85	2.14
Factor (export pool or subteranean garage)	59	cyds	1.98					
Concrete								
Total Cubic Yards	119.38	cyds	11.94	6	40.00	2.98	17.91	13.43
Foundations	43.94	cyds						
SOG	55.00	cyds						
Courtyard/Patio	3.47	cyds						
Driveway	5.56	cyds						
Pool	2.77	cyds						
Other/Waste Factor/Contingency	8.64	cyds						
Reinforcing Steel	11,938	lbs	1.19	3	3000.00	3.98	11.94	8.95
Concrete Finishing	4,229	sqft		3	2000.00	2.11	6.34	4.76
Misc Masonry Walls / Curbs	678	sqft	0.678	2	400.00	1.70	3.39	2.54
Lumber / Framing								
Foundation Formwork	63.6	10' lenghts	0.25	3	25.00	2.54	7.63	5.72
SOG edge formwork	31.8	10' lenghts	0.12	3	25.00	1.27	3.82	2.86
Other Edge Form	9	10' lenghts	0.04	3	25.00	0.36	1.08	0.81
Pool Wall Form	6	sheets	0.07	5	20.00	0.30	1.50	1.13

Building Materials	Material			Labor				
	Quantity	Units	Truck Trips	Crew Size	Production	Crew Days	Total Labor Days	Vehicle Trips*
Pool Wall Form	32	10' lenghts	0.13	5	20.00	1.60	8.00	6.00
Exterior Partition Framing	238.5	10' lenghts	0.93	4	25.00	9.54	38.16	28.62
Interior Partition Framing - House	114.375	10' lenghts	0.27	4	25.00	4.58	18.30	13.73
Interior Partition Framing - ADU	0	10' lenghts	0.00	4	25.00	0.00	0.00	0.00
Second Story Framing	51.64	20' lenghts	0.40	5	15.00	3.44	17.21	12.91
Second Story Deck	86.06	sheets	0.98	5	50.00	1.72	8.61	6.45
Roof Joist Framing - House	114.75	20' lenghts	0.90	5	15.00	7.65	38.25	28.69
Roof Joist Framing - ADU	18.9	20' lenghts	0.15	5	15.00	1.26	6.30	4.73
Plywood - Roof House + ADU	222.75	sheets	2.53	5	50.00	4.46	22.28	16.71
Exterior Materials								
Roofing Materials	3564	sqft	0.89	4	650.00	5.48	21.93	16.45
Exterior Finish (Plaster / Siding)	1939.8	sqft	1.29	4	250.00	7.76	31.04	23.28
Exterior Sheething	48.495	sheets	0.51	4	12.00	4.04	16.17	12.12
Waterproofing / Vapor Barrier	3836	sqft	w crew	3	1500.00	2.56	7.67	5.75
Stone / Brick	318	sqft	0.64	3	200.00	1.59	4.77	3.58
Windows	636	sqft	2.544	4	200.00	3.18	12.72	9.54
Sliding / Operable / Doors	159	sqft	1	3	100.00	1.59	4.77	3.58
Garage Doors	127.2	sqft	1	3	100.00	1.27	3.82	2.86
Exterior Materials								
Roofing Materials	3564	sqft	0.89	4	650.00	5.48	21.93	16.45
Exterior Finish (Plaster / Siding)	1939.8	sqft	1.29	4	250.00	7.76	31.04	23.28
Exterior Sheething	48.495	sheets	0.51	4	12.00	4.04	16.17	12.12
Waterproofing / Vapor Barrier	3836	sqft	w crew	3	1500.00	2.56	7.67	5.75
Stone / Brick	318	sqft	0.64	3	200.00	1.59	4.77	3.58
Windows	636	sqft	2.544	4	200.00	3.18	12.72	9.54
Sliding / Operable / Doors	159	sqft	1	3	100.00	1.59	4.77	3.58
Garage Doors	127.2	sqft	1	3	100.00	1.27	3.82	2.86
Ceiling Finish - Paint	4100	sqft	w crew	3	2500.00	1.64	4.92	3.69
Doors, Frames, Hardware	16	ea	1.6	2	2.67	6.00	12.00	9.00
Flooring - wood	1750	sqft	0.875	2	500.00	3.50	7.00	5.25
Flooring - tile	875	sqft	w crew	2	200.00	4.38	8.75	6.56
Flooring - sealed concrete	1475	sqft	w crew	2	1000.00	1.48	2.95	2.21
Millwork / Kitchen Cabinets / Island	410	sqft	1.64	3	150.00	2.73	8.20	6.15
Millwork / Shelves / Built Ins	102.5	sqft	0.41	3	150.00	0.68	2.05	1.54
Custom Veneers or Stone	102.5	sqft	0.41	3	100.00	1.03	3.08	2.31
Kitchen / Bath Counters	82	sqft	1.64	3	50.00	1.64	4.92	3.69
Mirrors	41	sqft	0.41	2	50.00	0.82	1.64	1.23
Residential Appliances								
Kitchen Appliances	3	ea	1.5	2	3.00	1.00	2.00	1.50
Laundry Appliances	2	ea	1	2	2.00	1.00	2.00	1.50
Electrical								
Incoming Service	3564	sqft	w crew	3	1250.00	2.85	8.55	6.42

Building Materials	Material			Labor				
	Quantity	Units	Truck Trips	Crew Size	Production	Crew Days	Total Labor Days	Vehicle Trips*
Conduit / Outlets / Switches	3564	sqft	w crew	3	750.00	4.75	14.26	10.69
Wiring	3564	sqft	w crew	3	1250.00	2.85	8.55	6.42
Panels/Breakers/Disconnects	3564	sqft	1.19	3	1250.00	2.85	8.55	6.42
Meter	3564	sqft	w crew	3	2500.00	1.43	4.28	3.21
Lighting	3564	sqft	1.19	3	1250.00	2.85	8.55	6.42
Lighting / AV Wiring / Control	3564	sqft	w crew	3	1250.00	2.85	8.55	6.42
PV	3564	sqft	1.4256	3	1000.00	3.56	10.69	8.02
Exterior / Landscape Lighting	2386	sqft	0.80	3	2000.00	1.19	3.58	2.68
Electrical								
Incoming Service	4100	sqft	w crew	3	1250.00	3.28	9.84	7.38
Conduit / Outlets / Switches	4100	sqft	w crew	3	750.00	5.47	16.40	12.30
Wiring	4100	sqft	w crew	3	1250.00	3.28	9.84	7.38
Panels/Breakers/Disconnects	4100	sqft	1.37	3	1250.00	3.28	9.84	7.38
Meter	4100	sqft	w crew	3	2500.00	1.64	4.92	3.69
Lighting	4100	sqft	1.37	3	1250.00	3.28	9.84	7.38
Lighting / AV Wiring / Control	4100	sqft	w crew	3	1250.00	3.28	9.84	7.38
PV	4100	sqft	1.64	3	1000.00	4.10	12.30	9.23
Exterior / Landscape Lighting	3900	sqft	1.30	3	2000.00	1.95	5.85	4.39
Landscape / Hardscape								
Planting Soil	22.23	cyds	1.85	4	20.00	1.11	4.45	3.34
Stone	5.56	cyds	0.46	4	10.00	0.56	2.22	1.67
Irrigation	1440.8	sqft	w crew	2	1500.00	0.96	1.92	1.44
Plants / Trees / Grass / Turf	1440.8	sqft	1.4408	4	750.00	1.92	7.68	5.76
Pavers	360.2	sqft	0.3602	4	300.00	1.20	4.80	3.60
Fence / Gates / Others	217	lf	1.085	3	100.00	2.17	6.51	4.88
Dumpsters / Waste Management**	3564	sqft	4.46					
Temp Toilet Cleaning***			38.45					
Subtotal Vehicle Round Trips			**104.76**					**493.76**
Total Vehicle Round Trips								**598.52**

Notes:
* Assumes 1 in 4 carpools
** 1 Dumpster per 800 sqft
*** 1 clean per crew week

Table A.3: Vehicle Trips per residential Build - Marquez Knolls Neighborhood

Neighborhood Assumptions:	
Average Lot Size	7,448 sqft
Average Home Size	2,000 sqft
Bedrooms	3 each
Bath	2.5 each
Kitchen / Dining / Other	1 each
ADU/Garage Size (*permits require garage)	504 sqft
Bedrooms	0 each
Bath	0 each
Courtyard/Patio/Walk	225 sqft
Driveway	360 sqft
Pool	200 sqft
Landscape	4,359 sqft

Typical Home Style Assumption: Single story Mediterranean, Modern, or Spanish

Building Materials	Material			Labor				
	Quantity	Units	Truck Trips	Crew Size	Production	Crew Days	Total Labor Days	Vehicle Trips*
Earthwork								
Mobilize / Demobilize Earthwork Equipment	2,504	sqft	2.00					
Overex / Recompact Existing	2,504	sqft		3	1250.00	2.00	6.01	4.51
Foundation Excavation / Backfill	2,504	sqft		3	1500.00	1.67	5.01	3.76
Rough Grading	7,448	sqft		3	4000.00	1.86	5.59	4.19
Import / Export	46	cyds	3.83	3				
Trench / Backfill Incoming Utilites	2,504	sqft		3	1500.00	1.67	5.01	3.76
Factor (homes with pool or subteranean garage)	2,504	sqft		3	1500.00	0.67	2.00	1.50
Factor (export pool or subteranean garage)	59	cyds	1.98					
Earthwork								
Total Cubic Yards	92.05	cyds	9.21	6	40.00	2.30	13.81	10.36
Foundations	35.00	cyds						
SOG	38.65	cyds						
Courtyard/Patio	3.47	cyds						
Driveway	5.56	cyds						
Pool	2.77	cyds						
Other/Waste Factor/Contingency	6.61	cyds						
Reinforcing Steel	9,205	lbs	0.92	3	3000.00	3.07	9.21	6.90
Concrete Finishing	3,169	sqft		3	2000.00	1.58	4.75	3.57
Misc Masonry Walls / Curbs	540	sqft	0.54	2	400.00	1.35	2.70	2.03
Foundation Formwork	54.4	10' lenghts	0.21	3	25.00	2.18	6.53	4.90
SOG edge formwork	27.2	10' lenghts	0.11	3	25.00	1.09	3.26	2.45
Other Edge Form	9	10' lenghts	0.04	3	25.00	0.36	1.08	0.81
Pool Wall Form	6	sheets	0.07	5	20.00	0.30	1.50	1.13

Building Materials	Material			Labor				
	Quantity	Units	Truck Trips	Crew Size	Production	Crew Days	Total Labor Days	Vehicle Trips*
Pool Wall Form	32	10' lenghts	0.13	5	20.00	1.60	8.00	6.00
Exterior Partition Framing	204	10' lenghts	0.80	4	25.00	8.16	32.64	24.48
Interior Partition Framing - House	114.375	10' lenghts	0.27	4	25.00	4.58	18.30	13.73
Interior Partition Framing - ADU	0	10' lenghts	0.00	4	25.00	0.00	0.00	0.00
Second Story Framing	33.75	20' lenghts	0.26	5	15.00	2.25	11.25	8.44
Second Story Deck	56.25	sheets	0.64	5	50.00	1.13	5.63	4.22
Roof Joist Framing - House	75	20' lenghts	0.59	5	15.00	5.00	25.00	18.75
Roof Joist Framing - ADU	18.9	20' lenghts	0.15	5	15.00	1.26	6.30	4.73
Plywood - Roof House + ADU	156.5	sheets	1.78	5	50.00	3.13	15.65	11.74
Plywood - Roof House + ADU	222.75	sheets	2.53	5	50.00	4.46	22.28	16.71
Exterior Materials								
Roofing Materials	2504	sqft	0.63	4	650.00	3.85	15.41	11.56
Exterior Finish (Plaster / Siding)	1659.2	sqft	1.11	4	250.00	6.64	26.55	19.91
Exterior Sheething	41.48	sheets	0.43	4	12.00	3.46	13.83	10.37
Waterproofing / Vapor Barrier	2776	sqft	w crew	3	1500.00	1.85	5.55	4.16
Stone / Brick	272	sqft	0.54	3	200.00	1.36	4.08	3.06
Windows	544	sqft	2.176	4	200.00	2.72	10.88	8.16
Sliding / Operable / Doors	136	sqft	1	3	100.00	1.36	4.08	3.06
Garage Doors	108.8	sqft	1	3	100.00	1.09	3.26	2.45
Interior Finishes								
Drywall								
Walls - Exterior	54.4	sheets	0.57	4	16.00	3.40	13.60	10.20
Walls - Interior House	63.75	sheets	0.66	4	16.00	3.98	15.94	11.95
Walls - Interior ADU	0	sheets	0.00	4	16.00	0.00	0.00	0.00
Ceilings	62.6	sheets	0.65	4	10.00	6.26	25.04	18.78
Drywall Mud/Tape	7230	sqft	w crew	2	2500.00	2.89	5.78	4.34
Wall Finish - Tile	708.9	sqft	0.35	2	500.00	1.42	2.84	2.13
Wall Finish - Paint	4017.1	sqft	w crew	3	2500.00	1.61	4.82	3.62
Ceiling Finish - Paint	2504	sqft	w crew	3	2500.00	1.00	3.00	2.25
Doors, Frames, Hardware	13.5	ea	1.35	2	2.25	6.00	12.00	9.00
Flooring - wood	1000	sqft	0.5	2	500.00	2.00	4.00	3.00
Flooring - tile	500	sqft	w crew	2	200.00	2.50	5.00	3.75
Flooring - sealed concrete	1004	sqft	w crew	2	1000.00	1.00	2.01	1.51
Millwork / Kitchen Cabinets / Island	250.4	sqft	1.0016	3	150.00	1.67	5.01	3.76
Millwork / Shelves / Built Ins	62.6	sqft	0.2504	3	150.00	0.42	1.25	0.94
Custom Veneers or Stone	62.6	sqft	0.2504	3	100.00	0.63	1.88	1.41
Kitchen / Bath Counters	50.08	sqft	1.0016	3	50.00	1.00	3.00	2.25
Mirrors	25.04	sqft	0.2504	2	50.00	0.50	1.00	0.75
Residential Appliances								
Kitchen Appliances	3	ea	1.5	2	3.00	1.00	2.00	1.50
Laundry Appliances	2	ea	1	2	2.00	1.00	2.00	1.50
Plumbing / Mechanical								

Building Materials	Material			Labor				
	Quantity	Units	Truck Trips	Crew Size	Production	Crew Days	Total Labor Days	Vehicle Trips*
Fixtures	3.5	bath/kitchen	1.4	3	1.00	3.50	10.50	7.88
Water Heater / Equipment	1	ea	1	3	1.00	1.00	3.00	2.25
UG Utilites - Storm, Water, Sanitary, Gas	2504	sqft	w crew	3	1000.00	2.50	7.51	5.63
Piping - Below Grade	2504	sqft	w crew	3	1000.00	2.50	7.51	5.63
Piping - In Wall	3.5	bath/kitchen	w crew	3	0.50	7.00	21.00	15.75
Air Conditioner	2504	sqft	1	3	3000.00	0.83	2.50	1.88
Ductwork	2504	sqft	1	3	2000.00	1.25	3.76	2.82
Gas Piping/Meter	2504	sqft	w crew	3	2000.00	1.25	3.76	2.82
Pool Piping/Equipment	80	sqft	1	3	50.00	1.60	4.80	3.60
Electrical								
Incoming Service	2504	sqft	w crew	3	1250.00	2.00	6.01	4.51
Conduit / Outlets / Switches	2504	sqft	w crew	3	750.00	3.34	10.02	7.51
Wiring	2504	sqft	w crew	3	1250.00	2.00	6.01	4.51
Panels/Breakers/Disconnects	2504	sqft	0.83	3	1250.00	2.00	6.01	4.51
Meter	2504	sqft	w crew	3	2500.00	1.00	3.00	2.25
Lighting	2504	sqft	0.83	3	1250.00	2.00	6.01	4.51
Lighting / AV Wiring / Control	2504	sqft	w crew	3	1250.00	2.00	6.01	4.51
PV	2504	sqft	1.0016	3	1000.00	2.50	7.51	5.63
Exterior / Landscape Lighting	4944	sqft	1.65	3	2000.00	2.47	7.42	5.56
Landscape / Hardscape								
Planting Soil	53.81	cyds	4.48	4	20.00	2.69	10.76	8.07
Stone	13.45	cyds	1.12	4	10.00	1.35	5.38	4.04
Irrigation	3487.2	sqft	w crew	2	1500.00	2.32	4.65	3.49
Plants / Trees / Grass / Turf	3487.2	sqft	3.4872	4	750.00	4.65	18.60	13.95
Pavers	871.8	sqft	0.8718	4	300.00	2.91	11.62	8.72
Fence / Gates / Others	243.6	lf	1.218	3	100.00	2.44	7.31	5.48
Dumpsters / Waste Management**	2504	sqft	3.13					
Temp Toilet Cleaning***			32.99					
Subtotal Vehicle Round Trips			**96.75**					**422.77**
Total Vehicle Round Trips								**519.52**

Notes:
* Assumes 1 in 4 carpools
** 1 Dumpster per 800 sqft
*** 1 clean per crew week

Table A.4: Vehicle Trips per residential Build - Neighborhoods

Neighborhood	Destroyed	Vehicle Trips (per lot)			Vehicle Trips (Totals)		
		Material	Labor	Total	Material	Labor	Total
Alphabet Streets (1748)	1,577	104.76	493.76	598.52	165,206	778,655	943,861
Bel Air Bay (119)	79	121.05	567.56	688.62	9,563	44,838	54,401
Bienveneda (248)	63	121.05	567.56	688.62	7,626	35,757	43,383
Canyon (1000)	8	121.05	567.56	688.62	968	4,541	5,509
Castellamare (401)	143	121.05	567.56	688.62	17,310	81,162	98,472
El Medio Bluffs (787)	409	121.05	567.56	688.62	49,510	232,134	281,644
El Medio Palisair (371)	143	121.05	567.56	688.62	17,310	81,162	98,472
Highlands-Lower (436)	30	121.05	567.56	688.62	3,632	17,027	20,658
Highlands-Upper (627)	193	121.05	567.56	688.62	23,363	109,540	132,903
Huntington (593)	245	121.05	567.56	688.62	29,658	139,053	168,711
Las Casas (348)	311	121.05	567.56	688.62	37,647	176,512	214,159
Marquez Lower (376)	322	121.05	567.56	688.62	38,979	182,756	221,734
Marquez Upper (306)	79	121.05	567.56	688.62	9,563	44,838	54,401
Marquez Knolls (630)	441	96.75	422.77	519.52	42,667	186,442	229,109
Paseo Miramar (85)	35	121.05	567.56	688.62	4,237	19,865	24,102
Riveria (700)	25	121.05	567.56	688.62	3,026	14,189	17,215
Sunset Mesa (611)	310	121.05	567.56	688.62	37,526	175,945	213,471
Tahitian Terrace (314)	313	121.05	567.56	688.62	37,889	177,648	215,537
Via Bluffs (1018)	905	104.76	493.76	598.52	94,807	446,850	541,657
Will Rogers (96)	68	121.05	567.56	688.62	8,231	38,594	46,826
TOTAL VEHICLE TRIPS	**5,699**				**638,719**	**2,987,504**	**3,626,224**



Appendix B-2
Fire Rebuild Memorandum

Workstream #4 Logistics

AECOM

Pacific Palisades Fire Rebuild

Executive Summary

The Pacific Palisades Rebuild project is a logistics-intensive initiative aimed at restoring and revitalizing the community following devastating fires. A key component of this effort is the strategic selection and management of construction staging sites, which serve as critical operational hubs throughout the project. By addressing key logistical parameters and deploying dedicated taskforces, the project will ensure efficient, safe, and effective execution of rebuilding efforts.

Site Selection Key Parameters:

1. Easement Impacts and Overhead Power Lines: Sites will be evaluated for potential conflicts with existing easements and overhead power lines to ensure construction safety and regulatory compliance, minimizing disruptions to utility services.
2. Proximity to Residential or Commercial Buildings: The distance from staging sites to currently inhabited residential dwelling units (D.U.) or commercial buildings will be assessed to minimize noise, dust, and other disturbances, thereby safeguarding community well-being.
3. Street Classification for Access: Access routes are being reviewed according to their classification—local, collector, or arterial. Priority will be given to sites with access via arterial or collector streets to enable efficient transportation of materials and equipment while reducing traffic impact on local roads.

Logistical Approach and Key Tasks:

- Launch Logistics and Access Planning Taskforce:
    - Coordinate with key stakeholders such as the BOE, LADOT, LADWP, Streets Services, LAFD, LAPD, EMD, and other relevant departments.
    - Define impact zones, staging areas, access constraints, and recovery activity timelines to ensure seamless operational integration.
- Assess Physical and Operational Constraints:
    - Inventory damage to critical infrastructure including roads, bridges, intersections, traffic signals, and signage.
    - Identify debris piles, road obstructions, slope failures, and unsafe conditions that may impact site access.

    - Map emergency access routes, school zones, hospitals, and evacuation corridors to facilitate timely and safe transit during recovery operations.
    - Use proper BMP measures to proactively address potential slope failures due to future storm events.
- Identify Material, Equipment, and Labor Staging Requirements:
    - Define the volume and frequency of material deliveries such as aggregates, lumber, and utility facilities and appurtenances.
    - Assess the need for laydown yards, container storage, field offices, contractor mobilization zones, and temporary workforce housing to support crews moving from outside the community.
    - Identify potential staging locations on public or private parcels, considering easement and permitting requirements.

By integrating these logistical tasks with the currently defined site selection parameters, the Pacific Palisades Rebuild project is set to implement a robust framework for staging site management. This comprehensive approach ensures that all operational, physical, and community factors are addressed, ultimately leading to a smoother, safer, and more efficient rebuilding process.

Proposed Sites

Site 1: **Temescal Canyon Public Park**. 2.5 acres. No apparent overhead powerline conflicts. It has optimal distance from residential and commercial buildings. Has arterial road access. *(See figure 2)*

Site 2: **Palisades Recreation Center.** 15.5 acres. No apparent overhead powerline conflicts. Most of the nearby residential area is uninhabited due to the burn area and razed property. Locally classified road access. *(See figure 3)*

Site 3: **Rustic Canyon Recreation Center,** .94 acres. No apparent overhead powerline conflicts over recreation center parking lot, powerlines on east side of Latimer Rd. Nearby residential is currently inhabited. Locally classified road access. *(See figure 4)*

Site 4: **Paul Revere Soccer Fields,** 4.1 acres. No apparent overhead powerline conflicts. Paul Revere Charter Middle school is in session. Nearby residential is occupied. Collector classified road access. *(See figure 5)*

Site 5: **Palisades Drive roadside pullout** .8 acres. No apparent overhead powerline conflicts. No nearby inhabited residential. Arterial classified road access. *(See figure 6)*

Site 6: "**HOA 1**" 2.7 acres. No apparent overhead powerline conflicts. Inhabited residential across Palisades Dr. Arterial classified road access. *(See figure 7)*

Site 7: "**HOA 2**" 2.5 acres. No apparent overhead powerline conflicts. Inhabited residential across Palisades Dr. Arterial classified road access. *(See figure 8)*

Site 8: **Santa Ynez Reservoir**. .96 acres. Nonoperational at this time. No apparent overhead powerline conflicts. No inhabited residential nearby. Locally classified road access. *(See figure 9)*

Site 9: **1433 Monte Grande Pl.** .1 acres. Gated public building. No apparent overhead powerline conflicts. Located in residential area, most homes are uninhabited. Locally classified road access. *(See figure 10)*

Conclusion

After our preliminary evaluation of the logistical parameters and site selection criteria, it has been concluded that the laydown areas may be strategically positioned near the burn sites. This decision ensures optimal access to the affected zones, facilitating efficient transportation of materials and equipment, and expediting the rebuilding process.

Moving forward, additional research and analysis will be conducted to address factors such as easements, encumbrances, environmental constraints, and other potential conflicts. This will involve close collaboration with all relevant stakeholders, including local authorities, community representatives, and environmental agencies, to ensure that all considerations are comprehensively addressed. By maintaining a flexible and informed approach, the project team is committed to adapting to information and challenges as they arise in the future, ensuring the successful execution of the Pacific Palisades Rebuild project.

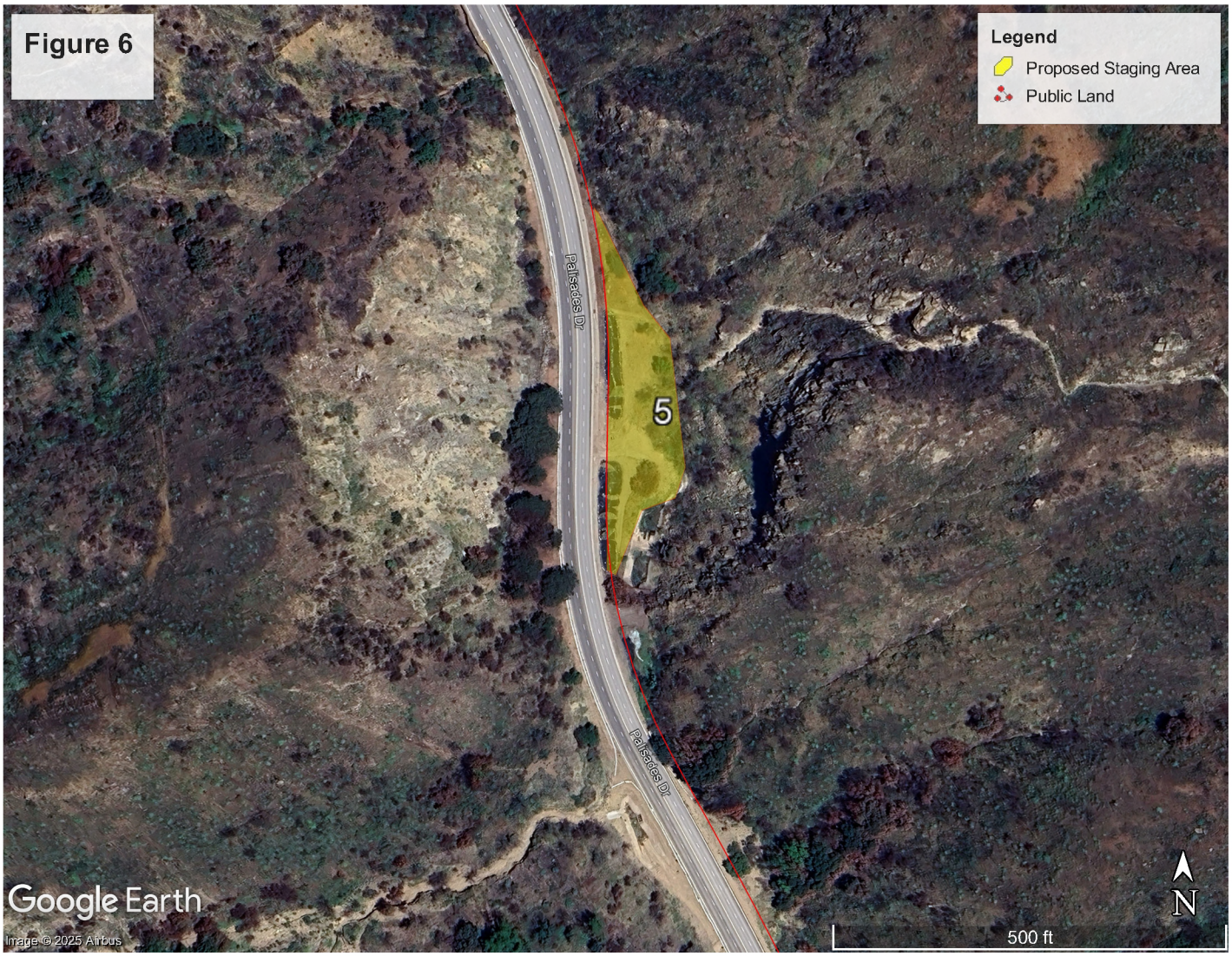

Figure 1
Legend
Proposed Staging Area
1
2
3
4
5
6
7
8
9
Pacific Palisades
W Sunset Blvd
Pacific Palisades
San Vicente Blvd
26th St
14th St
20th St
7th St
Montana Ave
Google Earth
Image © 2025 Airbus
Data CSUMB SFML, CA OPC
2 mi
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Figure 2
Legend
Proposed Staging Area
Public Land
Bali Ln
Aloha Dr
Copra Ln
Samoa Way
N Mt Hoyoke Ave
1
Google Earth
Image © 2025 Airbus
500 ft
N


Figure 3
Legend
Proposed Staging Area
Public Land
2
Via De La Paz
N Swarthmore Ave
La Cruz Dr
W Sunset Blvd
Eske St
Galloway St
Alma Real Dr
Toyopa Dr
Haverford Ave
Carthage St
Drummond St
De Pauw St
W Pampas Rd
Frontera Dr
Google Earth
Image © 2025 Airbus
1000 ft
N


Figure 4
Legend
Proposed Staging Area
Public Land
3
W Pampas Ricas Blvd
Ocampo Dr
Chautauqua Blvd
Toyopa Dr
Latimer Rd
Highview Rd
Haldeman Rd
Amalfi Dr
E Channel Rd
Spoleto Dr
Dryad Rd
Google Earth
Image © 2025 Airbus
1000 ft
N


Figure 5
Legend
Proposed Staging Area
Public Land
4
W Sunset Blvd
Old Ranch Rd
Mandeville Canyon Rd
W Rockingham Ave
Parkyns St
N Bristol
Highwood St
Sorrento Dr
Capri Dr
Monaco Dr
San Remo Dr
W D Este Dr
Lucca Dr
Allenford Ave
Marlboro St
Jonesboro Dr
Google Earth
Image © 2025 Airbus
1000 ft
N


Figure 6
Legend
Proposed Staging Area
Public Land
Palisades Dr
5
Palisades Dr
Google Earth
Image © 2025 Airbus
N
500 ft

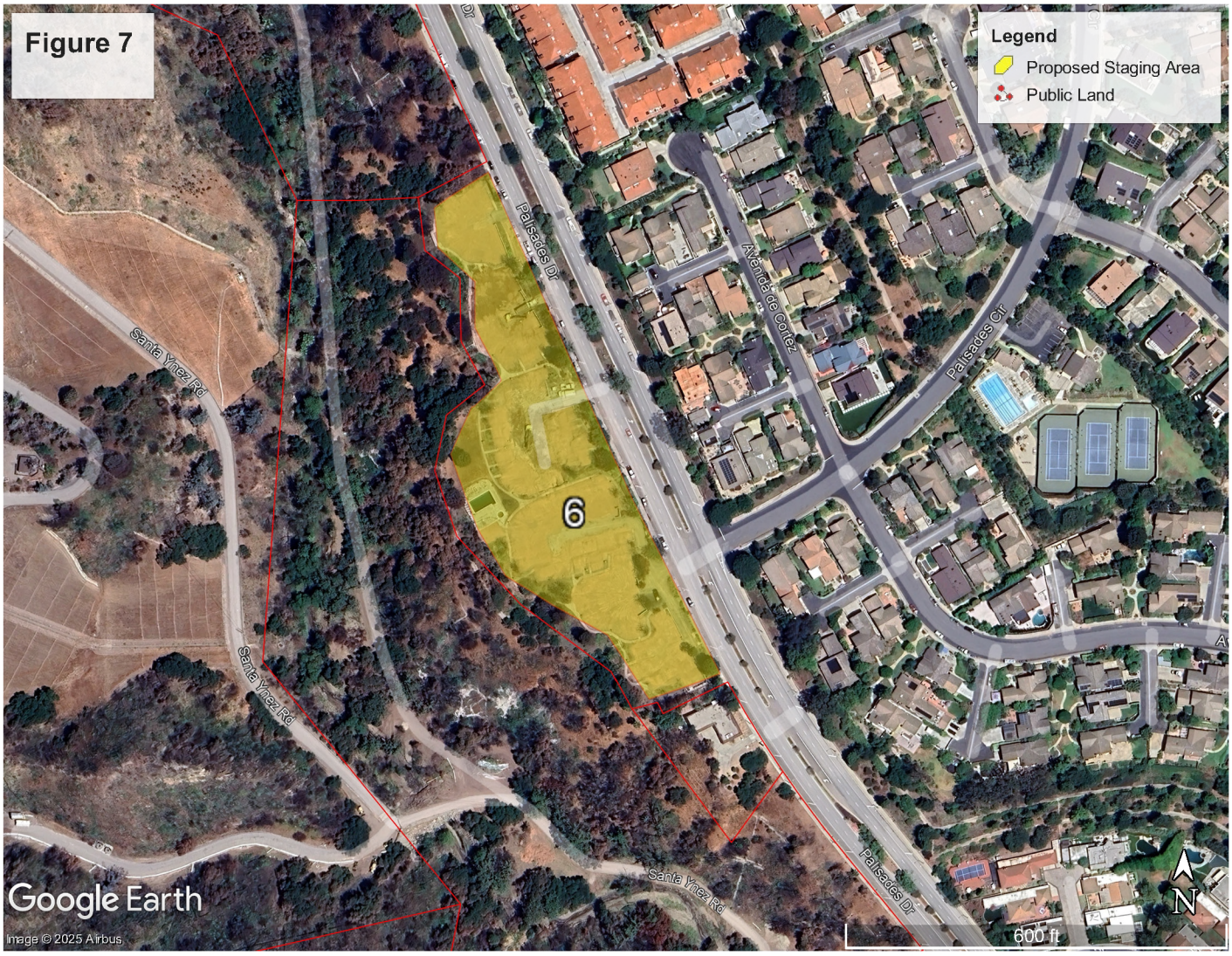
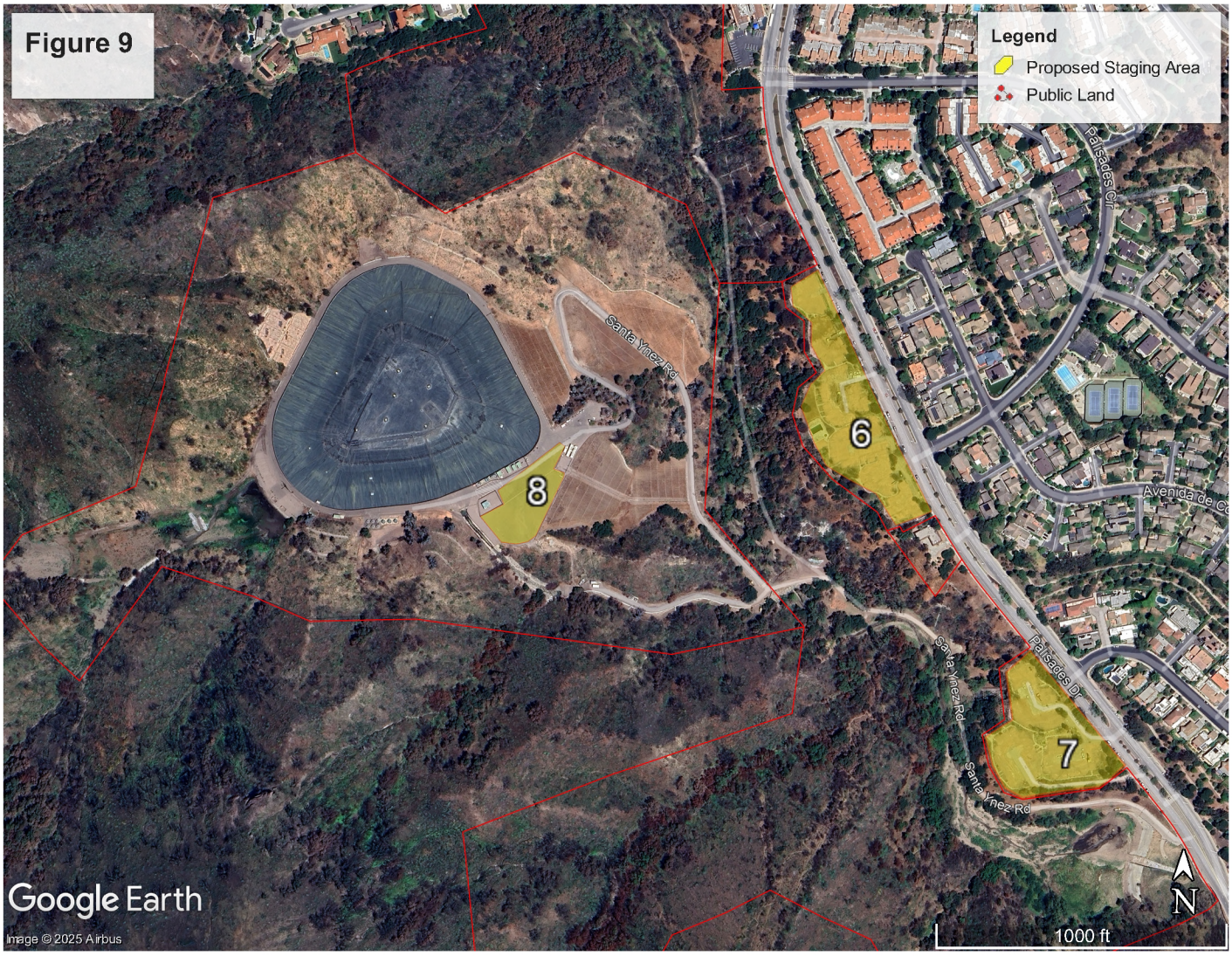
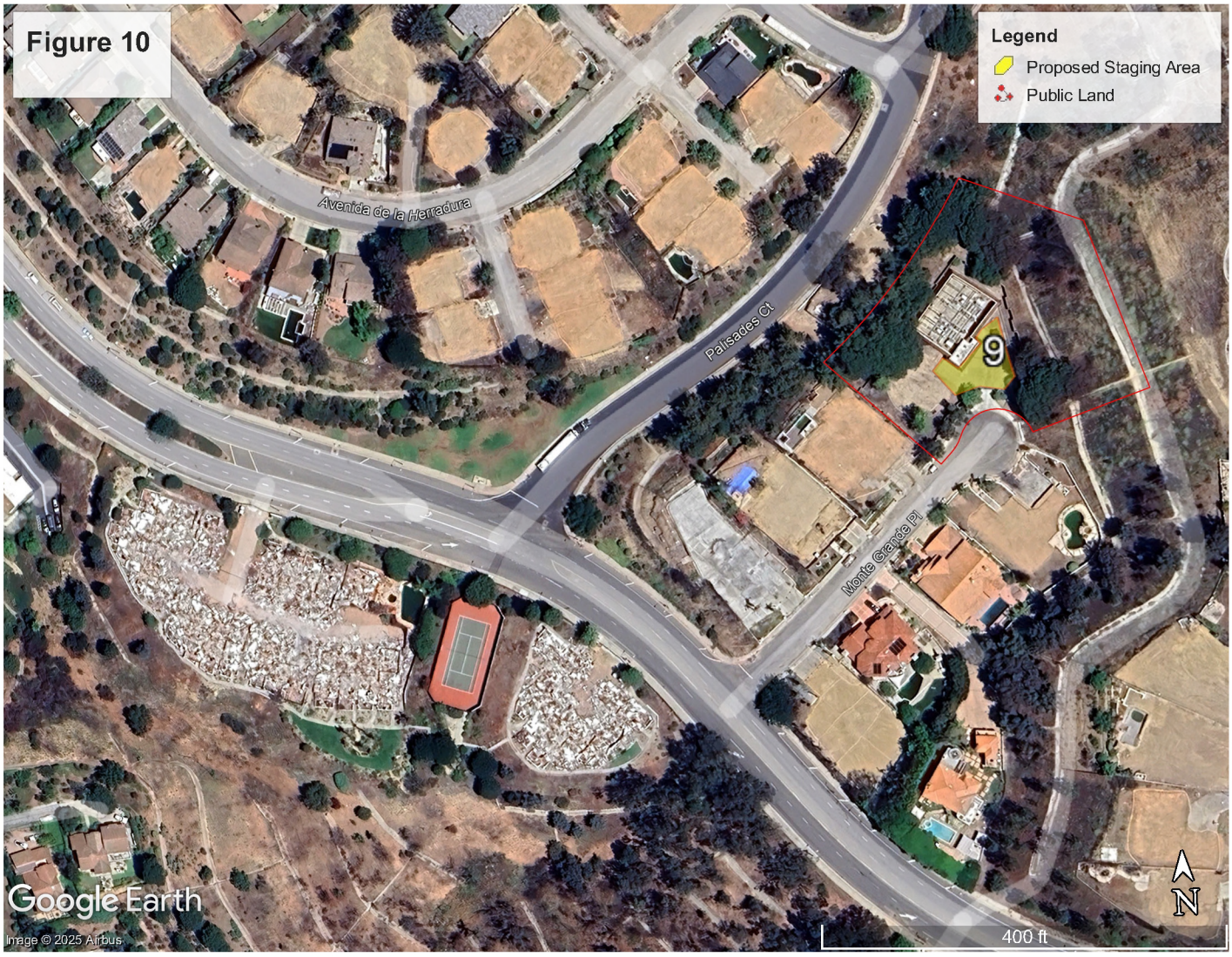

Figure 7
Legend
Proposed Staging Area
Public Land
6
Palisades Dr
Avenida de Cortez
Palisades Cir
Santa Ynez Rd
Santa Ynez Rd
Santa Ynez Rd
Palisades Dr
Google Earth
Image © 2025 Airbus
600 ft
N


Figure 8
Legend
Proposed Staging Area
Public Land
Avenida de Cortez
Avenida de Cortez
Palisades Dr
Santa Ynez Rd
Avenida De Santa Ynez
Palisades Dr
Santa Ynez Rd
7
Santa Ynez Rd
Palisades Dr
C/ De Sevilla
Google Earth
Image © 2025 Airbus
N
600 ft


Figure 9
Legend
Proposed Staging Area
Public Land
Palisades Cir
Santa Ynez Rd
6
8
7
Palisades Dr
Santa Ynez Rd
Santa Ynez Rd
Google Earth
Image © 2025 Airbus
N
1000 ft


Figure 10
Legend
Proposed Staging Area
Public Land
Avenida de la Herradura
Palisades Ct
Monte Grande Pl
9
Google Earth
Image © 2025 Airbus
400 ft
N