

Innovation Fund Recommendation:

Ozone Clean Alternative Disinfectant Study

September 2, 2020



Recommendations:

- Establish and appropriate new account:
 - “LASAN – Ozone Clean Alternative Disinfectant Study”
 - Amount: \$90,000
 - Innovation Fund No. 105/10
- Transfer funds to Sewer Construction and Maintenance Fund
- LASAN to conduct Pilot Study with Ozone Clean Technologies
- LASAN to report back to Innovation and Performance Commission



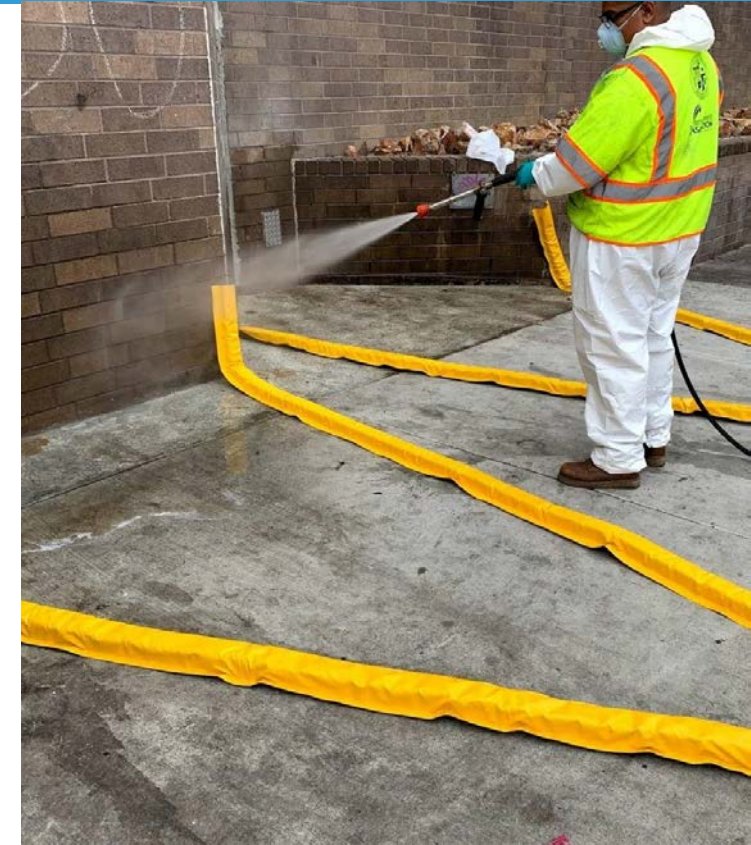
Purpose of the Study:

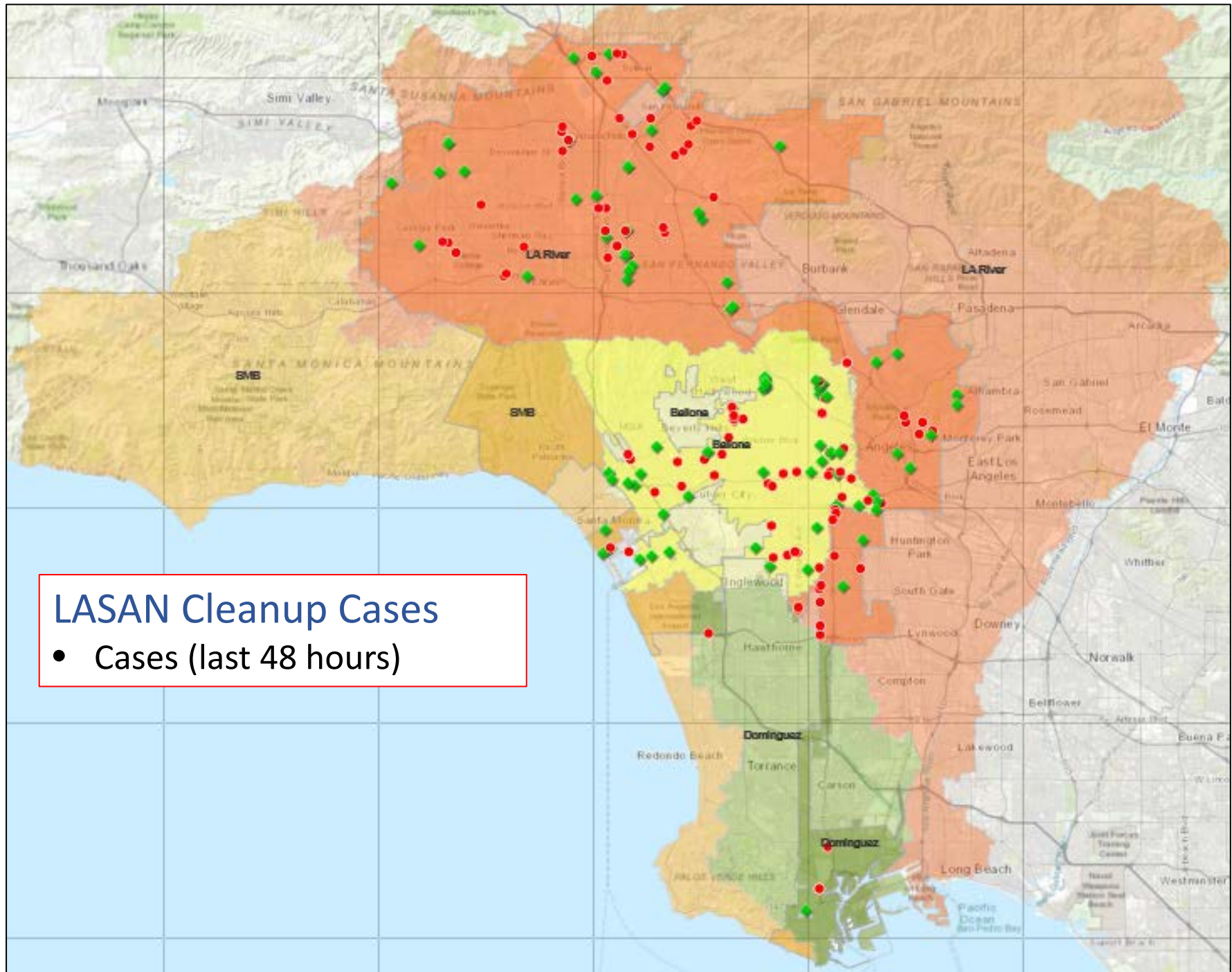
- Conduct Pilot Study with Ozone Clean Technologies
- Determine if Ozone can replace Bleach as disinfectant



Background:

- LASAN responsible for cleanup of Biohazardous Materials
 - CARE team cleanups (homeless encampments)
 - Right of Way Enforcement Cleanups
 - Sewer Spills
 - Reports of human waste
 - Traffic Accidents
 - Illegal dumping
 - Other reports of biohazardous materials
- LASAN performs approximately 15,000 cleanups each year.
- Chlorine Bleach is the current method of disinfection





LASAN Cleanup Cases

- Cases (last 48 hours)

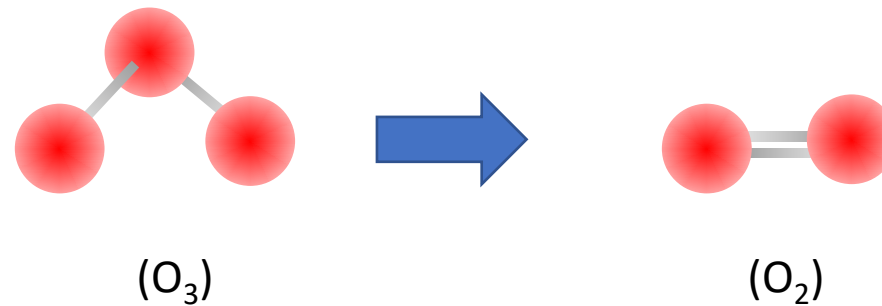
Background: Current Clean Up Procedures

- 1) Bulky items and trash are removed.
- 2) Feces and other biohazard materials are collected and disposed.
- ➡ 3) Spot treatment with concentrated Bleach (4/1 solution).
- 4) Entire area is pressure washed, runoff is collected
- ➡ 5) Dilute Bleach (10/1 solution) is sprayed as a “blanket” treatment.



Potential Benefits of Ozone vs. Bleach

- Bleach has potential environmental impacts (residues & chlorine residuals)
- Ozone (O_3) degrades quickly into oxygen (O_2)
- Ozone kills bacteria and viral pathogens (based on laboratory studies)
- Ozone can be generated on-site (does not require storage and transport)



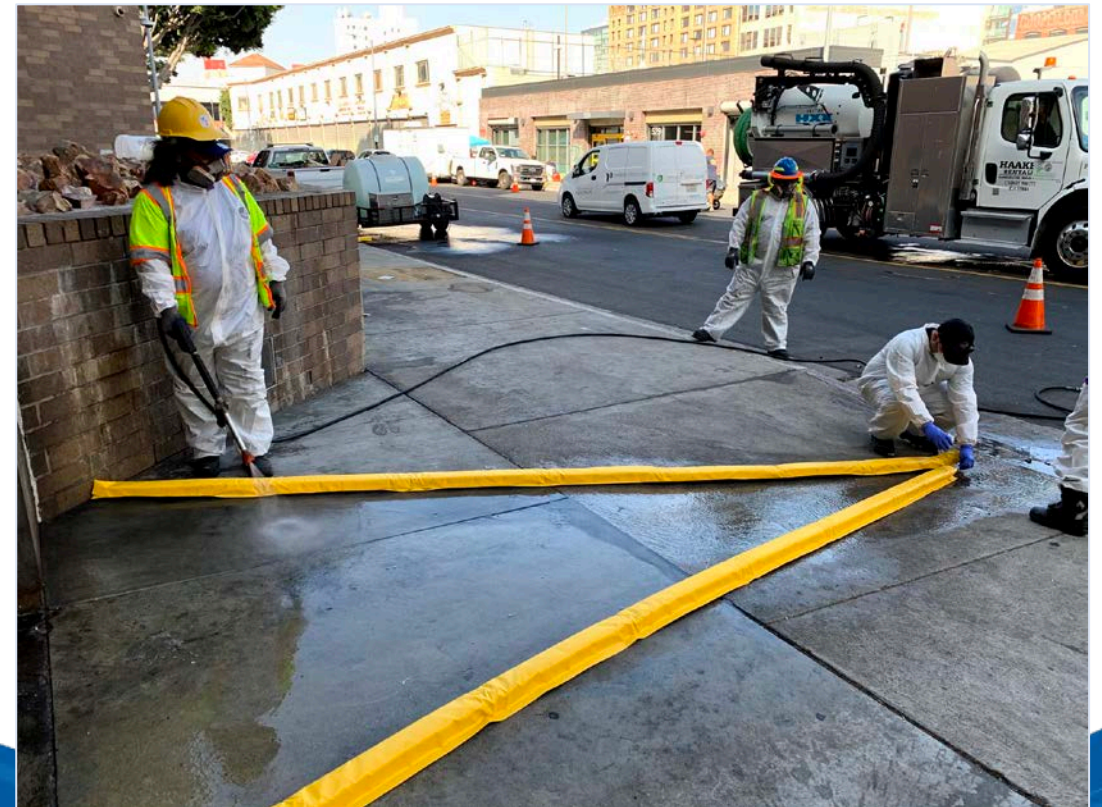
Pilot Study Approach:

- Site: Skid Row area
- Disinfection Treatments:
 - Zone A: Water (Control)
 - Zone B: Bleach
 - Zone C: Ozone
- Sample Collection:
 - Pre-treatment Sample (Baseline)
 - Post-treatment Sample
- Analysis: Fecal Indicator Bacteria
 - *E. coli*, Enterococcus, and Total Coliforms



Study Criteria:

- Primary:
 - Is the Ozone Clean Technologies system safe to use?
 - Are Fecal Indicator Bacteria eliminated or reduced to acceptable levels?
- Secondary:
 - Is Ozone cost-effective compared to Bleach?
 - Is Ozone easy/practical to use?



Final Remarks:

- Disinfection is a critical step in protecting public health.
- Must be certain that Ozone is effective in field setting before adopting.
- This study will also evaluate our current disinfection practices.



Pilot Study Participants:

- Innovation & Performance Commission
- LASAN
 - LASAN Executive Office
 - Livability Services Division (LSD)
 - Watershed Protection Division (WPD)
 - Environmental Monitoring Division (EMD)
- Ozone Clean Technologies

