

Findings of the Storm Water Panel of Experts & Next Steps



Larry Forester
Mayor, City of Signal Hill



Summary Comments

- Cities are installing “first generation” storm water devices – numeric compliance is problematic.
- Technology will improve over time.
- The iterative process is full of uncertainties – engineering, testing, construction and maintenance.
- It is reasonable to establish “goals” to improve water quality.
- Cities should be held accountable to implementing BMPs.
- The BMP development process should be comprehensive – examining all of the major impairments facing a community.
- We can improve water quality, without strict numeric limits.
- Invest resources in BMPs to reach goals.



Numeric Limits and Trash

- Hamilton Bowl is an ideal test of the practical application of numeric limits to municipal storm water.
- LA River Trash TMDL applies strict numeric limits to trash – with 10% annual reductions required.
- Cities required to establish a “baseline” to measure reductions against.
- Cities required to reach mathematical “zero” calculation
- Natural vegetation not counted/ illegally dumped vegetation counted.
- We have yet to figure out how to count and characterize trash in storm water – despite 5 years of trying.
- “Full capture” status granted to some devices – to avoid the “trash counting” exercise.
- Hamilton Bowl project focuses on building and testing BMPs.

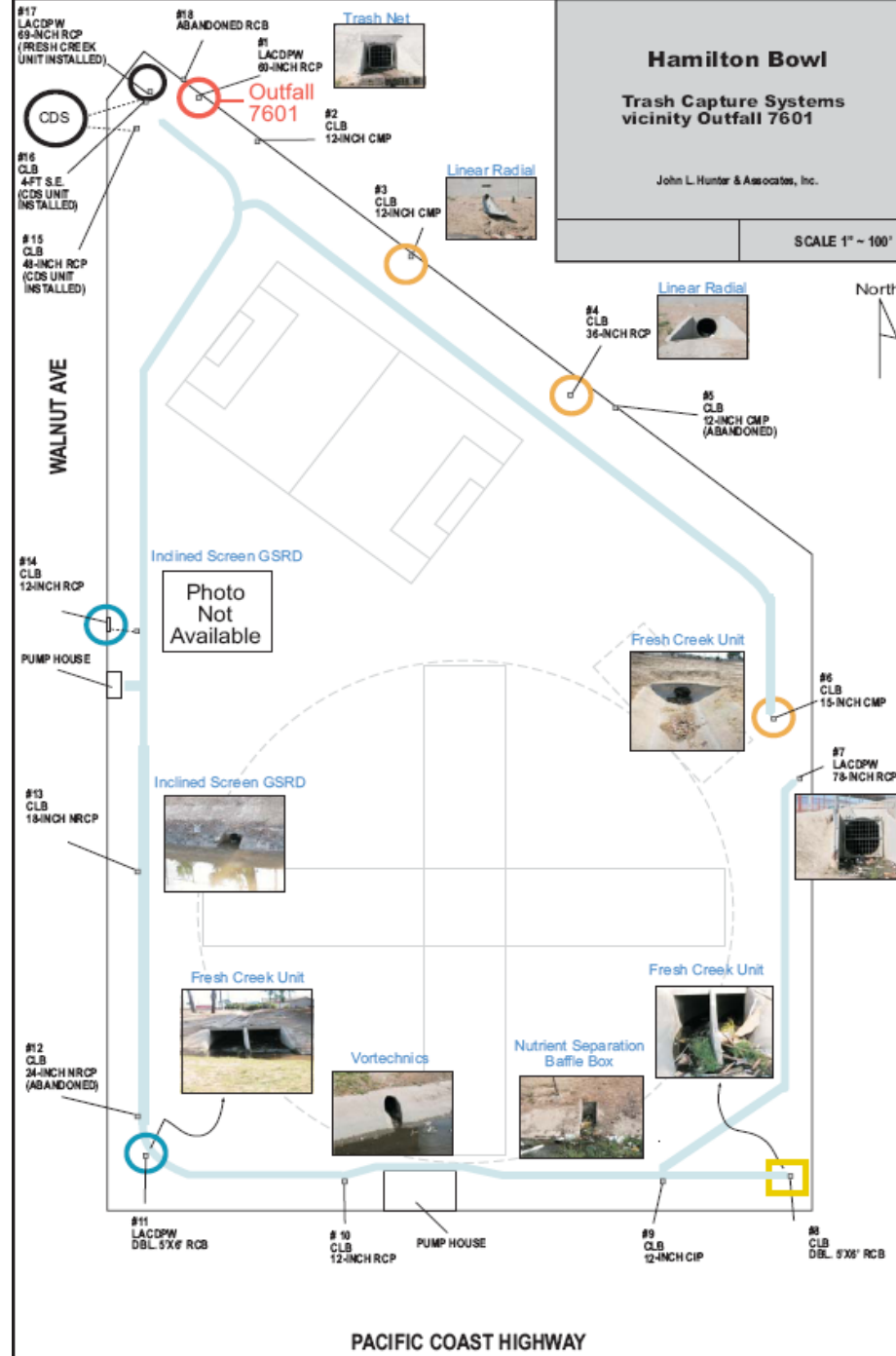
Hamilton Bowl

Trash Capture Systems vicinity Outfall 7601

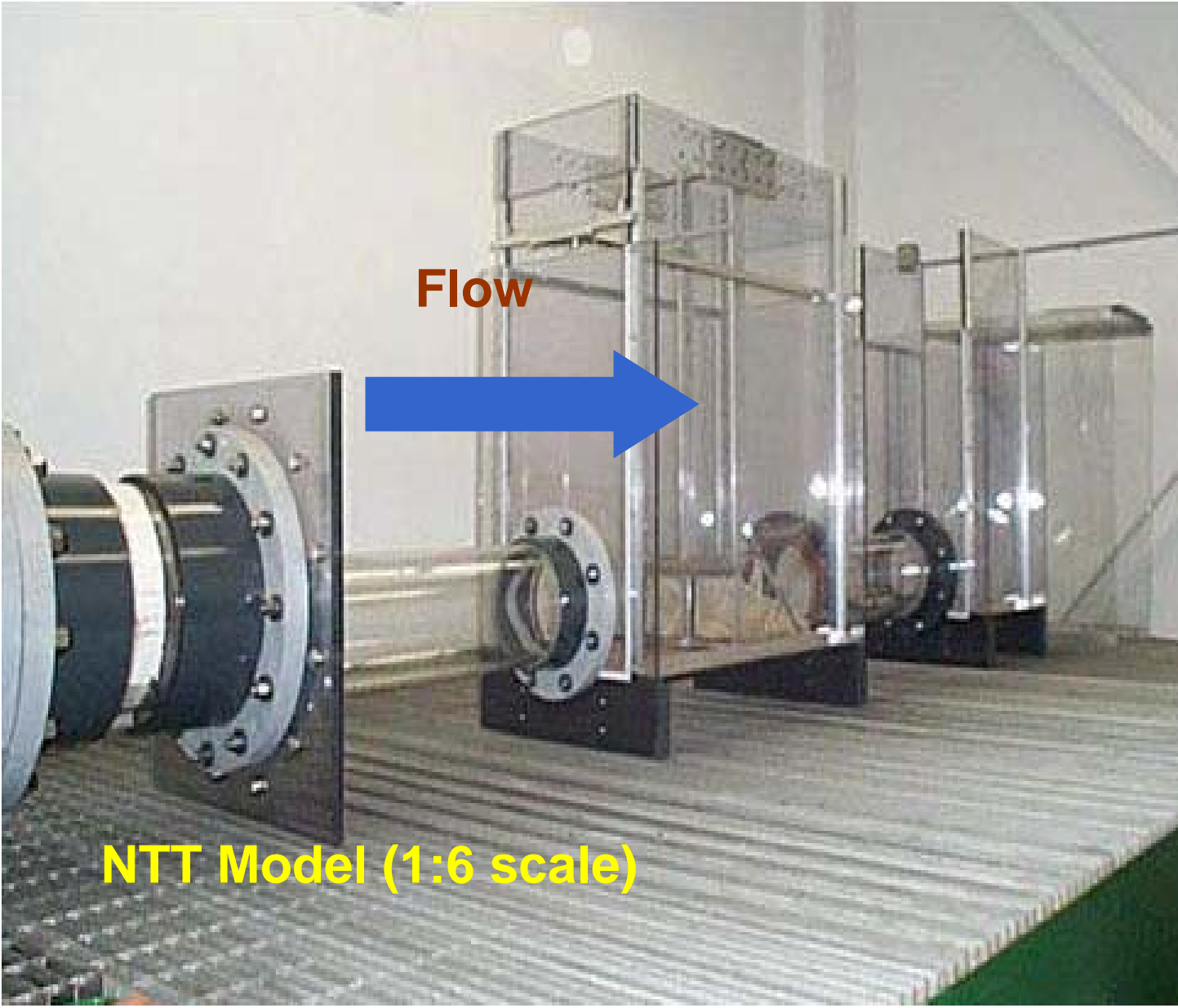
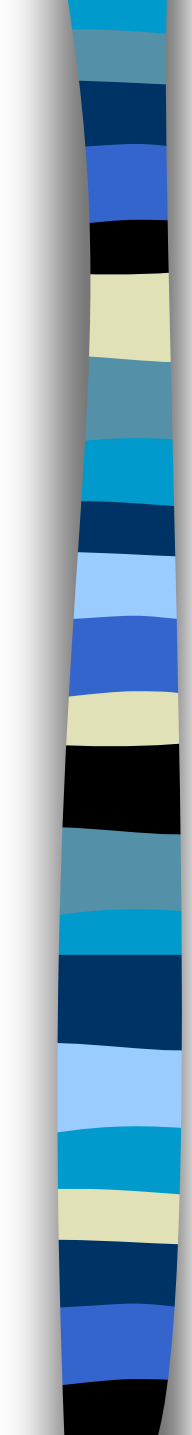
John L. Hunter & Associates, Inc.

SCALE 1" = 100'

North







NTT Model (1:6 scale)



C FRESH CREEK TECH INC

4/23/2002



C FRESH CREEK TECH INC

4/24/2002





C FRESH CREEK TECH INC

4/24/2002



C FRESH CREEK TECH INC

4/24/2002



Accountability

- Accountability in the BMP design and construction process.
- Design included 98% capture rate.
- Peak runoff storm of 0.6 inches per hour.
- Large scale models constructed for testing.
- Independent university lab tested trash capture nets and device designs.
- Regional Board attached regular inspection requirements.
- Maintenance is required after every storm.
- First net removed 2,500 lbs of trash and debris per storm event – over 35,000 lbs. removed over the last three years.
- The process took time – 18 months for design. Construction in phases, beginning in 2002.



Costs of Compliance

- Regional Board estimates NPDES compliance costs of \$18 per household annually in LA Region (2005).
- Costs of trash capture devices ranged from \$10.18 to \$45.95 per household.
- Wide variance is attributed to device selected, characteristics of the outfall, including drainage area size, population density and land uses.
- Signal Hill currently budgets \$126.17 per household for NPDES compliance (not including new Hamilton Bowl costs)
- Cost of compliance will vary based on city size, number of impairments, land uses and community demographics.



Cost of Compliance

<u>Type of Unit</u>	<u>Cost</u>	<u>Drainage Area</u>	<u>Household Cost</u>
CDS	\$661,750	122 acres	\$39.88
Net # 1	\$63,600	80 acres	\$45.95
Net # 2	\$80,000	374 acres	\$10.18
Net # 3	\$85,000	190 acres	\$20.28

- Hamilton Bowl estimated average costs of \$34.43 per household – twice the County average for NPDES Programs.



Lessons Learned

- “Trash counting” is a waste of time and resources.
- Cities prefer to invest in the installation of BMPs, as opposed to “counting” exercise.
- Project was feasible since storm water retention facility existed.
- Design storm and retention issues need to be solved on a global basis.
- Iterative process will take time and will be imperfect. They do not lend themselves to strict numeric applications.
- The broad goal should be to protect all of the outfalls, instead of counting trash.



Improving the Process

- The process should be comprehensive – examining all impairments faced by a community.
- One trash unit now generates bacteria – creating another impairment.
- None of the devices deal with metals.
- We should be examining “treatment trains” of BMPs