

Public Information Meeting
(Public Meeting #4)

SSFL Stormwater Expert Panel
Progress Report
Outfalls 008 and 009

July 17, 2008

Agenda

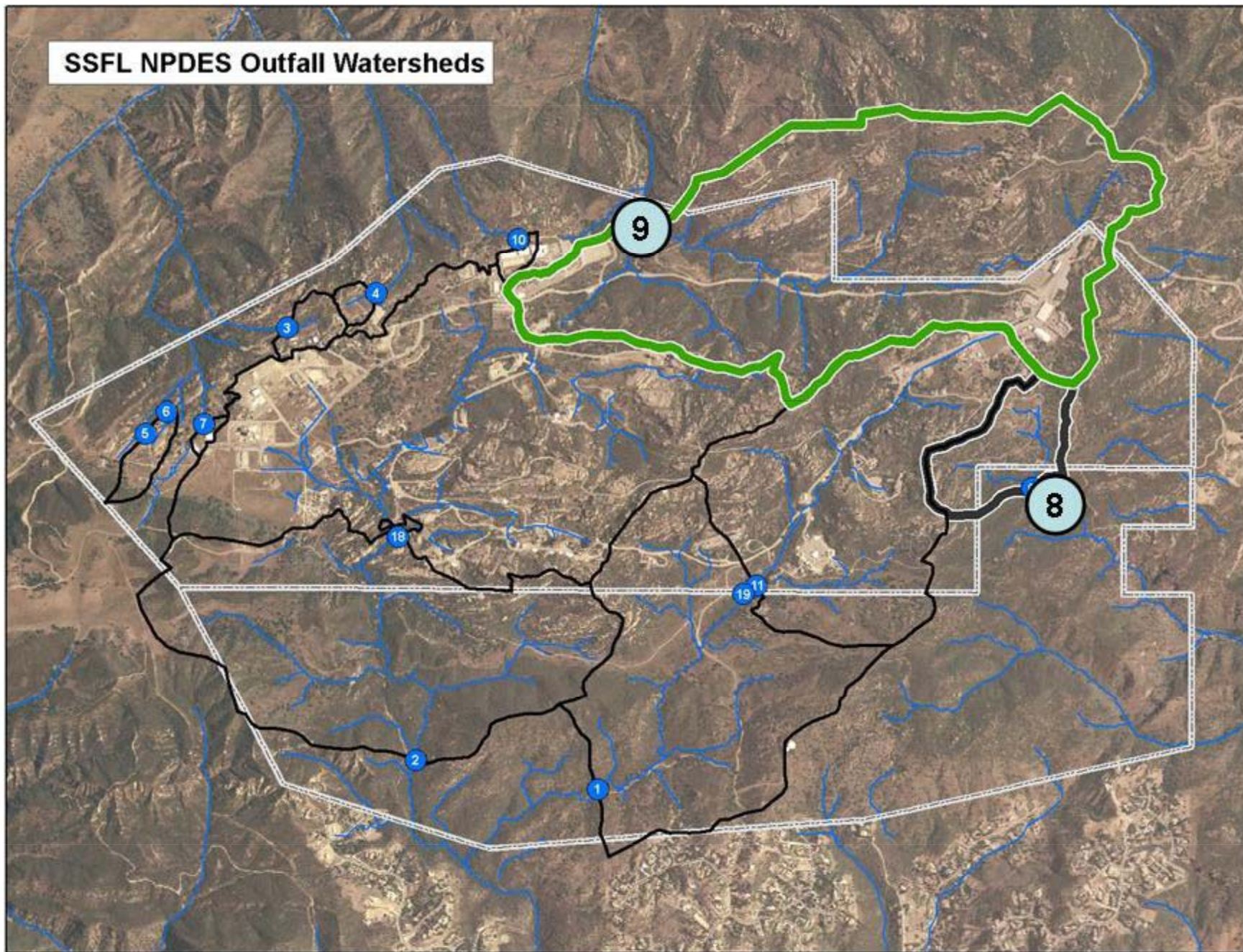
- Expert Panel Scope & Schedule
- Existing Conditions
- How ENTS Will Function
- ENTS Soil Management Plan
- ENTS Progress Report
- Clarifications on Comments Raised During June 5 Regional Board Workshop

Expert Panel Scope & Schedule

Expert Panel's Scope of Work

- For outfalls 008 and 009 review site data and recommend natural Engineered Natural Treatment Systems (ENTS) capable of providing the required treatment to meet the final effluent limits
- Recommend to the Board a site-wide design storm
- Public Involvement

SSFL NPDES Outfall Watersheds



Expert Panel Schedule

Tasks	Proposed Date
Design Storm Recommendation	Complete
ENTS Conceptual Designs	Complete
ENTS Final Designs	October 2008
White Papers: 1) Sampling Methods, 2) Background Concentrations	1) July 31, 2008 2) Sept 15, 2008
ENTS Permitting	May 2008 – Feb 2009
Start of ENTS Construction	Phase I – Aug 2008; Phase II – Feb 2009
Final Permit Limits Become Effective	June 10, 2009

Clarification on Purpose of ENTS

The ENTS that have been recommended for watersheds 008 and 009 are intended to provide long-term water quality protection to meet NPDES permit requirements while RCRA cleanup is ongoing.

The ENTS are not intended to facilitate, circumvent, or be a part of the RCRA cleanup process.

The cleanup process is continuing under DTSC oversight and according to the sitewide cleanup schedule.

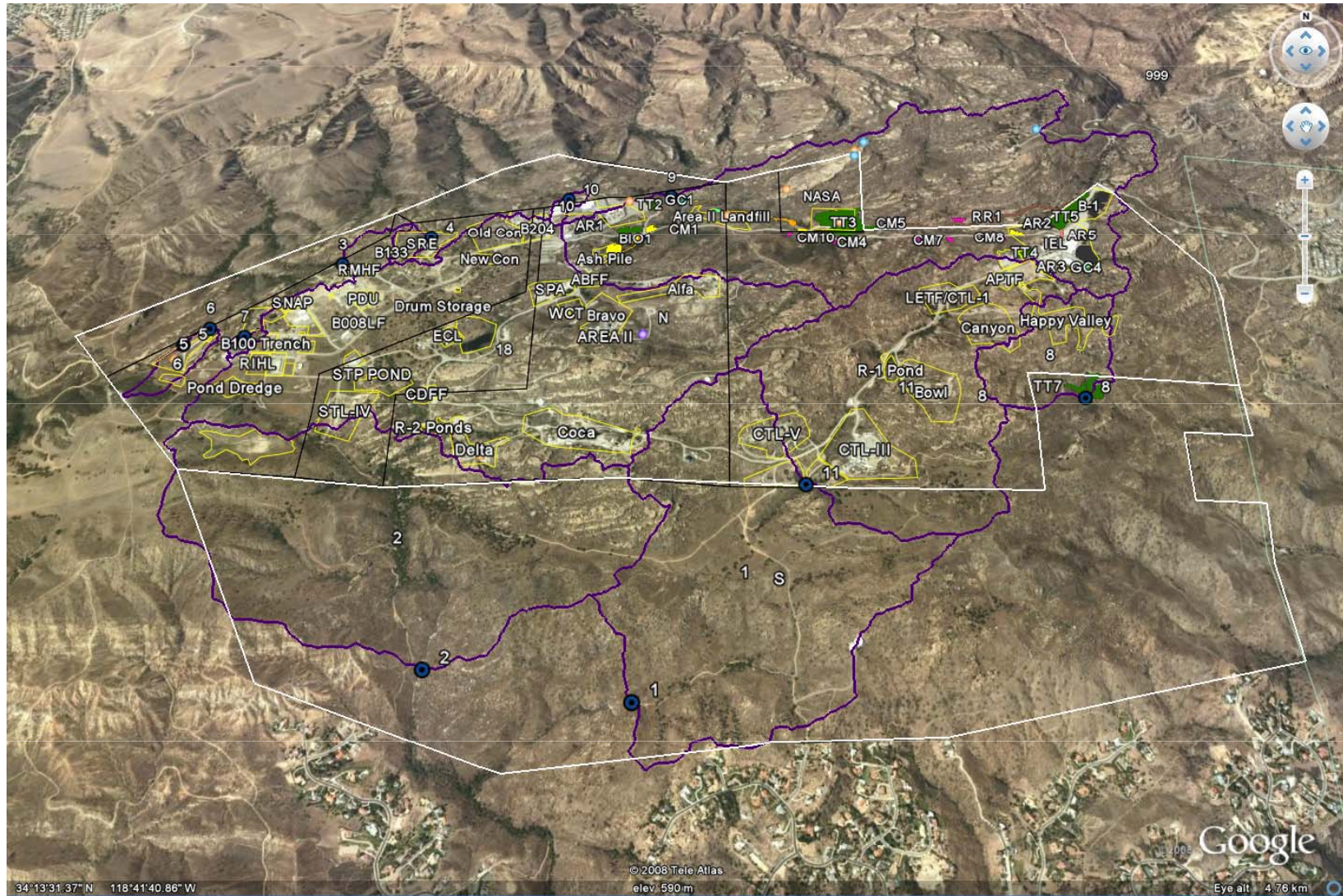
Existing Conditions – Virtual Tour & Site Photos

Virtual Tour of Watersheds

- Google Earth-based 3D video to provide flying tour through watersheds
- Purpose:
 - Clarify where key RFI areas are relative to our watersheds of interest
 - Discuss ENTS opportunities (e.g., existing disturbed area at LOX) and constraints (e.g., steep slopes at Outfall 9) within watersheds 8 and 9
 - Describe how runoff – particularly from RFI areas – will proceed through ENTS in series

Virtual Tour of Watersheds

[Play Google Earth video]



Photos of Existing Conditions

- Photo tour of drainages to illustrate existing conditions
- Key points:
 - Significant sediment transport occurring through drainages during storms (and suspended sediments carry majority of load for NPDES pollutants)
 - Significant areas of erosion exist near the drainages, providing continuous source of sediment during storms
 - Challenging terrain for ENTS construction and maintenance
 - High quality riparian habitat in some cases, which limits areas for constructing instream facilities

LOX Area



**Proposed Treatment
Train Location**

LOX Area (cont'd)



LOX Area (cont'd)



LOX Area (cont'd)

Sediment deposition in drainage after Jan storm demonstrates significant sediment transport during storms



LOX Area (cont'd)



Current design preserves
oak trees in the riparian
area

01/18/2008 08:17

Outfall 008

Existing drainage at Outfall
will become an instream
basin to collect sediment,
and then divert flows
through biofilter



01/17/2008 14:32

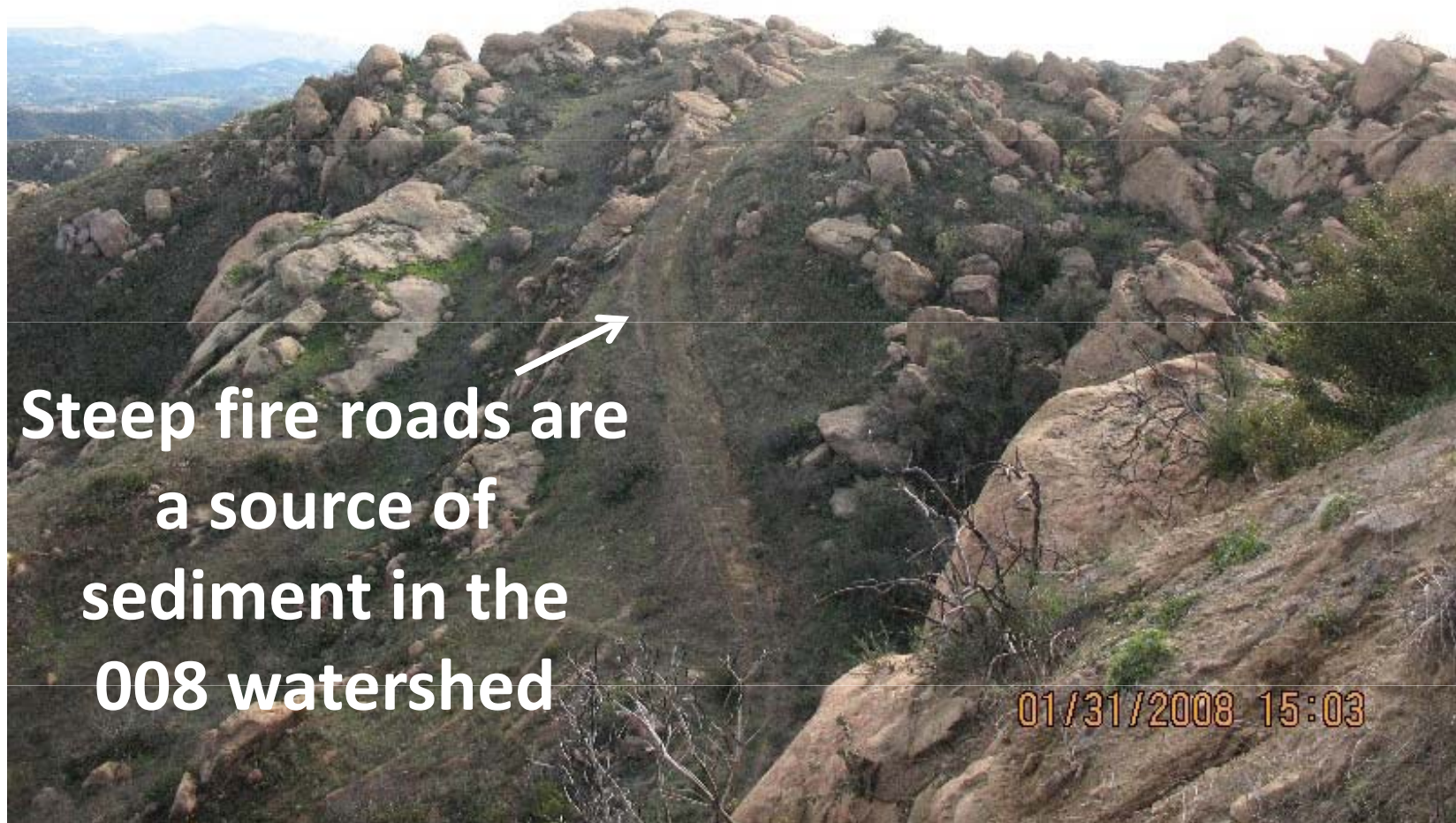


Outfall 008 (cont'd)

Significant sediment deposition at Outfall 008 after Jan storm; this will be captured in proposed treatment train



Outfall 008 (cont'd)



**Steep fire roads are
a source of
sediment in the
008 watershed**

01/31/2008 15:03

Outfall 008 (cont'd)



**Bare slope now
stabilized through
erosion control
measures**

Area II



Area II (cont'd)



Sage Ranch



How ENTS Will Function

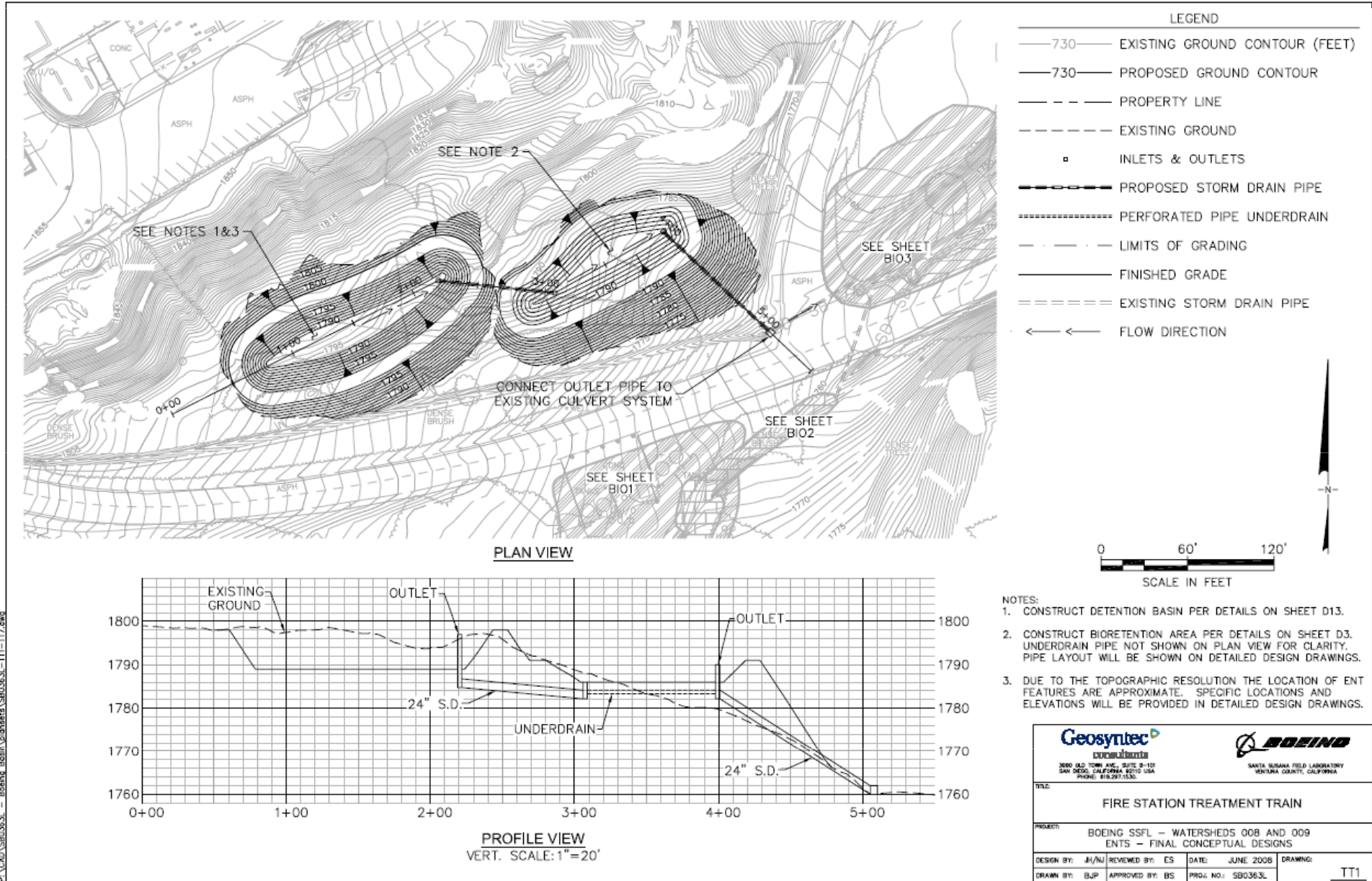
How ENTS Will Function During Storms

- Following simple animation is provided to demonstrate how the ENTS will function during both small and large rain events
- Key things to note:
 - Up to design flow/volume, storm flows are fully treated
 - Above design flow/volume, storm flows are partially treated (i.e., less residence time in sediment basins)

Area II Treatment Train Example - Aerial



Area II Treatment Train Example - Design



Area II Treatment Train Example - Animation



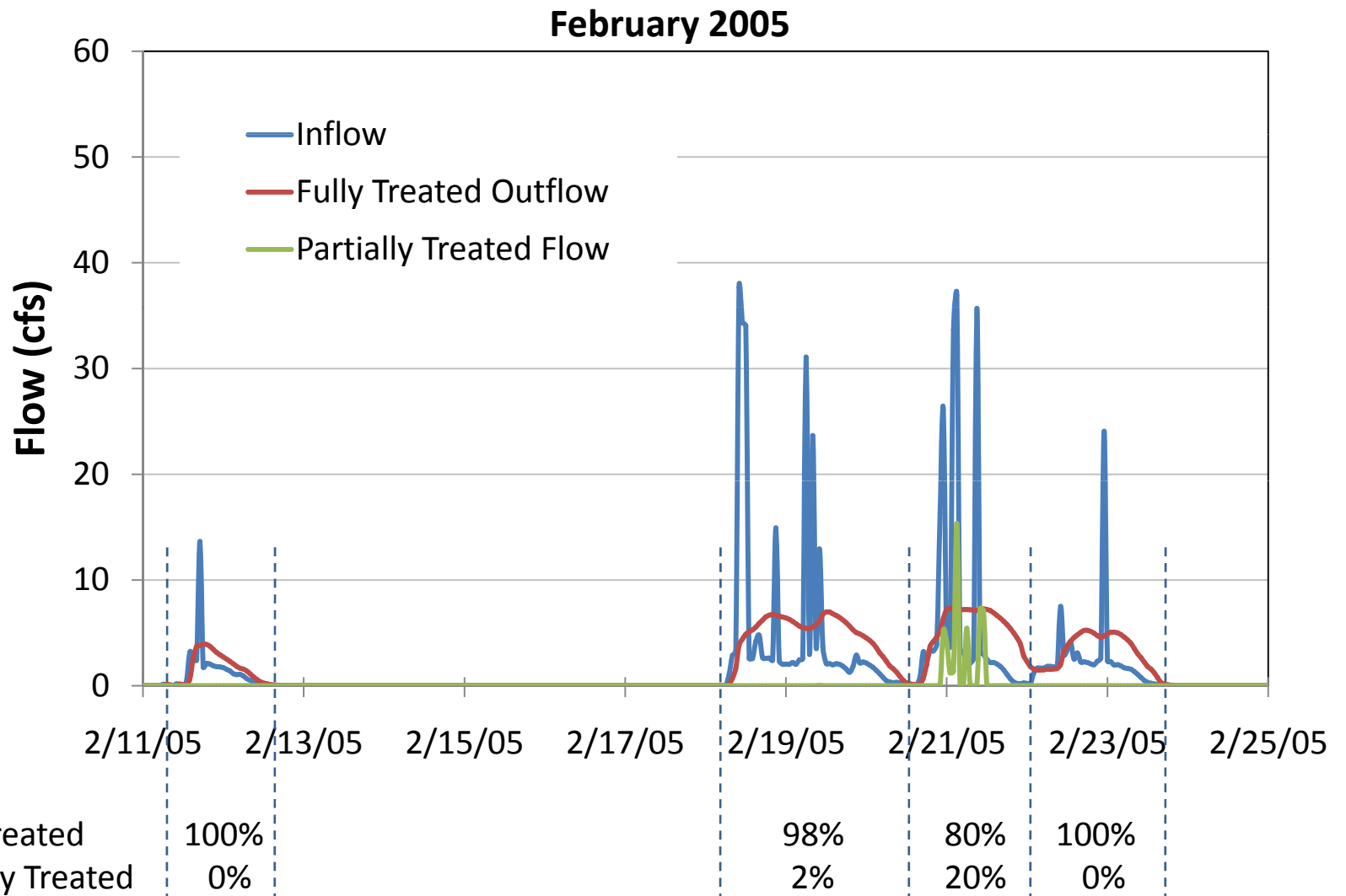
How ENTS Will Function During Storms

Play ENTS animation video

How ENTS Will Function During Storms

- Up to design flow/volume, storm flows are fully treated
- Above design flow/volume, storm flows are partially treated (i.e., less residence time in sediment basins)

Continuous simulation flow results for TT7 (Outfall 008) – Example shown for extremely wet period



QUESTIONS?

Addressing Contamination at ENTS Locations

Boeing's Soil Management Plan

- A Soil Management Plan (SMP) is being completed to address how contamination will be dealt with during ENTS construction
- Ventura County is the lead agency for the project; the County will look to the LARWQCB and DTSC to review the SMP

Boeing's Soil Management Plan

- The approach for managing soils is consistent with all laws and regulations regarding the excavation, handling, and disposal of contaminated soils, with health and safety requirements for the construction personnel and community, and in a manner that is consistent with the anticipated final remedy for Boeing's SSFL facility.
- All soils within planned construction areas following construction will undergo Corrective Action evaluation as part of the RFI reporting process, and be subject to site closure requirements or assessments.

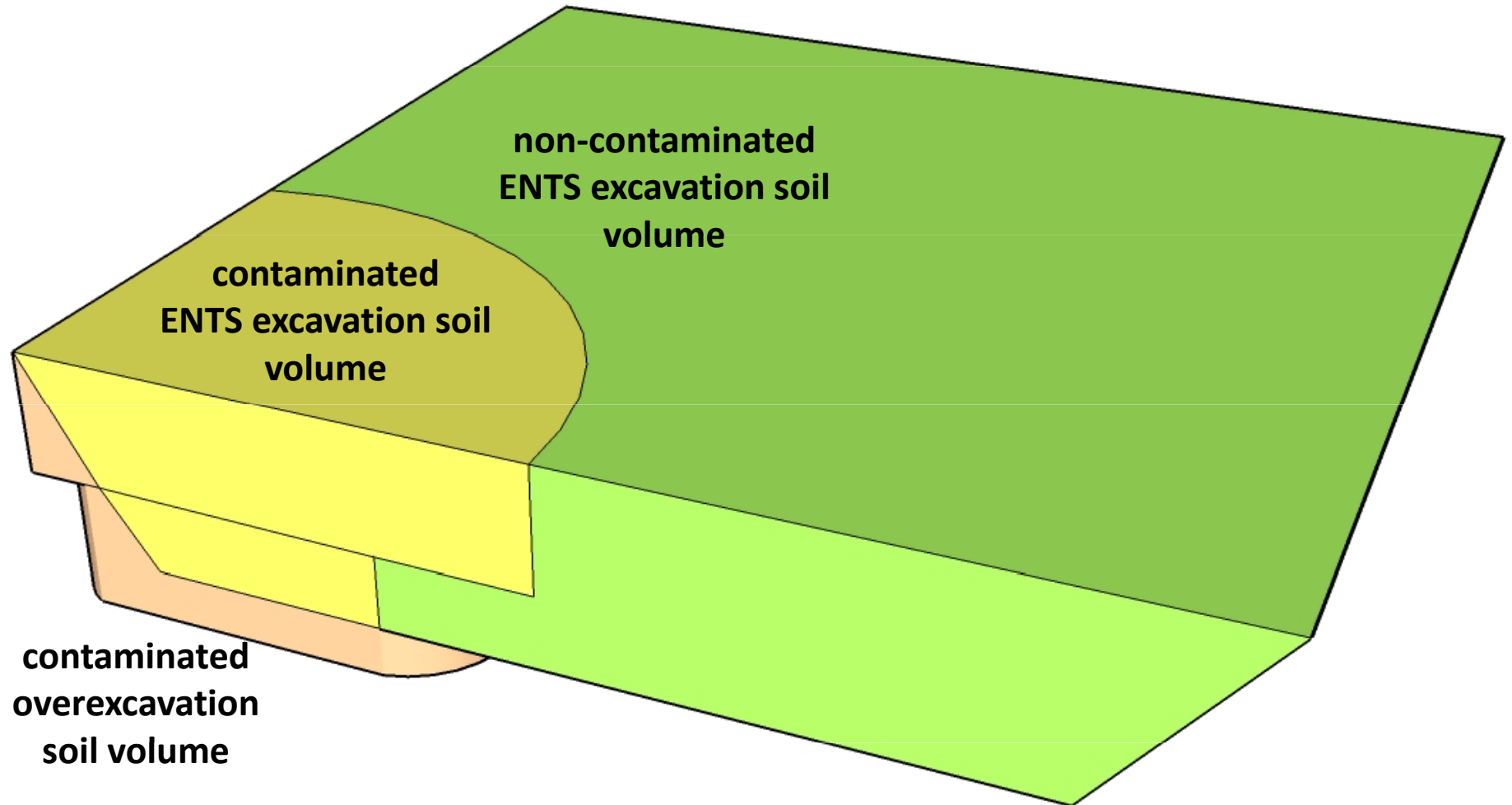
Boeing's Soil Management Plan

- Bottom line:
 - Agency-approved RCRA cleanup will continue to proceed at ENTS and other areas regardless of ENTS project (i.e., ENTS construction does not circumvent DTSC's approval process)
 - ENTS construction will accelerate the removal of significant volumes of contaminated soils well before RCRA cleanup is complete by 2017

ENTS Construction at or Near Cleanup Areas

- Pre-construction soil characterization sampling to fill data gaps
- Additional soil sampling during construction
- Removal of contaminated soils within and below ENTS footprints as necessary
- Proper disposal of contaminated soils off-site
- Restricting infiltration from ENTS to groundwater plumes (through use of a low permeability liner)
- Designs may not interfere with future vapor treatment plans at each ENTS area

ENTS Excavation Concept



QUESTIONS?

ENTS Progress Report

ENTS Planning/Permitting Schedule

ENTS Project Milestone	Status
Final site-wide design storm recommendation	Submitted to LARWQCB
Conceptual Design Package	Complete
Biological & cultural resources surveys	Complete
Construction plan	Draft under review
Geotechnical, hydrology, and water quality impacts reports	Drafts under review
Traffic, air quality, noise, biological, and cultural resources impacts reports	Drafts due late July
Ventura County CUP application, including CEQA documentation	To be submitted in August

ENTS Planning/Permitting Schedule

ENTS Project Milestone	Status
Culvert modification construction	Beginning in Aug/Sept (don't need to wait for grading permit like rest of ENTS)
Soil Management Plan	Draft under review; Final July 18 then submitted for LARWQCB/DTSC review
Alternatives analysis white paper	Submitted for NASA review
Sage Ranch approval	Draft conceptual design package submitted to SMMC; future discussion planned for August

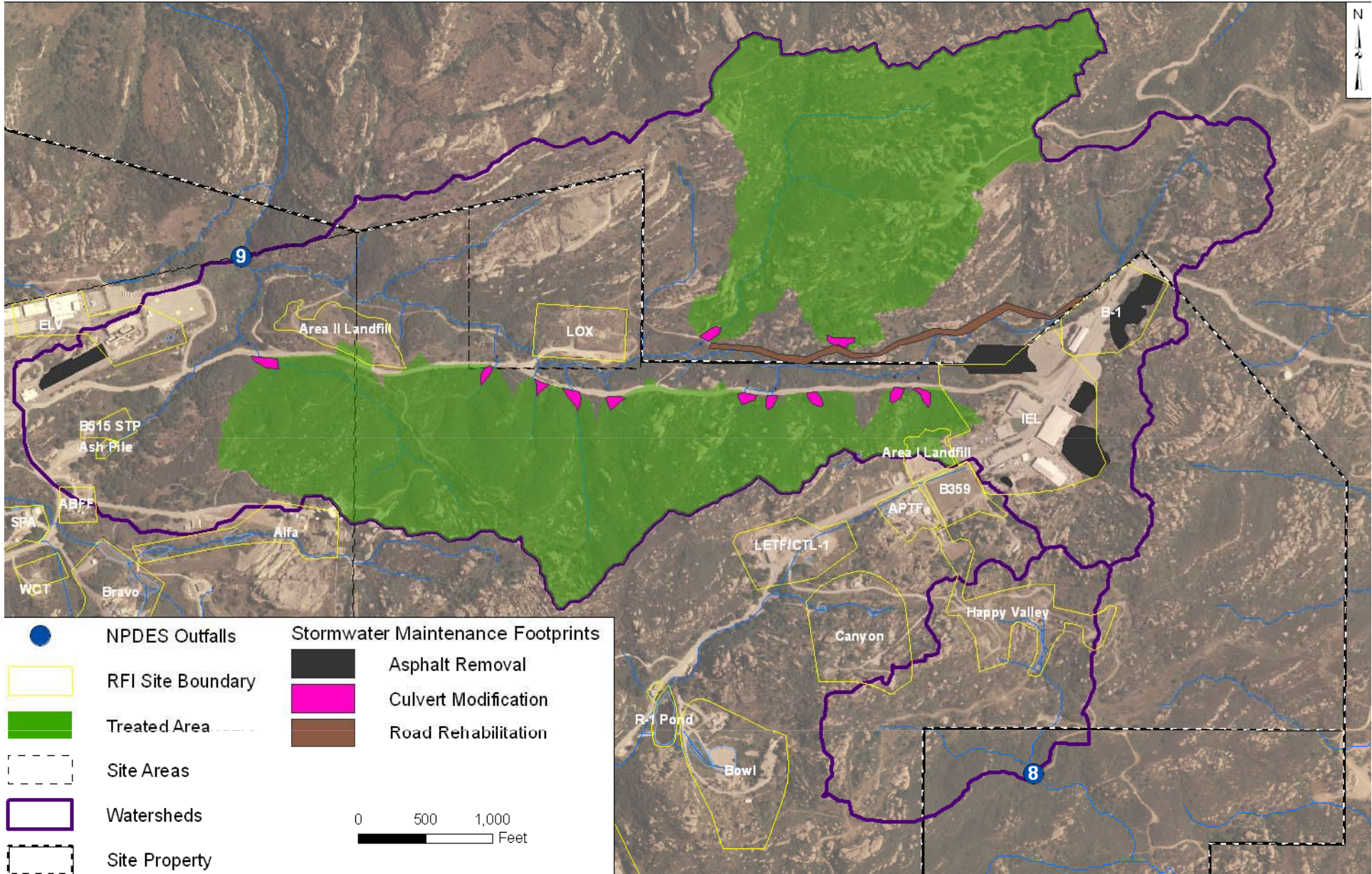
ENTS Planning/Permitting Schedule

ENTS Project Milestone	Status
CDFG Streambed Alteration Agreement	Application to be submitted in late July
ACOE Nationwide 404 Permit	Application to be submitted in late July
RWQCB 401 Cert.	Application to be submitted in late July

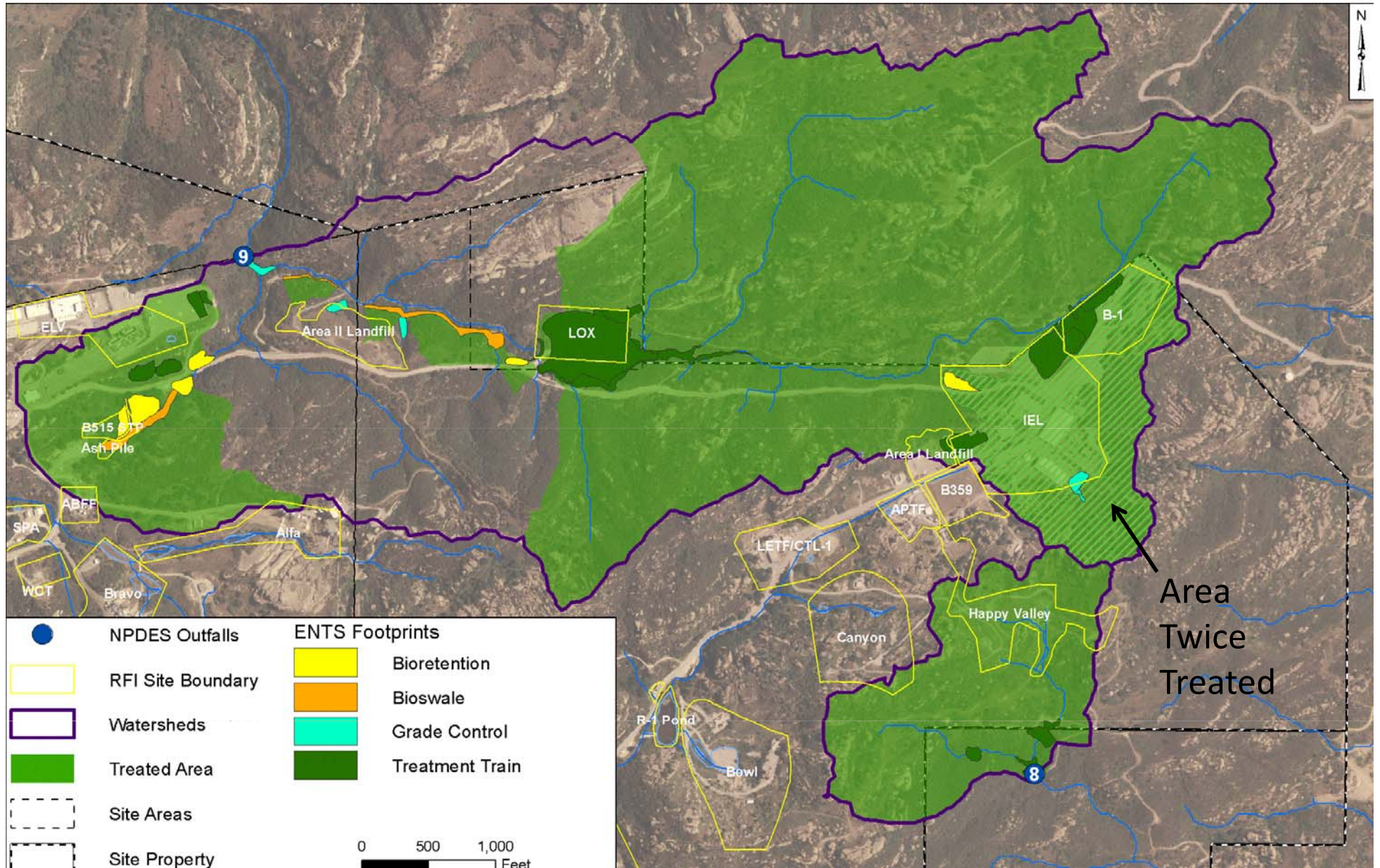
ENTS Construction Schedule

- Begin construction on Phase I ENTS prior to 2008/09 rain season
- Begin construction on Phase II ENTS in early 2009 after County and agency approvals

Phase I - Stormwater Maintenance and Asphalt Removal Projects – Immediate Implementation



Phase II – Larger ENTS – Implementation Following Agency Permits



Treatment Train Sedimentation Basins

Proposed Dominant species:



Species, common name	Container Size	Spacing (Feet On Center)
<i>Anemopsis californica</i> , yerba mansa	1 gallon	3 ft
<i>Carex praegracilis</i> , slender sedge	1 gallon	2 ft
<i>Encelia californica</i> , California encelia	1 gallon	3 ft
<i>Juncus patens</i> , rush	1 gallon, seed	2 ft 5 lbs/acre
<i>Leymus triticoides</i> , creeping wildrye	4" rose pot & seed	1.5 ft 8 lbs/acre
<i>Lotus scoparius</i> , deerweed	1 gallon & seed	2 ft 4 lbs/acre
<i>Bromus carinatus</i> , California brome	seed	6 lbs/ acre
<i>Deschampsia cespitosa</i> , tufted hairgrass	seed	2 lbs/acre
<i>Elymus trachycaulus</i> , slender wheatgrass	seed	4 lbs/ acre
<i>Vulpia microstachys</i> , small fescue	seed	8 lbs/ acre

- Other species include mostly wetland and upland grasses

Bioretention Basins

- May require media replacement after a number of years
- Slightly wetter than Media Filter & Sedimentation basins (Drains within 36-48 hours)
- Must be graded flat to spread storm water evenly over media filter surface



Bioretention Basins

- Proposed Dominant species



Riparian Areas

- Sediment basins can be graded to include islands and berms appropriate for riparian vegetation.
- Potential to grade benches adjacent to some basins.
- Include willows and live oak with mulefat and coyote brush



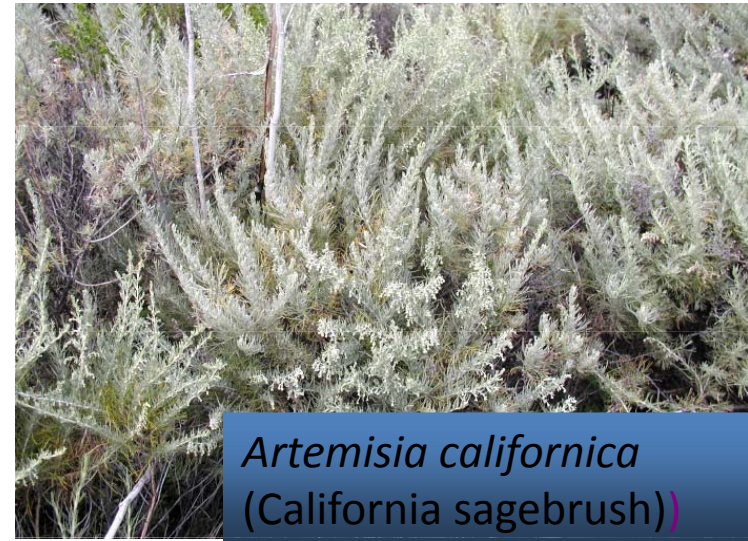
Upland ENTS

- Watershed 8:



Upland ENTS

- Selected species from seed mix



Clarifications to Comments Made at June 5 Regional Board Hearing

June 10 Panel Letter to Board

- **The Panel has not, is not, and will not recommend abandoning numeric limits**
- ENTS were located and sized to the maximum extent possible, while considering impacts to sensitive vegetation and valuable habitat, rather than to just the recommended design storm (which is just a regulatory mechanism)

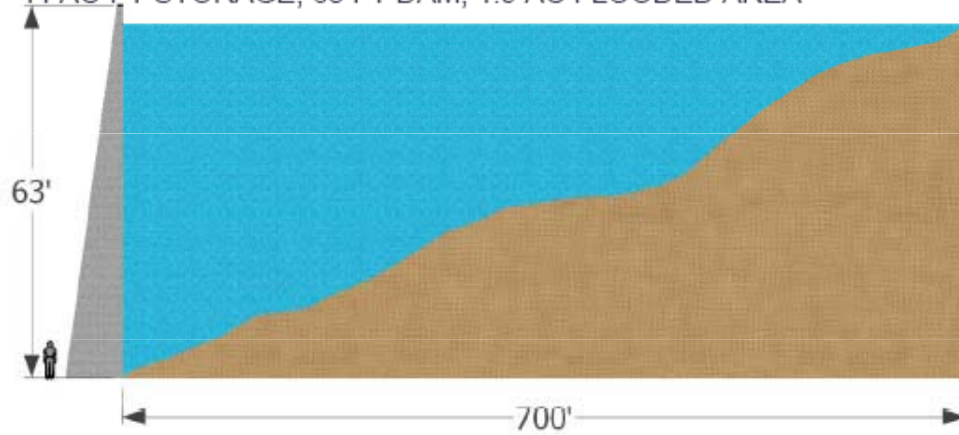
Hydrologic Effectiveness of the Proposed ENTS: Volume Capture Summary

ENTS ID	ENTS Type	Location	Design Storm Percent Capture	Long-Term Percent Capture
TT1	Treatment Train	Fire Station	100	92.2
TT2	Treatment Train	Helipad	100	90.9
TT3	Treatment Train	LOX	100	87.4
TT4	Treatment Train	Area 1 landfill	100	96.0
TT5	Treatment Train	Lower Parking Lot	100	89.7
TT6	Treatment Train	Sage Ranch Trail Head	100	96.7
TT7 (008)	Treatment Train	Outfall 008	100	90.2
BIO1	Bioretention	Ashpile	100	98.9
BIO2	Bioswale	Ashpile	100	99.8
BIO3	Bioretention	Roadway ENT	100	99.5
BIO4	Bioswale	Area 2 Landfill	100	96.0
BIO5	Bioswale	Area 2 Landfill	100	92.2
BIO6	Bioretention	Roadway ENT	100	94.0
BIO7	Bioretention	Roadway ENT	100	94.1

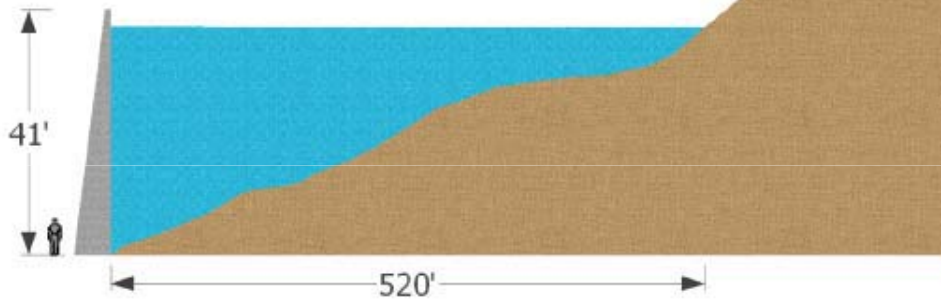
June 10 Panel Letter to Board (cont'd)

- Storms greater than the design storm will still be partially treated
- Storms above design storm will still use numeric limits; exceedances will instead trigger investigation and BMP improvements
- Increasing the design storm size has only marginal benefits to water quality but significant impacts to the environment (e.g., heritage oaks, threatened & endangered species, riparian habitat, dam construction and safety, etc.)

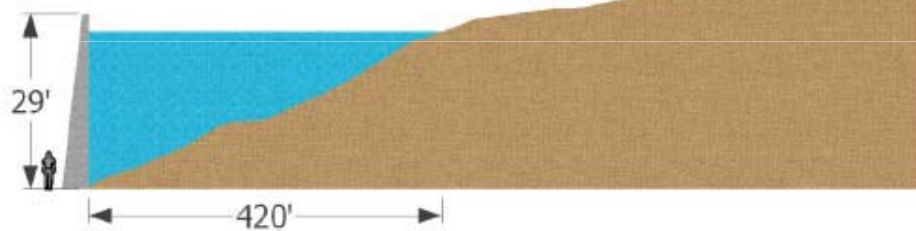
SIZING BASIS: 5 YEAR EVENT
44 AC-FT STORAGE, 63 FT DAM, 1.9 AC FLOODED AREA



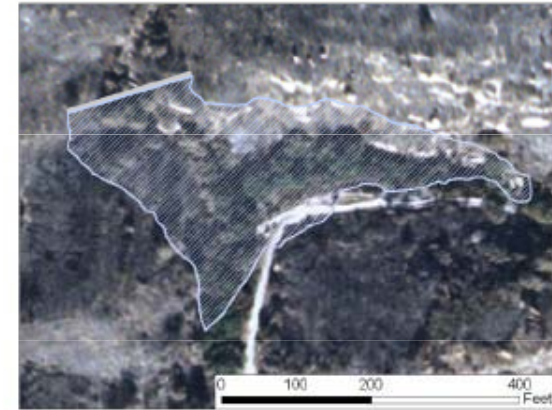
SIZING BASIS: 2 YEAR EVENT
15 AC-FT STORAGE, 41 FT DAM, 0.9 AC FLOODED AREA



SIZING BASIS: 1 YEAR EVENT
6.3 AC-FT STORAGE, 26 FT DAM, 0.6 AC FLOODED AREA



Outfall 009



June 10 Panel Letter to Board (cont'd)

- Larger design storm may require dams which would trigger EIR and permitting process would extend implementation significantly beyond CDO deadline of June '09
- Regarding issue of “allowable exceedances” for dioxin and some metals – concept of allowable permit limit exceedances has been applied in many other stormwater permits in the region and nation
 - e.g., Santa Monica Bay beaches have allowable wet weather exceedance days for bacteria
 - CSO permits nationwide

June 10 Panel Letter to Board (cont'd)

- Panel did not recommend removal of dioxin limits, however we have stated that even with perfectly designed ENTS, permit limits will not be met 100% of the time
 - These limits are extremely low (barely above lab detection capability) and stormwater quality is highly variable by nature
- Panel has recommended ENTS that are specifically designed to reduce dioxin concentrations in runoff, and they will perform and function similar to the existing flow-through filtration systems, but at a larger and more distributed scale

June 10 Panel Letter to Board (cont'd)

- Some ENTS are located at or near contaminated areas
 - These locations were selected because they are optimal for treating runoff from these and upstream areas
 - Many siting constraints exist at the SSFL limiting the areas possible for ENTS construction (it is a fact that most of the sites with lower grades suitable for ENTS were impacted)
 - Siting ENTS at contaminated areas will result in accelerated removal of contaminated soils

June 10 Panel Letter to Board (cont'd)

- Automated composite sampling was recommended over the current manual grab approach to more accurately characterize pollutant loads being discharged
 - Grab samples may still be collected to try to catch early storm instantaneous concentrations
 - Current sampling results in most grabs being taken after majority of flow has passed (morning after). Composite sampling would reduce this problem.

June 10 Panel Letter to Board (cont'd)

The proposed ENTS plan is:

- extremely ambitious,
- has been maximized without consideration of cost,
- was developed based on maximizing pollutant reduction while limiting environmental impact, and
- will include substantial long-term monitoring

QUESTIONS?

THE END

Next Public Information Meeting - Fall/Winter