Palo Alto Horizontal Levee Pilot Project

October 21, 2020

Draft 30% Design Drawings

City of Palo Alto, California

Abbrivations:
- AC: Asphaltic Concrete
- CONC: Concrete
- RW: Reclaimed Water
- RWQCP: Regional Water Quality Control Plant
- DS: Downstream
- EL: Elevation
- SD: Storm Drain
- ES: Existing
- EFF: Effluent
- SS: Sanitary Sewer
- F/L: Flowline
- IN: Invert
- TYP: Typical
- JP: Joint Service Pole
- U/S: Upstream
- (N): New
- W: Water
- O/H: Overhead-Utilities
- WM: Water Meter
- RCP: Reinforced-Concrete Pipe
- ML: M. L. Lindley
- GW, BD: G. W. & B. D. (GD&T)
- N: North
- ML: Municipal Levee
- SC: Survey Control Point
- SF: San Francisco
- SCP: Survey Control Point
- RW: Reclaimed Water
- SD: Storm Drain
- IN: Invert
- U/S: Upstream
- W: Water
- O/H: Overhead-Utilities
- RCP: Reinforced-Concrete Pipe

Scale: 1" = 800'

Location Map

Vicinity Map
1. This project will route treated effluent from the Palo Alto Regional Water Quality Control Plant to the proposed horizontal levee.

2. The horizontal levee will incorporate a subsurface treatment zone that discharges surface water to the ecotone habitat slope.
NOTES

1. RECYCLED WATER AND GAS UTILITY AS SHOWN IS PER RECORD INFORMATION THAT CANNOT BE VERIFIED. UTILITY MAY NOT HAVE BEEN INSTALLED, MAY HAVE BEEN REMOVED, OR MAY HAVE BEEN ABANDONED. TO BE CONFIRMED PRIOR TO CONSTRUCTION.

2. TOPOGRAPHIC SURVEY BASED ON USGS TOPOGRAPHIC LIDAR (USGS, 2010), AS DOWNLOADED FROM THE NOAA OFFICE FOR COASTAL MANAGEMENT.

3. AERIAL PHOTOGRAPH OBTAINED FROM USGS EARTH EXPLORER DATABASE, PREPARED BY NORTHROP GRUMMAN BETWEEN FEBRUARY 20 TO 24, 2015.

4. HORIZONTAL DATUM: NAD83 CA STATE PLANE ZONE 3.

5. VERTICAL DATUM: NAVD88.

6. UTILITY LOCATIONS SHOWN ARE PLOTTED FROM RECORD INFORMATION AND ARE APPROXIMATE ONLY. PRIOR TO CONSTRUCTION, CONTRACTOR SHALL POTHOLE AND VERIFY THE LOCATIONS OF ALL UTILITIES, AND NOTIFY THE ENGINEER IMMEDIATELY IF ANY CONFLICTS OR DISCREPANCIES ARE IDENTIFIED.

7. ALL EXISTING UTILITIES SIZING AND MATERIALS TO BE CONFIRMED PRIOR TO CONSTRUCTION.
NOTES

1. TOPOGRAPHIC SURVEY BASED ON USGS TOPOGRAPHIC LIDAR (USGS, 2010), AS DOWNLOADED FROM THE NOAA OFFICE FOR COASTAL MANAGEMENT.

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5. PROPOSED SWALES ARE INTENDED TO ADD HABITAT COMPLEXITY. THEY ARE NOT DRAINAGE INFRASTRUCTURE ELEMENTS, AND THE SECTION AREA, FLOWLINE ALIGNMENT, AND CONFIGURATION DO NOT REQUIRE MAINTENANCE (EXCEPT FOR AT THE CULVERT OUTFALL, WHICH SHALL BE MAINTAINED SIMILARLY TO THE EXISTING CULVERT BEING REPLACED).
1. SEGREGATE FINE AND COARSE MATERIAL ENCOUNTERED DURING EXCAVATION OF SITE TO SUBGRADE, DURING FILL OPERATIONS, PLACE COARSE MATERIAL ON THE RIDGES AND FINE MATERIALS IN THE SWALES.

2. SUBSURFACE TREATMENT LAYER COMPRISED OF A BLEND OF DRAIN ROCK AND COMPOSTED WOOD CHIPS.

3. SAND FILTER COMPRISED OF A BLEND OF SAND AND WOOD CHIPS.

4. COARSE AND FINE MATERIAL INCLUDES A BLEND OF NATIVE MATERIAL WITH COMPOSTED WOOD FINES.

5. FUTURE FLOOD CONTROL LEVEE MAY OR MAY NOT BE CONSTRUCTED, BUT THIS LAYOUT PLANS FOR ITS POTENTIAL SPACE SHOULD IT BE CONSTRUCTED.

6. ALL ELEVATIONS ARE ON NORTH AMERICAN VERTICAL DATUM 1988 (NAVD88).
PLANTING PLAN

PLANTING TABLES

IRRIGATED HABITAT ZONE PLANT ASSEMBLAGE

- California Rose: Rosa californica
- Black Elder: Sambucus nigra
- Red Willow: Salix lasiolepis
- Western Goldenrod: Solidago californica
- Western Raggweed: Ambrosia californica
- Susun Marsh Aster: Symphyotrichum lentum
- California Sunflower: Helianthus californicus
- Creeping Wildryes: Elymus trichodes, E. x gouldii
- Valley Sedge: Carex barbarae
- Field Sedge: Carex praegracilis
- Baltic Rush: Juncus arcticus

RIDGE/UPLAND SCRUB PLANT ASSEMBLAGE

- California Rose: Rosa californica
- Western Raggweed: Ambrosia californica
- Western Goldenrod: Solidago californica
- Pacific Aster: Symphyotrichum lanceolatum
- Susun Marsh Aster: Symphyotrichum lentum
- California Sunflower: Helianthus californicus
- Creeping Wildryes: Elymus trichodes, E. x gouldii
- Valley Sedge: Carex barbarae
- Field Sedge: Carex praegracilis
- Baltic Rush: Juncus arcticus

WET MEADOW AND SWALE/BRACKISH WETLAND PLANT ASSEMBLAGE

- Common Saltgrass: Distichlis spicata
- Baltic Rush: Juncus arcticus
- Creeping Wildryes: Elymus trichodes, E. x gouldii
- Field Sedge: Carex praegracilis
- Valley Sedge: Carex pellita
- Salt Grass: Stilagrostis capillaris
- Baltic Rush: Juncus arcticus

LEGEND

- Irrigated Habitat Zone
- Ridge/Upland Scrub
- Wet Meadow
- Swale/Brackish Wetland

E.M.B.A.R.C.A.D.E.R.O. ROAD

SAFER LEVEE REACH 10 OPTIONS 1 & 2 ALIGNMENTS

HARBOR MARSH

TIDAL CHANNEL

SWALE / BRACKISH WETLAND, TYP

RIDGE / UPLAND SCRUB, TYP

WET MEADOW, TYP

TREATMENT ZONE LIMIT, TYP

NEW TRAIL, TYP

PROJECT LIMIT, TYP

GRADING LIMIT, TYP

( E ) TRAIL

DRAFT 30% DESIGN DRAWINGS

SHEET C-10

SHEET NUMBER

OF 12

TIDEAL CHANNEL

PLANTING PLAN

SCALE: 1" = 20'
POLLUTION PREVENTION — IT’S PART OF THE PLAN

Construction projects are required to implement year-round water BMPs, as they apply to your project.

Runoff from streets and other paved areas is a major source of pollution to San Francisco Bay. Construction activities can directly affect the health of the Bay unless contractors and crews plan ahead to keep construction dirt, debris, and other pollutants out of storm drains and local creeks. Following these guidelines will ensure your compliance with City of Palo Alto Ordinance requirements.

MATERIALS & WASTE MANAGEMENT

Non-Hazardous Materials
- Bring in and store stockpiles of sand, dirt or other construction materials with covers when rain is forecast or when they are not in use.
- Use but don’toss excessed reclaimed water for dust control.
- Ensure erosion control water doesn’t flow or discharge to storm drain.

Hazardous Materials
- Label all hazardous materials and hazardous waste (such as paint, solvents, thinners, solvents, fuel, and antifreeze) in accordance with city, county, state and federal regulations.
- Store hazardous materials and waste in water tight containers, store in appropriate secondary containment, and cover them at the end of every work day during wet or rainy weather.
- Follow manufacturer’s application instructions for hazardous materials and do not apply more frequently than required or in quantities larger than can be applied within 24 hours.
- Arrange for appropriate disposal of all hazardous waste.

Waste Management
- Cover and maintain simplicity. Check frequently for leaks. Place dump pads under stockpiles of sand, dirt or other materials with covers while they are in good working order. Check frequently for leaks.
- Dispose of waste and demolition solids properly. Recycle materials and waste that can be recycled, including paper, waste paper, metal, concrete, asphalt, and contaminate.” (sic)
- Dispose of soluble materials from paint, thinners, solvents, glass, and cleaning fluids as hazardous wastes.
- Keep site clear of litter (e.g. lunch items, cigarette butts).
- Prevent litter from uncovered stockpiles by covering stockpiles that are being transported to and from site.

Construction Entrances and Perimeter
- Establish and maintain effective perimeter controls and obtain all construction entrances and exits to facilitate effective controls. Set up effective sediment and stormwater controls for the site.
- Keep site clear of litter (e.g. lunch items, cigarette butts).
- Dispose of soluble materials from paint, thinners, solvents, glass, and cleaning fluids as hazardous wastes.

STORM DRAIN POLLUTANTS MAY BE LIABLE FOR FINES OF UP TO $10,000 PER DAY!
NOTES:
1. PIPE SIZE TO HORIZONTAL LEVEE TO BE BETWEEN IF AND IF. FINAL SIZE TO BE DETERMINED DURING DETAILS DESIGN.
2. 120V POWER TO COME FROM 120V PANEL BOARD LOCATED NEAR THE UV SYSTEM MFD.
3. DATA CONNECTION FOR REMOTE R0 PANEL TO COME FROM THE CHLORINATION SYSTEM PLC PANEL. FLOWMETER AND VALVE TO BE CONTROLLED AND MONITORED BY SCADA.
4. PIPE HEADER AND R0 PANEL TO BE LOCATED NEAR EXISTING EFFLUENT BOX ON THE WEST SITE.

DRAFT 30% DESIGN DRAWINGS

PIPING PROCESS AND INSTRUMENTATION DIAGRAM (P&ID)

PAHLPP SITE
PALO ALTO RWQCP

HORIZONTAL LEVEE

PLOT DATE: 10/20/2020 12:00:57 AM
PLOTTED BY: LIANE WARE

FILE:
U:\Projects\SFO\18xxxx\D181306.00 - Palo Alto Horizontal Levee\09 CAD\Dwgs\M-01 PIPING PROCESS INST DIA.dwg