



**ITEM NO. 12**

**OPERATIONS & MAINTENANCE COMMITTEE AGENDA**

**Tuesday, October 17, 2023**

**2:00 P.M.**

**East Bay Dischargers Authority  
2651 Grant Avenue, San Lorenzo, CA**

**Committee Members: McGowan (Chair); Lathi**

**OM1. Call to Order**

**OM2. Roll Call**

**OM3. Public Forum**

**OM4. EBDA Permit Compliance**

(The Committee will be updated on EBDA's NPDES compliance.)

**OM5. Status Report**

(The Committee will be updated on EBDA's O&M activities.)

**OM6. Motion Authorizing the General Manager to Execute a Change Order to the Purchase Order with Peterson Caterpillar for Diesel Engine Repair and Maintenance in the Amount of \$74,245 for a Total Purchase Order Value of \$99,244**

(The Committee will consider the motion.)

**OM7. Adjournment**

Any member of the public may address the Commission at the commencement of the meeting on any matter within the jurisdiction of the Commission. This should not relate to any item on the agenda. It is the policy of the Authority that each person addressing the Commission limit their presentation to three minutes. Non-English speakers using a translator will have a time limit of six minutes. Any member of the public desiring to provide comments to the Commission on an agenda item should do so at the time the item is considered. It is the policy of the Authority that oral comments be limited to three minutes per individual or ten minutes for an organization. Speaker's cards will be available in the Boardroom and are to be completed prior to speaking.

In compliance with the Americans with Disabilities Act of 1990, if you need special assistance to participate in an Authority meeting, or you need a copy of the agenda, or the agenda packet, in an appropriate alternative format, contact Juanita Villasenor at [juanita@ebda.org](mailto:juanita@ebda.org) or (510) 278-5910. Notification of at least 48 hours prior to the meeting or time when services are needed will assist the Authority staff in assuring that reasonable arrangements can be made to provide accessibility to the meeting or service.

Agenda Explanation  
East Bay Dischargers Authority  
O&M Agenda  
October 17, 2023

In compliance with SB 343, related writings of open session items are available for public inspection at East Bay Dischargers Authority, 2651 Grant Avenue, San Lorenzo, CA 94580. For your convenience, agenda items are posted on the East Bay Dischargers Authority website located at <http://www.ebda.org>.

**Next Scheduled Operations and Maintenance Committee is  
Tuesday, November 14, 2023, at 2:00 p.m.**

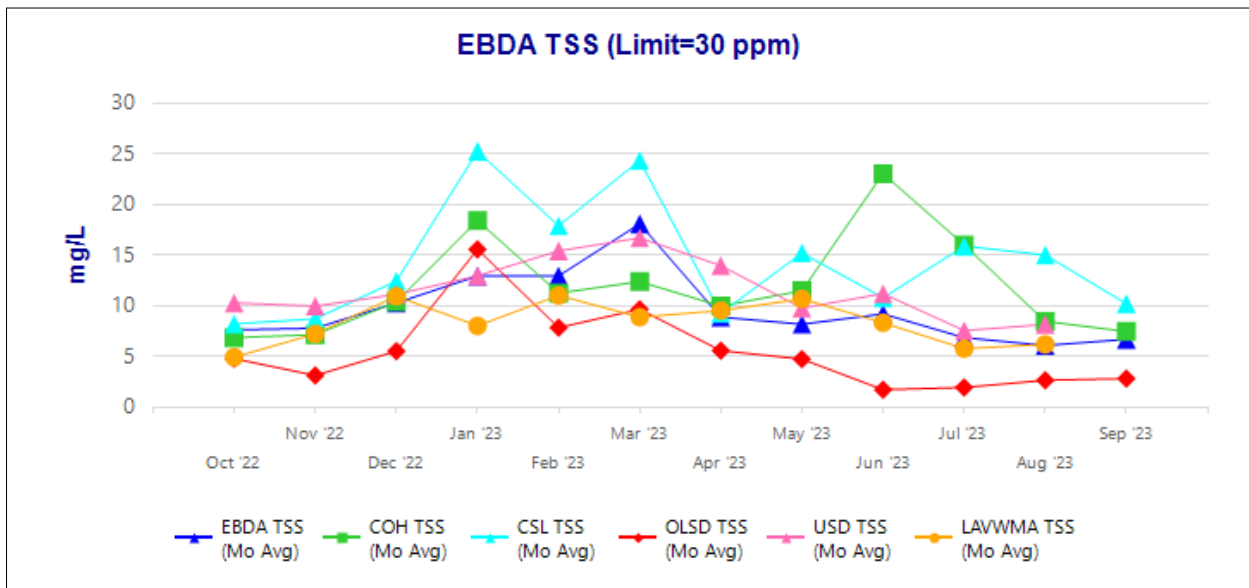
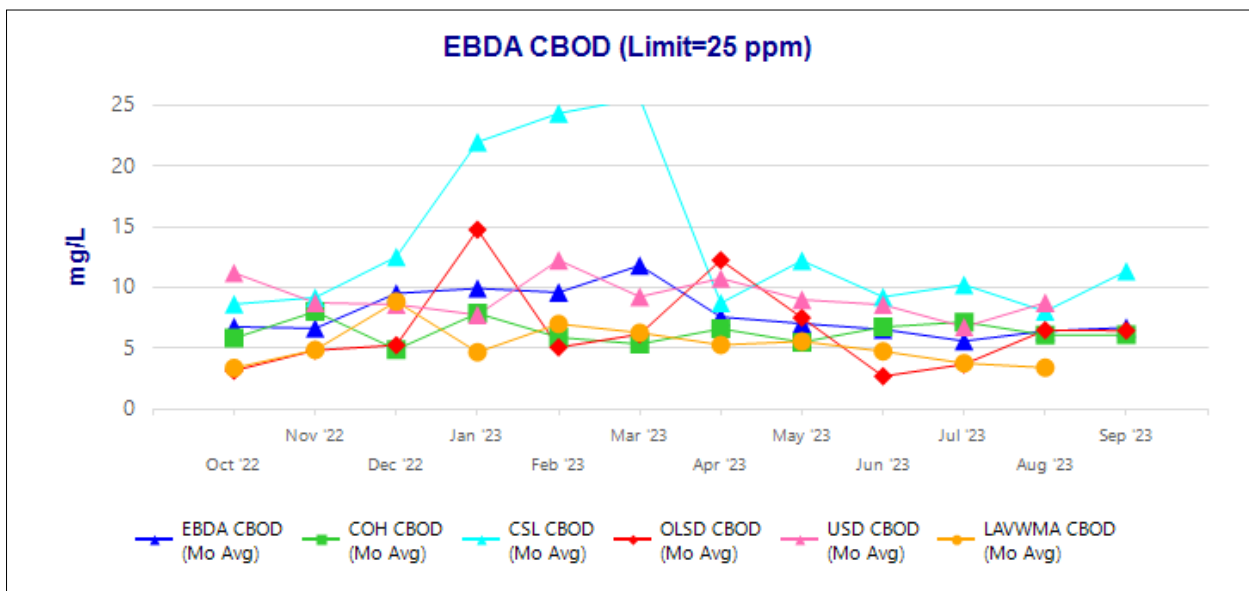
**ITEM NO. OM4 EBDA PERMIT COMPLIANCE**

**Recommendation**

For the Committee’s information only; no action is required.

**Discussion**

There were no NPDES permit violations in August, and preliminary data from September are also free of permit exceedances. Member Agency CBOD and TSS performance are shown below. A table with bacterial indicators is also included. Staff notes that the spike observed in CBOD at San Leandro in the Spring of 2023 was primarily the result of repeated non-compliant discharges to the plant by an industrial discharger.



## EBDA Bacterial Indicators

Date	FECAL	ENTERO
	MPN/ 100mL	MPN/ 100mL
Limit (90th Percentile)	1100	1100
Limit (Geomean)	500	280
<b>October 2022 Geomean</b>	<b>12</b>	<b>4</b>
<b>November 2022 Geomean</b>	<b>6</b>	<b>6</b>
<b>December 2022 Geomean</b>	<b>21</b>	<b>9</b>
<b>January 2023 Geomean</b>	<b>12</b>	<b>14</b>
<b>February 2023 Geomean</b>	<b>4</b>	<b>2</b>
<b>March 2023 Geomean</b>	<b>3</b>	<b>2</b>
<b>April 2023 Geomean</b>	<b>10</b>	<b>7</b>
<b>May 2023 Geomean</b>	<b>15</b>	<b>122</b>
<b>June 2023 Geomean</b>	<b>8</b>	<b>83</b>
<b>July 2023 Geomean</b>	<b>7</b>	<b>18</b>
8/1/2023	1600	< 2
8/2/2023	NA	17
8/7/2023	33	17
8/8/2023	7	8
8/14/2023	8	2
8/15/2023	8	2
8/21/2023	8	4
8/22/2023	23	4
8/28/2023	9	2
8/29/2023	4	10
<b>August 2023 Geomean</b>	<b>17</b>	<b>5</b>
9/4/2023	540	6
9/5/2023	17	< 2
9/6/2023	NA	< 2
9/11/2023	33	6
9/12/2023	17	6
9/18/2023	79	2
9/19/2023	33	6
9/20/2023	NA	4
9/25/2023	13	6
9/26/2023	140	6
<b>September 2023 Geomean</b>	<b>47</b>	<b>4</b>

## **ITEM NO. OM5 STATUS REPORT**

### **Union Effluent Pump Station (UEPS)**

No change; all equipment is operational.

### **Hayward Effluent Pump Station (HEPS)**

#### **Effluent Pump Replacement Project**

The new Effluent Pumps are currently on order with the lead time quoted as 28 weeks, which would have the pumps arriving in late December 2023 or January 2024, assuming no further supply chain delays. EBDA would most likely postpone the installation of the new pumps until the end of the wet season in April or May of 2024.

### **Oro Loma Effluent Pump Station (OLEPS)**

#### **Emergency Outfall Upgrade**

This project will remove the existing lumber weir and replace it with a new permanent weir at an increased height, increasing system detention time and delaying or preventing an unanticipated bypass in the event of a catastrophic failure at OLEPS. The contractor, D.W. Nicholson Corporation (DWN), provided EBDA with shop drawings for the new stainless steel weir. Carollo Engineers, Inc. (Carollo), EBDA's engineers on this project, provided comments, which have been incorporated in revised shop drawings. Carollo is currently reviewing the revised shop drawings, and once approved, the new stainless steel weir will be fabricated and installed.

#### **Wet Well Sluice Gate Repairs and Preventative Maintenance**

For a number of years, the OLEPS North Wet Well Influent Gate has had a broken guide-bearing and a bent shaft. Because it was still operational, staff elected to defer repair until a larger related need arose. Last Fall, in the process of completing preventative maintenance activities at OLEPS, the Effluent Pump No. 2 Inlet Gate got stuck in the closed position when the actuator drive threads failed. Newly fabricated actuator drive threads were installed, and the Effluent Pump No. 2 Inlet Gate was fully operational. Following that failure, staff added a project to the FY 2023/2024 Renewal and Replacement Fund List to repair the North Wet Well Influent Gate and perform inspections and preventative maintenance on all seven OLEPS Wet Well Sluice Gates.

During the week of August 28<sup>th</sup>, the OLEPS North Wet Well was isolated and pumped down. On August 31<sup>st</sup>, GSE Construction Co., Inc. (GSE) entered the North Wet Well and removed the broken guide-bearing and the bent shaft and inspected and cleaned two additional North Wet Well Sluice Gates. EBDA had a new guide-bearing and shaft fabricated. The newly fabricated parts arrived on October 11<sup>th</sup>, and will be installed in the next several weeks.

**Skywest Pump Station**

**Recycled Water Production**

During the month of September 2023, the Skywest Recycled Water System operated for two days and produced 1.12 million gallons of recycled water.

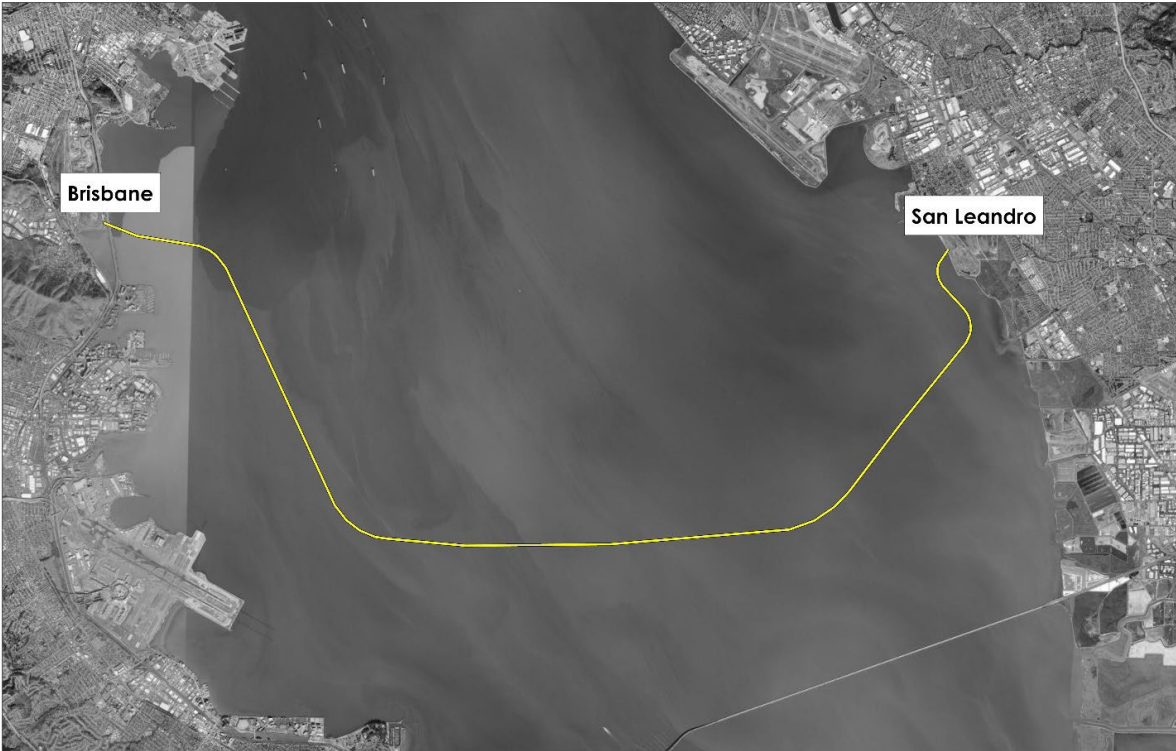
**Marina Dechlorination Facility (MDF)**

No change; all equipment is operational.

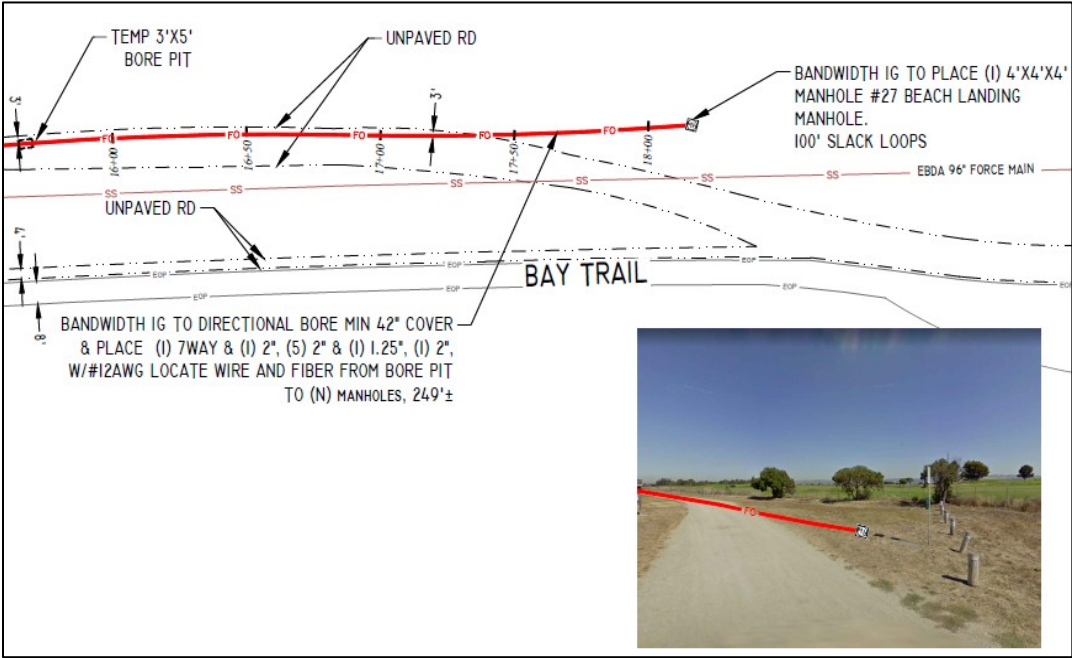
**Force Main**

**Bandwidth Infrastructure Group Development Near the EBDA Force Main**

Staff has been working with Bandwidth Infrastructure Group (Bandwidth) to ensure that their San Francisco Bay Fiber Optic Cables Project, pictured below, does not negatively impact EBDA’s Force Main. This project is intended to “enhance telecommunication capacity within the greater SF Bay Area and connected regions by adding a direct telecommunications link across the SF Bay,” and it initially proposed an eastern cable landing site immediately on top of the EBDA Force Main. EBDA staff has actively coordinated with Bandwidth and their contractors to provide corrected information about the force main location and to shift the project to avoid impacts. Examples of the original and corrected plans are included on the following page.

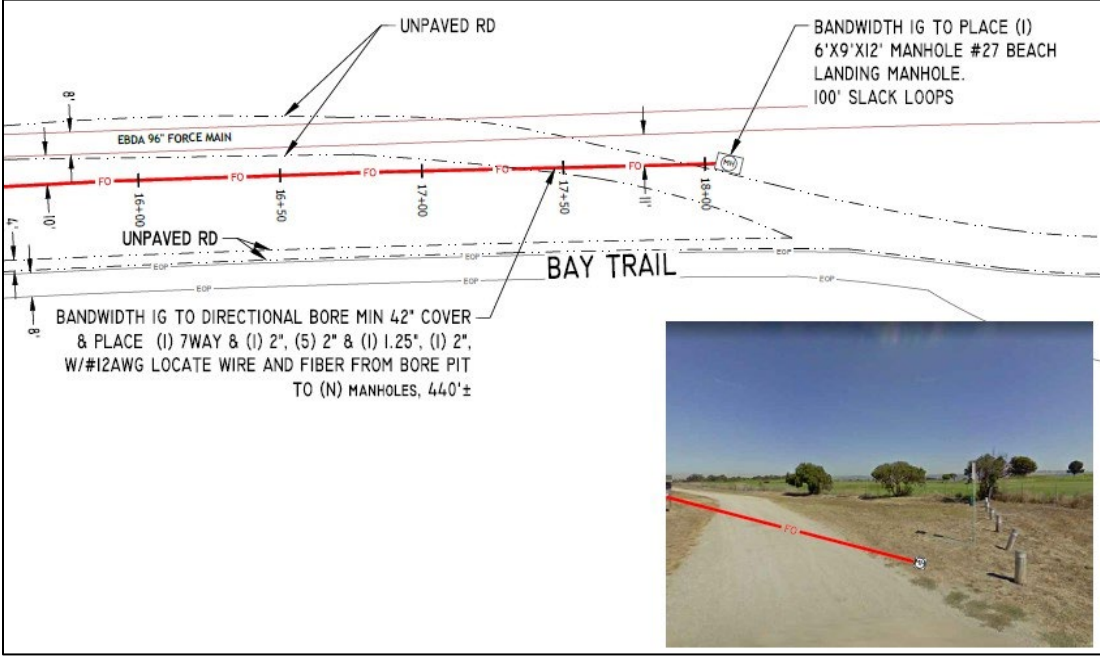


**San Francisco Bay Fiber Optic Cables Project Overview**



**Original Bandwidth Infrastructure Group Project Plans**

These plans have the EBDA 96-inch force main in the wrong location resulting in the Bandwidth manhole directly on top of the EBDA force main.



**Corrected Bandwidth Infrastructure Group Project Plans**

These plans have the EBDA 96-inch force main in the correct location. The force main and the fiber line in red switched positions, which eliminated the fiber line crossing the EBDA force main in this location.

EBDA contracted with DCM Consulting, Inc. (DCM) to prepare a Technical Memorandum (TM) that included recommendations and requirements for this project. DCM has performed this type of geotechnical engineering review for EBDA in the past and has also worked with EBDA's Member Agencies. The TM prepared by DCM and forwarded to Bandwidth is attached at the end of the O&M status report.

### **Force Main Preventative Maintenance**

On September 28, 2023, USD staff took over EBDA force main preventative maintenance activities from OLEPS south to USD.

### **Operations Center**

#### **EBDA Administration Building Improvements**

As part of the Fiscal Year 2018/2019 RRF Project List, \$40,000 was budgeted for the EBDA Administration Building Improvements Project. In 2020, EBDA spent \$2,530 replacing four windows with new windows that open to allow fresh air in the building. An additional \$250 was spent to repair one other window. \$3,350 was spent to repair dry rot found during the window replacement.

On September 25, 2023, EBDA began the next phase of the project to replace the aged carpet with laminate flooring and paint all interior walls. During the floor replacement, additional dry rot was found in one area and mold was found in another area (see photo on the following page). The dry rot was repaired and the mold was removed. The evidence of mold prompted staff to evaluate air flow in the building and basement. Based on review of the building as-built plans, it appears that there were additional vents under the building when it was initially constructed. At some point in the past, these vents were covered over. Staff has engaged EBDA's HVAC contractor, B.A. Morrison to look at the area under the building to evaluate the need to install additional vents and/or a fan that is controlled automatically with a moisture sensor. B.A. Morrison is scheduled to inspect the building on October 13<sup>th</sup>.

The work on flooring and paint at the Administration Building also revealed the need for electrical work, for which staff has opened another project (see next item).

As Commissioners will see when they enter the building the week of October 16<sup>th</sup> for Committee meetings, the new flooring and paint have greatly improved the look of the offices. Work is expected to be completed in November.





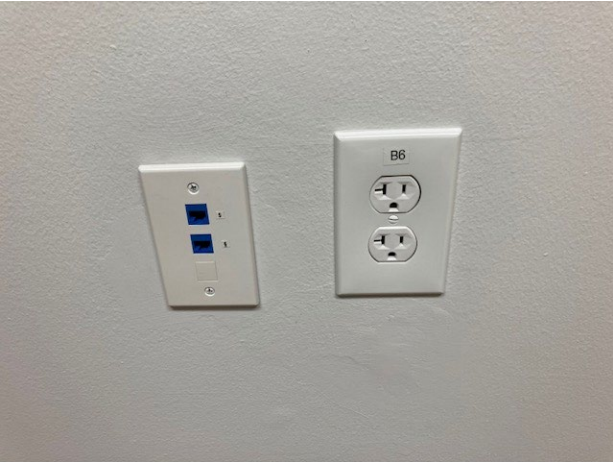
**Mold Identified in the Floor under the Plan Drawers**

**EBDA Administration Building Electrical Upgrade**

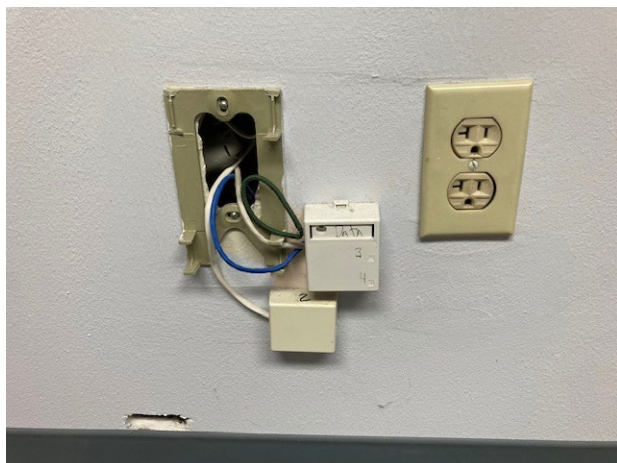
As noted above, staff is moving forward with electrical improvements while painting is being conducted and carpet has been removed. In particular, wiring issues in several offices have been corrected and new electrical plates installed to improve safety and cosmetics (see photos below and on the following page). In addition, it has been determined that there are electrical code issues with the wiring through the lobby of the building, which was originally set up for multiple work stations. Staff has engaged EBDA's electrical and instrumentation contractor, Calcon, to perform the wiring and electrical upgrades to bring the building up to code.



**Wiring Before**



**Wiring After**



**Wiring Before**



**Wiring After**

### **Miscellaneous Items**

#### **Underground Service Alerts**

EBDA received fourteen (14) Underground Service Alert (USA) tickets during the month of September 2023. Five required an Electronic Positive Response (EPR) and calls/emails to the excavators, and of the five, four required field verification.

### **Special Projects**

#### **Roof Replacement Projects**

The Administration Building, the MDF Sodium Bisulfite (SBS) Building, and the OLEPS roofs are all complete. The roofing contractor is currently working on punch list items and a final inspection will be scheduled once the items are completed.

#### **Cargill Brine Project**

As discussed at previous Commission Meetings, following certification of the Final Environmental Impact Report (EIR) for the proposed project, Cargill informed EBDA staff that they have made the decision to re-evaluate the “Bayside” pipeline route. Cargill is continuing to refine the route and expects it to be very similar to the Bayside alternative outlined in the EIR. Since Cargill is entirely re-engineering the pipeline and route, EBDA staff has requested they take another look at connecting at or after MDF instead of OLEPS, which would alleviate EBDA’s concerns about corrosion. Cargill and their engineering consultants conducted a site visit to MDF with EBDA staff in early August, and they are working on engineering concepts. Cargill expects to make a decision on this extension in Spring 2024.

Cargill’s preliminary schedule shows revised CEQA analysis in 2025, and construction beginning sometime between 2027 and 2029 depending on permitting, with operation

commencing between 2031 and 2033. In the interim, staff will continue at a measured pace negotiating the operating agreement between Cargill and EBDA.

**Advanced Quantitative Precipitation Information (AQPI) Project**

The regional AQPI project continues to move forward with a goal of improving prediction of rainfall events in the Bay Area. Following a series of delays, the East Bay radar was installed at Rocky Ridge in December 2022. There was some operational delay due to data communications issues, but those issues have now been resolved. The team is also installing a new buried power line to provide electricity to the radar. EBDA members can access regional data through AQPI's data portal. Program Management of AQPI is shifting from Colorado State University to the Center for Western Weather and Water Extremes (CW3E) at Scripps Institution of Oceanography, UC San Diego. CW3E will be developing an updated website and data management tools. Sonoma Water and the AQPI team will also be seeking local funding to install a C-Band radar to complete the regional system. More information on the cost-share proposal will be shared in the coming months. The next User Group meeting to discuss access to data during the upcoming wet season will be held on November 3<sup>rd</sup>.

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To:	Howard Cin East Bay Dischargers Authority	Date:	October 6, 2023
From:	Dave Mathy DCM Consulting, Inc.	File:	No. 406
Subject:	Bandwidth IG, Fiber Optics Cable Project Bundled Conduit Installation by HDD at East Bay Dischargers Authority (EBDA) Marina Dechlorination Facility and 96-inch Outfall Pipeline San Leandro, California		

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1.0 INTRODUCTION

This technical memorandum presents the results of a geotechnical and trenchless engineering review of currently available project information for Bandwidth IG’s planned fiber optics cable conduit installation by horizontal directional drilling (HDD) with respect to potential impacts on EBDA facilities. The Bandwidth IG project includes fiber optics cable installation across San Francisco Bay from Brisbane (western landing) to San Leandro (eastern landing). The eastern landing includes a segment (Span 1C, Segment 012) located in the Marina Park area of San Leandro that crosses EBDA’s 96-inch Outfall Pipeline. The approximate alignment of Span 1C, Segment 012 is shown in Figure A along with the location of EBDA’s Marina Dechlorination Facility and 96-inch Outfall Pipeline to San Francisco Bay.



**Figure A** – Bandwidth IG, Span 1C, Segment 012, approximate alignment  
Total fiber optic conduit length, approximately 1,800 feet



Bandwidth IG's Span 1C, Segment 012 is to be installed by horizontal directional drilling. Up to 8 conduits, 2 inches to 1.25 inches in diameter will be bundled and installed by 5 individual HDD runs of 200 to 400 feet in length. To accommodate up to 8 bundled conduits (7-2" and 1-1.25") the reamed HDD bore hole will likely be on the order of 12 to 14 inches in diameter. As shown in Figure A, HDD bores are oriented north-south along the east bay shoreline. EBDA facilities in the immediate vicinity of, or crossed by, the HDD bores include the Marina Dechlorination Facility, 96-inch Outfall Pipeline and associated parallel electrical and instrumentation conduits and PVC sample lines, 48-inch Force Main pipeline (City of San Leandro) and parallel 4-inch EBDA force main.

EBDA has requested that DCM Consulting, Inc. review the Bandwidth IG project plans for potential impacts on EBDA facilities.

## 2.0 REFERENCES

The following references have been provided by EBDA for this project review.

1. Force Main Between San Leandro and Marina (48-inch and 4-inch)  
Plan and Profile Drawings  
Sta. 75+10 to Sta. 90+00, Drawing No. 8  
Sta. 90+00 to End, Drawing No. 9  
by: East Bay Dischargers Authority  
dated: 6/30/77
2. Force Main Between Marina and Oro Loma (96-inch)  
Plan and Profile Drawings  
Sta. 0+00 to Sta. 4+00, Drawing No. 3  
Sta. 4+00 to Sta. 18+50, Drawing No. 4  
By: East Bay Dischargers Authority  
Dated: 4/6/77
3. Bay Outfall (96-inch)  
Plan and Profile Drawings  
Marina Dechlorination Facility to San Francisco Bay  
by: East Bay Dischargers Authority  
dated: 8/8/77  
21 drawings
4. Bandwidth IG  
New-Build Fiber Connection Underground  
Span 1C, Segment 012, San Leandro  
Plans, Profiles, Details and Notes  
by: Sagebrush Engineering  
dated: 8/23/22  
16 sheets

5. Horizontal Directional Drilling  
Geotechnical Exploration  
San Francisco Bay Cable Route  
Brisbane to San Leandro, California  
by: Engeo  
dated: 8/4/23  
54 pages
6. Letter dated August 8, 2023  
EBDA to Bandwidth IG  
RE: San Francisco Bay Fiber Optic Cables Project Drawing Review  
1 page
7. Google Earth Images from EBDA  
with approximate EBDA Facilities overlay at San Leandro Marina  
undated

The EBDA facilities in close proximity to, or to be crossed by, the Bandwidth IG fiber optics conduit installations include:

- Marina Dechlorination Facility structure, 96-inch Outfall Pipeline flowing west out of the Dechlorination Facility and a Flow Meter/Meter Box structure that the 96-inch Outfall Pipeline flows into approximately 95 feet west of the Dechlorination Facility and multiple small diameter electrical and instrumentation conduits and PVC sample lines between the two structures (see Figure 1);
- 96-inch Force Main flowing south to north into the Marina Dechlorination Facility; and
- 48-inch Force Main (San Leandro) flowing north to south into, and 4-inch Force Main (EBDA) flowing south to north out of, the Marina Dechlorination Facility.

The planned HDD installation of fiber optic conduits includes a total of 5 individual runs of 200 feet to 400 feet in length. Following is a brief summary of individual HDD runs and proximity to EBDA facilities (Stationing from the Bandwidth IG plans).

1. Station 0+00 to 3+67, length = 367 ft.  
4'x4'x4' manhole #26 is shown immediately adjacent to the City of San Leandro's 48-inch Force Main and EBDA's 4-inch Force Main at Station 0+00.
2. Station 3+67 to Station 7+67, length = 400 ft.  
The HDD bore path crosses EBDA's 96-inch Outfall Pipeline and associated 2-inch electrical and instrumentation conduits and 1-½ to 2-inch PVC sample lines (see Figure 1) at approximately Station 5+05.
3. Station 7+67 to Station 11+67, length = 400 ft.  
No EBDA facility in proximity to HDD bore path

4. Station 11+67 to Station 13+67, length = 200 ft.  
 3'x5' HDD temporary bore pit is shown 12' west of the west edge of EBDA's 96-inch Force Main at Station 13+67.
  
5. Station 13+67 to Station 18+07, length = 440 ft.  
 The HDD bore path is shown 12' to 10' west of EBDA's 96-inch Force Main. 6'x9'x12' manhole #27 is shown less than 10 feet (no dimension given) from the nearest edge of EBDA's 96-inch Force Main at Station 18+07.

The Bandwidth IG project plans do not show a profile of the HDD bore path where it crosses the EBDA 96-inch Outfall Pipeline at approximately Station 5+05. However, the plan Construction Notes on Sheet G-1 do include the following Note 5.

5. THE FOLLOWING MINIMUM CLEARANCES (FROM REAMED PERIMETER OF THE BORE MIN 42" COVER HOLE TO THE OUTER PERIMETER OF THE UTILITY) SHALL BE USED AS A GUIDELINE. THE GEOTECHNICAL REPORT CONCLUSIONS & RECOMMENDATIONS OR THE CITY'S DETERMINATION SHALL BE FOLLOWED, IF MORE RESTRICTIVE.

(A) LOCATE HDD 8 FT. CLEAR (HORIZONTALLY) FROM THE EXISTING STORM DRAIN & SANITARY SEWER MAINS. MINIMUM OF 5' HORIZONTAL CLEARANCE SHALL BE MAINTAINED FROM WATER MAINS, EXCEPT WHEN AT THE SAME ELEVATION AS WATER MAINS, 8 FT. HORIZONTAL CLEARANCE SHALL BE MAINTAINED. MINIMUM OF 5 FT. HORIZONTAL CLEARANCE SHALL BE MAINTAINED FROM FIRE HYDRANTS, ELECTRICAL CONDUITS, BOXES, & VAULTS.

(B) USE THE FOLLOWING CHART FOR MINIMUM DEPTH OF COVER (IN THE PAVEMENT & SIDEWALK AREAS) & MINIMUM CLEARANCE WHEN CROSSING UTILITIES (STORM DRAIN, SANITARY SEWER, WATER, ELECTRICAL, GAS, ETC.). CROSSING SHALL BE AT 90-DEGREE.

BORE DIAMETER	Min. DEPTH OF COVER	Min. CLEARANCE FROM CROSSING UTILITIES
6" OR LESS	4'	3'
14" OR LESS	6'	5'
24" OR LESS	10'	7'
48" OR LESS	25'	15'

**Figure B** – Bandwidth IG Minimum Depth of Cover and Minimum Clearance from Crossing Utilities as a function of reamed borehole diameter.  
 From: Construction Notes, Sheet G-1, Note 5

Assuming that the bundled 2" conduits (7 each) and 1.25" conduit (1 each) will require a reamed bore hole on the order of 12 to 14-inches in diameter (for conventional HDD installation the reamed bore hole is typically 50% larger in diameter than the outside diameter of the pipeline or bundled conduits to be installed), the minimum clearance from crossing utilities per Construction Note 5 should be 5 feet. In addition, per Construction Note 5 the minimum depth of cover should be 6 feet. This applies to EBDA's 96-inch Outfall Pipeline as well as the associated 2-inch electrical and instrumentation conduits and 1-½ to 2-inch PVC sample lines between the Marina Dechlorination Facility and the 96-inch Outfall Pipeline Flow Meter/Meter Box structure (see Figure 1).

There is a further note within the Bandwidth IG plan set on Sheet BP-1 that requires a minimum of 10 feet of vertical separation from the deepest utility at all intersections.

**"BANDWIDTH TO DIRECTIONAL BORE AND MAINTAIN  
10' MINIMUM VERTICAL SEPARATION FROM DEEPEST  
UTILITY THROUGH ALL INTERSECTIONS"**

**Figure C** – Sheet BP-1 note requires 10 feet of vertical separation from deepest utility through all intersections.

In addition to these potentially conflicting notes regarding minimum clearances (and vertical separation) from existing utilities, the "Typical Utility Crossing Detail" on sheet CD-1 shows 12" min. clear (typ.) for crossing under and over existing utilities.

### 3.0 CONCLUSIONS

1. The construction note on Bandwidth IG's plan sheet BP-1 (Figure C above), and the "Typical Utility Crossing Detail" on sheet CD-1 are in conflict with Construction Note 5 on plan sheet G-1 (Figure B above). For purposes of HDD crossing EBDA's 96-inch Outfall Pipeline and associated electrical and instrumentation conduits and PVC sample lines, Construction Note 5 on plan sheet G-1 (see Figure B herein) should govern.
2. Where the Bandwidth IG fiber optic conduits cross EBDA's 96-inch Outfall Pipeline (approximately Bandwidth IG Station 5+05) the ground surface is paved and the top of the 96-inch Outfall Pipeline is approximately 13 to 15 feet below ground surface (see Figure 2 for excerpts from EBDA record Outfall Pipeline drawings). Within the 13 to 15 feet of cover, there are multiple 2-inch electrical and instrumentation conduits and 1-½ to 2-inch PVC sample lines connecting the Marina Dechlorination Facility and 96-inch Outfall Pipeline Flow Meter and Meter Box (see Figure 1).

For a 12 to 14-inch reamed HDD bore hole diameter, the minimum depth of cover is 6 feet (in pavement and sidewalk areas) and the minimum utility clearance is 5 feet (see Figure B above). That means that the window for the HDD bore path above considering the 96-inch Outfall Pipeline alone is between 6 feet below ground surface and 8 to 10 feet below ground surface (i.e., only 2 to 4 feet available above the top of the 96-inch Outfall Pipeline). See Figure 3 for a schematic sketch of this available HDD bore path window (with respect to the 96-inch Outfall Pipeline only) at about 70 feet west of the Dechlorination Facility. Depending on the depth of the EBDA electrical and instrumentation conduits and PVC sample lines (i.e., are they very shallow or very deep?), it is possible that there will not be a 5-foot utility clearance window within the 13 to 15 feet of cover on the 96-inch Outfall Pipeline. If this is the case then the HDD bore path will have to go under the 96-inch Outfall Pipeline with a minimum of 5 feet of separation. This would put the HDD bore path for the HDD run between Station 3+67 and 7+67 where it crosses the 96-inch Outfall Pipeline at a minimum depth of about 26 to 28 feet below ground surface.



3. 10' to 12' of edge-to-edge horizontal separation between EBDA's 96-inch Force Main and the 12 to 14-inch reamed bore hole (Station 13+67 to 18+07) is adequate for future access to the 96-inch Force Main. However, the 6'x9'x12' manhole #27 at Station 18+07 does not have a stated dimension for edge-to-edge horizontal separation from the 96-inch Force Main.

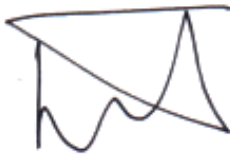
#### 4.0 RECOMMENDATIONS

1. Bandwidth IG should confirm the bundled conduits size (i.e., bundle diameter) and the planned diameter of the reamed HDD bore hole. For purposes of this technical memorandum a bundled conduit size of approximately 8 to 9 inches (for 7 – 2" conduits and 1 – 1.25" conduit) and a reamed borehole diameter of 12 to 14 inches has been assumed.
2. Bandwidth IG should reconcile the conflicts regarding the minimum clearance between the HDD bore path and crossing utilities as required by Construction Note 5 on plan sheet G-1 and the note on plan sheet BP-1 and the "Typical Utility Crossing Detail" on sheet CD-1. For purposes of EBDA's facilities Construction Note 5 on plan sheet G-1 should apply.
3. The 4'x4'x4' manhole #26 shown on plan sheet C-1 at Station 0+00 is too close to the City of San Leandro's 48-inch Force Main and EBDA's 4-inch Force Main. In order to allow for unrestricted open cut access to the 48-inch Force Main and 4-inch Force Main (for potential future repairs/maintenance) the clear distance between the outside edge of the 48-inch San Leandro Force Main and/or the outside edge of the 4-inch EBDA Force Main and the outside edge of the 4'x4'x4' manhole #26 should be a minimum of 5 feet. This 5-foot edge to edge clear dimension should be shown on plan sheet C-1 with a note to pothole both the 48-inch and 4-inch Force Main pipelines. The 48-inch Force Main and the 4-inch Force Main must both be pot holed for accurate location to ensure the minimum 5-foot edge to edge separation.
4. The 6'x9'x12' manhole #27 shown on plan sheet C-4 at Station 18+07 is shown at less than 10 feet from the edge of EBDA's 96-inch Force Main. In order to allow for unrestricted open cut access to the 96-inch Force Main (for potential future repairs/maintenance) the clear distance between the outside edge of the 96-inch Force Main and the outside edge of the 6'x9'x12' manhole #27 should be a minimum of 7 feet. This 7-foot edge to edge clear dimension should be shown on plan sheet C-4. The 96-inch Force Main must be pot holed for accurate location to ensure the minimum 7-foot edge to edge separation.
5. Every electrical and instrumentation conduit and PVC sample line between the Marina Dechlorination Facility and the 96-inch Outfall Flow Meter and Meter Box (see Figure 1) must be:
  - a. accounted for;
  - b. potholed; and
  - c. accurately located.

Once accurately located the HDD bore path must maintain a minimum of 5 feet of clearance from each conduit as well as 5 feet of clearance from the 96-inch Outfall Pipeline and with a minimum of 6 feet of cover (for a 12-to-14-inch reamed bore hole diameter).

As shown in Figure 3, the available HDD bore path above the 96-inch Outfall Pipeline is very limited with respect to the 96-inch Outfall Pipeline only. When the multiple 2 inch electrical and instrumentation conduits and 1-½ to 2-inch PVC sample lines are fully accounted for and pot holed for accurate depths they will need to be added to this or similar section. Given the minimum depths of cover and minimum clearances from crossing utilities specified in Bandwidth IG's plans Construction Note 5 (see Figure B), it may be impossible to directional drill above the 96-inch Outfall Pipeline. Bandwidth IG should provide a bore profile for final review (similar to sheet BP-1 for the A.C.F.C. Creek crossing) for crossing EBDA's 96-inch Outfall Pipeline and associated 2-inch electrical and instrumentation conduits and 1-½ to 2-inch PVC sample lines.

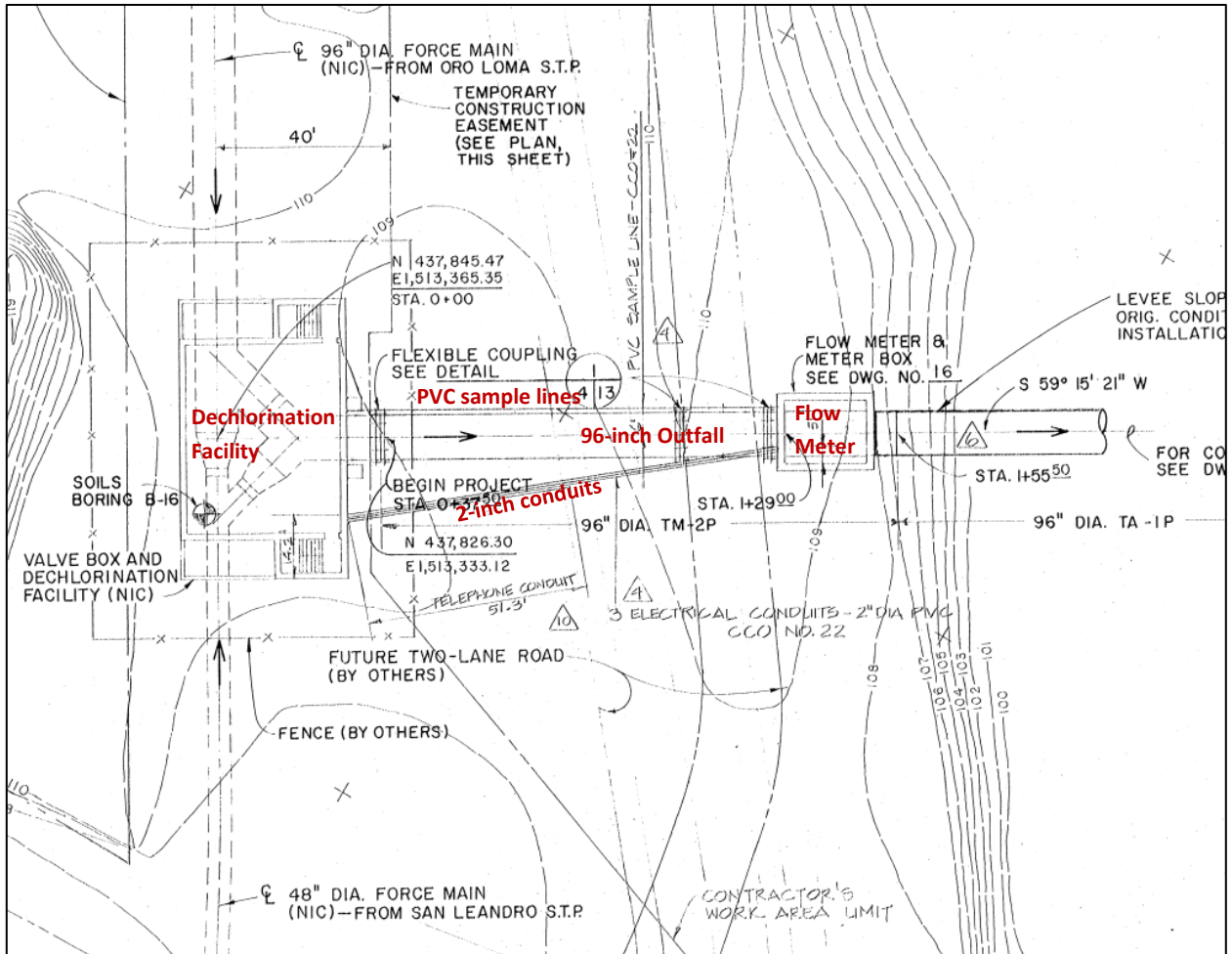
Let me know if you have any questions or need any additional review of the Bandwidth IG fiber optic conduit installation plans and specifications.



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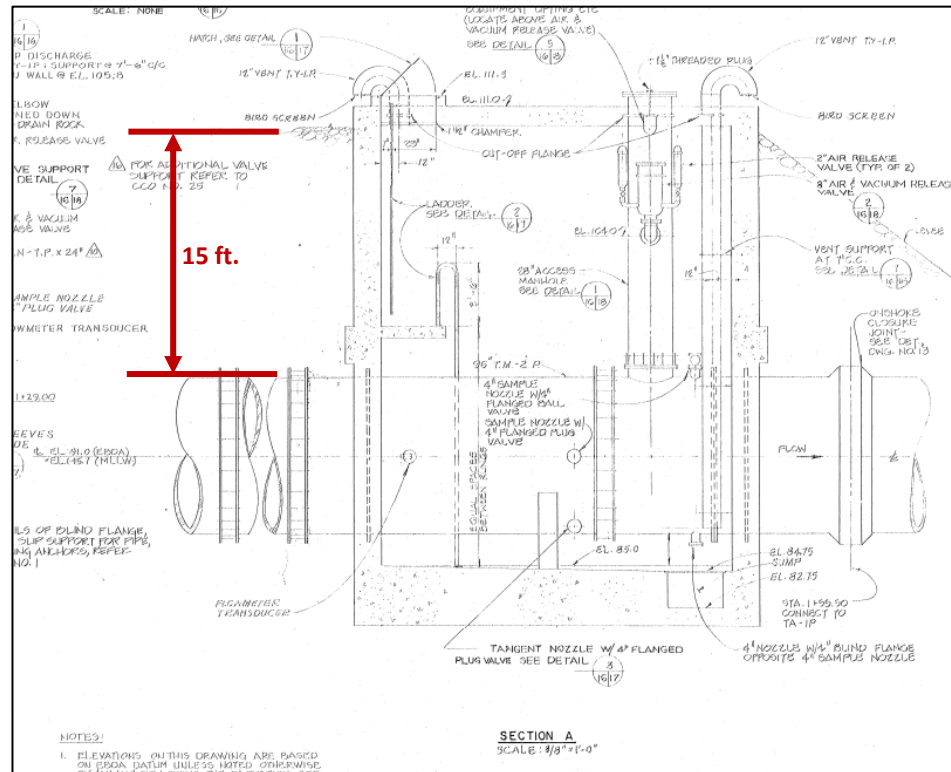
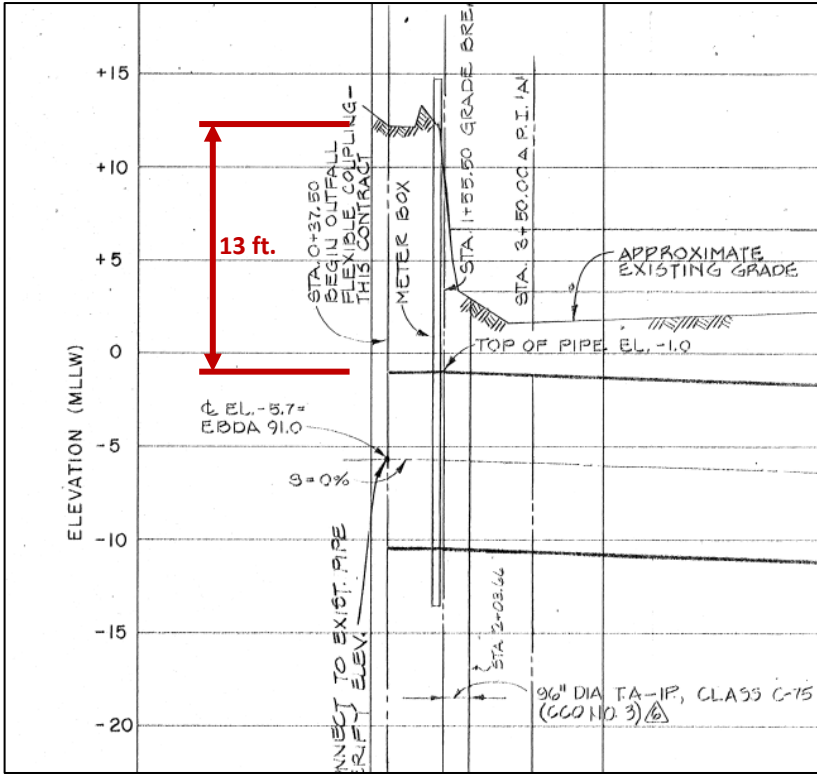
David C. Mathy  
Principal Engineer  
C.E. 28082  
G.E. 569





**Figure 1** – Excerpt from EBDA record drawings for the 96-inch Outfall Pipeline, Drawing No. 4. The Marina Dechlorination Facility to the left and the 96-inch Outfall Pipeline Flow Meter and Meter Box to the right. The length of the 96-inch Outfall Pipeline between the two structures is 95.5 feet.

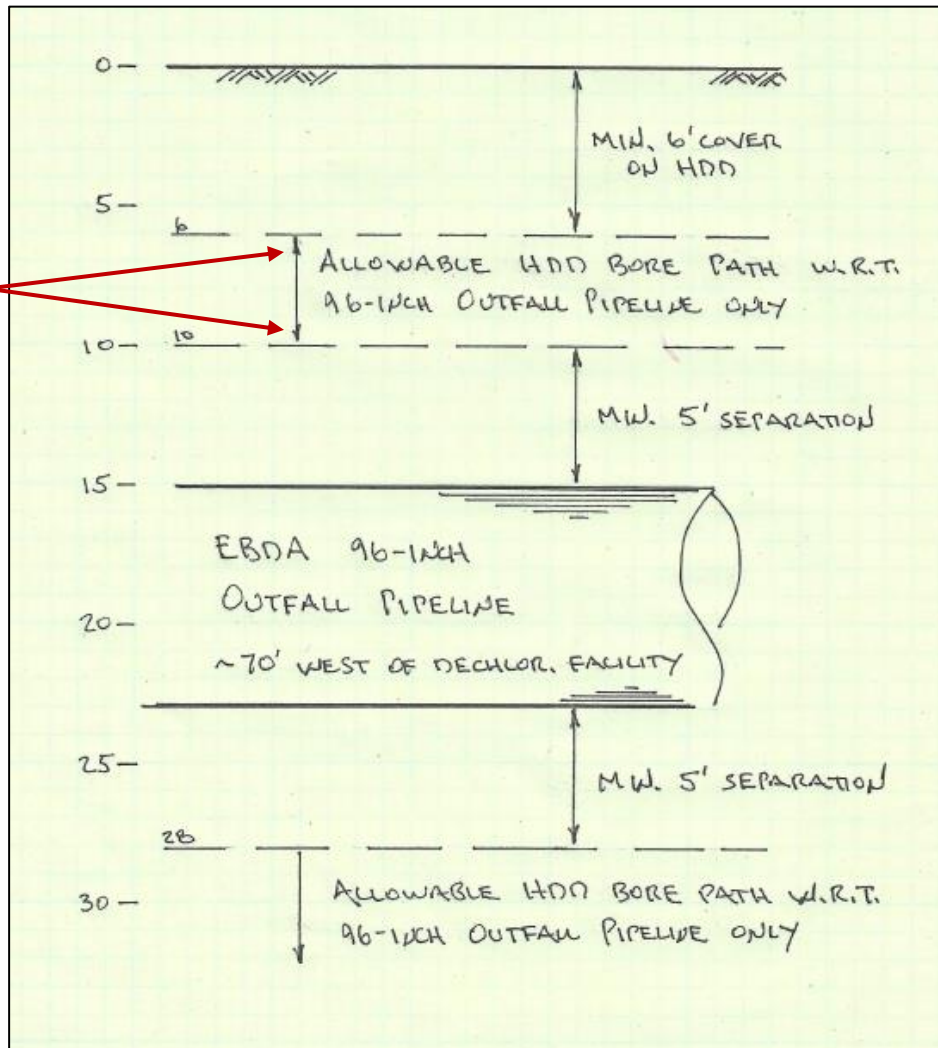
Note the plan view location of 2-inch electrical and instrumentation conduits and 1-½ to 2-inch PVC sample lines between the Dechlorination Facility and Flow Meter and Meter Box. All conduits and pipes between the Dechlorination Facility and Flow Meter and Meter Box must be fully accounted for and potholed for accurate location and depth for HDD bore path design (see Figure 3).



**Figure 2** – The depth of cover on the 96-inch Outfall Pipeline from record drawings varies from 13 feet at the Marina Dechlorination Facility (upper section) to 15 feet at the Flow Meter/Meter Box (lower section). Depth of cover at crossing to be confirmed by potholing.

From EBDA Outfall Pipeline record drawings No. 5 and No. 16

This upper HDD bore path window may close as a function of the pot holed depths of electrical and instrumentation conduits and PVC sample lines.



**Figure 3** – Schematic section at 96-inch Outfall Pipeline crossing approximately 70 feet west of the Dechlorination Facility illustrating the very narrow allowable HDD bore path above the Outfall Pipeline (only 4 feet). Assumes 12 to 14-inch reamed HDD bore hole and the minimum depth of cover and minimum clearance from crossing utilities from Bandwidth IG plans Construction Note 5 (see Figure B).

Note that this schematic section does not include the depths of multiple electrical and instrumentation conduits and PVC sample lines between the Dechlorination Facility and 96-inch Outfall Pipeline Flow Meter/Meter Box as shown in Figure 1. Once accurately accounted for and located these conduits need to be added to this evaluation of allowable HDD bore path depth.

**ITEM NO. OM6 MOTION AUTHORIZING THE GENERAL MANAGER TO EXECUTE A CHANGE ORDER TO THE PURCHASE ORDER WITH PETERSON CATERPILLAR FOR DIESEL ENGINE REPAIR AND MAINTENANCE IN THE AMOUNT OF \$74,245 FOR A TOTAL PURCHASE ORDER VALUE OF \$99,244**

**Recommendation**

Approve the motion authorizing the change order.

**Strategic Plan Linkage**

1. **Operations & Maintenance:** Ensure reliable operations & maintenance of the EBDA system to protect public health and the Bay.
  - a. Implement EBDA's Asset Management Plan.

**Background**

On an annual basis, EBDA engages Peterson Caterpillar for diesel engine repair and maintenance. Peterson Caterpillar performs routine maintenance on EBDA's generator diesel engines at HEPS and MDF, as well as the generator engine and two pump engines at OLEPS, and also provides as-needed support when issues with the engines arise. Staff issued a Purchase Order (PO) to Peterson Caterpillar at the start of this Fiscal Year for \$24,999 for routine and as-needed diesel engine repair and maintenance.

During the March storms, OLEPS Diesel Engine #2 (Pump #3) experienced an issue with the engine surging under load. In late March, Peterson Caterpillar performed a service call to troubleshoot the issue. During the service call, the diesel engine operated normally without any issues. The issue only occurs intermittently and has been hard to replicate.

On October 11, 2023, Peterson Caterpillar completed a major service on OLEPS Diesel Engine #2 (Pump #3). The major service included replacing all filters, fluids, thermostats and hoses, replacing the oil cooler, performing valve adjustments, and checking injector timing. The pump was run and operated without any issues. The Peterson Caterpillar Service Technicians believe that they found and corrected the cause of the engine surging issue. The pump will be test run several times over the next week to ensure reliable operation and to verify that the engine surging issue was eliminated.

The March work was completed under the PO for last FY. The work completed on October 11<sup>th</sup> was performed under the existing PO.

**Discussion**

Staff is proposing a change order to Peterson Caterpillar's PO in the amount of \$74,245 for a total PO of \$99,244. Work under the proposed change order would include major service on OLEPS Diesel Engine #1, major service on the OLEPS generator diesel engine, and minor service on the HEPS and MDF generator diesel engines. Major service was completed on the HEPS and MDF generator diesel engines three years ago. An

allowance has also been made for a new actuator/governor for Diesel Engine #2 in case it is deemed necessary to correct the engine surging issue.

The following table summarizes completed and planned work under Peterson Caterpillar's PO during FY 2023/2024:

<b>Task</b>	<b>Cost</b>
MDF Generator Minor Service	\$2,206
HEPS Generator Minor Service	\$2,956
OLEPS Generator Major Service	\$3,845
Actuator/Governor for Diesel Engine #2	\$6,777
OLEPS Diesel Engine #1 (Pump #2) Major Service	\$24,730
OLEPS Diesel Engine #2 (Pump #3) Major Service	\$24,730
Tax & Contingencies for Above Work	\$14,000
Additional As-Needed Work This FY	\$20,000
<b>Total</b>	<b>\$99,244</b>
Previously Authorized	\$24,999
<b>Proposed Change Order</b>	<b>\$74,245</b>

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