DELTA CONVEYANCE DESIGN & CONSTRUCTION AUTHORITY

October 17, 2024

Delta Conveyance Design and Construction Authority
Board of Directors

Subject: ***Final Meeting Materials for the October 17 2024, Regular Board Meeting***

Members of the Board:

The Delta Conveyance Design and Construction Authority (DCA) Board of Directors will have a Regular Board Meeting, scheduled for **Today, October 17, 2024 at 1:30 p.m.** and will be a **hybrid** meeting. The Board will meet in closed session and anticipate opening the Regular Session at approximately **2:00 p.m**. Members of the public may attend the meeting in person or virtually. The call-in and video information, as well as meeting location is provided in the attached agenda. Meeting information will also be posted on the dcdca.org website.

Please note that the DCA continues to follow current State and Local COVID-19 guidelines and will comply with public health recommendations regarding public meetings and social distancing efforts. Any meeting changes or cancellation will be communicated.

Enclosed are the Final materials for the Board meeting in a PDF file, which has been bookmarked for your convenience.

Regards,

Graham Bradner
DCA Executive Director

DELTA CONVEYANCE DESIGN AND CONSTRUCTION AUTHORITY
BOARD OF DIRECTORS MEETING

REGULAR MEETING

Thursday, October 17, 2024
1:30 p.m.
Hybrid (Teleconference) Meeting

DCDCA Boardroom
980 9th Street, Suite 100
Sacramento, CA 95814

TELECONFERENCE LOCATIONS:

1) Valley Water, 5700 Almaden Expressway, Headquarters Boardroom, San Jose, CA 95123
2) Metropolitan Water District, 700 N. Alameda Street, Conference Room 12-310, Los Angeles, CA 90012

CONFERENCE ACCESS INFORMATION:
Phone Number: (669) 444-9171 Access Code: 88146651399#

Virtual Meeting Link: https://dcdca-org.zoom.us/j/88146651399?from=addon

Please join the meeting from your computer, tablet, or smartphone.

Additional information about participating by telephone or via the remote meeting solution is available here: https://www.dcdca.org

AGENDA

Except as permitted by Government Code section 54953(f), Directors will attend the meeting from the DCDCA Boardroom or any of the teleconference locations. Members of the public may attend in person at these locations or remotely through the virtual meeting link above. Assistance to those wishing to participate in the meeting in person or remotely will be provided to those requiring accommodations for disabilities in compliance with the Americans with Disabilities Act of 1990. Interested person must request the accommodation as soon as possible in advance of the meeting by contacting the DCA support staff at (888) 853-8486 or info@dcdca.org. Members of the public may speak regarding items on the agenda during those items and when recognized by the Chair. Speakers are limited to three minutes each; however, the Chair may limit this time when reasonable based on the circumstances. Persons wishing to provide public comment remotely on Agenda Items are encouraged to complete a public comment request form at: https://tinyurl.com/dcapubliccomment by 2:00 pm or through the QR code below. In addition, members of the public may use the "raise hand" function (*9 if participating by telephone only) during the meeting to request the opportunity to speak. Additional information will be provided at the commencement of the meeting.

1. CALL TO ORDER

2. ROLL CALL – Any private remote meeting attendance will be noticed or approved at this time.

3. CLOSED SESSION

   (a) CONFERENCE WITH LEGAL COUNSEL

   Significant exposure to litigation pursuant to Government Code Section 54956.9(d)(2):

      i. *Tulare Lake Basin Water Storage District v. DWR*, Sacramento Superior Court, Case No. 24WM000006 (and related cases Nos. 24WM000008, 09, 10, 11, 12, 14, 17, 62, 76)

4. OPEN REGULAR MEETING & PLEDGE OF ALLEGIANCE – At approximately 2:00p.m.

5. PUBLIC COMMENT

Members of the public may address the Authority on matters that are within the Authority's jurisdiction but not on the agenda at this time. Speakers are generally limited to three minutes each; however, the Chair may further limit this time when reasonable based on the circumstances. Persons wishing to speak may do so remotely through the electronic meeting link, by scanning the QR Code, or teleconference number when recognized by the Chair. The DCA encourages public comments and requests that speakers present their remarks in a respectful manner, within established time limits, and focus on issues which directly affect the DCA or are within its jurisdiction.

6. APPROVAL OF MINUTES

   (a) August 15, 2024 Regular Meeting Minutes

7. DISCUSSION ITEMS

   (a) October Monthly Board Report

   Recommended Action: Information Only.

   (b) Adopt Resolution Approving the Amended Travel Policy

   Recommended Action: Adopt Resolution.

   (c) Findings of the Independent Technical Review (ITR) Committee Report

   Recommended Action: Information Only.

(d) Sr. Leadership Spotlight – Rebekah Green, DCA Property Acquisition Manager

Recommended Action: Information Only.

8. REPORTS AND ANNOUNCEMENTS

Members of the public may address the Authority on matters pertaining to the Reports at this time.

(a) General Counsel's Report

(b) Treasurer's Report

(c) DCP Communications Report

(d) Verbal Reports, if any

9. FUTURE AGENDA ITEMS

10. ADJOURNMENT

* * * * * *

The Board of Directors meet bi-monthly, proposed next scheduled meetings:

December 19, 2024, Regular Board Meeting at 2:00 p.m. (1:30 p.m. if there is a closed session).

February 20, 2025, Regular Board Meeting at 2:00 p.m. (1:30 p.m. if there is a closed session).

BOARD OF DIRECTORS MEETING

MINUTES

REGULAR MEETING

Thursday, August 15, 2024
1:30 p.m.
(Paragraph numbers coincide with agenda item numbers)

1. CALL TO ORDER

The regular meeting of the Delta Conveyance Design and Construction Authority (DCA) Board of Directors was called to order in person, by teleconference, and remotely - Conference Access Information: Phone Number: (669) 444-9171, Code: 82512742661#, https://dcdca-org.zoom.us/j/82512742661?from=addon at 1:30 pm.

2. ROLL CALL

Board members in attendance from the DCA Boardroom were John Weed, Martin Milobar, Miguel Luna, and Robert Cheng. Tony Estremera participated from Valley Water Headquarters Boardroom, Adnan Anabtawi participated from Mojave Water Agency and Gary Martin participated from Santa Clarita Valley Water Agency.

Alternate Director in attendance from the DCA Boardroom was Michael Plinski. Alternate Directors Sarah Palmer, Dan Flory and Dennis LaMoreaux participated remotely.

DCA staff members in attendance were Graham Bradner, Valerie Martinez and Josh Nelson.

Department of Water Resources (DWR) member in attendance was Carrie Buckman.

3. CLOSED SESSION

a) CONFERENCE WITH LEGAL COUNSEL

Significant exposure to litigation pursuant to Government Code Section 54956.9(d)(2):

i. *Tulare Lake Basin Water Storage District v. DWR*, Sacramento Superior Court, Case No. 24WM000006 (and related cases Nos. 24WM000008, 09, 10, 11, 12, 14, 17, 62, 76)

4. OPEN REGULAR MEETING & PLEDGE OF ALLEGIANCE- At Approximately 2:20 p.m.

President Milobar announced that there was no reportable action from closed session.

5. APPROVAL OF MINUTES: June 20, 2024, Regular Board Meeting.

Recommendation: Approve the June 20, 2024, Regular Board Meeting Minutes

Motion to Approve Minutes from June 20, 2024, as

Noted:	Cheng
Second:	Luna
Yeas:	Milobar, Martin, Luna, Estremera, Cheng, Anabtawi
Nays:	None
Abstains:	Weed
Recusals:	None
Absent:	None
Summary:	6 Yeas; 0 Nays; 1 Abstain; 0 Absent. (Motion passed as MO 24-08-01).

6. DISCUSSION ITEMS:

a) August DCA Monthly Report

Information Item

DCA Executive Director, Graham Bradner, presented to the Board the Monthly Report for July 2024. Mr. Bradner started with Section 1, highlighting that at this time the DCA is focused on financial and controls related topics, closing out the financials from the last fiscal year that ended on June 30, 2024. The DCA is working on new task orders and contracts based on the budget approved by the board in June. He stated that the board approved the sustainability policy last year and there have been efforts to advance the policy into a programmatic sustainability management plan. The strategy development allows DCA to develop the sustainability goals, metrics, reporting requirements and other parts to capture the programmatic plan.

Mr. Bradner also mentioned that the DCA has been working on several quality, health and safety items through internal audits with program team members. Also connected to quality, we have also been performing a process optimization review. Looking at our internal processes and in cooperation with our partners to that we have a well-founded basis.

In addition, Mr. Bradner stated that the administrative team continues to support directors, assist with tours and improve the audio issues in the boardroom.

Mr. Bradner continued to the engineering team activities, our primary efforts continue to be supporting the DWR permitting efforts. We have also continued with the public roll out of the updated total program cost estimate through presentations. These activities will continue through the Fall and help acquaint individuals with the new information, as well

as make sure there is an opportunity for people to hear from us how the information was developed. Coupled with presentations from the department's consultants on the economic analysis that was performed using the cost information as one of the principal inputs. Currently, there is a preferred project engineers reports that is being worked on. This allows for engineering documentation to be available to support the EIR (Environmental Impact Report). Some of the information was supplemented through an additional addenda and various memos that were prepared to support the environmental analysis. He stated that now that there is a preferred project selected by the department through the FEIR (Final Environmental Impact Report) for further study, much of the information has now been removed related to the other alignments that are no longer being considered. This allows for one cohesive engineering document that includes all the engineering bases for the project as it's described in the EIR. This is an internal document for starters but will be a key foundational document for future procurements.

Mr. Bradner stated that as part of the cost estimate work, there has been development of potential design innovations which could reduce cost, schedule and risk. DCA will continue to work on the innovations captured. There have been several reasonable credible innovations as part of the secondary estimate with the cost release.

Mr. Bradner continued to the fieldwork activities, the team completed the spring program. There is still laboratory testing and documentation work that is taking place. The current status of the preliminary injunction, the field teams are dormant for the time being however working to ensure that the final data is documented, into the databases and incorporated into the models. This will be available for the engineering team to use.

Mr. Bradner continued to Section 3: Budget, DCA has an approved budget of $44.0M, this has been established within the program control system with a committed amount of $33.6M. There is an underrun of about $6.4M. The underrun is due to the investigative work that is currently suspended for the Summer and Fall programs. DCA has incurred to date $351KPrepayments typically come out early, the rest of the contractor invoices are working their way through the process.

Mr. Bradner continued on to Fiscal Year (FY) 23/24, due to DCA continuing to close invoices that are coming in from June or anytime during the last FY. The FY usually closes with all invoices processed by October-November, during this time frame the financial from the previous FY will be added to the monthly report to provide transparency of the project. FY 23/24 has an approved budget of $40.44M with an incurred at $31.23M and an estimate at completion at $32.56M. DCA is forecasting an underrun of $8.8M. Mr. Bradner stated that there is nothing that we should have done that we didn't do last FY. There were a number of items we anticipated and budgeted at the beginning of the year that we elected not to engage in or fully implement. He went on to mention, we tend to carry a reasonable unallocated reserve which was not tapped in to last year, and he is content with the performance of the year.

Mr. Bradner continued to Section 5: Program Schedule and stated that schedule is broken into phases including the program management phase, program implementation, pre-design and pre-implementation elements of program delivery. DCA is showing within the program delivery the Geotech sub schedule activities that would include a summer 24 program, a Fall 2024 program and Spring 2025 program. This was part of the plan when DCA developed the budget and believe that it is the right thing to do to acknowledge that plan and acknowledge those activities even though they're currently in joined. The plans will be tracked throughout the year. In addition, there are various other activities that have begun and will report to the board if any of them appear to lag or need attention during the monthly report.

Director Cheng stated that there are large amounts of funds in the Executive Office and Engineering section of the budget. Director Cheng understands that the underrun of the engineering part is due to activities but would like clarification on the Executive Office portion.

Mr. Bradner stated to the board that most of the funds in the Executive Office section are from the unallocated reserve. In table 2A of the report, there is more detail of the items within the Executive Office section and there is an undefined allowance as a surplus variance of $1.85M

President Milobar stated if the refinements are saving money to be used for the following FY of 25/26.

Mr. Bradner stated that that is a correct statement.

No further comments or questions were received from the Board, nor were any public comment requests received.

b) Adopt Resolution Approving the Second Amendment to the AECOM Technical Services, Inc. Agreement for Geotechnical and Fieldwork Services

Approve Resolution

DCA Chief Contracting Officer, Adrian Brown explained to the board that AECOM is requesting to extend their contract. AECOM provides geotechnical exploration reporting services. AECOM received their contract through formal public competitive solicitation conducted in late 2021. The contract expires January 2025. Mr. Brown stated that since they are heavily involved in providing geological services to the DCA and its operational and management requirements. Staff would like to recommend a 23-month extension to continue their services at this juncture.

Director Cheng stated that he is supportive of the continuity of the services and would like to know if DCA is following the Metropolitan contracting process or best practice.

Mr. Brown stated that DCA adopted their own purchasing and procurement policy and follows that policy including a request for qualifications from AECOM.

DCA General Counsel, Josh Nelson stated that under DCA's Joint Powers Agreement (JPA) DCA does follow the procurement rules applicable to Metropolitan Water District except as modified by the Joint Exercise of Power Agreement (JEPA). There are additional requirements that DCA agreed to in that contract with DWR.

Director Cheng stated that it possibly would be more disruptive if DCA were to do a procurement instead of extending the contract with AECOM.

Mr. Bradner stated that DCA did consider the status of the geotechnical program and the data collection program. At the time the contract was reprocured we were thinking about the conclusion of the planning and permitting phase. Mr. Bradner went on to mention that that the DCA revisited the JEPA and acknowledged the planning and permitting phase does not stop with conclusion of the California Quality Environmental Act (CEQA) process. There are several other major permit activities that are ongoing and the scope of the Geotech contract was intended to align with the planning and permitting phase which will likely extend through the end of 2026. Mr. Bradner stated that there would be a need to procure a larger scale geotechnical contract associated with the implementation phase, at this time DCA is not there yet and the work that we are intending for the next couple of years is in line with the work we have been doing the last couple of years.

President Milobar stated if there was a request for additional funding.

Mr. Bradner stated that that was correct, and the request is to increase the contract total from $30M to $65M. This amount is reflective of the level of work that has been scoped out for the next couple of years, through the end of 2026.

President Milobar stated if the additional amount is now due to being able to define all the geotechnical information that is needed for the new alignment.

Mr. Bradner stated that prior to selecting a preferred project, there was investigative work spread out through the Delta. Now that there is a preferred project, work must be completed along the selected alignment. Mr. Bradner stated that at this time, the information provided now does not replace what will need to be done for the implementation phase of the design level investigative work.

Director Milobar asked how DCA determined the extent of the increased expenditure that is being requested.

Mr. Bradner stated that DCA reviewed the existing alignment and all the information that was collected and pulled from other sources in the database. This allows the ability to

identify gaps within the system of subsurface information along the tunnel alignment. In some cases, there are miles between existing data points. This limits what DCA can understand of the conditions along the tunnel profile. Mr. Bradner stated that filling in the gaps will provide context that will inform and refine the project, consider potential innovations in the future and position the project for consideration at the implementation phase.

President Milobar stated if there could be adjustments to cost made to the increase request.

Mr. Bradner stated that there would be no anticipation of an adjustment. The requested amount would extend through the end of calendar year 2026. If there was a change, DCA would advise the board of the basis of any change to the amount.

President Milobar stated that it would be inefficient to start over with a different contract. Also, if DCA is content with the work that has been performed with AECOM.

Mr. Bradner stated that AECOM is performing well and would be inefficient to start a new contract at this moment.

Director Cheng stated that with the approved budget for FY 24/25 how much is going towards the FY 24/25 versus the FY 25/26.

Mr. Bradner stated that the current approved budget is $43M and this includes costs for geotechnical exploration. This is sufficiently covered by the current budget contract. The issues are that there is not enough time coverage for the full FY and there needs to be an amendment to do any work in the second half of the FY. There is consideration for potential additional contract capacity.

Recommendation: Adopt by motion to Approve the Second Amendment to the AECOM Technical Services, Inc. Agreement for Geotechnical and Fieldwork Services

Motion to Approve the Second Amendment to the AECOM Technical Services, Inc. Agreement for Geotechnical and Fieldwork Services

Noted:	Estremera
Second:	Luna
Yeas:	Milobar, Martin, Luna, Estremera, Cheng, Anabtawi, Weed
Nays:	None
Abstains:	None
Recusals:	None
Absent:	None
Summary:	7 Yeas; 0 Nays; 0 Abstain; 0 Absent. (Motion passed as Resolution 24-09).

No comments or questions were received from the Board, nor were any public comment requests received.

c) Adopt Resolution Approving the Second Amendment to the Launch Consulting, LLC Agreement for Information Technology Services

Approve Resolution

DCA Chief Contracting Officer, Adrian Brown presented to the board the company Launch that provides DCA with services. In 2019 a formal competitive solicitation was conducted and Launch's predecessor in interest was selected to provide the services. It was determined that this provider would provide the services through the length of the project. The contract stated that it would allow DCA to approve a series of 5-year extensions and this is the first of the 5-year extension. Staff recommend adding an additional $2.97M to the contract to get through the next 5 years.

President Milobar stated what the cost would be of the total contract.

Mr. Brown stated that the total max compensation would be $5.27M.

President Milobar stated if there would be other extensions.

Mr. Brown stated that yes, there would be other extensions as that is how the original contract was set up to allow 5-year extensions for the life of the project.

President Milobar stated if they are satisfied with the current service provider.

Mr. Bradner stated that they are satisfied with the services provided and feel that it is in DCA's best interest to continue with the current service provider.

Director Anabtawi asked if the rates are in line with what is expected with inflation and Consumer Price Index (CPI) and what would trigger interest to recompete this type of work. Mr. Brown stated that the contract manager reached an amount that would allow the contract amount to reach the next 5 years. Mr. Brown stated that the performance would have a large impact and as stated in the clause, that the DCA can terminate the contract at any time with Launch. This would then juncture a new competitive solicitation.

Recommendation: Adopt Resolution Approving the Second Amendment to Launch Consulting LLC, dba Launch Consulting., Agreement for IT Services.

Motion to Adopt Resolution Approving the Second Amendment to Launch Consulting LLC, dba Launch Consulting., Agreement for IT Services

Noted: Luna
Second: Anabtawi
Yeas: Milobar, Martin, Luna, Estremera, Cheng, Anabtawi, Weed
Nays: None
Abstains: None
Recusals: None
Absent: None
Summary: 7 Yeas; 0 Nays; 0 Abstain; 0 Absent. (Motion passed as Resolution 24-10).

No comments or questions were received from the Board and no public comment requests received.

d) DCA Board Appointments for Office of President, Vice President, Secretary, and Treasurer

Appoint Board Officers by Motion

DCA Board Director, Miguel Luna proposed that board move forward as a slate and nominated Director Milobar as President, Director Estremera to be Vice President, Director Martin to continue as secretary and to re-appoint Katano Kasaine as Treasurer for FY 24/25-FY 25/26.

Board members agreed with the nominations, no further discussion on the appointment of officers.

Recommendation: DCA Board Appointments for Office of President, Vice President, Secretary, and Treasurer

Motion to Appoint for Officer of President, Vice President, Secretary, and Treasurer

Noted: Luna
Second: Martin
Yeas: Milobar, Martin, Luna, Estremera, Cheng, Anabtawi, Weed
Nays: None
Abstains: None
Recusals: None
Absent: None
Summary: 7 Yeas; 0 Nays; 0 Abstain; 0 Absent. (Motion passed as MO 24-08 02).

No comments or questions were received from the Board, nor were any public comment requests received.

e) DCA Internship Program Update

Information Item

DCA Human Resources Manager, Marcie Scott presented to the board the DCA 2024 Summer internship program. The program has 4 interns, 1 graduate student from UC Davis who is now studying to environmental policy and management, 2 undergraduate civil engineering students that attend UC Irvine and UC Davis and 1 undergraduate student studying environmental and economics with a minor in statistics attending UC Santa Cruz. The 4 students completed their finals on June 14, 2024, and went straight to DCA and started on Monday, June 17, 2024, which demonstrates their enthusiasm and commitment to learning. Ms. Scott stated to the board that DCA holds these internship programs because students learn about statewide water resource issues. UC Davis has an excellent curriculum with a lot of interesting water classes. The interns enter the internship program with some base knowledge of water and expand their resources and understanding of the dynamics that go on around water resource issues statewide. The program is also a great tool for the interns to learn about public sector work and the impact of the public sector on large difficult and complex projects. Ms. Scott stated that the interns can connect and work with technical experts, colleagues at Delta Conveyance Office (DCO) and others at DWR. On the first day of the internship, DCA takes the interns to the Sacramento Municipal Utility District Museum, this museum has an excellent display on water and water resources. DCA Chief of Staff, Claudia Rodriguez, gave the students a tour of the museum.

Ms. Scott presented to the board a graph that showed a wide variation of water content in the mountains through snow and is a great tool for the interns to see. The interns had a social luncheon with the DCA board members prior to the June board meeting. This gave the interns the opportunity to learn about the members, their background and understand experience and knowledge of water the members have. They also had the chance to attend the board meeting and learn the protocols and the project's transparency process.

Ms. Scott stated to the board that the interns had the opportunity to explore parts of the project including doing a Delta Tour, tour the ISI Fish Screen facility and visited the Geotech lab and see the different types of soil testing. The interns also had the opportunity to meet with DCA staff members and learn about the tunnel boring machine and how it works, sustainability and the concepts used and lunches to learn about the different career opportunities and options when choosing a career path.

Ms. Scott stated to the board that now that there is a more defined project and the cost benefit analysis was released, this provided valuable information to the interns. One intern worked on a mock Geotech investigation plan and created her own plan. This plan consisted of the interns using Gantt charts, excel sheets and ARCGIS. The interns had to give a presentation on their last day regarding information they had learned and how that information had paved a path forward for them. Ms. Scott stated that this internship allowed them to understand the complexity around resource management in California, understand long-term planning as well as understand how public and private sectors work together and how they work differently. The interns learned how important communication skills and good writing are due to learning about technical writing and

being able to speak about engineering concepts in a way that people can understand. This internship program has helped the interns see a means to achieve their goals and how to enact positive environmental change.

Ms. Scott stated that Chaves and Associates is the employer that supports this project.

Director Luna asked how many interns have gone through the program.

Ms. Scott stated that 13 interns have gone through the internship program.

Director Luna stated if DCA reaches out to the students, or the students reach out to DCA.

Ms. Scott stated that students reach out to DCA and DCA does their own reaching out.

Director Luna stated that it was a pleasure meeting the interns and happy to see their intelligence and their inquiry about the work that the board does and how the interns will use that to their own personal stuff.

President Milobar stated that he received a letter from on the of the interns and appreciated their thoughts.

Director Weed stated that he is a strong supporter of the internship programs and water education foundation also has an active program. The DCA internship program would complement the program.

Director Martin thanked Ms. Scott and DCA for creating such a comprehensive and meaningful experience for the interns. This program could help decide whether the students proceed with their career in water or make a change.

President Milobar stated that it is a great program and asked what the largest group of interns has been.

Ms. Scott stated that the largest group of interns was five and that was the first year of the program and continue to make the program better.

President Milobar stated that he would like to know where the students end up in 2-3 years.

Director Cheng stated that he supports the internship program and believes that it is a very robust program that benefits the industry. Companies allowing the mentors to spend time with the interns is a great opportunity and believes the mentors that were listed are great. Director Cheng also mentioned that communication is very important.

Director Estremera believes that the internship program is a great thing and mentioned that Valley Water also has year-round programs that the interns can participate in.

Director Anabtawi stated that this is a great program that leaves a lasting impression on the interns. This is good for them to learn about the complexity of the program and the careers in the business, challenges and the way things are communicated.

No further comments or questions were received from the Board, nor were any public comment requests received.

7. STAFF REPORTS AND ANNOUNCEMENTS:

President Milobar stated that members of the public may address the Authority on matters pertaining to the Reports at this time.

No public comment requests were received.

a. General Counsel's Report

DCA General Counsel, Josh Nelson, informed the Board that he continues to provide legal assistance as requested. This includes assisting with the procurement and other action items on the agenda. Mr. Nelson provided one noteworthy update. The Attorney General recently determined that there is a requirement for local agencies to provide accommodation for qualifying directors to attend meetings remotely under the ADA. The directors can attend from a private remote meeting location if they use a 2-way video, audio streaming and disclose anyone over the age of 18 in their room. These are similar to requirements under AB 2449 except there is no on the number of qualifying meetings. Mr. Nelson stated that we will work with any affected director if this is available.

President Milobar stated that they had been following that procedure for several years.

Mr. Nelson stated that the statement was correct except that if a director needed to attend from a private meeting location more than the maximum number of times permitted in the Brown Act, there may be an ability to do so now.

President Milobar stated what the maximum number of times to do that was.

Mr. Nelson stated that it was twice a year for the DCA.

Director Anabtawi stated that without having to post one's particular location or have it been made available for access by the public yet disclosing those adults within the room is required.

Mr. Nelson confirmed that that was correct. If a director needed to attend from a private home without making that location public or listed on the agenda, this could be an opportunity to do so.

No further comments or questions were received from the Board, nor were any public comment requests received.

b. Treasurer's Report

Bernadette Robertson, DCA Controller, presented on behalf of DCA Treasurer, Katano Kasaine. Ms. Robertson informed the Board that the beginning cash balance for the Delta Conveyance Design and Construction Joint Powers Authority (Authority) as of June 1, 2024, was $2,052,064. Receipts for June 2024 totaled $237,658 representing contributions from the Department of Water Resources, Delta Conveyance Office (DCO), for payment of the Authority's obligations. During the same period, disbursements totaled $1,536,858 resulting in an ending cash balance of $752,864 as of June 30, 2024.

Ms. Robertson stated that as of June 30, 2024, the Authority's outstanding receivables amounted to $5,254,815 consisting of 20 invoices issued to the DCO. Deposits, comprising of office lease security and court ordered entry permit reserves, and prepaid expenses were $1,023,073 and $76,331, respectively, as of June 30, 2024. For the same period, balances for accounts payable and advances were $5,181,717 and $800,000, respectively. The net position as of June 30, 2024, was $1,125,366, which included $1,023,073 of restricted net position from deposits and $102,293 of unrestricted net position. for payment of the Authority's obligations. During the same period, disbursements totaled $6,771,373 resulting in an ending cash balance of $2,052,064 as of May 31, 2024.

Ms. Robertson stated that this is preliminary due to the authority's financial statement being under audit.

No comments or questions were received from the Board, nor were any public comment requests received.

c. DCP Communications Report

DCA Communications Manager, Valerie Martinez informed the Board that Graham Bradner, Carrie Buckman and DR. David Sunding completed a podcast with What Matters Water TV with Charlie Wilson who is with the Southern California Water Coalition. This podcast should be ready in a couple of weeks. Ms. Martinez stated that the current goal is to continue to push out information about the project, the cost estimate and the benefit cost analysis to several different audiences using several different platforms. DCA has a new Instagram page and encourages everyone to follow the page. This includes following DCA's Facebook page, you tube and X (formerly known as Twitter). DCA will also be moving forward with a LinkedIn page. Ms. Martinez continued to present to the board that there

are a few new fact sheets that have been posted on the website in English, Spanish and Chinese regarding the Bethany Alignment.

Ms. Martinez stated to the board that the team attended the building industry at the Southern California Water Conference. This was a great place to gather information and listen to the industry itself talk about the project and how people are positive about moving the project forward. The DCA will also be attending the Urban Water Institute conference as this is also a great opportunity to give people the opportunity to ask questions about the project. Ms. Martinez stated that at these conferences, DCA has a booth and has materials, videos and information for people to take.

Ms. Martinez stated that Graham Brander, Carrie Buckman and Dr. David Sunding are presenting at multiple member agencies and informing the community about the project.

Ms. Martinez added that Crestline Lake Arrowhead has a new fact sheet that is available in English, Spanish and Chinese. All the information that is presented Is available on the DCA website.

Director Cheng stated that he appreciates all the work that is being done.

Director Luna also appreciates all the work that is being done.

Director Weed would like to know what conferences DCA plans to participate in.

Ms. Martinez stated that that information can be provided.

President Milobar stated that the presentations that Mr. Bradner, Ms. Buckman, and Dr. Sunding gave were excellent and provide valuable information. Having someone as accomplished as Dr. Sunding working on the number was very impressive. President Milobar Would like more information regarding the public comment that pushed back on the numbers.

Ms. Buckman stated that Dr. Jeff Michael from the University of the Pacific wrote a paper with a rebuttal to Dr. Sunding's evaluation and Dr. Sunding has responded and is available on the DWR website. Dr. Sunding's response did mention that Dr. Michael's points did not have merit. Ms. Buckman stated that DWR sent out an eblast with a lot of information including the rebuttal.

No further comments or questions were received from the Board, nor were any public comment requests received.

d. DWR Environmental Manager's Report

DWR Environmental Manager, Carrie Buckman presented to the Board the two (2) main focuses are the Endangered Species Act (ESA) and the California Endangered Species Act

(CESA) compliance and the water rights process. The ESA and the CESA process are moving forward as the documents are all with the resource agencies for evaluations.

Ms. Buckman stated that the water rights process is gearing up, DWR had their first prehearing conference on Tuesday that was focused on the schedule. The water board has asked their Administrative Hearings Office to preside over the overall hearing and the Administrative Hearings Officer had the first prehearing conference to speak about the schedule. DWR had the opportunity to provide information from their perspective on schedule and the protestants did as well. The Administrative Hearings Officer will consider that to determine if there are any changes she would like to make to the initial schedule she has developed. There are two more prehearing conferences scheduled, one is on October 17, 2024, and one is on December 16, 2024, and they will both cover other administrative and procedural issues before the hearing begins. The hearing is scheduled to begin with policy statements on January 16th and then the beginning of the hearing cases starts on January 30, 2025.

President Milobar stated if the hearings are available online.

Ms. Buckman stated that they are available online. There is a zoom site for the active participants and a YouTube link.

Director Cheng stated that the community benefits program seems to be coming to a draft implementation plan which is great and asked if there would be costs associated with it.

Ms. Buckman stated that the next step towards implementation of the community benefits program is to provide something to respond to as they've been working with communities and asking a lot of questions. It is hard to develop ideas from a blank slate and this will make it clear that this is an initial draft to discuss, edit and revise. Ms. Buckman stated that this is not intended to be the final product but there is information in the budget that the DCA developed this year. The overall cost is $200M of the community benefits program that will be reflected in the upcoming documentation.

No comments or questions were received from the Board, nor were any public comment requests received.

e. Verbal Reports

Director Weed shared that he recently got married and won another term on the Alameda County Water District Board.

8. FUTURE AGENDA ITEMS:

No future agenda items requested.

9. PUBLIC COMMENT:

DCA Alternate Director, Sarah Palmer stated that the Special Districts Association of Alameda County is looking for scholarships for interns and scholarships for individuals developing in infrastructure. The DCA program has done a great job in pulling the ideas of both policy and infrastructure.

No further public comment requests.

10. ADJOURNMENT:

President Milobar adjourned the meeting at 3.36 p.m., remotely-Conference Access Information: Phone Number: (669) 444-9171, Code: 82512742661#, https://dcdca-org.zoom.us/j/82512742661?from=addon

DELTA CONVEYANCE DESIGN & CONSTRUCTION AUTHORITY

Monthly Board Report

This document is fully interactive; use menus to navigate on-screen.

Agenda Item 7a

OCTOBER 2024

(ACTIVITIES IN SEPTEMBER)

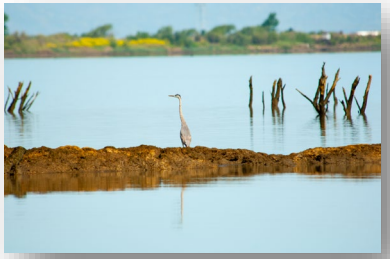
Section 1 | Work Performed (September 2024 Activities)

Program Management. The team continued program-wide support activities, including Program Controls, Health & Safety, Quality, and Sustainability.

- Continued processing invoices for FY23/24 and FY24/25.
- Supported vendors with invoice submission and contract amendment requests.
- Supported contract managers with financial forecasting and cashflow projections.
- Continued development of master programmatic schedule and PMO schedule.
- Continued program-wide process optimization evaluation.
- Continued development of sustainability strategy.
- Continued quality and health & safety audits.
- Continued work on FY24/25 Procurement Strategy development.
- Continued implementation and training of SOPs/Management Plans.
- Finalized revised cost data for DCO Annual Report.
- Developed initial baseline forecast for cashflow in FY24/25.
- Completed FY23/24 Deliverable Record Documents review.

Administration. The Administrative team continued to support functions including IT support, in-person and virtual meetings and social media content/updates

- Supported DCA Board of Directors and coordination of DCA events.
- Coordination of DCA Change Board meetings/actions.
- Activities supporting the development and training for SOPs/Management Plans.
- Planning for DCA participation at conferences.
- Planning activities to improve audio and display in the DCA Board Room.
- DCA Learning Management System activities including content management and creation.



Engineering. The engineering team primarily focused on supporting the Department of Water Resources (DWR) Delta Conveyance Office (DCO) permitting efforts while also continuing to develop and progress engineering studies.

- Completed development of Delta Conveyance Project Concept Engineering Report (CER). Began ADA compliance editing and formatting.
- Continued supporting public release of updated total program cost documentation associated with the Delta Conveyance Project.
- Continued to support communications and outreach efforts, including development of new and revised community outreach materials such as graphics and tour visualizations.
- Continued to support ongoing DWR environmental permitting as needed.
- Continued to support DWR CEQA compliance including coordinating mitigation compliance documentation for Spring 2024 field investigations.
- Continued to evaluate potential design innovations which could reduce program cost, schedule, or risk.
- Continue reviewing existing Delta-wide subsurface information.
- Continued to support DCA programmatic planning activities.

Field Work. The field work team continued planning efforts to conduct geotechnical and environmental investigations for evaluation of subsurface conditions and validation of parameters assumed during conceptual design.

- Continued Spring 2024 laboratory testing and documentation.
- Coordinated with Right-of-Way Agents to process signed TEP paperwork for 2024 investigations, compile diary notes and property titles for Court Ordered Entry Batch #4, and issue payments.
- Continued evaluating soil samples for the reusable tunnel material (RTM) study; coordinate with engineering team on mix ratios and test types.
- Evaluated potential GIS solution(s) to aid field clearance and data collection teams.
- Continue development of the Mitigation and Monitoring Reporting Program compliance tracker for soil investigations performed in the Spring.

Section 1 | One Month Look-Ahead (October 2024 Activities)

Program Management

- Continue processing invoices for FY24/25; continue close out of FY23/24 Task Orders and Purchase Orders.
- Support vendors with invoice submission and contract amendment requests.
- Continue development, implementation, and training of SOPs/Management Plans.
- Continue quality, health & safety, and sustainability efforts.
- Continue program-wide process optimization evaluation.
- Continue work on FY24/25 Procurement Strategy development.
- Continue development of master programmatic and PMO schedules.

Administration

- Continue support to DCA office including all Admin, Facility and IT functions.
- Continue support for DCA Board of Directors meetings and monthly report generation.
- Continue coordination of DCA Change Control Board meetings/actions.
- Continue support for stakeholder engagement and outreach efforts, including management of content for Social Media outlets.
- Continue support for the Organization Growth Implementation Plan.
- Planning for DCA participation at conferences.
- Project kick-off to improve audio and display in the DCA Board Room.
- Ongoing management of DCA Learning Management System.

Engineering

- Continue responding to RFIs from the DCO environmental team to support permitting efforts.
- Finalize the CER, including ADA compliance.
- Continue evaluating potential design innovations which could reduce program cost, schedule, or risk.
- Continue supporting DCA programmatic planning activities and community benefits program.
- Continue reviewing existing subsurface information along the Bethany Reservoir Alignment.
- Continue providing engineering support to the planning of future Geotechnical Investigation Programs.

Field Work

- Continue evaluating soil samples for RTM study; coordinate with engineering team on test types and procedures. Coordinate with conditioner supplier to determine appropriate mix ratios.
- Coordinate with Scheduling and Permitting team to plan future geotechnical investigations.
- Coordinate with right-of-way agents to extend current Temporary Entry Permits into 2025.
- Continue development of the MMRP compliance tracker for soil investigations performed in the Spring.
- Coordinate with geotechnical contractor to develop Spring 2024 data submittal.
- Coordinate with engineering team to develop geotechnical cross sections.

Section 2 | Community Engagement

Communication Highlights

- Developed new fact sheet on “Engineering Innovations” to highlight some of the project innovations that were included as an addendum to the Cost Estimate.
- Attended DCP Roundtable event at Eastern Municipal Water District that included updates on project status and answers to questions from attendees.
- Continued to support DWR in developing materials to be made available at public libraries across the project area.
- Continued to develop new DCA social media channels and content, adding more than 215 new followers on Facebook.
- Created Spanish version of Crestline-Lake Arrowhead fact sheet.

DCA | A CLOSER LOOK: ENGINEERING INNOVATIONS

As part of the development of the Delta Conveyance Project Cost Estimate, the Department of Water Resources (DWR) directed the Delta Conveyance Design and Construction Authority (DCA) to consider potential design or construction innovations to further reduce construction schedule, costs, and/or project footprint to improve constructability.

DCA engineers and environmental scientists took a conservative approach to design and construction in the Engineering Project Report (EPR), analyzing likely worst-case scenarios in the Environmental Impact Report. But DCA engineers have identified 19 reasonable innovations for DWR’s consideration as project design and engineering progresses. Preliminary figures estimate that these innovations could potentially further reduce construction impacts to local communities and collectively reduce the project cost by up to $1.2 billion.

The DCA identified a variety of potential improvements — or innovations — to the Engineering Project Report (EPR) conceptual design of the Delta Conveyance Project. To select potential innovations for further conceptual development, each potential innovation was considered through a multi-step process that included screening, ranking, and preliminary evaluation in collaboration with DWR.

- **Innovations** generally focused on potential alternative design or construction approaches aimed at reducing overall community and environmental effects, schedule, cost, or risk.
- **Evaluation of all potential innovations** focused on reducing construction materials, labor hours, and optimizing sequencing and construction activities to streamline the process while adhering to project requirements.

None of the project innovations selected for further conceptual development would impact the safety of the project nor its operational abilities. The following highlight some examples of the potential innovations:

Intakes Innovation: Raise Tee Screen Elevation

The initial design concept for the intakes places the bottom of the cylindrical tee fish screens between 13 and 17 feet below the water surface. However, the minimum recommended submergence is one half of the screen diameter, or 4 feet for the current 8-foot-diameter tee screen units. An innovation proposes to increase the separation between the river bottom and the bottom of the tee screens and reduce the screen submergence to the minimum of 4 feet. This would reduce the overall height of the two intake structures by 4.6 to 4.7 feet. This height reduction would also reduce the materials required and duration of construction, thereby reducing concrete quantities and project costs.

Tunneling Innovation: Planning for Semi-Continuous Mining

The EPR assumed tunnel excavation using a Tunnel Boring Machine (TBM) with separate phases for excavation and tunnel lining installation. In this manner, a full precast concrete segmental tunnel lining ring would be installed before the TBM rams push the machine forward from the leading edge of the lining to excavate the next section. The latest TBM technology allows a thrust forward from a partially completed segmental lining ring such that excavation and lining installation can happen concurrently. As a result, the time to complete tunnel reaches could be reduced by between 101-184 construction days, depending on the reach length.

Logistics Innovation: Hood Franklin Road Intersection Reconfiguration

The EPR assumed the existing bridge over Snodgrass Slough on Hood-Franklin Road would be widened to accommodate left and right turn pockets onto the Intake Haul Road from Hood-Franklin Road. This innovation would instead involve the installation of a single-lane roundabout that would eliminate the need to widen the bridge and would provide efficient traffic movement. Construction costs of the roundabout would be slightly less than the cost of constructing a widened bridge; however, the primary benefit of this innovation would be a reduction in traffic effects.

9.25.2024

We’re Connecting Everywhere!

SOCIAL MEDIA:	WEBSITE VIEWS:
Total impressions: 85,088	Overview Page: 267
Video Plays: 16,525	Document Library: 1,059

Section 3 | Budget

Budget. The FY24/25 DCA budget has been approved and is $43.00M (Table 1). We are currently forecasting an Estimate at Completion (EAC) budget of $36.41M (Table 1), $6.59M under our approved budget. Planned Geotechnical work has been suspended and is not included in the EAC. The DCA has incurred $4.93M in expenditures through the end of September (details in Table 2) and has committed $34.20M (details in Table 3) through contracts and task orders. Planned and actual cash flow curves are shown in Figure 1.

Table 1 | Monthly Budget Summary (FY 24/25)

	Original Budget	Current Budget	Current Commitments	Incurred to Date	EAC	Variance (Surplus)/Deficit
Program Management Office						
Executive Office	$ 4,939,700	$ 4,939,700	$ 3,080,082	$ 463,688	$ 4,818,041	$ (121,659)
Community Engagement	1,224,600	1,224,600	967,716	147,774	1,252,960	28,360
Program Controls	4,905,500	4,905,500	4,897,306	803,067	4,897,316	(8,184)
Administration	3,535,700	3,535,700	3,448,181	745,964	3,669,219	133,519
Procurement and Contract Administration	762,900	762,900	762,490	106,474	762,520	(380)
Property	1,028,300	1,028,300	1,028,129	62,102	1,028,300	-
Permitting Management	1,254,600	1,254,600	1,254,493	106,461	1,254,600	-
Health and Safety	431,600	431,600	431,592	71,478	431,592	(8)
Quality Management	698,600	698,600	698,160	71,431	668,160	(30,440)
Sustainability	501,500	501,500	500,292	77,771	500,292	(1,208)
Geotechnical Management	444,300	444,300	444,230	55,612	444,300	-
Program Initation Office						
Engineering	$ 13,938,700	$ 13,938,700	$ 13,938,522	$ 1,896,255	$ 13,938,700	$ -
Program Delivery						
Project Delivery	$ 9,334,200	$ 9,334,200	$ 2,747,242	$ 319,001	$ 2,747,242	$ (6,586,958)
	$ 43,000,200	$ 43,000,200	$ 34,198,437	$ 4,927,078	$ 36,413,242	$ (6,586,958)

Section 3 | Budget *continued*

Table 2 | FY 24/25 Budget Detail

Work Breakdown Structure	Original Budget	Current Budget	Commitments	Pending Commitments	Actuals Received	Remaining Budget	% of Budget Incurred	Estimate at Completion	Variance (Surplus)/Deficit
Delta Conveyance	**$ 43,000,200**	**$ 43,000,200**	**$ 34,198,437**	**$ -**	**$ 4,927,078**	**$ 38,073,122**	**11%**	**$ 36,413,242**	**$ (6,586,958)**
Executive Office	**4,939,700**	**4,939,700**	**3,080,082**	**-**	**463,688**	**4,476,012**	**9%**	**4,818,041**	**(121,659)**
Executive Office	1,974,700	1,974,700	1,952,167	-	334,106	1,640,594	17%	1,975,167	467
Legal	497,200	497,200	497,162	-	21,304	475,896	4%	497,200	-
Audit	18,000	18,000	-	-	-	18,000	0%	18,000	-
Treasury	338,000	338,000	347,513	-	51,516	286,484	15%	355,760	17,760
Human Resources	258,800	258,800	283,240	-	56,762	202,038	22%	283,240	24,440
Undefined Allowance	1,853,000	1,853,000	-	-	-	1,853,000	0%	1,688,674	(164,326)
Community Engagement	**1,224,600**	**1,224,600**	**967,716**	**-**	**147,774**	**1,076,826**	**12%**	**1,252,960**	**28,360**
Management	456,800	456,800	431,626	-	92,178	364,622	20%	456,800	-
Community Coordination	250,000	250,000	-	-	-	250,000	0%	250,000	-
Outreach	517,800	517,800	536,090	-	55,596	462,204	11%	546,160	28,360
Program Controls	**4,905,500**	**4,905,500**	**4,897,306**	**-**	**803,067**	**4,102,433**	**16%**	**4,897,316**	**(8,184)**
Management	651,000	651,000	688,169	-	102,357	548,643	16%	688,169	37,169
Cost Management	843,600	843,600	1,146,867	-	190,533	653,067	23%	1,146,867	303,267
Schedule Management	1,688,800	1,688,800	1,328,454	-	227,262	1,461,538	13%	1,328,464	(360,336)
Document Management	481,400	481,400	479,840	-	64,377	417,024	13%	479,840	(1,560)
Governance	911,300	911,300	924,816	-	147,853	763,447	16%	924,816	13,516
Asset Management	329,400	329,400	329,160	-	70,685	258,715	21%	329,160	(240)
Administration	**3,535,700**	**3,535,700**	**3,448,181**	**-**	**745,964**	**2,789,736**	**21%**	**3,669,219**	**133,519**
Management	948,700	948,700	963,840	-	162,297	786,403	17%	963,840	15,140
Facilities	1,496,200	1,496,200	1,486,951	-	445,364	1,050,836	30%	1,548,582	52,382
Information Technology	1,090,800	1,090,800	997,390	-	138,303	952,497	13%	1,156,797	65,997
Procurement and Contract Administration	**762,900**	**762,900**	**762,490**	**-**	**106,474**	**656,426**	**14%**	**762,520**	**(380)**
Procurement Management	762,900	762,900	762,490	-	106,474	656,426	14%	762,520	(380)

continued >

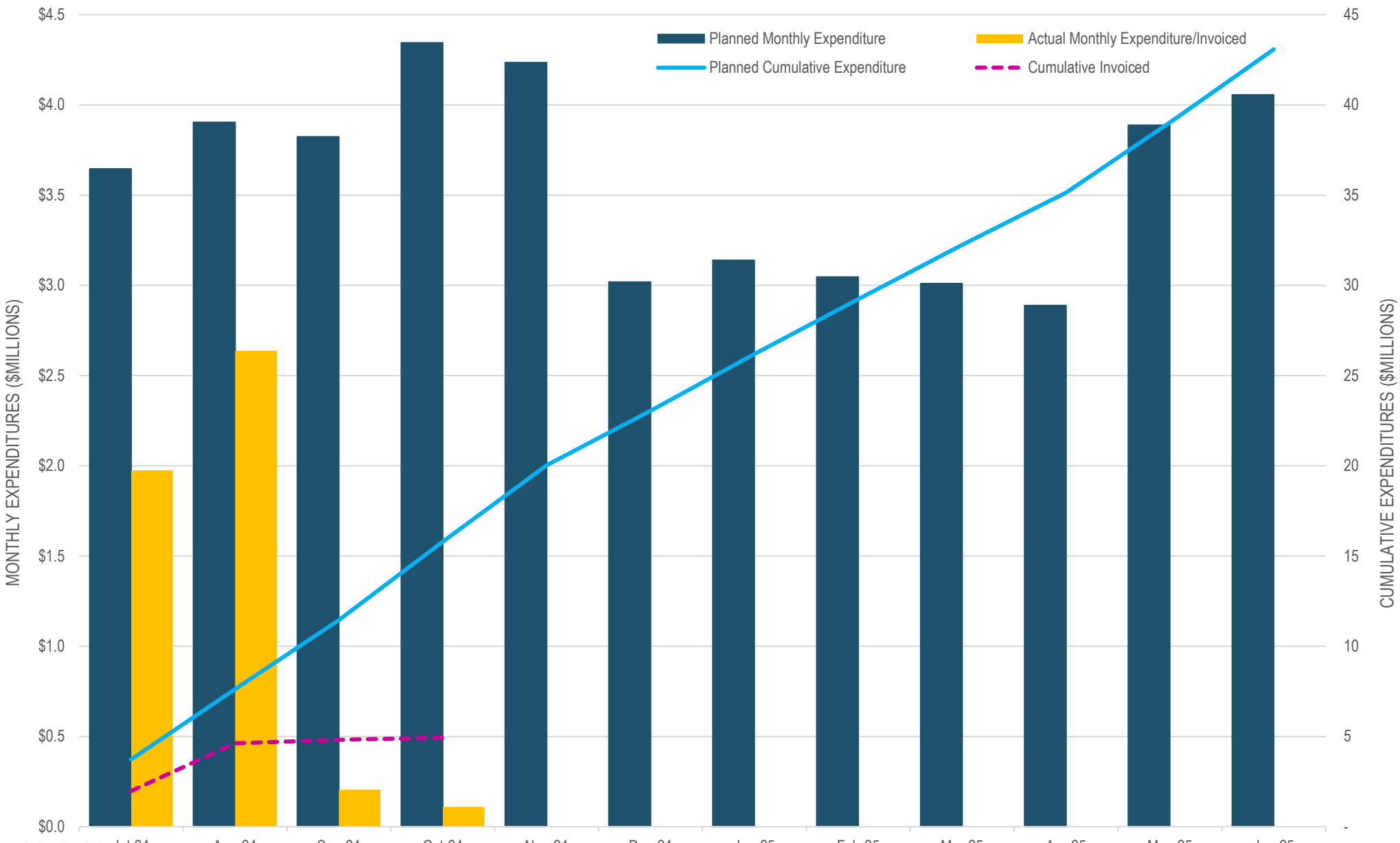
Section 3 | Budget *continued*

Table 2 | FY 24/25 Budget Detail

Work Breakdown Structure	Original Budget	Current Budget	Commitments	Pending Commitments	Actuals Received	Remaining Budget	% of Budget Incurred	Estimate at Completion	Variance (Surplus)/Deficit
Property	**1,028,300**	**1,028,300**	**1,028,129**	**-**	**62,102**	**966,198**	**6%**	**1,028,300**	**-**
Property Agents	501,200	501,200	501,087	-	16,588	484,612	3%	501,200	-
Temporary Entrance Permits	477,100	477,100	477,042	-	45,514	431,586	10%	477,100	-
Court Ordered Entry	50,000	50,000	50,000	-	-	50,000	0%	50,000	-
Permitting Management	**1,254,600**	**1,254,600**	**1,254,493**	**-**	**106,461**	**1,148,139**	**8%**	**1,254,600**	**-**
Management	534,700	534,700	534,686	-	95,463	439,237	18%	534,700	-
Permit Monitoring and Compliance	719,900	719,900	719,807	-	10,998	708,902	2%	719,900	-
Health and Safety	**431,600**	**431,600**	**431,592**	**-**	**71,478**	**360,122**	**17%**	**431,592**	**(8)**
Management	431,600	431,600	431,592	-	71,478	360,122	17%	431,592	(8)
Quality Management	**698,600**	**698,600**	**698,160**	**-**	**71,431**	**627,170**	**10%**	**668,160**	**(30,440)**
Management & Auditing	698,600	698,600	698,160	-	71,431	627,170	10%	668,160	(30,440)
Sustainability	**501,500**	**501,500**	**500,292**	**-**	**77,771**	**423,730**	**16%**	**500,292**	**(1,208)**
Management	501,500	501,500	500,292	-	77,771	423,730	16%	500,292	(1,208)
Geotechnical Management	**444,300**	**444,300**	**444,230**	**-**	**55,612**	**388,688**	**13%**	**444,300**	**-**
Management	444,300	444,300	444,230	-	55,612	388,688	13%	444,300	-
Engineering	**13,938,700**	**13,938,700**	**13,938,522**	**-**	**1,896,255**	**12,042,445**	**14%**	**13,938,700**	**-**
Management & Administration	1,141,900	1,141,900	1,141,843	-	199,233	942,667	17%	1,141,900	-
Facility Studies	5,657,900	5,657,900	5,657,838	-	1,538,711	4,119,189	27%	5,657,900	-
Project Definition Reports	6,937,300	6,937,300	6,937,283	-	146,810	6,790,490	2%	6,937,300	-
Permit Engineering Support	201,600	201,600	201,557	-	11,501	190,099	6%	201,600	-
Program Delivery	**9,334,200**	**9,334,200**	**2,747,242**	**-**	**319,001**	**9,015,199**	**3%**	**2,747,242**	**(6,586,958)**
Project Geotechnical	9,334,200	9,334,200	2,747,242	-	319,001	9,015,199	3%	2,747,242	(6,586,958)

Section 3 | Budget *continued*

Figure 1 | FY 24/25 Cash Flow



Section 4 | Contracts

Table 3 | Contract Summary (FY 24/25)

Contract Description	Commitment Amount	Pending Commitments	Invoiced to Date	Percent Invoiced
Delta Conveyance Commitments	**$ 34,198,437**	**$ -**	**$ 4,927,078**	**14%**
180006 - Jacobs Engineering Group	$ 16,402,031	$ -	$ 2,208,490	13%
180008 - Hamner, Jewell & Associates	$ 58,284	$ -	$ 2,004	3%
180009 - Bender Rosenthal, Inc.	$ 552,953	$ -	$ 23,875	4%
180010 - Associated Right of Way Services, Inc.	$ 34,911	$ -	$ 2,195	6%
190009 - Parsons	$ 9,521,105	$ -	$ 1,382,676	15%
190011 - GV/HI Park Tower Owner, LLC	$ 1,362,382	$ -	$ 426,419	31%
190014 - 110 Holdings dba Launch Consulting, LLC	$ 371,864	$ -	$ 78,496	21%
190019 - VMA Communications, Inc.	$ 801,897	$ -	$ 128,496	16%
190023 - JAMBO-Silvacom LTD	$ 37,800	$ -	$ 34,920	92%
200003 - Best Best & Krieger	$ 497,162	$ -	$ 21,304	4%
200013 - Metropolitan Water District of S. California	$ 536,142	$ -	$ 14,411	3%
200014 - Dept of Water Resources	$ 100,000	$ -	$ 15,500	16%
210018 - AECOM Technical Services	$ 2,747,242	$ -	$ 319,001	12%
220002 - Gwendolyn Buchholz, Permit Engineer Inc	$ 150,000	$ -	$ 28,500	19%

continued >

Section 4 | Contracts *continued*

Table 3 | Contract Summary

Contract Description	Commitment Amount	Pending Commitments	Invoiced to Date	Percent Invoiced
220008 - IRIS Intelligence, LLC	$ 27,830	$ -	$ -	0%
220009 - Alliant Insurance	$ 27,549	$ -	$ 27,549	100%
220015 - Consolidated Communications, Inc.	$ 36,000	$ -	$ 8,549	24%
220016 - AT&T	$ 34,449	$ -	$ 5,948	17%
230009 - Caltronics Government Services	$ 37,700	$ -	$ 9,906	26%
230015 - AVI-SPL LLC	$ 120,293	$ -	$ -	0%
230035 - Bradner Consulting LLC	$ 611,271	$ -	$ 151,680	25%
240003 - Miles Treaster & Associates	$ 18,000	$ -	$ -	0%
240005 - Keogh Multimedia	$ 15,600	$ -	$ -	0%
240012 - LuxBus America	$ 25,000	$ -	$ 1,921	8%
240013 - Alvarez & Associates, LLC	$ 25,000	$ -	$ 13,500	54%
Agreements <$15k	$ 45,973	$ -	$ 21,737	47%

continued >

Section 4 | Contracts *continued*

Table 4 | Commitment Changes

There are no Commitment Changes for this period.

Table 5 | S/DVBE Status (FY 24/25)

	Commitment Amount	Invoiced to Date	Percent Committed	Percent Invoiced
Delta Conveyance	$ 34,134,491	$ 2,286,922		
SBE Participation	**3,757,837**	**539,992**	**11.0%**	**23.6%**
DVBE Participation			**0.0%**	**0.0%**

Consultant	Current Commitment	Percent of Total Commitment	Invoiced to Date	Percent Invoiced SBE/DVBE	SBE/DVBE Status
AECOM	**2,747,242**	**5%**	**319,001**	**0%**	
ISI	91,827	3.3%	-	0.0%	SBE
WRES	46,345	1.7%	-	0.0%	SBE
Associated Right of Way Services	**34,911**	**100%**	**2,195**	**100%**	**SBE**
Bender Rosenthal, Inc.	**552,953**	**100%**	**23,875**	**100%**	**SBE**
Caltronics Government Services	**37,700**	**100%**	**9,906**	**100%**	**SBE**
Hamner, Jewell & Associates	**58,284**	**100%**	**2,004**	**100%**	**SBE**
Jacobs Engineering Group	**16,402,031**	**1%**	**2,208,490**	**0%**	
5RMK	80,000	0.5%	9,993	0.5%	SBE
JMA	10,000	0.1%	-	0.0%	SBE
Peter Wiseman	20,000	0.1%	-	0.0%	SBE
Robert Marshall	10,000	0.1%	-	0.0%	SBE
Parsons	**9,521,105**	**30%**	**1,382,676**	**26%**	
Chaves	2,013,920	21.2%	363,523	26.3%	SBE
VMA Communications, Inc.	**801,897**	**93.5%**	**128,496**	**93.5%**	**SBE**

Table 6 | Contract Procurement Summary

There are no active Procurements for this period.

Sections 3a Budget | 4a Contracts

FISCAL YEAR 23/24 FINANCIAL REPORTS

Section 3a | Budget

Budget. The FY23/24 DCA budget was approved at $40.44M (Table 1a). Our Estimate at Complete continues to be below the approved budget. Our projection is currently forecasting an Estimate at Completion budget of $31.38M (Table 1a). The DCA has incurred $31.38M in expenditures through the end of June (details in Table 2a) and has reduced its commitments to $31.41M (details in Table 3a) as part of the annual closeout process. Commitment amounts will continue to be updated as final invoices are received and paid. Actual and planned cash flow curves are shown in Figure 1a.

Table 1a | Monthly Budget Summary (FY 23/24)

	Original Budget	Current Budget	Current Commitments	Incurred to Date	EAC	Variance (Surplus)/Deficit
Program Management Office						
Executive Office	$ 5,382,983	$ 5,232,983	$ 2,214,623	$ 2,214,623	$ 2,214,623	$ (3,018,360)
Community Engagement	1,263,072	1,263,072	970,691	970,691	970,691	(292,381)
Program Controls	4,230,306	4,230,306	3,601,786	3,599,786	3,601,786	(628,520)
Administration	3,229,589	3,229,589	3,229,147	3,222,926	3,201,409	(28,180)
Procurement and Contract Administration	555,508	555,508	523,465	523,465	523,465	(32,043)
Property	570,364	570,364	537,956	537,956	537,956	(32,408)
Permitting Management	489,208	489,208	476,710	476,710	476,710	(12,498)
Health and Safety	488,585	488,585	376,638	376,638	376,638	(111,947)
Quality Management	391,560	391,560	430,207	430,207	430,207	38,647
Sustainability	84,344	84,344	333,423	333,423	333,423	249,079
Program Initation Office						
Engineering	$ 15,656,019	$ 15,656,019	$ 11,576,381	$ 11,576,381	$ 11,576,381	$ (4,079,638)
Fieldwork	7,613,466	8,101,016	7,008,058	7,008,058	7,008,058	(1,092,958)
Initiation Fieldwork Support	-	150,000	133,547	133,547	133,547	(16,453)
	$ 39,955,004	$ 40,442,554	$ 31,412,630	$ 31,404,410	$ 31,384,892	$ (9,057,662)

Section 3a | Budget *continued*

Table 2a | FY 23/24 Budget Detail

Work Breakdown Structure	Original Budget	Current Budget	Commitments	Pending Commitments	Actuals Received	Remaining Budget	% of Budget Incurred	Estimate at Completion	Variance (Surplus)/Deficit
Delt Environmental Monitoring	$ 39,955,004	$ 40,442,554	$ 31,412,630	$ -	$ 31,404,410	$ 9,038,145	78%	$ 31,384,892	$ (9,057,662)
Executive Office	**5,382,983**	**5,232,983**	**2,214,623**	**-**	**2,214,623**	**3,018,360**	**42%**	**2,214,623**	**(3,018,360)**
Executive Office	2,555,988	2,555,988	1,787,151	-	1,787,151	768,837	70%	1,787,151	(768,837)
Legal	525,000	525,000	254,800	-	254,800	270,200	49%	254,800	(270,200)
Audit	18,000	18,000	17,970	-	17,970	30	100%	17,970	(30)
Treasury	37,315	37,315	45,855	-	45,855	(8,540)	123%	45,855	8,540
Human Resources	246,680	246,680	108,847	-	108,847	137,833	44%	108,847	(137,833)
Undefined Allowance	2,000,000	1,850,000	-	-	-	1,850,000	0%	-	(1,850,000)
Community Engagement	**1,263,072**	**1,263,072**	**970,691**	**-**	**970,691**	**292,381**	**77%**	**970,691**	**(292,381)**
Management	406,072	406,072	412,810	-	412,810	(6,738)	102%	412,810	6,738
Community Coordination	250,000	250,000	-	-	-	250,000	0%	-	(250,000)
Outreach	607,000	607,000	557,881	-	557,881	49,119	92%	557,881	(49,119)
Program Controls	**4,230,306**	**4,230,306**	**3,601,786**	**-**	**3,599,786**	**630,520**	**85%**	**3,601,786**	**(628,520)**
Management	682,311	682,311	705,139	-	703,139	(20,828)	103%	705,139	22,828
Cost Management	823,085	823,085	671,260	-	671,260	151,825	82%	671,260	(151,825)
Schedule Management	1,367,850	1,367,850	768,050	-	768,050	599,800	56%	768,050	(599,800)
Document Management	436,560	436,560	380,226	-	380,226	56,334	87%	380,226	(56,334)
Governance	920,500	920,500	1,077,111	-	1,077,111	(156,611)	117%	1,077,111	156,611
Administration	**3,229,589**	**3,229,589**	**3,229,147**	**-**	**3,222,926**	**6,663**	**100%**	**3,201,409**	**(28,180)**
Management	917,760	917,760	912,000	-	912,000	5,760	99%	912,000	(5,760)
Facilities	1,420,461	1,420,461	1,389,732	-	1,383,512	36,949	97%	1,361,995	(58,466)
Information Technology	891,368	891,368	927,414	-	927,414	(36,046)	104%	927,414	36,046
Procurement and Contract Administration	**555,508**	**555,508**	**523,465**	**-**	**523,465**	**32,043**	**94%**	**523,465**	**(32,043)**
Procurement Management	555,508	555,508	523,465	-	523,465	32,043	94%	523,465	(32,043)

Section 3a | Budget *continued*

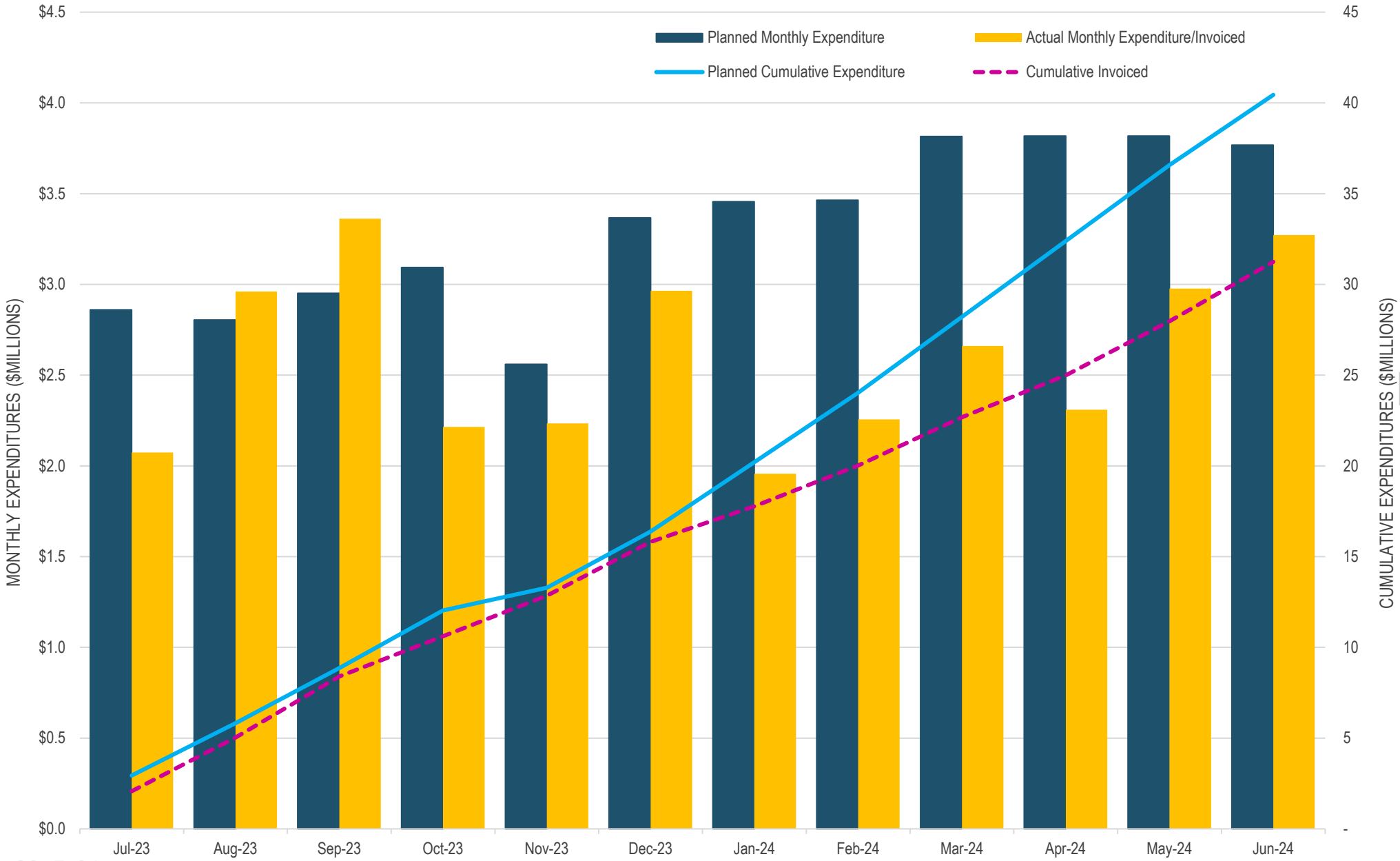
Table 2a | FY 23/24 Budget Detail

Work Breakdown Structure	Original Budget	Current Budget	Commitments	Pending Commitments	Actuals Received	Remaining Budget	% of Budget Incurred	Estimate at Completion	Variance (Surplus)/Deficit
Property	**570,364**	**570,364**	**537,956**	**-**	**537,956**	**32,408**	**94%**	**537,956**	**(32,408)**
Management	115,364	115,364	124,141	-	124,141	(8,777)	108%	124,141	8,777
Property Agents	355,000	355,000	307,566	-	307,566	47,434	87%	307,566	(47,434)
Temporary Entrance Permits	100,000	100,000	106,250	-	106,250	(6,250)	106%	106,250	6,250
Court Ordered Entry	-	-	-	-	-	-	0%	-	-
Permitting Management	**489,208**	**489,208**	**476,710**	**-**	**476,710**	**12,498**	**97%**	**476,710**	**(12,498)**
Management	489,208	489,208	476,710	-	476,710	12,498	97%	476,710	(12,498)
Health and Safety	**488,585**	**488,585**	**376,638**	**-**	**376,638**	**111,947**	**77%**	**376,638**	**(111,947)**
Management	488,585	488,585	376,638	-	376,638	111,947	77%	376,638	(111,947)
Quality Management	**391,560**	**391,560**	**430,207**	**-**	**430,207**	**(38,647)**	**110%**	**430,207**	**38,647**
Management & Auditing	391,560	391,560	430,207	-	430,207	(38,647)	110%	430,207	38,647
Sustainability	**84,344**	**84,344**	**333,423**	**-**	**333,423**	**(249,079)**	**395%**	**333,423**	**249,079**
Management	84,344	84,344	333,423	-	333,423	(249,079)	395%	333,423	249,079
Engineering	**15,656,019**	**15,656,019**	**11,576,381**	**-**	**11,576,381**	**4,079,638**	**74%**	**11,576,381**	**(4,079,638)**
Management & Administration	1,019,495	1,019,495	1,153,334	-	1,153,334	(133,839)	113%	1,153,334	133,839
CEQA Engineering Support	941,432	941,432	433,211	-	433,211	508,221	46%	433,211	(508,221)
Facility Studies	8,831,836	8,831,836	9,784,696	-	9,784,696	(952,860)	111%	9,784,696	952,860
Project Definition Reports	4,863,256	4,863,256	205,140	-	205,140	4,658,116	4%	205,140	(4,658,116)
Fieldwork	**7,613,466**	**8,101,016**	**7,008,058**	**-**	**7,008,058**	**1,092,958**	**87%**	**7,008,058**	**(1,092,958)**
Management	1,379,135	1,379,135	1,016,947	-	1,016,947	362,188	74%	1,016,947	(362,188)
Geotechnical Work	5,800,000	6,287,550	5,533,621	-	5,533,621	753,929	88%	5,533,621	(753,929)
Project Delivery	**-**	**150,000**	**133,547**	**-**	**133,547**	**16,453**	**89%**	**133,547**	**(16,453)**
Project Geotechnical	-	150,000	133,547	-	133,547	16,453	89%	133,547	(16,453)

continued >

Section 3a | Budget *continued*

Figure 1a | FY 23/24 Cash Flow



Section 4a | Contracts

Table 3a | FY 23/24 Contract Summary

Contract Description	Commitment Amount	Pending Commitments	Invoiced to Date	Percent Invoiced
Delta Conveyance Commitments	**$ 31,412,630**	**$ -**	**$ 31,404,410**	**100%**
180005 - e-Builder, Inc.	$ 153,861	$ -	$ 153,861	100%
180006 - Jacobs Engineering Group	$ 13,119,931	$ -	$ 13,119,931	100%
180008 - Hamner, Jewell & Associates	$ 44,265	$ -	$ 44,265	100%
180009 - Bender Rosenthal, Inc.	$ 241,885	$ -	$ 241,885	100%
180010 - Associated Right of Way Services, Inc.	$ 21,415	$ -	$ 21,415	100%
190005 - Baker Tilly US LLP	$ 299,014	$ -	$ 299,014	100%
190009 - Parsons	$ 7,433,343	$ -	$ 7,433,343	100%
190011 - GV/HI Park Tower Owner, LLC	$ 1,233,011	$ -	$ 1,233,011	100%
190014 - 110 Holdings dba Launch Consulting, LLC	$ 341,709	$ -	$ 341,709	100%
190019 - VMA Communications, Inc.	$ 765,743	$ -	$ 765,743	100%
190023 - JAMBO-Silvacom LTD	$ 34,920	$ -	$ 34,920	100%
200003 - Best Best & Krieger	$ 254,800	$ -	$ 254,800	100%
200013 - Metropolitan Water District of S. California	$ 213,951	$ -	$ 213,951	100%
200014 - Dept of Water Resources	$ 106,250	$ -	$ 106,250	100%

continued >

Section 4a | Contracts *continued*

Table 3a | FY 23/24 Contract Summary

Contract Description	Commitment Amount	Pending Commitments	Invoiced to Date	Percent Invoiced
210018 - AECOM Technical Services	$ 6,219,035	$ -	$ 6,219,035	100%
210019 - Santa Clara Valley Water	$ 28,770	$ -	$ 28,770	100%
220002 - Gwendolyn Buchholz, Permit Engineer Inc	$ 147,500	$ -	$ 147,500	100%
220008 - IRIS Intelligence, LLC	$ 36,790	$ -	$ 36,790	100%
220009 - Alliant Insurance	$ 37,043	$ -	$ 37,043	100%
220015 - Consolidated Communications, Inc.	$ 34,176	$ -	$ 34,176	100%
220016 - AT&T	$ 23,717	$ -	$ 23,717	100%
230007 - onPar Advisors LLC	$ 48,622	$ -	$ 48,622	100%
230009 - Caltronics Government Services	$ 30,335	$ -	$ 30,335	100%
230014 - Interagency Agreement	$ 133,547	$ -	$ 133,547	100%
230015 - AVI-SPL LLC	$ 17,998	$ -	$ 17,998	100%
230016 - LuxBus America	$ 18,020	$ -	$ 18,020	100%
230020 - Miles Treaster & Associates	$ 28,000	$ -	$ 26,780	96%
230034 - Bradner Consulting, LLC	$ 147,917	$ -	$ 147,917	100%
230035 - Bradner Consulting LLC	$ 151,680	$ -	$ 151,680	100%
Agreements <$15k	$ 45,383	$ -	$ 38,383	85%

Section 5 | FY 24/25 Program Schedule

Schedule. The Program Management Office (PMO) continued to work on program support activities as planned. The Engineering Team continued its focus on completing the Concept Engineering Report (CER) and evaluating potential design innovations which could reduce program cost, schedule, or risk. The team also continued to support DCA programmatic activities including environmental, fieldwork and communications. The field work team primarily focused on evaluating the data collected during the Spring 2024 investigation program and planning for future geotechnical investigation programs.

Disclaimer: This Program Sequence is for discussion purposes only and does not represent a decision by the DCA or DWR. Final decisions about the project will be made by DWR and will NOT be made until the concluding stages of the CEQA process.

[1] % Complete – Based on qualitative assessment of factors that may include spend to date and anticipated progress vs actual progress, see Table 2 for detailed cost breakdown

On Schedule
Delayed

DELTA CONVEYANCE DESIGN & CONSTRUCTION AUTHORITY

Board Memo

Contact: Graham Bradner, Executive Director
Josh Nelson, General Counsel
Date: October 17, 2024 Board Meeting **Item No.** 7b

Subject:

Consider Passing Resolution Adopting the Delta Conveyance Design and Construction Authority Revised Allowable Travel Expenses Policy

Summary:

Staff recommends that the Board approve the revised Allowable Travel Expenses Policy.

Detailed Report:

Under the amended Joint Exercise of Powers Agreement (JEPA), the DCA is required to adopt and utilize a travel policy for its contractors and consultants. This policy must be approved by the Board of Directors by resolution and then forwarded to the Department of Water Resources (DWR). The Board previously adopted a policy that was approved by DWR.

This item proposes one edit to the policy. Currently, the policy incorporates a number of template forms for administration of the policy. These forms may need to be updated, and any update currently requires Board approval. This edit would clarify that staff can develop and update forms as necessary and consistent with the terms of the policy.

The enclosed resolution adopts the proposed, revised Allowable Travel Expenses Policy. Clean and redline versions of the policy are attached for reference.

Recommended Action:

Adopt the attached Resolution approving the revised Allowable Travel Expenses Policy.

Attachments:

Attachment 1 - Draft Resolution 24-XX
Attachment 2 - Allowable Travel Expenses Policy (clean)
Attachment 3 - Allowable Travel Expenses Policy (redline)

BOARD OF DIRECTORS OF THE DELTA CONVEYANCE

DESIGN AND CONSTRUCTION AUTHORITY

RESOLUTION NO. 24-XX

Introduced by Director xxxx
Seconded by Director xxxx

ADOPT THE REVISED ALLOWABLE TRAVEL EXPENSES POLICY

Whereas, consistent with best practices and Section 6(b) and Section 12 of Exhibit F of the amended Joint Exercise of Powers Agreement (JEPA), the Board of Directors wishes to adopt an allowable travel expenses policy;

Now, therefore, the DCA Board of Directors resolves as follows:

1. The Board of Directors hereby adopts the revised Allowable Travel Expenses Policy (Policy) attached to this Resolution as Exhibit A and incorporated by this reference.

2. The Executive Director is authorized and directed to amend all existing consultant and similar agreements to ensure that such agreements are consistent with the provisions of this Policy. The Board President may amend the Bradner Consulting LLC agreement if necessary to ensure that such agreement is consistent with the provisions of this Policy.

3. This Resolution is effective upon its adoption and shall be transmitted to the Department of Water Resources as required by the JEPA.

* * * * *

This Resolution was passed and adopted this 17th day of October 2024, by the following vote:

Ayes:
Noes:
Absent:
Abstain:

Attest: Martin Milobar, Board President

Gary Martin, Secretary

DELTA CONVEYANCE DESIGN & CONSTRUCTION AUTHORITY

ALLOWABLE TRAVEL EXPENSES POLICY

PART I

Pursuant to this Allowable Travel Expenses Policy ("Policy"), the DCA does not generally reimburse vendors for travel expenses. Vendors are required to provide fully inclusive rates that include all taxes, surcharges, expenses and fees, including travel expenses, as part of their negotiated other direct cost rate, which must be incorporated as part of the vendor's rates set forth in the fee schedule. Vendors will only be reimbursed travel expenses in the following cases:

- Vendor's agreement with the DCA expressly authorizes such reimbursement; or
- Vendor has requested and received prior written approval from the Executive Director for reimbursement of extraordinary travel expenses not otherwise captured under the negotiated other direct cost rate.

Notwithstanding the foregoing, in the event the vendor's services are paid for in whole or in part using federal funds and provided such federal funds require compliance with the Federal Acquisition Regulations, the provisions of this Part I are superseded by Part II of this Policy, and all travel expenses will be processed in accordance with Part II of this Policy and applicable provisions of the Federal Acquisition Regulations.

PART II

Reimbursement for travel expenses are specifically excluded, unless expressly authorized by the Executive Director, or his or her designee, in writing and memorialized using the Consultant Travel Authorization form. If approved in advance in writing by the Executive Director, or his or her designee, the DCA shall reimburse vendor for reasonably incurred actual costs in accordance with this Policy, and no markup shall be applied to such actual costs. Expenses incurred without prior approval or which are not in compliance with this Policy may be denied. Any changes from this Policy requires approval by the Executive Director, or his or her designee, in writing. Notwithstanding anything to the contrary and to the extent allowable under existing law, the Executive Director, or his or her designee, may revise this Policy on a case by case basis with such revised Policy incorporated in the applicable agreement. As it relates to the Executive Director, the Chair of the Board of Directors shall be responsible for any approvals.

BILLING AND SUPPORTING DOCUMENTS

Vendors shall submit all supporting documents (receipts, invoices, travel itineraries, etc.) for each expense listed below, unless otherwise stated. Attached receipts should itemize each cost and

provide descriptive information so that expenses are separately identified. Failure to submit accurate and complete supporting documents may result in less than full reimbursement for travel expenses. Where receipts are not required to be submitted with the monthly invoice, vendors shall keep receipts on file for audit purposes in accordance with Federal Acquisition Regulations. If vendor is missing, is unable to obtain or has lost a receipt, vendor shall complete and submit a Missing or Lost Receipt Certification form.

FEDERAL GENERAL SERVICE ADMINISTRATION ("GSA")

Expense reimbursements in this Policy are generally based on the GSA rates, and policies. GSA resources can be located on the GSA website at: https://www.gsa.gov/travel-resources and via the additional links set forth in this Policy.

MEALS & INCIDENTAL EXPENSES (M&IE)

Meal and incidental expenses ("M&IE") while on a travel status will be reimbursed at the per diem rate based on the GSA published rate for destinations within the Continental United States. Receipts are not required for M&IE reimbursements. If the DCA requests weekend work assignments, per diem shall be reimbursed.
M&IE includes tax and tips and no separate reimbursement will be made for those costs.

Trips of 24 Hours or More: As set by the GSA, DCA will reimburse a daily per diem rate equal to the GSA rate for meals and incidental expenses including taxes and gratuity. Specific GSA maximum M&IE per diem rates are assigned to designated destinations within each state. The per diem rates are updated annually on October 1st and provided online at the GSA web site https://www.gsa.gov/travel/plan-book/per-diem-rates.

- Day travel begins: The per diem allowable shall be three-quarters of the destination M&IE rate.
- Full calendar day of travel: The per diem allowable shall be the full destination M&IE rate, referred to on the GSA website as the "total M&IE rate".
- Day travel ends: The per diem allowable shall be three-quarters of the total M&IE rate.

M&IE Example*: vendor leaves residence in Sacramento, CA on 06/20 and travels to Los Angeles, CA. Vendor works a full day in Los Angeles on 06/21. Vendor leaves Los Angeles on 06/22 back to Sacramento, CA.

- Day 1, 6/20: three quarters of Los Angeles total M&IE Rate of $74.00 = $55.50 M&IE per diem allowable
- Day 2, 6/21: Full Los Angeles total M&IE Rate = $74.00 M&IE per diem allowable
- Day 3, 6/22: three quarters of Los Angeles total M&IE Rate of $74.00 = $55.50 M&IE per diem allowable
- Entire travel M&IE Reimbursed = $185.00

* Based on FY 2022 GSA per diem rates.

Trips of More than 12 Hours, but not Exceeding 24 Hours: The rate will be adjusted down for partial days of travel. For partial days, use the breakdown of eligible expenses from this GSA web site: https://www.gsa.gov/travel/plan-book/per-diem-rates/mie-breakdown. For travel more than 12 hours and less than 24 hours, the Vendor's allowance is three-quarters of the destination M&IE rate.

M&IE Reduction: When all or part of the meals are provided by the project, meals included in hotel expenses or conference fees, meals included in transportation costs such as airline tickets, or meals that are otherwise provided, the applicable M&IE per diem rate shall be reduced by the amount specified for the relevant meal(s) on the GSA website, as further detailed below.

To determine the amount to deduct, find the applicable M&IE per diem rate and breakdown by meal for travel in the continental U.S. pursuant to the instructions below:

1. Look up the location-specific information for the location where you will be working while on official travel at www.gsa.gov/perdiem.
2. On the results page, click Meals & Incidentals (M&IE) Rates to go to the M&IE rates table.
3. Find the row for your travel location and identify the amount listed for the M&IE total, for the relevant meal(s), and for first and last day of travel.

Subtract the amount for the relevant meal(s) from the applicable per diem rate (either the total M&IE rate, or the reduced rate (i) for first and last day of travel, or (ii) for partial days more than 12 hours, but less than 24 hours; which is, in either case, three quarters of the total M&IE rate).

M&IE Reduction Example*: vendor leaves residence in Sacramento, CA and travels to San Francisco, CA for a conference and travels more than 12 hours and less than 24 hours. Breakfast is included at the conference. Vendor returns home to Sacramento, CA that same day.

- Total M&IE destination rate for San Francisco is $79.00
- Because the trip is for more than 12 hours and less than 24 hours, the vendor is entitled to three-quarters of the total M&IE rate, or $59.25
- M&IE Reduction of breakfast provided at San Francisco rate of $18.00
- Entire travel M&IE Reimbursed = $41.25

* Based on FY 2022 GSA per diem rates.

RECEIPT BASED REIMBURSEMENTS FOR TRIPS 12 HOURS OR LESS

For trips 12 hours or less, breakfast or dinner may be reimbursed as follows:

- Trip begins at or before 6 am and ends at or after 9 am - Breakfast may be claimed
- Trip begins at or before 4 pm and ends at or after 7 pm - Dinner may be claimed

The meal rates set forth in the M&IE table shall be the maximum allowance a vendor is entitled to claim for a reimbursable breakfast or dinner for travel 12 hours or less. A receipt shall be required. For travel 12 hours or less, lunch and incidentals may not be claimed.

LODGING EXPENSES

Vendors who incur approved overnight lodging expenses may be reimbursed. Lodging expenses will be reimbursed, on an actual cost basis. An original detailed hotel receipt, showing the single room rate plus taxes, must be submitted with the request for payment, otherwise reimbursement will be denied. If vendor is requested by the DCA to perform services on the weekend, hotel charges for Saturday and Sunday shall be reimbursable.

Lodging reimbursement will be limited to the GSA lodging rate for the location in question. Please visit www.gsa.gov/perdiem to find the rates. Enter the zip code for the location. Please note this amount does not include taxes, which are reimbursed separately. If you are unable to find lodging within the maximum GSA posted rate, you may submit a request for reimbursement of the excess of the maximum reimbursement rate to the Agreements Administrator. You must obtain prior written approval by the Agreements Administrator, on the Approval for Lodging Exceeding Maximum GSA Rate form, to book the lodging that exceeds the GSA posted rate. The written approval of the DCA is required to be submitted with the invoice for the travel expense.

Hotel cancellations are the responsibility of the vendor. Any hotel expenses charged to the DCA when the vendor had adequate time to cancel the accommodations without charge will be the sole responsibility of the vendor.

METHOD OF TRAVEL

- Vendors are responsible for determining the need for and method of travel.
- Reimbursement for transportation expenses will be based on the method of transportation that is in the best interest of the project, considering both direct expense and the consultant's time.
- Trips that require travel in excess of 200 miles one way shall be made by commercial airline unless the circumstances dictate otherwise. Reimbursements for transportation costs for trips over 200 miles one way by any form of transportation other than commercial airline shall generally not exceed the standard round-trip airline coach airfare in effect at the time, plus any personal auto mileage and airport parking that would have been incurred and reimbursable if airline transportation had been used.

If a vendor chooses and is authorized to use a method of transportation that is:

- Not the least costly,
- Not the typical method of getting from one location to the other, or
- Not "in the best interest of the state,"

A cost comparison will be prepared, and the consultant shall be reimbursed only the amount that would have been reimbursed had the consultant traveled using the least costly method.

Taxis/Uber/Lyft/Rideshare: When it is an economical choice to use a taxi/Uber/Lyft/rideshare service for approved business travel, the cost of the fare will be reimbursed with a receipt. M&IE includes tips and those costs are not separately reimbursable.

Car Rental: Car rentals shall be the most economical vehicle to fulfill vendor's needs when other modes of transportation are not available. vendor shall use the most reasonable cost rental vehicle that can accommodate travel requirements. One automobile rental for up to three travelers is acceptable. If a more expensive rental option is required, vendor must provide justification and obtain prior approval from the Executive Director, or his or her designee, the approval must be attached to the invoice. Insurance for collision and personal liability is the responsibility of the vendor and shall not be reimbursed. Rental car receipts are required for all rental car expenses. Claims for rental car gasoline must be supported by original receipts.

Personal Car: Personal automobile reimbursement is allowable only from consultant's local office to project site location or meeting destination as determined by the Executive Director, or his or her designee, and will be paid at the current Federal Internal Revenue Standard ("IRS") allowable mileage rate.

Mileage Reimbursement: Mileage reimbursements are based upon the number of miles driven for DCA related trips. Vendors are required to retain a monthly mileage log. The log is not required to be submitted with the expense reports or invoices. Vendor must keep the log on file for audit purposes using the form required by the DCA. The length of trip does not determine eligibility for mileage reimbursement that has been approved in accordance with this Policy.

Parking: Receipts for parking while traveling are not required for expenses of $75.00 or less. Parking for staff located on-site shall not be reimbursable by the DCA.

Tolls: Receipts for tolls are not required. You must include a description of any tolls on your monthly mileage log.

Air Travel: Preapproved airfare will be reimbursed at the actual cost of the airline ticket. Air travel shall be made by commercial airline at coach or economy airfare. If flight accommodations are upgraded from coach or economy airfare, all additional charges shall be paid by the vendor, and not charged to the Agreement. Travel should be by whichever scheduled airline offers the (lowest fare and is not dictated by a vendor's frequent flyer preference or preferred carrier.

Air travel receipts must include the flight itinerary (including flight number, departure time, arrival time, etc.) and proof of payment. Service fees for airline tickets shall be reimbursable as part of the air travel cost. In-flight internet fees are reimbursable for DCA related work while in-flight.

Long Term Travel: Travel over 30 days shall be considered long term travel. Pre-approval request required, using the form required by the DCA. Reimbursable costs shall include rent, utilities and reduced per diem of $41.00

International Travel: Travel outside of the United States shall require prior written approval and shall be subject to all applicable GSA requirements.

NON-REIMBURSABLE EXPENSES

Time spent in travel shall not be compensable unless services are performed during such travel.

Except as otherwise expressly stated herein, and approved in accordance with this Policy, travel expenses will not be reimbursed for travel of twelve hours or less.

TEMPLATE FORMS

The Executive or their designee shall develop, update, and maintain forms and other template documents to assist in the administration of this Policy.

DELTA CONVEYANCE DESIGN & CONSTRUCTION AUTHORITY

ALLOWABLE TRAVEL EXPENSES POLICY

PART I

Pursuant to this Allowable Travel Expenses Policy ("Policy"), the DCA does not generally reimburse vendors for travel expenses. Vendors are required to provide fully inclusive rates that include all taxes, surcharges, expenses and fees, including travel expenses, as part of their negotiated other direct cost rate, which must be incorporated as part of the vendor's rates set forth in the fee schedule. Vendors will only be reimbursed travel expenses in the following cases:

- Vendor's agreement with the DCA expressly authorizes such reimbursement; or
- Vendor has requested and received prior written approval from the Executive Director for reimbursement of extraordinary travel expenses not otherwise captured under the negotiated other direct cost rate.

Notwithstanding the foregoing, in the event the vendor's services are paid for in whole or in part using federal funds and provided such federal funds require compliance with the Federal Acquisition Regulations, the provisions of this Part I are superseded by Part II of this Policy, and all travel expenses will be processed in accordance with Part II of this Policy and applicable provisions of the Federal Acquisition Regulations.

PART II

Reimbursement for travel expenses are specifically excluded, unless expressly authorized by the Executive Director, or his or her designee, in writing and memorialized using the Consultant Travel Authorization form ~~attached to this Policy~~. If approved in advance in writing by the Executive Director, or his or her designee, the DCA shall reimburse vendor for reasonably incurred actual costs in accordance with this Policy, and no markup shall be applied to such actual costs. Expenses incurred without prior approval or which are not in compliance with this Policy may be denied. Any changes from this Policy requires approval by the Executive Director, or his or her designee, in writing. Notwithstanding anything to the contrary and to the extent allowable under existing law, the Executive Director, or his or her designee, may revise this Policy on a case by case basis with such revised Policy incorporated in the applicable agreement. As it relates to the Executive Director, the Chair of the Board of Directors shall be responsible for any approvals.

BILLING AND SUPPORTING DOCUMENTS

Vendors shall submit all supporting documents (receipts, invoices, travel itineraries, etc.) for each expense listed below, unless otherwise stated. Attached receipts should itemize each cost and

provide descriptive information so that expenses are separately identified. Failure to submit accurate and complete supporting documents may result in less than full reimbursement for travel expenses. Where receipts are not required to be submitted with the monthly invoice, vendors shall keep receipts on file for audit purposes in accordance with Federal Acquisition Regulations. If vendor is missing, is unable to obtain or has lost a receipt, vendor shall complete and submit a ~~the~~ Missing or Lost Receipt Certification form ~~attached to this Policy~~.

FEDERAL GENERAL SERVICE ADMINISTRATION ("GSA")

Expense reimbursements in this Policy are generally based on the GSA rates, and policies. GSA resources can be located on the GSA website at: https://www.gsa.gov/travel-resources and via the additional links set forth in this Policy.

MEALS & INCIDENTAL EXPENSES (M&IE)

Meal and incidental expenses ("M&IE") while on a travel status will be reimbursed at the per diem rate based on the GSA published rate for destinations within the Continental United States. Receipts are not required for M&IE reimbursements. If the DCA requests weekend work assignments, per diem shall be reimbursed.
M&IE includes tax and tips and no separate reimbursement will be made for those costs.

Trips of 24 Hours or More: As set by the GSA, DCA will reimburse a daily per diem rate equal to the GSA rate for meals and incidental expenses including taxes and gratuity. Specific GSA maximum M&IE per diem rates are assigned to designated destinations within each state. The per diem rates are updated annually on October 1st and provided online at the GSA web site https://www.gsa.gov/travel/plan-book/per-diem-rates.

- Day travel begins: The per diem allowable shall be three-quarters of the destination M&IE rate.
- Full calendar day of travel: The per diem allowable shall be the full destination M&IE rate, referred to on the GSA website as the "total M&IE rate".
- Day travel ends: The per diem allowable shall be three-quarters of the total M&IE rate.

M&IE Example*: vendor leaves residence in Sacramento, CA on 06/20 and travels to Los Angeles, CA. Vendor works a full day in Los Angeles on 06/21. Vendor leaves Los Angeles on 06/22 back to Sacramento, CA.

- Day 1, 6/20: three quarters of Los Angeles total M&IE Rate of $74.00 = $55.50 M&IE per diem allowable
- Day 2, 6/21: Full Los Angeles total M&IE Rate = $74.00 M&IE per diem allowable
- Day 3, 6/22: three quarters of Los Angeles total M&IE Rate of $74.00 = $55.50 M&IE per diem allowable
- Entire travel M&IE Reimbursed = $185.00

* Based on FY 2022 GSA per diem rates.

Trips of More than 12 Hours, but not Exceeding 24 Hours: The rate will be adjusted down for partial days of travel. For partial days, use the breakdown of eligible expenses from this GSA web site: https://www.gsa.gov/travel/plan-book/per-diem-rates/mie-breakdown. For travel more than 12 hours and less than 24 hours, the Vendor's allowance is three-quarters of the destination M&IE rate.

M&IE Reduction: When all or part of the meals are provided by the project, meals included in hotel expenses or conference fees, meals included in transportation costs such as airline tickets, or meals that are otherwise provided, the applicable M&IE per diem rate shall be reduced by the amount specified for the relevant meal(s) on the GSA website, as further detailed below.

To determine the amount to deduct, find the applicable M&IE per diem rate and breakdown by meal for travel in the continental U.S. pursuant to the instructions below:

1. Look up the location-specific information for the location where you will be working while on official travel at www.gsa.gov/perdiem.
2. On the results page, click Meals & Incidentals (M&IE) Rates to go to the M&IE rates table.
3. Find the row for your travel location and identify the amount listed for the M&IE total, for the relevant meal(s), and for first and last day of travel.

Subtract the amount for the relevant meal(s) from the applicable per diem rate (either the total M&IE rate, or the reduced rate (i) for first and last day of travel, or (ii) for partial days more than 12 hours, but less than 24 hours; which is, in either case, three quarters of the total M&IE rate).

M&IE Reduction Example*: vendor leaves residence in Sacramento, CA and travels to San Francisco, CA for a conference and travels more than 12 hours and less than 24 hours. Breakfast is included at the conference. Vendor returns home to Sacramento, CA that same day.

- Total M&IE destination rate for San Francisco is $79.00
- Because the trip is for more than 12 hours and less than 24 hours, the vendor is entitled to three-quarters of the total M&IE rate, or $59.25
- M&IE Reduction of breakfast provided at San Francisco rate of $18.00
- Entire travel M&IE Reimbursed = $41.25

* Based on FY 2022 GSA per diem rates.

RECEIPT BASED REIMBURSEMENTS FOR TRIPS 12 HOURS OR LESS

For trips 12 hours or less, breakfast or dinner may be reimbursed as follows:

- Trip begins at or before 6 am and ends at or after 9 am - Breakfast may be claimed
- Trip begins at or before 4 pm and ends at or after 7 pm - Dinner may be claimed

The meal rates set forth in the M&IE table shall be the maximum allowance a vendor is entitled to claim for a reimbursable breakfast or dinner for travel 12 hours or less. A receipt shall be required. For travel 12 hours or less, lunch and incidentals may not be claimed.

LODGING EXPENSES

Vendors who incur approved overnight lodging expenses may be reimbursed. Lodging expenses will be reimbursed, on an actual cost basis. An original detailed hotel receipt, showing the single room rate plus taxes, must be submitted with the request for payment, otherwise reimbursement will be denied. If vendor is requested by the DCA to perform services on the weekend, hotel charges for Saturday and Sunday shall be reimbursable.

Lodging reimbursement will be limited to the GSA lodging rate for the location in question. Please visit www.gsa.gov/perdiem to find the rates. Enter the zip code for the location. Please note this amount does not include taxes, which are reimbursed separately. If you are unable to find lodging within the maximum GSA posted rate, you may submit a request for reimbursement of the excess of the maximum reimbursement rate to the Agreements Administrator. You must obtain prior written approval by the Agreements Administrator, on the Approval for Lodging Exceeding Maximum GSA Rate form ~~attached to this Policy~~, to book the lodging that exceeds the GSA posted rate. The written approval of the DCA is required to be submitted with the invoice for the travel expense.

Hotel cancellations are the responsibility of the vendor. Any hotel expenses charged to the DCA when the vendor had adequate time to cancel the accommodations without charge will be the sole responsibility of the vendor.

METHOD OF TRAVEL

- Vendors are responsible for determining the need for and method of travel.
- Reimbursement for transportation expenses will be based on the method of transportation that is in the best interest of the project, considering both direct expense and the consultant's time.
- Trips that require travel in excess of 200 miles one way shall be made by commercial airline unless the circumstances dictate otherwise. Reimbursements for transportation costs for trips over 200 miles one way by any form of transportation other than commercial airline shall generally not exceed the standard round-trip airline coach airfare in effect at the time, plus any personal auto mileage and airport parking that would have been incurred and reimbursable if airline transportation had been used.

If a vendor chooses and is authorized to use a method of transportation that is:

- Not the least costly,
- Not the typical method of getting from one location to the other, or
- Not "in the best interest of the state,"

A cost comparison will be prepared, and the consultant shall be reimbursed only the amount that would have been reimbursed had the consultant traveled using the least costly method.

Taxis/Uber/Lyft/Rideshare: When it is an economical choice to use a taxi/Uber/Lyft/rideshare service for approved business travel, the cost of the fare will be reimbursed with a receipt. M&IE includes tips and those costs are not separately reimbursable.

Car Rental: Car rentals shall be the most economical vehicle to fulfill vendor's needs when other modes of transportation are not available. vendor shall use the most reasonable cost rental vehicle that can accommodate travel requirements. One automobile rental for up to three travelers is acceptable. If a more expensive rental option is required, vendor must provide justification and obtain prior approval from the Executive Director, or his or her designee, the approval must be attached to the invoice. Insurance for collision and personal liability is the responsibility of the vendor and shall not be reimbursed. Rental car receipts are required for all rental car expenses. Claims for rental car gasoline must be supported by original receipts.

Personal Car: Personal automobile reimbursement is allowable only from consultant's local office to project site location or meeting destination as determined by the Executive Director, or his or her designee, and will be paid at the current Federal Internal Revenue Standard ("IRS") allowable mileage rate.

Mileage Reimbursement: Mileage reimbursements are based upon the number of miles driven for DCA related trips. Vendors are required to retain a monthly mileage log. ~~Use the attached template.~~ The log is not required to be submitted with the expense reports or invoices. Vendor must keep the log on file for audit purposes using the form ~~attached to this Policy~~required by the DCA. The length of trip does not determine eligibility for mileage reimbursement that has been approved in accordance with this Policy.

Parking: Receipts for parking while traveling are not required for expenses of $75.00 or less. Parking for staff located on-site shall not be reimbursable by the DCA.

Tolls: Receipts for tolls are not required. You must include a description of any tolls on your monthly mileage log.

Air Travel: Preapproved airfare will be reimbursed at the actual cost of the airline ticket. Air travel shall be made by commercial airline at coach or economy airfare. If flight accommodations are upgraded from coach or economy airfare, all additional charges shall be paid by the vendor, and not charged to the Agreement. Travel should be by whichever scheduled airline offers the (lowest fare and is not dictated by a vendor's frequent flyer preference or preferred carrier.

Air travel receipts must include the flight itinerary (including flight number, departure time, arrival time, etc.) and proof of payment. Service fees for airline tickets shall be reimbursable as part of the air travel cost. In-flight internet fees are reimbursable for DCA related work while in-flight.

Long Term Travel: Travel over 30 days shall be considered long term travel. Pre-approval request required, using the form ~~attached~~ required by the DCA~~to this Policy~~. Reimbursable costs shall include rent, utilities and reduced per diem of $41.00

International Travel: Travel outside of the United States shall require prior written approval and shall be subject to all applicable GSA requirements.

NON-REIMBURSABLE EXPENSES

Time spent in travel shall not be compensable unless services are performed during such travel.

Except as otherwise expressly stated herein, and approved in accordance with this Policy, travel expenses will not be reimbursed for travel of twelve hours or less.

TEMPLATE FORMS

The Executive or their designee shall develop, update, and maintain forms and other template documents to assist in the administration of this Policy.

~~Travel Reimbursement Templates~~

Long Term Travel

DCA Travel Policy: *Travel over 30 days shall be considered long term travel. Pre-approval request required. Reimbursable costs shall include rent, utilities and reduced per diem of $41.00.*

Consultant Name: **Agreement/Task Order #:**

Employee Name: **Project Role:**

Travel Locations:

Traveling From: (City, State)

Travel To: (City, State)

Departure Date: Return Date:

Reason for Travel:

Estimated Expenditures:

	Description	# of Days	Rate (+ tax)	Base Total	Total Estimated Expenses
Rent					
Utilities					
Per Diem					
Other					
Total					

By signing below, I certify that the costs to be incurred and reported will be in accordance with the provisions in the DCA Travel Policy.

Consultant Lead/Manager Date:

DCA Executive Director *or Designee* Date:

Consultant Travel Authorization

DCA Travel Policy: *Reimbursement for travel expenses are specifically excluded, unless expressly authorized by the Executive Director, or his or her designee, in writing and memorialized in a written agreement. If approved in advance in writing by the Executive Director, or his or her designee, the DCA shall reimburse vendor for reasonably incurred actual costs in accordance with this Allowable Travel Expenses Policy ("Policy"), and no markup shall be applied to such actual costs. Expenses incurred without prior approval or which are not in compliance with this Policy may be denied.*

Consultant Name: **Agreement/Task Order #:**

Employee Name: **Project Role:**

Travel Locations:

Traveling From: (City, State)

Travel To: (City, State)

Departure Date: Return Date:

Reason for Travel:

Estimated Expenditures:

	Description	# of Days	Rate (+ tax)	Base Total
Airfare				
Lodging (GSA Rate)				
Rental Car				
Mileage				
Parking				
Per Diem				
Other				
Total				

By signing below, I certify that the costs to be incurred and reported will be in accordance with the provisions in the DCA Travel Policy.

Consultant Lead/Manager Date:

DCA Executive Director *or Designee* Date:

Missing or Lost Receipt Certification

DCA Travel Policy : *If vendor is missing, is unable to obtain or has lost a receipt, vendor shall complete and submit the Missing or Lost Receipt Certification form attached to this Policy.*

This certification attests to the following:

a. No original receipt obtained for this expense or the original receipt was lost or misplaced and a duplicate cannot be obtained.

b. The expense was incurred on behalf of DCDCA.

c. The item and amount of the expense are accurate.

d. No reimbursement of this expense has been or will be sought or accepted from another source.

e. I have not previously requested reimbursement of this expense.

Provide a brief description of the expense:

Establishment: _____

Expense Amount: _____ Date of Expense: _____

Description of Expense: _____

_____

_____

Certification Signatures:

Requestor Name: _____ Date: _____

Requestor Signature: _____ Date: _____

Monthly Mileage Log

DCA Travel Policy: *Mileage reimbursements are based upon the number of miles driven for DCA related trips. Vendors are required to retain a monthly mileage log. Use the attached template. The log is not required to be submitted with the expense reports or invoices. Vendor must keep the log on file for audit purposes.*

Name:				**Month of:**		
Consultant:				**Mileage Rate:**		
Date	**From**	**To**	**Miles**	**Mileage Amount**	**Tolls (if applicable)**	**Reason**
				$		
				$		
				$		
				$		
				$		
				$		
				$		
				$		
				$		
				$		
				$		
				$		
				$		
				$		
				$		
				$		
				$		
				$		
				$		
				$		
				$		
				$		
Totals:				$		

Approval for Lodging Exceeding Maximum GSA Rate

DCA Travel Policy: *If you are unable to find lodging within the maximum GSA posted rate, you may submit a request for reimbursement of the excess of the maximum reimbursement rate to the Agreements Administrator. You must obtain prior written approval by the Agreements Administrator to book the lodging that exceeds the GSA posted rate. The written approval of the DCA is required to be submitted with the invoice for the travel expense.*

Consultant Name: _____ Date Requested: _____

Employee Name: _____ Task/Subtask No.: _____

Reason for exceeding GSA hotel rate:

TRAVEL DATES & LOCATION				LODGING INFORMATION	
Departure Date:		Time:		Lodging Name:	
Return Date:		Time:		Address:	
From: (City,State)					
To: (City,State)				Telephone No.:	
				Room Rate:	
Attending Conference @ Hotel		Yes	No		

Consultant Approval Date:

DCA Agreement Admin Approval Date:

DELTA CONVEYANCE DESIGN & CONSTRUCTION AUTHORITY

Board Memo

Contacts: Graham Bradner, Executive Director

Date: October 17, 2024 Board Meeting Item No. 7c

Subject:

Findings of the Independent Technical Review Committee Report

Summary:

An Independent Technical Review (ITR) Committee was convened by the California Department of Water Resources (DWR) to review early technical materials developed by the DCA related to potential innovations for the Delta Conveyance Project. ITRs are considered best practice in providing expert opinion on the technical studies and design work associated with large infrastructure projects and programs. ITRs are part of the DCA's overall Quality Plan and will continue to be convened throughout the planning and design phases of the program.

Committee members were selected by DWR from across the globe and represent a cross section of the most experienced tunnel engineers and builders in the world collectively representing over 300 years of experience in the design and construction of tunnels, deep shafts, and slurry wall systems. The ITR included the following members:

- Rich Millet of AECOM. Rich is a leader in AECOM's slurry wall Practice and Principal Geotechnical Engineering in their Sacramento office. Rich began working with cutoff and structural diaphragm walls in 1970 and has been involved with the design and construction of over 50 cutoff and diaphragm walls for dams, levees and deep foundations.
- Shahriar (Shah) Vahdani, an independent consultant. Shah has over 40 years of experience in the state-of-the-art Geotechnical Earthquake Engineering and Foundation Design.
- Gregg Korbin, an independent consultant. Gregg has over 49 years of experience working through all aspects of the design and construction of soft ground tunnels and deep shafts including over 25 hydraulic pressure tunnels.
- Jon Kaneshiro, an independent consultant. Jon has over 43 years of design and construction services experience in the tunnel industry and in geotechnical engineering.
- Ulrich Rehm, an independent consultant for TBM tunnelling. Ulrich has over 30 years practical experience in all fields of TBM tunnelling and related topics, including working 10 years for the market leader Herrenknecht as R&D director.
- Dale Berner of COWI. Dale has over 40 years of experience in construction engineering for heavy civil projects including those for deep excavations and for tunnels.
- Dan Adams of Delve Underground. Dan served as the Facilitator for the ITR panel and has

over 36 years of experience in underground engineering and construction.

The ITR Panel was charged with the following:

- Review each innovation Idea to gain an understanding of technical and constructability issues.
- Examine and evaluate the merits of each potential innovation in terms of their effects on the project's schedule, cost, and risk.
- Provide recommendations for new potential innovations or enhancements to the in-progress DCA design or construction innovations.
- Reach a consensus on whether any of the innovative Ideas should be "advanced" to the Concept Design level for the project for consideration by DWR.

A copy of the ITR findings is attached to this memorandum. The DCA found the session extremely constructive helping to validate key design approaches while providing independent insight from the heavy civil, underground design and construction industry.

Recommended Action:

Information, only.

Attachments:

Attachment 1 – ITR Committee Report

Delta Conveyance

Innovations Workshop

Workshop Dates: September 10 to 13, 2024

Independent Technical Review Report

October 11, 2024

Table of Contents

1.0 Introduction:

The Department of Water Resources convened an Independent Technical Review (ITR) Panel of large tunnel, shaft, and underground structure professionals to review several major project innovations under consideration for the Delta Conveyance Project. Specifically, the review focused on tunnel and underground structure innovations developed over the past year by the Delta Conveyance Design and Construction Authority's (DCA) Engineering Design Manager (EDM) Team. The ITR participated in an Innovations Workshop held in Sacramento on September 10th through the 13th for this review.

This report summarizes the ITR's review and its collective comments on the proposed Project innovations. It should be noted that any conceptual design changes resulting from these innovations will be evaluated by the Department of Water Resources' (DWR) Delta Conveyance Office (DCO) to be potentially incorporated into the DCP's Project Description and reviewed under the California Environmental Quality Act (CEQA).

The ITR Panel or Team Members, of whom collectively, include over 300 years of experience in the design and construction of tunnels, deep shafts, and slurry wall systems, were charged with the following:

- Review each Innovative Idea to gain an understanding of technical and constructability issues
- Examine and evaluate the merits of each in terms of their effects on the project's schedule, cost, and risk
- Provide recommendations for new potential innovations or enhancements to the in-progress DCA innovations and further design development of the innovations.
- Reach a consensus on whether any of the Innovative Ideas should be "advanced" to the Concept Design level for the project for consideration by DWR.

1.1 Introduction of ITR Team members and Summary of Review Work Completed.

The ITR panel members include:

- Rich Millet of AECOM. Rich is a leader in AECOM's slurry wall Practice and Principal Geotechnical Engineering in their Sacramento office. Rich began working with cutoff and structural diaphragm walls in 1970 and has been involved with the design and construction of over 50 cutoff and diaphragm walls for dams, levees and deep foundations.
- Shahriar (Shah) Vahdani, an independent consultant. Shah has over 40 years of experience in the state-of-the-art Geotechnical Earthquake Engineering and Foundation Design.

- Gregg Korbin, an independent consultant. Gregg has over 49 years of experience working through all aspects of the design and construction of soft ground tunnels and deep shafts including over 25 hydraulic pressure tunnels.
- Jon Kaneshiro, an independent consultant. Jon has over 43 years of design and construction services experience in the tunnel industry and in geotechnical engineering.
- Ulrich Rehm, an independent consultant for TBM tunnelling. Ulrich has over 30 years practical experience in all fields of TBM tunnelling and related topics, including working 10 years for the market leader Herrenknecht as R&D director.
- Dale Berner of COWI. Dale has over 40 years of experience in construction engineering for heavy civil projects including those for deep excavations and for tunnels.
- Dan Adams of Delve Underground. Dan served as the Facilitator for the ITR panel and has over 36 years of experience in underground engineering and construction.

1.2 The Study Group's work included the following:

Day 1: The Project planning and preliminary design team (comprised of the DWR, DCA and EDM Teams) presented a detailed project description and scope of review work, including easements, environmental constraints, and ideas under consideration to reduce environmental effects, costs, and/or schedule. A portion of the day was spent focusing on several Innovative Ideas related to the Project's tunneling concepts and the deep structures at the Bethany Reservoir Pumping Plant and Surge Basin that the team had developed. In the afternoon, DWR, the EDM, and the ITR panel members went through issues in a workshop environment, with questions and answers passed between each. About two weeks prior to Day 1, each ITR member was provided technical project information and related reference materials for their review.

Day 2: The ITR Panel spent the morning reviewing and discussing the prior day's presentation and dove into each of the Innovative Ideas. In the afternoon, the ITR members spent time in back and forth discussion between themselves and the EDM team's representative on topics such as TBM pressurization cycles, assumptions at Bethany Reservoir Pumping Plant, site constraints at the dual shaft sites, the adequacy of the geotechnical data, and value of early contractor involvement on the design development.

Day 3: The third day was dedicated to ITR members drafting position papers and brainstorming the results/statements amongst the panel members. For a brief period in the morning, the EDM Team answered questions from the ITR Panel. Early in the afternoon, the EDM re-joined the session, and those initial ideas were discussed, additional questions answered, and various issues refined with a very constructive back and forth exchange between members of the two groups. Later in the day, the EDM again left the meeting, and the ITR Panel worked to refine their combined opinions and ideas, such that by the end of Day 3, a draft summary position paper and presentation was completed.

Day 4: On the morning of the fourth day, the ITR team re-assembled in the morning to review the draft work from the previous day and come to consensus on the presentations for each topic and adopt and agree on the concluding recommendations. The ITR presented its findings to the Project Team and other Project participants, followed by a question-and-answer period. The remainder of this report is a documentation of the ITR's review and their recommendations for consideration.

2.0 Innovation Ideas

2.1 Innovation Idea #1 Optimization of Tunnel Lining

The conceptual tunnel lining design contained in the Engineering Project Report (EPR) is based on the maximum net internal pressure that will be encountered over the entire 45-mile tunnel length. The conceptual design neglects any effective soil pressure acting on the tunnel lining.

Ignoring the external soil pressure on the segmental lining design for low pressure tunnel systems (<55 psi), while not technically a problem, does not acknowledge the following design inputs:

- nature of the fluid being conveyed, i.e., water,
- transient nature of the peak pressure, i.e., frequency and duration,
- internal pressure in pipe is only marginally greater than external soil and groundwater pressures, and
- risk and consequences of leakage.

For the DCP, the maximum transient pressure (or "peak" pressure) over the static groundwater level is about 25 psi for a duration of 30 to 40 minutes and dissipates over a period of about 8 hours. The peak event is based upon the 200-year flood condition (i.e. tunnel flows of 6,000 cfs during high water elevation flood events) combined with a power failure/pump shutdown. In other words, the peak pressure is infrequent. In addition, the joint gap and gaskets can be designed to prevent leakage into the surrounding environment.

In the unlikely event, that the internal pressures are higher than the designed joint gap and gasket profile, the total volume of leakage would be extremely low (due to the short duration and short dissipation time). Moreover, the amount of water flowing out and consequences of leakage into the surrounding ground is likely to be inconsequential. This is because the fluid is water and the surrounding area is the Bay Delta and farmland, for which the groundwater level and quality is based on the same source: The Sacramento River.

Use of segmentally lined tunnels within alluvial soils for low-to moderate pressure water or wastewater conveyance is not uncommon. As can be seen by Table 1, a number of strategies have been used to confine the internal pressures. Details of each project's design criteria and analysis vary and may be investigated further by the EDM. Over half a dozen projects indicated by the asterisk in Table 1 are currently operating with similar internal pressures which utilize segmental linings in alluvial ground.

Table 1: Strategies to Confine Internal Water Pressure in Segmented Lined Tunnels

Project	Year	Ctry	OD (ft)	Peak Net internal pressure	Pressure Environment	Effluent	Strategy to Confine
Under Seine	1949	FR	14' & 16'		unknown	Sewer	External. steel bands
Under Rhine*	1960	DE	14.8'		unknown	Sewer	Ground via pre-loading w/jacks
San Diego Outfall	1995-1999	USA	15'	39 psi (pumped)	constant	Adv. Primary	Continuous. rebar steel
Aquas Argentia*	1996	AR	22'		constant	Water	Ground Loads
Osaka area (4 proj.)	1999-2003	JP	9 to 11.6'		unknown	Sewer & Flood	Tensioned strands
Tokyo	1999-2009	JP	34'		Intermittent	Flood	Continuous rebar steel
Von Thun	2008	CH	19.7		Intermittent	Flood	Tensioned strands
LACSD EOT	2020-2027	USA	22'	41 psi (peak WWF, 2170 year return period)	Intermittent	2nd treated	Tensioned strands
DC Water (6 proj.)*	2012-2029	USA	26'		Intermittent	Flood	Ground Loads

Some of the strategies shown in Table 1 are illuminating. For example, the Aquas Argentina project (under the Rio de la Plata) and the DC Water Clean Rivers program relied on a portion of the earth pressure to keep the segment ring in compression when exposed to internal pressures that are higher than the external groundwater pressure or head. By this approach the confinement provided by the ground keeps both the segments and the gaskets in compression such that fluids do not leak into the surrounding ground. Also, the Keiser method going back to 1952 to confine internal pressure of segmented liners notes the use of pre-loading the segments by external grouting.

It should be noted that after tail void grouting, the segments and gaskets will compress. Radial bolts (if used) will relax and loosen. If the bolts are left in place and especially if re-tightened this could lead to cracking of segments, unless they are specifically designed to accommodate added loading with a special detail (e.g., compressible grommets or washers). The requirements and need for radial bolts to compress the gaskets, other than for segment installation, are a subject of debate and further study well after the Concept Design phase is complete.

It is recommended that for final design, some portion of the earth pressure is utilized to resist internal water pressure (above hydrostatic) in order to develop a segmented tunnel liner that does not require the use of continuous hoop steel. Recommended design and construction steps to implement this approach include:

- estimate the duration, frequency, and the risks and consequences for the peak and normal river elevation internal surge pressure events;
- perform numerical models, applying internal pressure loading, and evaluate the expansion of the liner and the joints and expansion of the gaskets. (Analyses have shown on past projects that the joint separation is minimal and leakage will not occur);
- check impacts of differential movement across circumferential dowels and the possible benefit derived from using a trapezoidal segment with large key (minimum of two dowels per segment to engage the adjacent segment rings);
- specify and monitor the grout pressure in tail void and around segments to at least 1 to 2 bar above face/shield pressures (minimum TBM operating pressure during mining and downtime should be maintained at at-rest earth pressure (Ko) to preserve lateral confinement and to minimize ground disturbance);
- specify requirement and monitor the requirement for filling tail voids to be 3 to 5% over the theoretical grout volume around the segments;
- perform trial and check grouting to ensure full confinement of segments, as well as secondary grouting in problematic areas where ground loss or over-excavation have occurred or are suspected.

2.2 Innovation Idea #2: Semi-Continuous Mining

Semi-continuous mining (SCM) is the processes, during tunnel excavation with a TBM and Bolted Gasketed Segments (e.g. as proposed on the Delta Conveyance Project, 'DCP') wherein the segmental lining "rings" can be built concurrently with the tunnel excavation under certain circumstances, which can normally only be executed one after the other (sequentially). The original idea of the SCM-system was first invented in 1998 in the Netherlands (Sophiaspoortunnel) as the so-called continuous Shield (C-Shield), with additional extended thrust jacks (which advance the TBM) and a relatively complex additional component (second erector) to stabilize the first two segments of a new ring. The most important development of the prototype C-shield system was an automatic hydraulic steering system to control the center of force of the thrust jacks and thus the control of the TBM during C-shield operation. This automatic hydraulic steering system was then further developed and optimized for the actual SCM and is now named 'Center of Thrust' (COT) steering technology.

The C-shield system basically worked on the Sophiaspoortunnel but was only used for a short tunnel section to demonstrate its basic functionality in 1998. It was then further developed to the actual Semi-continuous Mining (SCM) technology utilized recently (2021) on one variable density TBM project in England (H2S, Chiltern Tunnel) since then. For this purpose, the SCM was modified so that no additional second erector for stabilizing the first segments and no additional extension of the thrust jacks was required.

The method is reported to “improve the production rate of tunneling”. While this is true, the effort does not halve the total “cycle” (excavation plus ring build) because the thrust jacks must be extended by at least one segment length to be able to install the first segment of the following ring. On the other side, in case the jacks are fully extended before the ring hasn’t finished yet, the TBM must wait until the keystone has been placed, otherwise the contact between some jacks and the segment would be lost.

This means that the maximum gain in cycle time is achieved when both excavation and ring building take approximately the same amount of time. For example, it makes no sense to build the ring as quickly as possible if the thrust cylinders are not yet fully extended, as only then can the keystone be inserted. But this is often the case, meaning that the excavation time is sometimes generally longer until the first segment can be inserted due to difficult geology, whereas the ring construction time is relatively quick. This means that the process that takes the longest of the two (mining or ring building) always determines the overall performance of the TBM, which means that the theoretical time savings of the SCM are partly lost. In addition, the influence on the overall TBM performance in very long tunnels (as in the DCP) is essentially determined by the logistics of the whole complex jobsite, the shaft and tunnel system.

Semi-continuous mining requires a more sophisticated logistical effort than traditional TBM mining. For SCM to be effective, the following must occur:

- Work area directly behind the main Shield of the TBM must be able to store 2 full rings.
- Different segment sequences (location of starting segment on the circumference).
- Each segment sequence (which part of the ring is installed where) must be determined in advance of placement due to different geometries and curve radii
- Large segment storage area on site (It is recommended to store rings for at least 3 months of advance: 3 x 4,680m2 = approx. 14,000 m2 (per TBM advance). If the SCM is to be used for longer than 3 months, it is recommended that the storage areas would have to be increased by 10-12%.)

- Transport of segments into the tunnel and muck (RTM) from it requires larger/higher capacity equipment.

To address these constraints, logistics must be established and implemented correctly in operation or SCM cannot be performed properly. This includes not just the work underground but transportation of segments to the Launch Shaft, and RTM removed from it. The logistics through the launch shaft limits mainly the overall TBM advance performance and thus also the maximum possible performance of the SCM.

The original predecessor of the SCM - the C-shield - was developed on a slurry TBM of 10m (32 feet) diameter (Sophiaspoortunnel, Netherlands 1998) and was subsequently only used as a prototype on one other TBM (2021 on the H2S Chiltern Tunnel, UK) in slurry mode so far. It has not yet been used for Earth Pressure Balance (EPB) TBM Tunneling.

Thus, its use to date is limited to Slurry Shields. This is because the SCM approach requires a predictable and relatively uniform permanent face pressure distribution in the excavation chamber. This is because the heart of an SCM operation is the automatic control of the center of thrust-force of the entire jacking forces (so called COT, center of thrust steering technology), so that when individual jacks are thrust at different locations around the ring, the forward force of the whole machine must be constantly recalculated to keep the TBM shield from diving, pushing, or otherwise "steering off course" (see Figure 1).

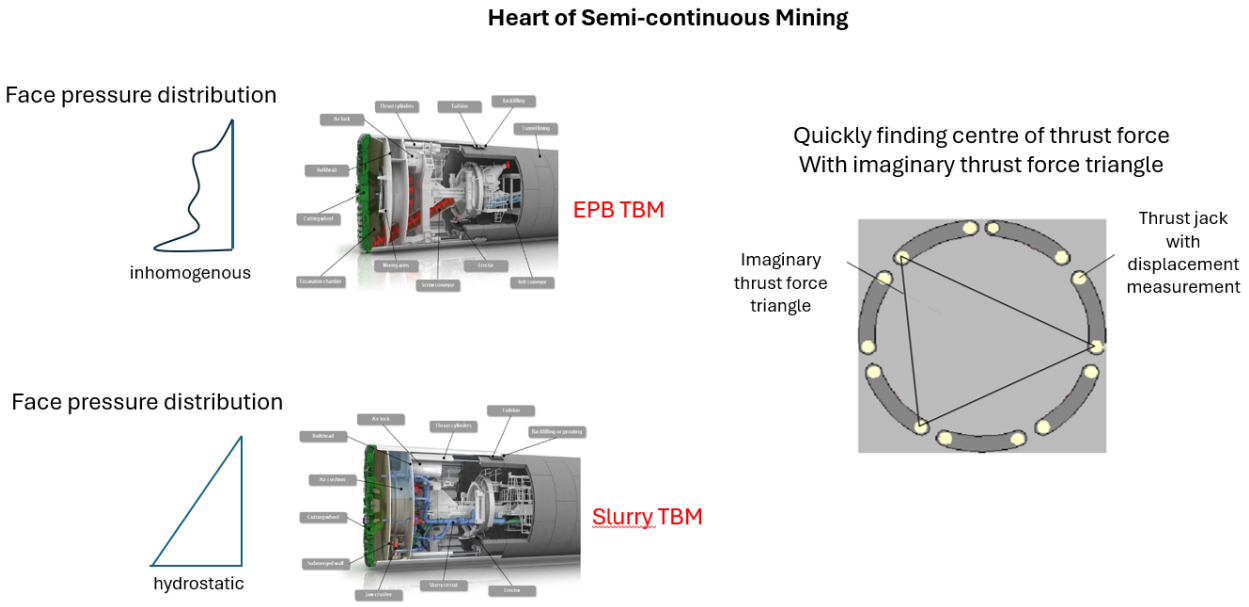


Figure 1. Thrust Control Considerations for SCM with EPB and Slurry TBMs

This also requires an appropriately adapted static design of the segments, as there is an increased risk of asymmetrical loads during SCM causing critical tensile stresses and thus overloading of the segments.

At the current stage of the discussion for the Project, the use of the EPB TBM is more likely than the slurry technology for energy consumption reasons. The ITR members discussed this, and agreed that due to the type of soils, groundwater conditions, experience in North America, and

the significantly higher power demand of a Slurry TBM, the project is most likely going to be built using EPB machines.

The SCM system was recently (2024) sold for the first time for an EPB TBM, but there is no experience so far as this TBM is not yet in place. It remains to be seen how and if the system will prove itself there.

On this topic, the ITR recommends the EDM team stay “in tune” with the TBM manufacturers to ascertain if the apparent EPB limitation is overcome in the next decade.

During the ITR workshop, the EDM team asked, despite the challenges associated with EPB tunneling using it, if SCM were used, would the Shafts need to increase in size? The ITR does not believe so. This is because to implement the SCM mining system, the thrust cylinders must be extended maximum by the length of an additional ring like the prototype from 1998 (the actual development of the COT allows even not to extent the thrust jacks). For the Project, this would be maximum around 2m (6.6 ft) for the worst case. This means that the shield length of the TBM would be extended accordingly. As a rule of thumb for, the shield length is approximately the length of the cutterhead diameter. For The Project, this would mean a shield length of around 40 feet without the SCM system or without additional jack extension. If the SCM technology were used like its prototype 1998, the shield would be extended to around 47 feet for the worst case. This is even shorter than the smallest Shaft Diameter (currently 70 feet and the proposed innovation shaft diameters of 66 feet).

As can be seen from the aspects listed, SCM technology is very complex and demanding and therefore requires a high level of experience - on the one hand on the contractor’s side and on the other hand on the TBM manufacturer side. Due to the high level of innovation of SCM technology, it can only be used effectively by a few experienced people, otherwise the planned increase in performance cannot be achieved. Indeed, allowing the use of SCM entails an increased risk of failure/maintenance due to its increased mechanical and procedural complexity.

In summary – while the ITR does not expect nor recommend the use of SCM tunneling for the Project, we cannot predict future developments and advances in the industry. What we can agree on is that SCM, if used, would not require larger shafts. Nor would it so greatly increase the tunnel production rate beyond the “maximum” planned to date by the EDM team. The average volumes of RTM, segment deliveries, and rate of consumables would increase, but the maximum achieved – and utilized for benchmarking environmental impacts, will not be

exceeded at a sustained level. For these reasons, we recommend that the EDM neither push/plan for SCM nor limit its use if ultimately selected by a Contractor. The development of the SCM and efficient implementation in practice, especially with EPB TBM, should therefore continue to be closely monitored as a basis for a final decision.

2.3 Innovative Idea # 3: Separate (dual) Site Access at Two-Contract Sites

The current EPR concept (see Figure 2) for the two launch shafts can be summarized as follows:

- Four tunnel contracts, each going a single direction from the two launch shafts
- Each Contract assumed to be awarded six months apart
- Two contracts (North/South) each will launch from Lower Roberts and two contracts will launch from Twin Cities Shafts
- Both Lower Roberts and Twin Cities Shaft Sites will be prepared/built ahead of Tunnel Launching

Based on this, two 115 ft I.D. shafts with a shared wall will be built on Lower Roberts and Twin Cities, with each of these two sites "shared" between two tunnel contractors. It is envisioned that the first contractor on each site will construct both launch shafts.

Issues of concern with this EPR concept include:

a) Potential traffic conflicts (e.g. delivering personnel, material, segments, etc.) between two different tunnel contractors on the one-way ingress and egress ramps;

b) the relatively tight turning radius for heavy construction vehicles (carrying up to 250-ton modules) on the elliptical roadway on the top of the pad; and

c) limited laydown areas on top of the pad.

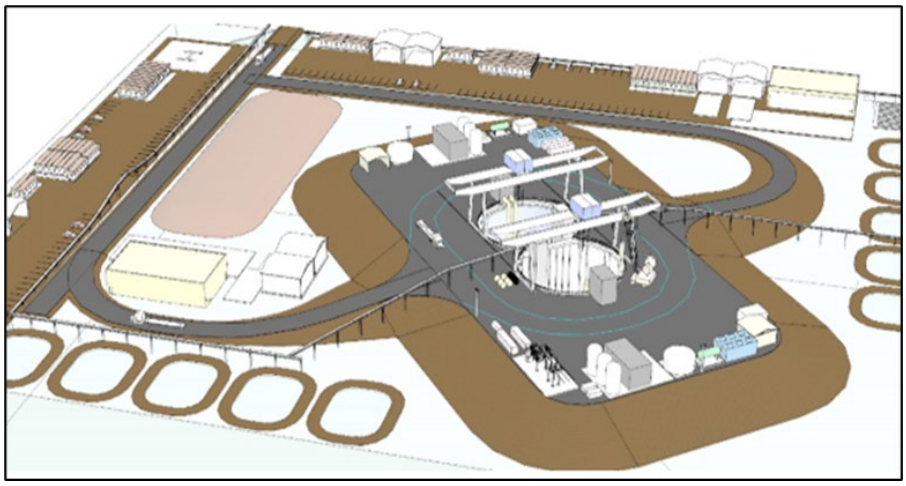


Figure 2. Representative EPR Concept Level Launch Pad and Shafts

To address such logistical concerns with the EPR concept T1 DCP, "Double Ramp Access to Launch Shafts" (see Figure 3) was developed by the DCA which includes the following features:

a) Separate ingress/egress ramps for each of the two tunnel contractors,

b) replacement of the elliptical road on top of the pad with two separate roadways with access to the two different shafts; and

c) an enlarged top of pad area with more room for separate contractor laydown areas.

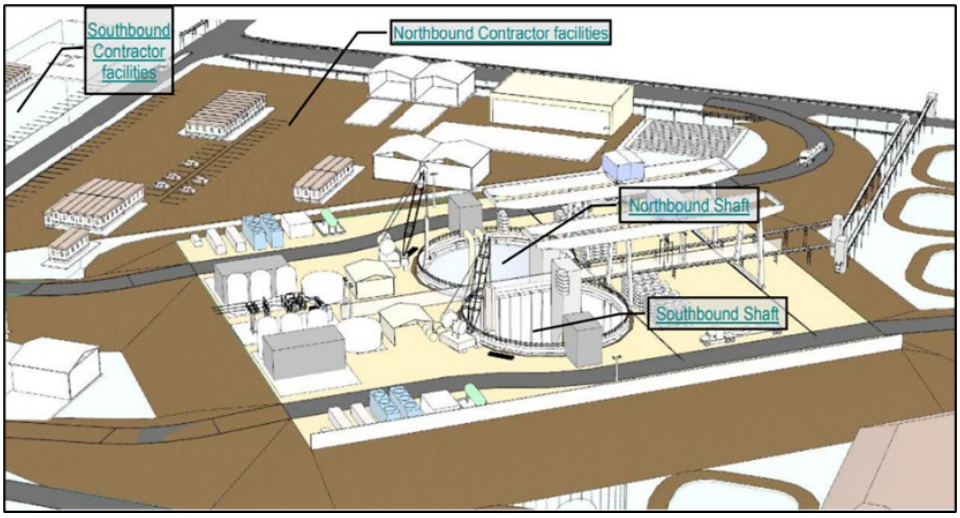


Figure 3. Innovation Concept T1 DCP, "Double Ramp Access to Launch Shafts"

The ITR discussed these two alternatives and debated the merits of building out two larger sites, with contract specific access vs. the added cost and environmental impact of doing so. We also considered the potential logistical optimization which could be "forced upon" the Contractors if they are required to share the smaller site.

The ITR came to an agreement that acceptance of Innovation Concept T1 DCP, "Double Ramp Access to Launch Shafts" is warranted at this time, particularly due to the early delivery packages from the construction of the two launch pads. We agreed also that DCA will get optimal benefit from this approach by structuring each Contract to allow the two tunnel contractors (per launch pad) to coordinate key logistical issues between themselves post award while pre-defining the necessary geometry of the early delivery launch pads.

The logistics of the access roads/ramps is only one potential chokepoint that the tunneling contractors need to resolve (between themselves) to support their respective tunneling operations. Another is getting tunnel muck out of the shaft to the ground surface. The 115' I.D. of each launch shaft is ample to support tunneling operations as indicated by Figure 4, which shows potential launch shaft logistics to support EPB tunneling operations. However, the 'Vertical Conveyor' will likely limit the rate of average TBM advancement. One way to alleviate that is "provide a longer run" (i.e., an inclined conveyor) to optimize RTM removal efficiency. One way to do this is to allow the two shafts to be connected. Accordingly, the ITR recommends that the DCA enable the contractor means and methods to allow the contractor to cut openings in the common shaft wall to allow the two 'Vertical Conveyors' to pass through the holes into the other contractors launch shafts so that steepness of the 'Vertical Conveyors' could be reduced thus increasing their respective carrying capacities.

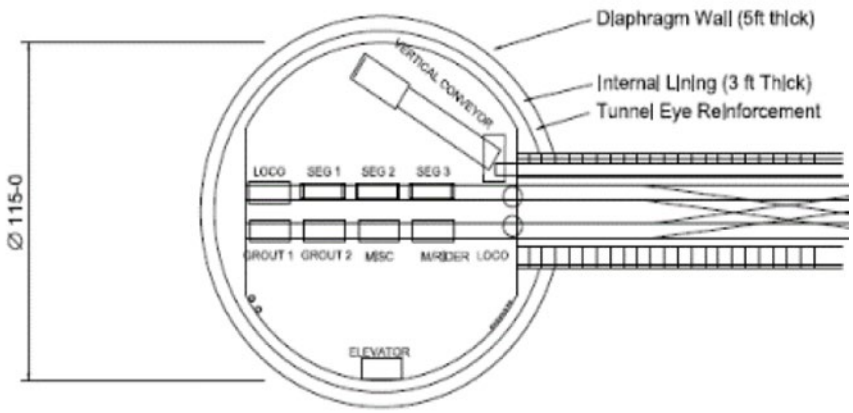
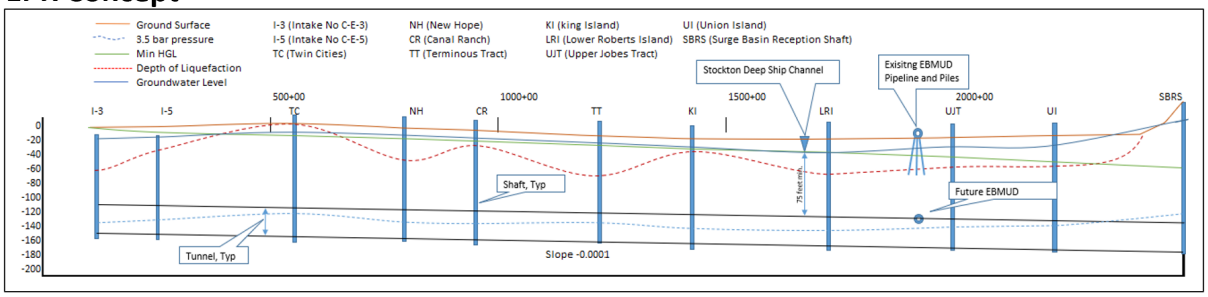


Figure 4. Conceptual Launch Shaft Logistics to Support EPB Tunneling Operations

2.4 Innovation Idea # 4 Optimize the Vertical Alignment /Tunnel Profile

The tunnel profile, as shown in Figure 5 below, in the EPR Concept slopes continuously at a slope of ~0.01% from north to south. Innovation Idea #4 considers raising the elevation of tunnel Reaches 1, 2 and the northern part of Reach 3 and lowering the tunnel from the Stockton Deep Water Ship Channel on through Reach 4 to accommodate EBMUD's MARP Tunnel Crossing. It also proposes reducing the diameter of the maintenance and reception shafts.

EPR Concept



Innovation Idea

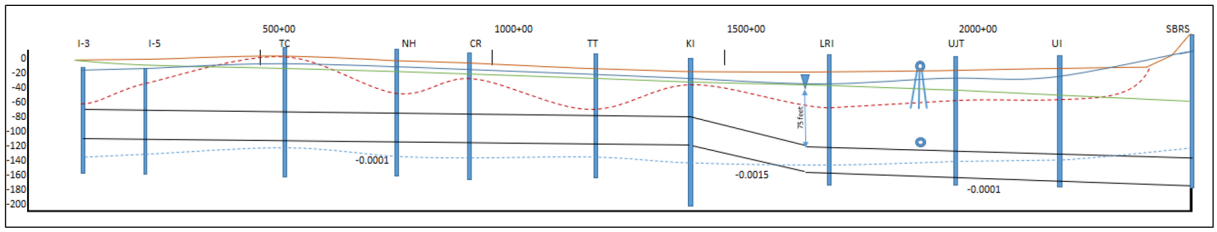


Figure 5. Comparison of EPR vs. Innovation Idea (Higher Vertical Alignment)

For this idea, the ITR was given a list of questions to answer. Before addressing the specific questions, the ITR debated the proposed idea, the impacts of it on risk, schedule, and potential environmental benefits. The outcome of this was an endorsement of the proposed change to the tunnel alignment.

1. *Are there any issues with reducing the size of the shafts?*

The optimization of the shafts, as presented, resulted in a reduction in the maintenance and reception, and intake shaft diameters. The ITR team does not see any issue with reducing the shaft sizes, so long as such a change is compatible with system hydraulics. While the reduced diameter appears to be adequate for the tunneling operation, if the contractor requested a larger diameter shaft to accommodate operations, this would be a contractor option at no cost to DCA.

2. *Are there any concerns with raising the tunnel profile in reaches 1, 2, and 3?*

The proposed raise in tunnel elevation is about 20 ft. From a design perspective, there are no issues so long as this change in profile is compatible with the system hydraulics. From a tunnel construction perspective, a larger percentage of the tunnel reaches will encounter the Modesto Formation (see Figure 6 below). While the overall characteristics of this soil unit are likely to be similar to the Riverbank Formation, there are possible zones of coarse-grained gravel material (or possibly even cobbles) at the interface of Modesto and Riverbank Formations (due to change in depositional environment, braided stream deposits, time hiatuses, and possible unconformities related to glacial and interglacial stages and subsequent differences in sea level elevation). This is not a significant problem in itself but it would become an important part of the future site investigation program.

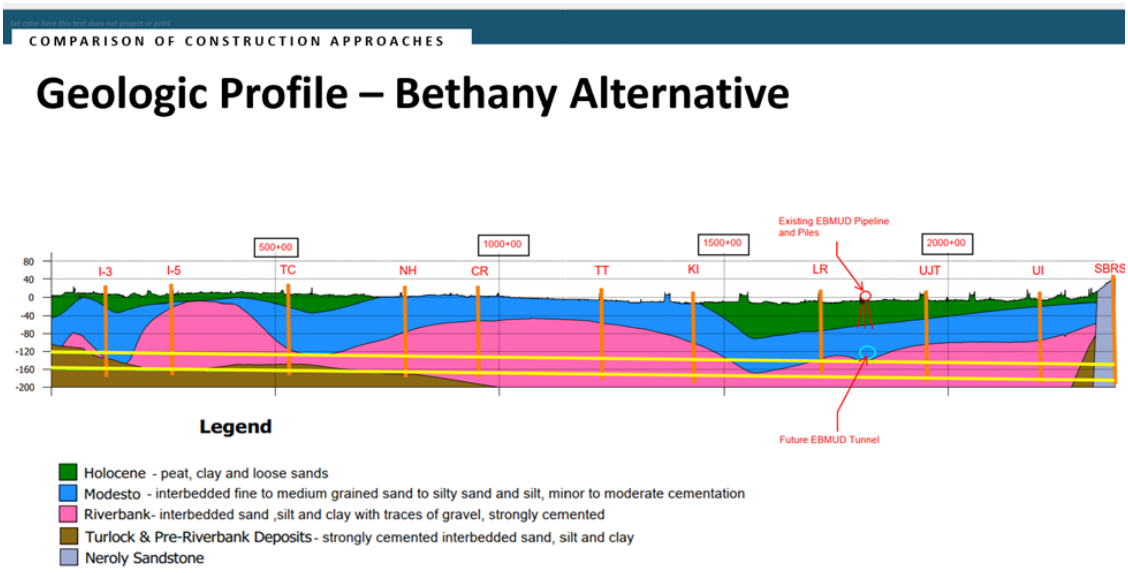


Figure 6. Geologic Profile EPR Concept

3. *Any concerns with lowering reach 4?*

Lowering the profile will increase the cost of Reach 4, primarily due to TBM operations at the higher groundwater head with increased TBM wear and more complex interventions (possibly with mixed gas), and deeper shafts. The added risk can be managed through site investigations and risk allocation. To partially mitigate the effect of the deeper profile, the ITR panel recommends reducing the tunnel slope to near flat between the Upper Jones Track shaft and the Pump Station shaft to raise the invert elevation at Bethany Surge Basin Reception Shaft by as much as 20 ft. While the Surge Basin Reception Shaft would be nearly 200 ft deep, even if the tunnel slope is not reduced, this depth is within standard practice for diaphragm (or slurry) wall construction methods.

The tunnel alignment could be further improved by revisiting the Stockton Deepwater Ship Channel minimum cover requirements with the Port of Stockton and to also perform ground improvement or other methods to allow the tunnel to pass closer to the future EBMUD tunnel and pile supported aqueduct. (This may include raising the EBMUD tunnel itself.) Moreover, technology improvements in the state-of-the-art of underpinning and ground improvement construction are likely to occur in the future. Whatever ground improvement costs, it will be insignificant in comparison to the benefit (lower cost and risk) of raising Reach 4.

4. *Do we have sufficient geotechnical information to justify raising the tunnel invert at this time?*

Based on the summary of Reach 1 ground conditions[1] (from DCA memo on "Preliminary Ground Characterization…" dated June 14, 2024), the average characteristics of the Modesto and Riverbank Formations are shown in Table 2 as follows:

Table 2. Summary of Ground Conditions Reach 1

Formation	Modesto	Riverbank
Fines content (average, %)	57	49
Soil Types (USCS and % of boreholes)	GP (3-4%)	GP (0%)
Layer thickness (average, ft)	6	6-7
Density - fine grained (average, STP):	44 (very stiff to hard)	57 (very stiff to hard)
Density - coarse grained (average, STP)	59 (medium to very dense)	84 (medium to very dense)
Local cementation (cohesionless soils)	Moderately	Strongly

[1] Ground conditions summarized in the table are for the EPR Concept tunnel envelope. Recommend the memo be updated for the proposed 20 ft raise (e.g., an increase in coarse grained fraction for 20 ft raise within the Modesto Formation was noted in boreholes along the southern part of Reach 1B).

In general, as indicated by the summary table, if Reach 1 is reasonably representative of the geology in the other tunnel reaches as it applies to the tunnel envelope within the proposed 20 ft raise, the difference between the Modesto and Riverbank Formations appears to be relatively minor. Nevertheless, it will be important to obtain additional information on the gravel unit (GP) as well as the clean sands (SP) within the Modesto Formation, especially the bed thicknesses.

To address the potential impact of gravel layers within the Modesto Formation the existing borings and geotechnical reports provide some information.

- Generalized Geologic Formations Interpreted in the Sacramento Delta Underlying Proposed DCP Tunnel Alignments and Appurtenant Facilities indicates that the gravel component found in the Lower Modesto Formation is "minor".
- Of the 12 existing borings located at Intakes A through C and Reach 1, 14 intervals were classified as GP, GP-GM or GP-SP with an interval thickness of 0.4 to 2.5 ft

(average, 1.1 ft). However, one 14.7 ft interval classified as GP was identified in boring DCIE2-DH-021 near Intake B (at depth 75.5 to 90.2 ft, bounded by SM type soils).

- For Reach 1, the DCA memo on "Preliminary Ground Characterization…" (dated June 14, 2024) reported the maximum gravel layer thickness as 6 ft.

While the thicker layers of GP type soil appear to be rare, identifying the thicker beds is important for the future development of the Contract Documents, in particular, the Geotechnical Baseline Report (GBR). Gravel (or clean sand) can be difficult to condition when using an EPBM, however, the impact will depend on the gravel layer thickness and the adjacent ground conditions relative to the mined tunnel heading (likely to be a mixed face). For EPBM excavation of cohesionless ground, when the fines content is less than 30%, the ground conditioning requires attention, but if it drops below 10%, special measures are needed to maintain a "soil plug" within the screw auger for consistent and uniform pressure drop along the auger length (such as use of polymer to bind the groundwater and soil or addition fines).

In summary, the ITR panel does not have any information that would suggest that raising the alignment is not a good idea. We cannot find any reason to not consider the shallower alignment as it has well-defined advantages in terms of reduced TBM operating pressures and shaft depths.

5. *If we decide to raise the invert, should we continue to collect geotechnical information at the greater depths?*

While along most of the tunnel alignment having geotechnical data within one tunnel diameter below the tunnel invert may be sufficient, at (a) critical tunnel sections (e.g. Tunnel at Intake Structures) and (b) all shaft locations, geotechnical data is needed at an appropriate depth (at least three tunnel diameter) below the tunnel invert for performing seismic soil structure interaction and evaluation of artesian conditions.

6. *If there is still some concern with neglecting effective soil pressure in the tunnel design, is raising the alignment decision prudent? Any other issues to consider?*

For tunnel Reaches 1, 2 and the northern part of Reach 3, the raise is about 20 ft, thereby, positioning the tunnel springline at about 100 ft depth. Considering a lower bound at rest

earth pressure (Ko) of around 0.3, the effective horizonal confinement, or earth pressure, is around 13 psi compared to a maximum internal pressure, above hydrostatic, of about 9 to 22 psi (head of about 20 to 50 ft above the ground surface) between tunnel reaches 1 and 3. Given the existence of "hardpans, which are dense, compacted layers of soil or sediment that have been weakly to highly cemented, often by calcium carbonate or silica" obtaining and maintaining confinement above Ko should be possible.

The excess internal pressure above the effective earth pressure (9 to 22 psi – 13 psi = up to 9 psi) will result in tunnel liner displacements that cause segment radial joint opening depending on the ground stiffness (using small strain modulus) and the ability to pre-stress the ground by utilizing relatively high tail void grouting pressures (additional modeling required to estimate joint displacements). If this turns out to be excessive, depending on possible reinforcement from the longitudinal dowels and the joint gasket design, reinforcement of the tunnel liner using hoop steel within specific tunnel reaches could be required. In any case, the overall potential savings derived from raising the alignment would most likely exceed the cost of any additional liner reinforcement, if required. Furthermore, the 20 ft elevation difference reduces the maximum excess pressure from up to 9 psi to about 6 psi, not a significant change.

Near the Intake 3 and Terminus Shaft, the estimated depth for liquefaction gets close to the tunnel crown. Accordingly, additional exploration of these areas is warranted.

2.5 Innovation Idea # 5 Alternative Surge Basin Foundations and Walls

Question to Answer: "Of the different options considered for the foundation and wall construction of this surge basin, which option(s) appear to be the best? Provide any suggested improvements and or concerns identified.

Foundations:

The conclusions of this innovation recommend the replacement of a drilled shaft surge basin foundation with a tie-down foundation. The ITR panel concurs with these conclusions and recommends that this foundation innovation be adopted for the base design.

Walls

Surge Basin Walls configurations are shown in Figure 7.

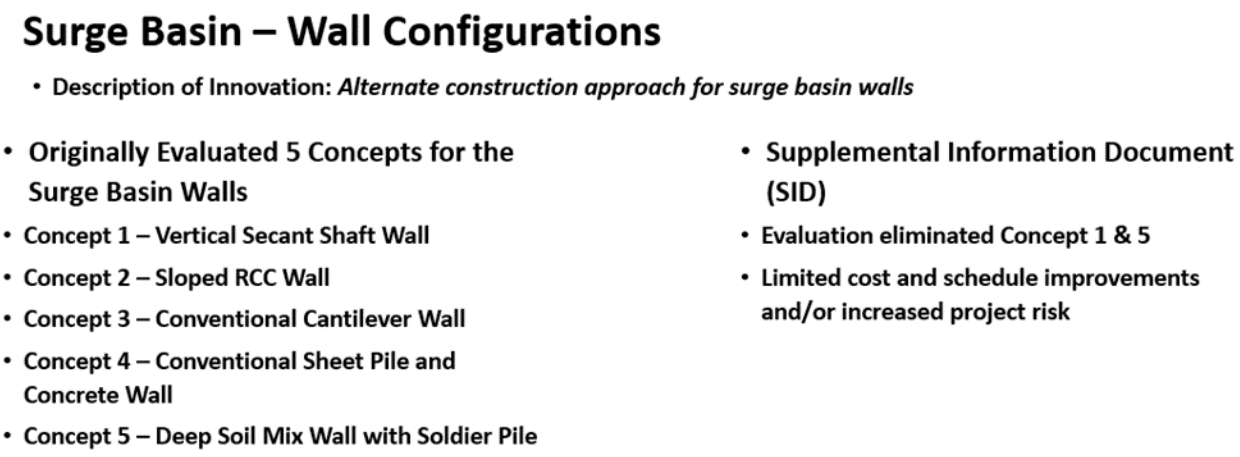


Figure 7. Innovation P3B DCP Surge Basin Wall Configuration.

The ITR panel concurred that Concepts 1 and Concept 5 should not be considered for further evaluation. Of the remaining three concepts the ITR panel recommends that a fourth concept should be added with rakers replacing the proposed tiebacks (see Figure 8).

1. All four alternatives are feasible from design and construction perspective.

2. A 135 feet cut-off wall has been considered for all 4 alternatives. Although this penetration depth may be appropriately conservative during a 10% design, it appears to be excessive for 45 feet of excavation. A major cost savings could be realized by performing a system wide hydrogeologic / groundwater study to identify the depth, thickness, and pressure head within the confined aquifer, and thus reducing the penetration depth of the cut-off walls.

3. The free standing 35-foot-tall retaining wall option would require special connection of its foundation to the 5-foot-thick concrete slab due to a high overturning moment.

4. The group's opinion is that the roller compacted concrete (RCC) option is the most suitable alternative, especially because it could easily accommodate the access ramp. However, the buoyancy and leakage conditions should be checked.

5. For all walls with tiebacks: It is recommended that an alternative system for lateral support of the wall consisting of permanent internal rakers, connecting the wall to the base slab, be considered.

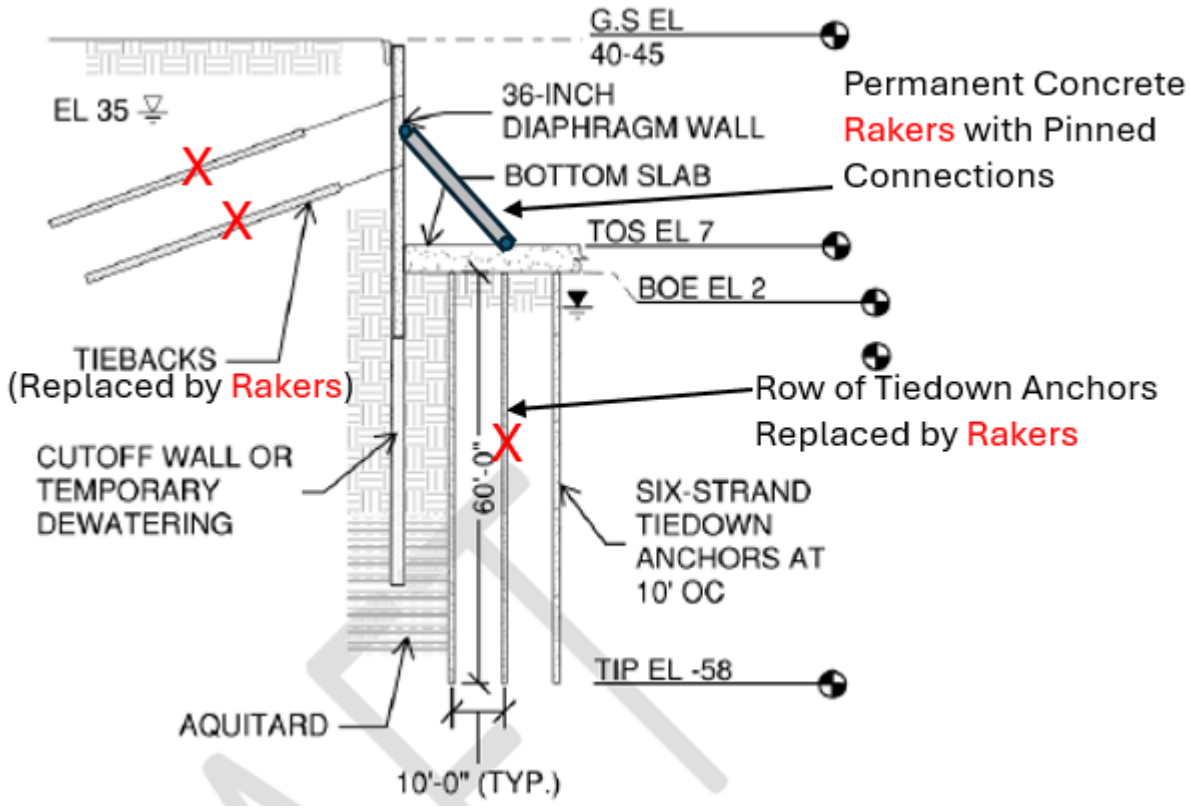


Figure 8. Alternate Surge Basin Wall Configuration with Permanent Concrete Rakers Replacing the Tiebacks and Replacing Some Perimeter Tiedown Anchors

While any of these four wall configurations (Concepts 2 thru 4 plus the raker configuration), reasons for recommending the RCC (Concept 2) surge basin wall configuration include the ease of constructing the access ramp (see the Figure 9 below), simplicity of construction and confidence of achieving the 100-year service life.

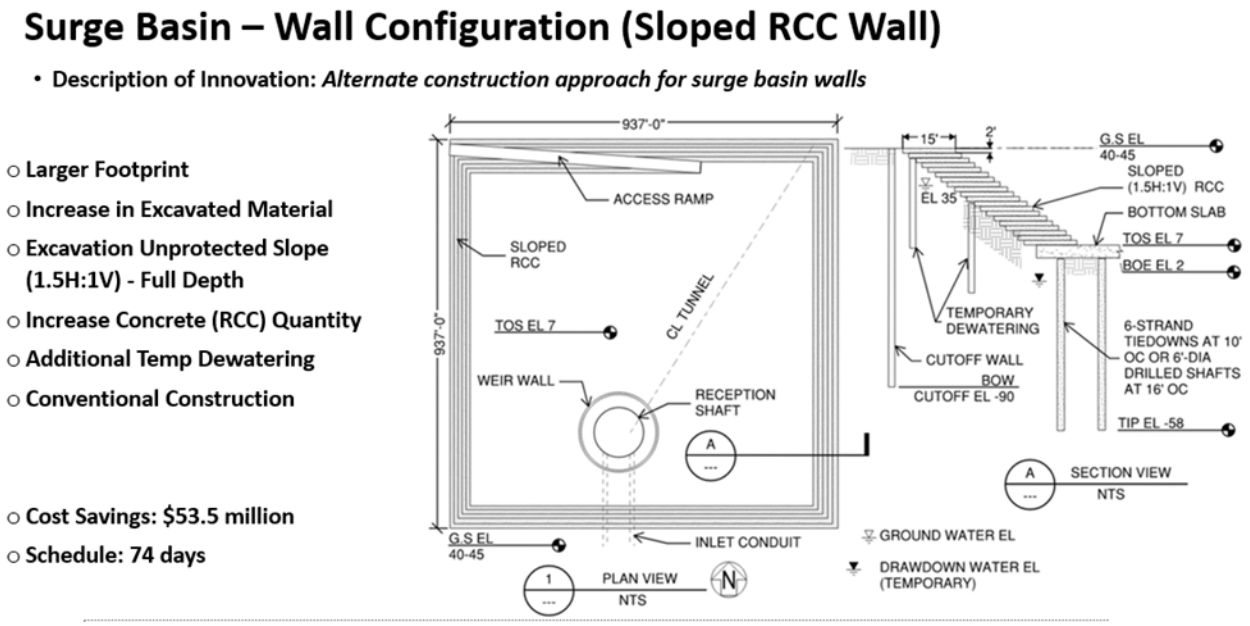


Figure 9. RCC Wall Concept for Surge Basin

In summary, the ITR panel recommendations:

- Consider evaluating the use of shorter cut-off walls once the aquifer situation is better understood. In this regard, it is suggested that a Hydro-Geo study be conducted to better understand the location, number of, and extent of any aquifer.
- All of the Tie-back options should consider being changed to permanent rakers, counterforts, or other mass materials (RCC) within the basin, which would both assist with uplift and reduce the footprint (i.e. reduce tie-downs in invert). Removing the tiebacks also alleviates all the issues associated with liquefaction and concern for the relaxation of them. Further design will be required to determine the spacing and sizing of the rakers to withstand the wall forces. The slab tiedowns to be replaced by the raker's vertical force will also be determined by the spacing of the internal rakers.

2.6 Innovation Idea #6: BRPP Interlocking Dry Pit Shaft Design

The current EPR concept (see Figure 10) uses box diaphragm structures for the dry pits and wet wells for the Bethany Reservoir Pump Plant (BRPP) with 'Pump Isolation Bulkhead Panel Slot Structures' for isolating the individual pumps from the wet well for maintenance.

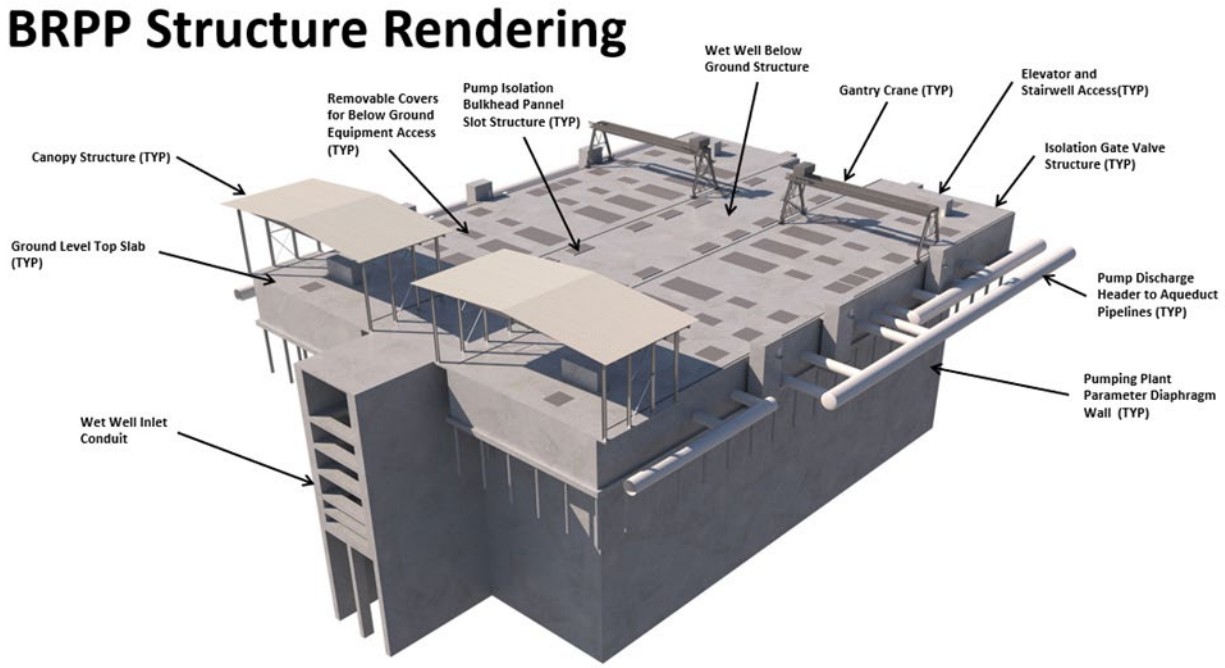


Figure 10. EPR BRPP Box Diaphragm Structure

The proposed Interlocking Dry Pit Shaft Design innovation concept is shown in Figures, 11 and 12.

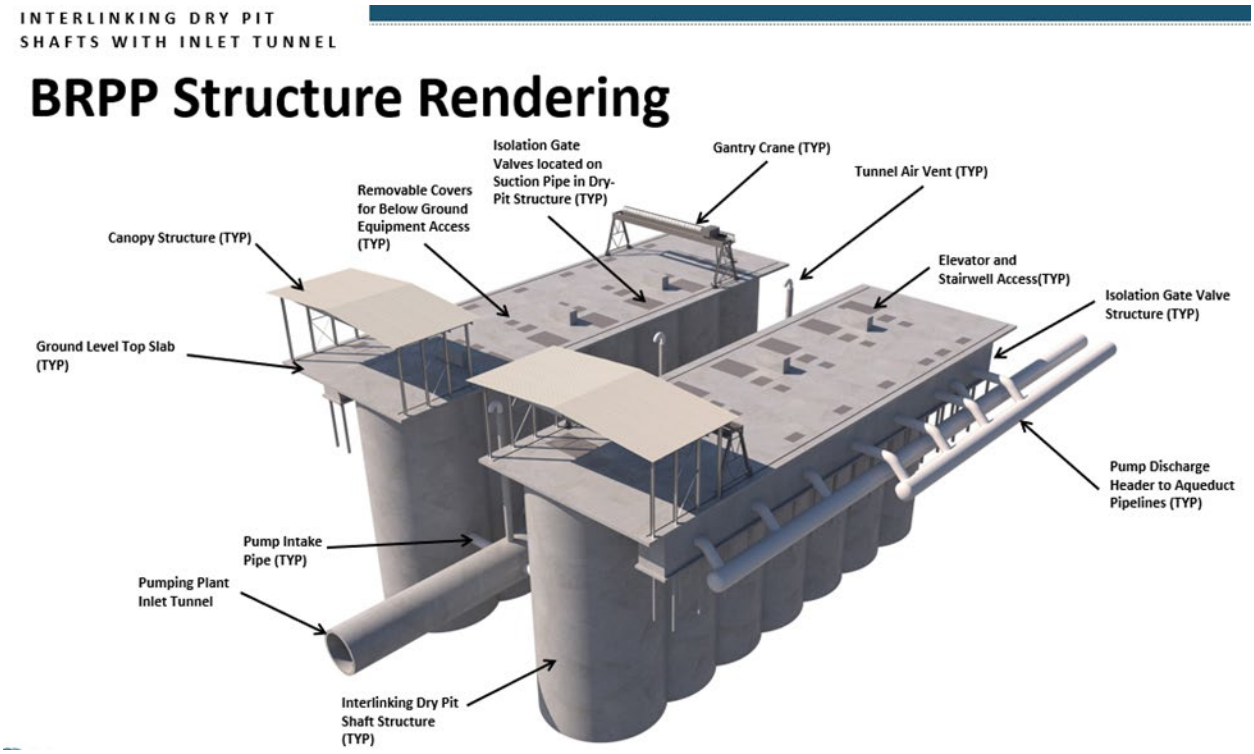


Figure 11. Interlocking Dry Pit Shaft Design Innovation Concept

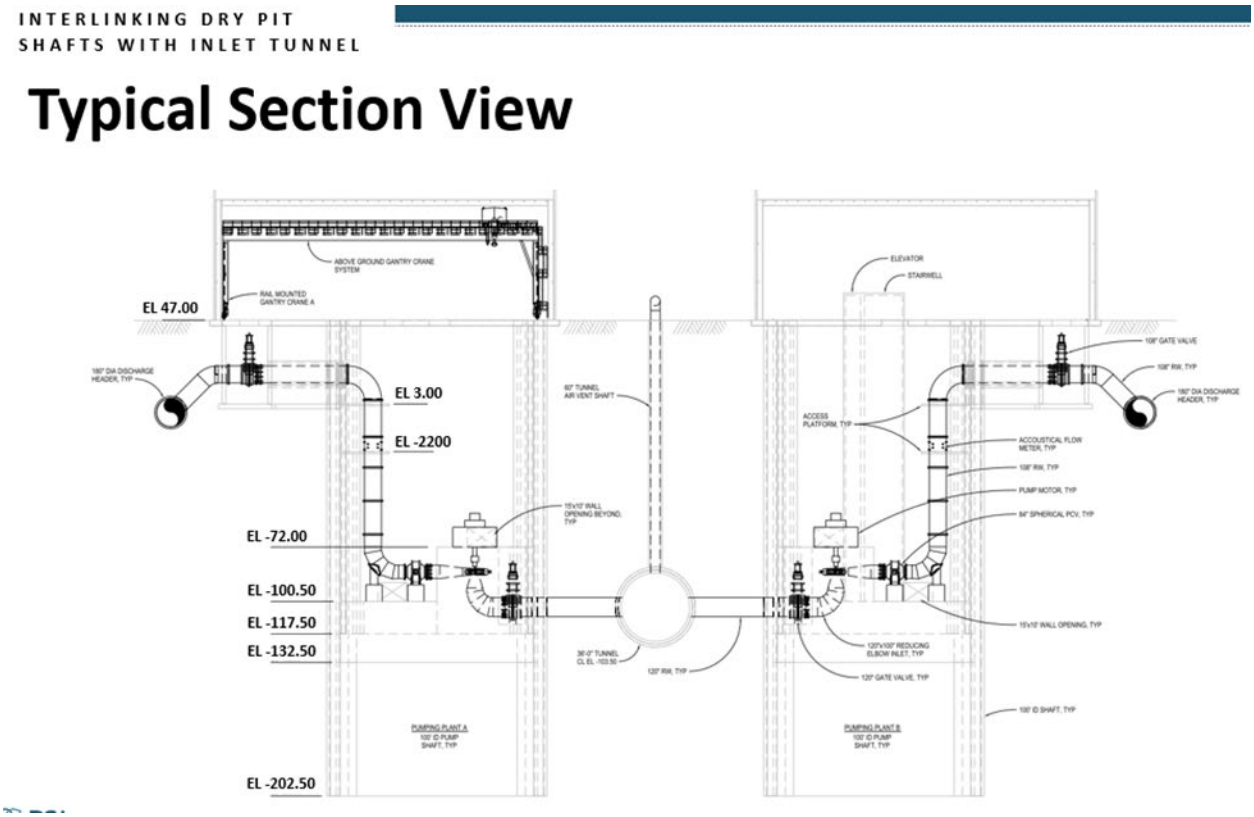


Figure 12. Interlocking Dry Pit Shaft Design Innovation Concept - Profile

The ITR generally considers both the EPR configuration and the Innovation concept "feasible". However, after debating the merits of each, and the Idea #6 Mined Wet Well was understood, the team coalesced around the Interlocking Shaft Concept. All ITR panel members agree that the Interlocking Dry Pit Shaft Design should be adopted as the base design, because it reduces the overall construction schedule (e.g. reduces concrete and excavation quantities), eliminates potential need for permanent tiebacks around the perimeter and allows for the mined wet well. However, the ITR panel recommends the EDM team acknowledge and investigate the following:

- The 240-ft to 250-ft height of the diaphragm panels is close to the limit for the current Construction Industry technology unless ground is consistent;

- Verticality and alignment of the "reinforcing" at these depths particularly for the Y-intersections of the shaft interlocks (which do not occur in the box diaphragm design) will be challenging; and
- It is recommended that double valve isolation be provided at each pump inlet (within the dry pit structures).

Some of the ITR members recommend that Option 2-A (replacing the Wet-well with an Inlet Tunnel [SEM]) be further developed along with the interlocking shaft option.

During the second day the EDM team asked the ITR if there is sufficient information to make this decision now?

Yes, the ITR panel considers that there is adequate information for this idea to advance. However, the ITR panel recommends that the DCA consider:

- Getting two or three Slurry Wall Contractors engaged to address "limitations of the industry"
- Confirming that no boulders/cobbles are expected in the formation, as this will make the cutterhead jump; and
- Obtaining Operational Requirements for isolation and other items that might change the size of the structure before advancing as part of the next stage of design.

2.7 Innovation Idea #7 Wet Well Mined Tunnel

The ITR was presented with three different design concepts for the Bethany Pump Station Wet Well: Top Down, 3-Stage bottom up, and an Inlet Tunnel. Of the three, the ITR team prefers the Inlet tunnel. Similar to the Interlocking Shafts, mining the Wet Well is expected to reduce the construction schedule, lower project risk, and reduce the environmental impact as there is simply less material to be excavated and concrete to be placed for the same facility. The ITR conclude also that:

- Driving non pressurized (open face) tunnel as proposed requires the ground ahead of the tunnel operation be improved/stabilized. The EDM team proposes this be done by depressurizing the ground within the pump station footprint.
- SEM or open shield with ribs and lagging could be employed to mine the connections.
- It is recommended the method of excavation and initial support be left open to the Contractor. Design should focus on specification of the final lining with due

attention to the design and specification of the tie-ins/connections to the wet and dry pits.

- Consider moving the reception shaft and pump station box closer together to reduce the overall length of the tunnel (especially, if tie-backs SOE [Support of Excavation] option can be eliminated).
- The mined tunnel (like the interlocking shafts) has been preliminarily reviewed and found to be feasible by Operations. Consider advancing the twin dry pits concept (e.g. South Side, North Side top down/or bottom up) with tunnel in center to allow flexibility. and allow as an option in the event Operations rejects the Mined Tunnel concept.
- It will be important, during final design, to determine the feasibility and effectiveness of groundwater depressurization. Pump tests are recommended to be performed at the conceptual design level. If dewatering proves to be impractical, ground improvement or temporary ground freezing could be employed.
- The ITR panel does not see an issue with the design approach as long as the sequence of excavation is accounted for, and settlements or ground movement is addressed /accommodated.

3.0 Innovation Compatibility

When the ITR panel began their work, some of the above Innovations were thought to be incompatible with one another. At the conclusion of Day 2 of the Workshop, the ITR performed a compatibility check, working through each Innovation and comparing it to one another. The conclusion is that they are all compatible, and the project could adopt all without adding any conflicts in theory or approach.

4.0 Additional Thoughts and Observations

4.1 Contracting Approach

The ITR discussed alternative delivery methods for the design and construction of the Project. Much of this discussion acknowledged:

- Logistics (delivery of material, movement of RTM) is an important driver of cost and schedule for any of the contracts.
- Significant Temporary Works are required on every contract
- The DWR is currently not anticipating the use of Alt Delivery

- The tunnel/mega project “industry” (competition, capacity, etc.)
- Current “track record” of mega project deliveries in the USA

Based on the limited value in terms of cost provided by Alt Delivery (when CM, Oversight, Owner’s Engineer, independent estimating, and multi-stage procurement are included) the ITR believes the lowest cost to design and construct the work will be achieved through a Design-Bid-Build (DBB) delivery which adopts the following:

- If permitted, the contractor should be selected based on “Best Value”.
- Optimize the use of Temporary Work/Permanent Work “limits”.
- Include in drawings “alternative approaches” for major elements which are subject to means and methods (e.g., type of cut off);
- Use “minimum diameter” language to allow flexibility.
- Consider USCOE approach for negotiating changes (written into the Division 1)
- Utilize unit Pricing and Provisional Sums for major elements where quantities may vary based on means and methods.
- Keep the “major construction decisions” with the Contractor – example: type of TBM.
- Clearly define the criteria which will “drive the means and methods” – e.g. power available at site, space for the RTM, etc.
- Emphasize the Value Engineering clause.
- Utilize the “dual access recommendation”
- Execute a meaningful and open Outreach (but only after dates are set and DCA can stick to it).

The above statement assumes there is adequate time in the Project’s Schedule to enable a linear progression of Final Design to Construction, including 8 to12-month procurement periods for each. If there is insufficient time in the overall project schedule to achieve this, then the ITR suggests the Agency consider the use of the CMGC/CMAR model (i.e. Construction Manager General Contractor / Construction Manager at Risk project delivery models). This would allow the Construction Procurement to overlap with Final Design, engagement of a General Contractor in the development of the above listed items, particularly with respect to Logistics and Temporary Work. While the ITR is convinced this will add cost, it will potentially eliminate 12 months of Procurement for each of the “Packages” that it is applied to.

4.2 Cost Estimate

The ITR was shown a summary Cost Estimate for the Project. The estimated costs were summarized for major items and presented as a comparison/summary to identify the potential reductions in cost generated by the above list of innovations.

In reviewing and discussing the costs, the ITR generated the following suggestions for the DCA to consider going forward:

- Update Life Cycle Costs for the Innovations, so that innovations are incorporated completely in the total cost.
- Shorten or move the Construction Duration where Innovations allow this to occur. In doing so, the team could capture the reduced costs (overhead, financing, etc.) associated with the value of time.
- Update the Risk Based Cost estimate for the Innovations to capture the reduced risk (and impact of them on total cost) in the same manner as the EPR design.

Ground improvement is being considered adjacent to shafts within soft / liquefiable material for (a) static support of flood control embankments and (b) lateral support of shafts during a seismic event. The appropriate and cost-effective ground improvement methods to meet design objectives of (a) and (b) may be very different. Cost savings could be realized to identify the need for ground improvement for stabilizing the shafts during the design seismic event through a seismic-shaft-soil interaction analysis. If ground improvement is not needed for this purpose, much simpler and less costly ground improvement could be designed to statically support the embankment.

One such method consists of installing a layer of geogrid at the ground surface, a one-foot-thick layer of crushed rock (railroad ballast material) over the geogrid and placing another layer of geogrid over the crushed rock layer. The embankment material could then be placed over this system to the desired elevation. Using this alternative may require (a) a slow pace of fill placement with monitoring of pore water pressure (b) minor but insignificant down drag loads, and (c) maintaining the embankment profile due to static settlement or after occurrence of the design seismic event; however, it eliminates the problem related to ground improvement (DSM or jet grouting) in organic-rich / peaty soil

4.3 Timeline and Suggestions for Additional Geotechnical Explorations

The ITR observed throughout the Workshop that several questions from the EDM team are related to timing and the need for additional geotechnical information. The ITR discussed this topic during the two-day workshop and addressed specific concerns of the EDM team in the applicable sections above. Recommendations that come out of this effort include:

- The current amount of Geotechnical Information is adequate for the design and the level of design presented.
- Given the construction methods proposed for tunnels shafts and basins, there is sufficient geotechnical information to add the innovations into the projects with confidence.
- Additional Geotechnical Information will likely reduce the complexity of the designs indicated and will reduce risk. As an example – a subsurface (only ground water) hydrologic study of the groundwater regime at Bethany is a small investment likely to have a very large positive impact on cost, schedule and understanding of risks.
- Focus any additional explorations along the Tunnel Alignment on the "most critical locations" (e.g. shafts and valley floors or low cover areas).
- Consider seismic reflection in areas where borings are more difficult/harder to perform (e.g. access or legal hurdles).

5.0 Concluding Recommendations

The ITR reviewed 8 Innovations for the Project. In a workshop environment, the ITR discussed, debated, and ultimately came to agreement on the following conclusions and recommendations:

- Developing dual access at the two major tunnel launch shafts is encouraged.
- The Tunnel Alignment may be raised by 20 ft for Reaches 1 2 and 3 (upstream of EBMUD ROW). Reach 4 alignment could be further improved by considering flattening the alignment or more importantly to revisit the agreements with the Port of Stockton's channel and EBMUD's MARP regarding clearances or mitigation measures.
- Optimizing the tunnel lining to reflect external confinement (soil + ground water pressure) is prudent and should be advanced.

- Semi Continuous Mining could potentially be utilized on Reach 4. However, nothing needs to be "changed" to allow this to happen.
- For the Surge Basin wall design, the ITR considers the RCC option the preferred approach of those presented and also suggests an internally braced alternative where rakers or buttresses are installed be considered.
- The Interlocking Dry Pits are a very good idea and they appear to simplify construction. The Twin Box dry well concept could be advanced if the interlinking shaft alternative is determined to be not feasible to construct.
- The tunneled wet well Innovation should be advanced. Design effort should focus on the Final Lining requirements and leave the method of tunneling and temporary support to the contractor's means and methods.
- DBB delivery provides appropriate cost control for the project, however, if schedule governs over cost, CMAR is the preferred alternative-delivery approach. However, a mix of both is likely the way to go (e.g. DBB for the Site Prep/Intakes, CMAR for the Tunnel and Shaft & Bethany Pump Station where schedule benefit is significant.

The ITR enjoyed our time working with the Project Team on this very challenging and unique project. We trust the work completed helped advance the project in some manner.

Sincerely,

The Independent Technical Review Panel

Dan Adams | Gregg Korbin | Jon Y. Kaneshiro | Ulrich Rehm

Richard Millet | Shahriar Vahdani | Dale Berner

Attachment 1 – Panel Member Resumes

Daniel Adams, PE, DBIA

Principal Engineer

Education

- MS, Civil Engineering, Geotechnical Concentration, University of Massachusetts, 1988
- BS, Civil Engineering, University of Massachusetts, 1988

Registrations/Certifications

- Professional Engineer: CA, MA; NY, OR, WA
- Design-Build Professional (DBIA)

Awards/Recognition

- Distinguished Alumni; Umass CEE, 2016
- Golden Beaver Engineering, 2020

Expertise

- Management
- Project Delivery
- Risk Allocation & Alternative contracting
- Tunnel Design and Construction
- Dispute Resolution
- Shaft Design and Construction
- Ground Improvement

Dan Adams has been working for 35 years in the design and construction of tunnels and underground structures. He started with Delve Underground in the late ’90s in Melbourne, Australia and since has worked on major projects in each of the company’s markets, serving as project manager or director on projects on the east and west coasts of North America. Prior to moving west in the early ‘90s, he worked on Area Geotechnical and Section Design teams on Central Artery’s Ted Williams Tunnel, Fort Point Channel Crossing, and the I-90/93 Interchange. During his time in Australia, Dan gained significant experience with both design-build delivery and shotcrete as a final lining for roadway tunnels driven using Sequential Excavation Method (SEM). Since 2005, when he served as project manager for Delve Underground/HNTB/AECOM tri-venture for University Link, he has gained significant experience managing large inter-disciplinary teams for tunnels that are built in heavy urban environments, where traffic control and management is a make-or-break part of a project’s success.

Relevant Experience

Newtown Creek CSO, NYC DEP, New York, NY (December 2022-Present)

Dan is serving as project manager for the Delve Underground Brown and Caldwell JV for the preliminary engineering and final design of New York City’s first major CSO tunnel project. The $1.5b project includes a 3.6m long, 21 ft. diameter tunnel which follows Newtown Creek in and out of Brooklyn and Queens from English Kills to the wastewater recycling facility. It also includes a dewatering pump station, four drop shafts, and odor, screening, and overflow controls at each outfall connection.

Sumner Tunnel Re-Construction, MassDOT, Boston MA (November 2021-Present)

Dan serves as design manager for this $150m design-build contract that includes the removal/re-construction of ceilings, roadway decks, and fire life systems for the 100-year-old tunnel. The project includes an innovative use of pre-cast segments to restore the tunnel’s arch integrity and improve the ventilation system’s performance. The work includes portal renovation, replacement and upgrade of the tunnel fire and safety systems, and reconstruction of the deck superstructure and final pavement. The firm is prime designer under sub-contract to the project’s builder, JF White, and is responsible for design management, structural, ventilation, and civil design.

Bay Park Conveyance Design-Build Project, NY DEC, Nassau County, NY (October 2020-Present)

Dan is serving as design manager for this $440m design-build contract that includes the renovation and re-lining of 7.3 miles of Bay Park Aqueduct, 3.5 miles of micro tunneled force-mains, and renovation and upgrades to two CSO pump stations. Delve Underground is lead designer for the Western Bays Constructors JV, and is responsible for design management, geotechnical engineering, and structural engineering for all underground structures including deep shafts, microtunnels, and renovation of the existing aqueduct. Dan led the multi-firm design team through the proposal and final project pricing. Dan has led the team in maintaining schedule and quality, while managing the interface with the owner and contractor as the design develops. A key technical project issue is traffic control and management, as the alignment runs entirely within the Bay Shore Parkway.

Rondout-West Branch Bypass Tunnel, NYC DEP, Roseton and Wawarsing, NY (2011-Present)

Dan is design team project director leading the $650m project. Throughout the design phase, Dan led the team through a complex decision process and assembling and chairing technical and risk review workshops. Since construction commenced in 2014, he has supported the project team in an

advisory role. The scope of work for the contract includes project management, geotechnical engineering, inspection and condition assessment, rehabilitation design, new tunnel and connection design, sequencing and scheduling analysis, cost estimating, and construction phase services.

Northgate Link Light Rail Extension Final Design, Sound Transit, Seattle, WA (2010-2021)

Dan served as project manager for the final design, and then project director. During the design phase (2016 completion), he led the 36-firm team through the detailed design of 13 different bid packages. When construction started, Dan became project director, helping resolve issues during that phase. The project, which opened in October 2021, includes 4.3 miles of double-track light rail, which consists of 3.5 miles of twin bored soft-ground tunnels, and .75 mile of retained cut fill, and elevated guideway structures. The project also includes two underground transit stations, one elevated station, a portal structure, and 23 cross passages, all of which were designed and built using SEM with shotcrete as final lining. Delve Underground served as the prime consultant, providing project management, geotechnical engineering, structural engineering, tunnel design, estimating, and scheduling.

University Link Light Rail Extension Final Design, Sound Transit, Seattle, WA (2006-2016)

Dan served as project manager for final design and construction phase services of this $1.2 billion, 3.15-mile light rail extension consisting of twin-bore soft ground tunnels and underground stations. He led the tri-venture's effort, primarily focusing on client relations, schedule and resource management within the team, and technical guidance. The project includes two cut and-cover stations located in dense, urban neighborhoods: Capitol Hill Station, measuring 800 feet long by 95 feet wide and 72 feet deep; and University Station, which measures 366 feet long by 108 feet wide by 105 feet deep to house both the station and a track-crossover. This station box was used to stage the construction of the twin bores to the south. The project began in 2006, final design was completed in 2008, and entered revenue service in 2016.

M-5 East Motorway, Sydney, Australia (1998-2000)

Dan led tunnel lining and rock support design for this 2.5-mile-long, twin-bore highway tunnel and 2.1 miles of ramps and vent tunnels. He was responsible for preparation of drawings and specifications. His work involved the coordination of the tunnel support and lining with the roadway geometry, ventilation, and drainage design efforts of other consultant groups within the team. The tunnels were driven using the SEM method – with rock bolts, cable anchors and fiber reinforced shotcrete for final linings. The project incorporated several "firsts" which have since become standard for design incorporates several unique elements, including underground interchanges, deep portals, a vehicle cross-over at mid-tunnel, pedestrian cross passages, emergency breakdown bays, fan niches, and a complex system of vent-distribution tunnels.

Publications

Adams, D., Pelligrino, G. (1996). "The Use of Jet Grouting to Improve Soft Clays for Open Face Tunnelling," presented at the International Society for Soil Mechanics and Foundation Engineering symposium. London, England, April 1996.

Adams, D.N., B.J. Hutchison and C. Wilson (In Press), "Freezing to Tanking: Challenges of the City Link Driven Tunnels," Rapid Excavation and Tunneling Conference, Orlando, Florida.

Adams, Daniel N., et. al., (2001). "M5 East Tunnels: A Flat Roofed, Bolt and Shotcrete-Lined Highway, " 2001 Proceedings Rapid Excavation and Tunneling Conference, Society for Mining, Metallurgy, and Exploration, Inc./ American Society of Civil Engineers, Littleton, Colorado, pp. 501-512.

Adams, Daniel N. (2005). "Design Build: Who's got the Risk?" Tunnel Business Magazine, June 2005.

Adams, Daniel N. et. al. (2005). "Design of the Brightwater Conveyance Tunnels," 2005 Proceedings Rapid Excavation and Tunneling Conference, Society for Mining, Metallurgy, and Exploration, Inc./American Society of Civil Engineers, Littleton, Colorado, pp. (in press).

Adams, Daniel N., Lamb, I.A., Morgan, A.M., Sleavin, J. (2008). "Design of the University Link Tunnels and Stations." North American Tunneling Proceedings, San Francisco.

Gregg E. Korbin – Resume

Background

January 2021

Born: 22 September 1949, U.S. citizen.
Address: 1167 Brown Ave., Lafayette, CA 94549
Phone/fax: (925) 284-9017
E-mail: gekorbin@earthlink.net

Education

Department of Civil Engineering, University of California, Berkeley: 1973-75 Ph.D., Major Field - geological engineering, Minor fields - soil mechanics and engineering analysis; 1967-72 B.Sc. and M.Sc. in civil and geological engineering.

Positions

1981-Present: Independent geotechnical consultant; 1980: Senior consultant with Lachel-Hansen & Assoc., CO; 1978-79: Post Doctoral Exchange Fellow from U.S. Department of Transportation to Transport and Road Research Laboratory, England in tunneling technology; 1975-78: Lecturer and Assistant Research Engineer at U.C. Berkeley.

Research and Publications

Dr. Korbin has performed research and published over 30 papers and technical reports in the following areas: model and field studies of ground pre-reinforcement, modeling and analysis of squeezing ground and standup time, tunnel support and pressure tunnel liner design, behavior of tunnels in active faults, aspects related to underground disposal of nuclear waste, and factors influencing the performance of tunnel boring machines.

Professional Experience

Since 1975 Dr. Korbin has consulted on over 100 projects including dams, hydroelectric facilities, and subway, water, railroad and highway tunnels. Consulting work has included site investigations, field and laboratory testing programs, dam foundation and slope stability analysis, instrumentation system design and installation, tunnel support and liner system design, selection of excavation methods, construction plans and specifications, construction prebid evaluation and claim analysis, assessment of TBM performance, Disputes Review Boards, and Design/Construction Review Boards.

Experience from over 50 projects where TBM's were employed or proposed include: East 63rd.St. Subway, NY; Kielder Water Tunnels, England; Tunjita Valle and Rio Negro Water Tunnels, Colombia; Milwaukee Sewer Tunnels, WI; WMATA Contracts K-1 and A10a, Wash., D.C.; Hanford Basalt Waste Isolation Project, WA; Foothills Water Tunnel, Denver, CO; Buffalo LRRT Subway, NY; Los Angles Metro, CA; Kerckhoff 2 Hydroelectric Project, CA; Sandbar Hydroelectric Project, CA; Mediterranean-Dead Sea

Hydroelectric Project, Israel; Rogers Pass Railroad Tunnel, Canada; State of California Superconducting Super Collider Project; Boston Harbor Cleanup, MA; Waste Isolation Pilot Project Brine Experiment, NM; Muck Valley Hydroelectric Project, CA; North Fork Stanislaus River Hydroelectric Project, CA; Metropolitan Water District of Southern California Inland Feeder; Passaic River Basin Flood Control Project, NJ; Grizzly Powerhouse Project, CA; Stanley Canyon Tunnel, CO; MetroWest Water Supply Tunnel, MA; Alumysa Project, Chile; Cowles Mountain Tunnel, CA; Baspa Hydro Electric Project, India; CSO Dearborn, MH; Westside LRT Tunnel, OR; LA Metro Red Line, C0311 and East Side Extension, CA; Porce II Hydro Electric Project, Colombia; Point Loma Tunnel Outfall, CA; South Bay Tunnel Outfall, CA; River Mountains Tunnel No.2, NV; Berryman Water Tunnel, CA; Second Manapouri Tailrace Tunnel, New Zealand; North Dorchester Bay and Reserved Channel CSO Facility, Boston; Chattahoochee Interceptor Relief Tunnel and Nancy Creek, West Area, South Cobb, South River and No Business Creek CSOs and tunnels, Atlanta; DR02, Detroit; Westside and Eastside CSOs, Portland; Port of Miami Tunnel, FL; East Side Access and No.7 Subway, NY; THE (or ARC) Project, NJ; Brightwater Sewer Tunnels, WA.; Blacklick Sewer Tunnel, OH.; 3RPORT CSO, Ft Wayne, IN (VE workshop).

Hydroelectric projects or pressure tunnels with field testing and/or design involvement include Seboyeta Pump Storage, NM; Balsam Meadow Pump Storage, CA; North Fork Stanislaus River, CA; Dinkey Creek, CA; Jiguey-Aguacate, Dominican Republic; Grizzly Powerhouse, CA; Stanley Canyon, CO; Tazimina Hydroelectric Project, AL; Potomac Bi-County Supply Main, Wash., D.C.; Inland Feeder Project, CA; MetroWest, Boston; Alumysa, Chile; SM3 and Pingston Hydroelectric Projects, Canada; Lake Hodges Pumped Storage, San Diego; Romaine 2 and 4 Hydroelectric Projects, Canada; SFPUC Mt Tunnel, CA; and White Pine Pump Storage, NV.

In addition, general design and instrumentation work has been performed on the following: Bonneville Railroad Tunnel, WA; Dwight D. Eisenhower Road Tunnel, CO; East 63rd St. Subway, NY; Los Angeles Metro; North Fork Stanislaus River Hydroelectric Project; Abiquiu Seepage Adits, NM; WSSC Bi-County Water Tunnel, Wash., D.C.; Superconducting Super Collider Prototype Injector Facility, TX; EBMUD Tunnels Seismic Improvements, CA; Jarvis Wine Caves, CA; Crystal Springs, Calaveras, Coyote Dam Outlet Tunnel, South Bay Tunnel Outfall and Lake Hodges Pump Storage Tunnel, all in CA; and more than 10 large underground caverns for wine caves and other facilities in northern CA.

Dam, penstock and foundation design and investigations include: New Spicer Meadow rockfill dam, Beaver Creek and Raising Pardee concrete gravity dams, McKays Point thin arch dam, Buckhorn earth fill and New Lyons dam feasibility studies, Beaver Creek and Camino Penstocks, and New Carquinez Suspension Bridge foundation, all in CA. This has required extensive interaction with regulatory agencies (DSOD and FERC).

Technical and/or expert witness testimony were provided for claims on: WMATA Contracts K-1, Wash., D.C.; Foothills Water Tunnel, Denver, CO; Buffalo LRRT Subway, NY; Kerckhoff 2 Hydroelectric Project, CA; Rogers Pass Railroad Tunnel,

Canada; Muck Valley Hydroelectric Project, CA; WSSC Bi-County Water Tunnel, Wash., D.C.; Kemano II Completion Project, Canada; Grizzly Powerhouse Project, CA; Stanley Canyon Tunnel, CO; Cowles Mountain Tunnel, CA; Westside LRT Tunnel, OR; Boston Harbor Outfall Tunnel, MA; Main Spine Tunnel, Providence, RI.; MWD, Arrowhead Tunnels; and Seymour-Capilano Twin Tunnels, Vancouver.

Dr. Korbin has or is serving on technical design or construction review boards for the following major projects: Passaic River Basin Flood Control Project, NJ; River Mountains Tunnel No.2, NV; LA Metro East Side Extension; MWD Inland Feeder Project; MWD Lake Mathews Outlet Facilities; Dorchester Sewer Tunnel, Boston; East Side Access and THE Tunnel Project, New York; Chattahoochee Interceptor Relief Tunnel, Nancy Creek, West Area CSO, No Business Creek, South Cobb and South River Sewer Tunnels, Atlanta; East Central and Northeast Interceptor Sewer Tunnels, City of Los Angeles; Narragansett CSO Deep Tunnel Project, RI; Riverbank Infiltration Tunnel at Payne Water Treatment Plant, Louisville; EBMUD Southern Loop Pipeline Project; Claremont Tunnel Upgrade, Oakland; Westside and Eastside CSOs, Portland, OR; No. 7 Subway Extension, NY; Devil's Slide and Caldecott Highway Tunnels, CA; MUNI New Central Subway and Downtown Extension Projects, San Francisco; Brightwater Sewer Tunnels, Seattle; SFPUC Polhemus, Irvington and Bay Division Pipelines Tunnel Projects; SNWA Lake Mead Intake 3 and Clean Water Coalition SCOP, Las Vegas; WSSC's Bi-County Water Supply Main, Wash. DC; LA County Tunnel and Ocean Outfall; Sheppard Extension, Eglington and Spadina Subway Lines, Toronto; WSDOT Alaskan Way (SR-99), WA; Annacis, Second Narrows, Port Mann, Stanley Park, and Coquitlam Main Water Tunnels, Vancouver, Canada; NYC DEP Rondout-West Branch Bypass Tunnel; SMUD Iowa Hill Pumped Storage and White Rock Tunnel rehab, CA; Mt Tunnel rehab, CA; Newell Creek Dam Outlet Replacement, CA; SSJID Canyon Tunnel, CA; BART to San Jose, CA; and Anderson Dam Seismic Retrofit, CA

Dr. Korbin has or is serving on the following disputes review boards (DRB): Folsom East Interceptor Section 2B Project, Sacramento; El Dorado Irrigation District Mill-Bull Tunnel; Dougherty Valley Tunnel & Trunk Sewer, San Ramon; Upper Northwest Interceptor, Sections 1&2, Section 7, and Section 9 and Lower Northwest Interceptor, Sacramento; SLAC-LINAC Project, Stanford, CA; Raritan River Tunnel Project, NJ; Blue Plains Tunnel, Washington DC; 86th St Station, 2nd Ave, NY; Antlers Bridge, Redding, CA (as DRB geotechnical advisor), and Regional Connector, Los Angeles, CA.

Dr. Korbin has been a Lecturer at U.C. Berkeley and an invited speaker at a number of workshops and professional meetings; chairman of consultants group, UTRC-GDSR Workshop in Wash., D.C.; 7th Annual William Barclay Parsons Lecture, ASCE, NY (2009); Fundamentals of Soft Ground Tunnel, ASCE short course, Seattle (2011); and Vancouver Geotechnical Society Technical Presentation (2023).

Professional Affiliations and Awards

Member ASCE and Chi Epsilon; U.S. National Committee for Rock Mechanics, Outstanding Student Research Award (1977); 2009 Charles Pankow Award (collaborator)

Jon Y. Kaneshiro

SUMMARY

- 40 + years of design and construction services experience in the tunnel industry, with the following employment history:
    - Self Employed, May 2019 to Present (including casual status Woodward-Curan, Gannett Fleming, GEI, Parsons, Nihon Kohei Latin America, Dr. Sauer & Partners)
    - Parsons Corporation, Senior Supervising Engineer to Senior Engineering Manager, 1993 to 2019 (Technology Leader for Tunnels, 1999-2019)
    - Geomatrix Consultants, Senior Project Engineer, 1991-1993
    - Earth Sciences Associates, Senior Project Engineer to Senior Supervising Engineer, Associate, 1985 to 1991
    - Tudor Engineering Company, Staff and Field Engineer, 1981-1985; Consultant 1989 to 1990
    - Richmond Field Station, Summer 1981, Research Assistant
    - CA DWR Dams and Canals Unit, Graduate Student Assistant, Summer and December 1980
    - USGS, Hydrological Field Assistant, Summer 1979
- Experience profile includes planning, conceptual, feasibility, preliminary engineering, investigation, analysis, and final design and engineering services during construction (ESDC), seismic analysis, and construction of foundation, pipelines, excavations, dams, tunnels and underground projects (including over 300 tunnels and engineer-of-record of over 50 tunnels and as design manager on more than 20 contracts) earthwork analysis for heavy construction projects, preparation of plans, specifications, and cost estimates for construction, geotechnical recommendations, and coordination of geologists, architects, and engineers, while interacting with regulatory agencies. Provided assistance for review of geotechnical and foundation recommendations for various tunnel, water, wastewater, transportation, and infrastructure projects. Responsible for civil/structural/geotechnical design or design considerations for numerous projects. Participated in many and managed five tunnel design-build projects with constructed values from $21 million to $270 million, including the North Fork Stanislaus Hydroelectric Project, Doha Expressway Drainage Tunnel, Kuwait City Deep Tunnels, Rancho Bernardo PL6, Lake Hodges to Olivenhain Pipeline Tunnel, Sandy River Crossing, and DC Water Anacostia River Tunnel. Participated in two and managed four tunnel design tenders for Contractors valued from $45 million to over $1.3 billion. Alternative deliver projects include three tenders for Singapore DTSS, Port of Miami Tunnel, Alaskan Way Viaduct, Ottawa LRT, DC Water Anacostia River Tunnel, and Ohio River Bridges Drumanard PPP tunnel. Understanding of the design and construction challenges of soft ground tunneling include earth pressure balance TBM specification, hyperbaric intervention specification, deep and large diameter shafts, adjacent structures impact and mitigation, and tie-ins and connection designs.
- Lead in engineering services during construction ESDC including tunnel inspection/CM services for Santa Teresa Tunnel, Crystal Springs Lake Tap and East Pilarcitos Pipeline, Coyote Dam Outlet Tunnel, South Bay Tunnel Outfall, Stone Canyon Bypass.
- Author/co-author of 19 tunnel investigations for tunnels.
- Author/co-author of over dozen GDSR and GBR, reviewer of over 30 GBRs.
- Value Engineering: Lake Mathews Outlet, ECIS, NEIS, Last Chance Grade, OCSD SARI, Laguna Beach Rehabilitation (facilitator), ALCOSAN
- Tunnel Advisory/Design Review: VTA BART to SJ Airport, NYC 2nd Ave., Panama Line 3 for Nihon-Koei, CapEx Storm Drain Tunnels Austin I35 for USS &TexDot, California Delta Conveyance Project for DWR, Santa Felica Dam Outlet Tunnel for GEI, Del Puerto Canyon Outlet Tunnel for Woodard &Curran, SDSU Mission Valley East Tunnels and Station for MTDB, SFPUC Bay Division Pipeline Tunnel, SFPUC Central Bayside Sanitary Sewer Overflow Tunnel, Iraq Dams (incl. Mosul Dam), EBMUD Southern Loop.
- Risk evaluations including SFPUC New Irvington Tunnel (facilitator) and Calaveras Dam, LACSD JWPCP Effluent Outfall Tunnel, Laguna Beach Rehabilitation, South Bay Tunnel Outfall.
- Contractor pre-bids for Mackinac Straits PL No. 5, MI (2019); Shoreline Tunnel, OH (2021); Surface Water Supply Project Tunnels, Houston, TX (2022)

- Independent Checker VTA BART to San Jose Airport connection for segmented liner Design (2023)
- Engineer-of-Record on over 50 projects including preparation, directions and supervision of detailed design calculations, and preparation of plans and specs.
- Author/Co-author of over 100 papers, presentations, lectures on geotechnology, including tunneling, microtunneling, rock mechanics and numerical analysis, groundwater inflow into tunnels, liquefaction, fault crossing design, tiebacks and disputes resolutions and risk management in underground construction. Regarding, DRB's, for example, author of Technical Note in response to "Discussion to Geotechnology in Disputes Resolution, Paper No. 10071 by J. Gould" ASCE Journal of Geotechnical Engineering, July 1997.
- National and international tunnel tenders for Design Build.
- Tunnel advisor and directions for projects in USA, Canada, Peru, Kuwait, Qatar, Dubai, Abu Dhabi.
- 4 tunneling technology trips to Japan, 1 to France, 1 to Austria, 1 to Germany and many in USA.

DEGREES

- Bachelor of Arts; Geology, University of California, Berkeley, 1980
- Master of Science; Engineering Science with specialty in Geological Engineering from Dept. of Civil Engineering, College of Engineering, University of California, Berkeley, 1981

REGISTRATIONS

- Civil Engineer, C36,677, California Date Earned: 7/22/1983; Expires**:** 6/30/2024
- Geotechnical Engineer, GE2102, CA; Date earned: 7/14/1989 Expires: 6/30/2024
- Geologist, PG4235, CA; Date Earned: 2/24/1987 Expires: 4/30/2025
- Expired/inactive PE: Colorado, District of Columbia, Florida, Kentucky, Missouri, Montana, New York, New Mexico, Oregon, Texas, Washington, Wyoming, NCEES

CERTIFICATIONS

- Certified Engineering Geologist, EG1387, CA; Date earned: 4/12/1988; Expires: 4/30/2025
- Engineering-In-Training, CA; Date earned: 1982

CONTINUING EDUCATION

Disputes Resolution Board Foundation Administration & Practice/Chairing (2019); Breakthroughs in Tunneling Short Course (invited: 2016, 2017); Colorado School of Mines Tunneling Short Course (invited: 2011, 2012, 2014, 2015, 2016); Earthquake Engineering Research Institute (EERI) Liquefaction Evaluation, Mapping, Simulation and Mitigation (2014); McMillian Water Survival/HUET Training (2008); Parsons University, Project Management Certification (2006 – 2008); American Concrete Institute Concrete Petrography Seminar (1997); American Concrete Institute Reinforced Concrete Design Short Course (1993); University of Wisconsin: Groundwater, Groundwater Inflow through Porous and Fractured Media (1992); Engineers Joint Council Contract Documents Committee Seminar (1988); American Society of Civil Engineers (ASCE) Engineering and Loss Prevention Course (1987); EERI Strong Ground Motion Course (1987); University of California, Berkeley Extension Groundwater Pollution (1985); ASCE Excavation and Shoring Design Seminars (1984); UC Berkeley Extension Review of Civil Engineering (1983).

PROFESSIONAL AFFILIATIONS

- American Concrete Institute; ACI 506 Shotcrete, Associate Member; 1987 to 2019
- American Geophysical Union, 1981 to Present
- American Society of Civil Engineers, Life Member, 1981 to Present
- ASCE-AIME Underground Technology Research Council; 1993 to 2004; Chair Subcommittee on GW Inflow 1993 to 2004
- Association of Engineering Geologists; Member, Student Chairman (1981), 1980 to Present
- Underground Construction Association of the Society of Mining Engineers; 1986 to Present (formerly American Underground Construction Association since 1982)
- Geological Society of American Society, 1986 to Present
- International Tunnelling Association, 1991 to 2010; ITA Working Group 15, Underground Space and the Environment since 2002, and Vice-Animateur 2005 to 2010
- United States Society of Dams, 1996 to 2018

Rich Millet, PE, GE

Evaluation of Potential Failure Modes; Alternatives Formulation & Analyses

Key Skills
Cutoff and Diaphragm Wall Design and Construction
Dam & Levee Assessment
Task Order Management
Technical Review
Safety
Dam Design
Levee Design

Years of Experience
63

Education
MS, Civil Engineering, Rensselaer Polytechnic Institute, 1964
BS, Civil Engineering, Rensselaer Polytechnic Institute, 1962

Licenses/Certifications
Professional Civil Engineer, California, #C 33875 (issued: 8/19/81; expires: 6/30/24)
Professional Geotechnical Engineer, California, #GE 600 (issued: 9/9/87; expires: 6/30/24)
AECOM Certified Project Manager

Trainings
Risk Assessment For Dams
AECOM Certified Project Manager

Professional Associations
American Society of Civil Engineers (Fellow)
Society of American Military Engineers
United States Society on Dams, past Board of Directors and past Chairman Technical Committee on Dam Foundation
American Consulting Engineers Council
Deep Foundation Institute (DFI) Committee Member on Seepage Cutoff and Structural Diaphragm Walls

Professional history

Rich is a leader in AECOM's slurry wall Practice and Principal Geotechnical Engineer in the Sacramento office. His expertise includes hydrology, geotechnical engineering, hydrogeology, geology, seismology, earthquake and dynamic engineering, geostatistics, field instrumentation, and construction management services. Rich began working with cutoff and structural diaphragm walls in 1970 and has been involved with the design and construction of over 50 cutoff and diaphragm walls for dams, levees and deep foundations for high-rise buildings, bridges and waterfront structures. He was coauthor on two classic papers published by ASTM on the proper development of specification addressing the different focus issues for cutoff walls and structural diaphragm walls. He has worked with all types of excavation methods (backhoe, clam shell, orange peel buckets, and stabilization fluids/bentonite, cement bentonite) and backfills including structural concrete with steel reinforcement. He has designed barrett foundation elements for bridges and heavy industrial equipment using the open slurry excavation process as well as using structural diaphragm walls for the "top down" method of constructing deep building foundations. Several typical projects are presented below.

Selected project experience

Program Manager and Design Engineer, USACE Natomas Basin Reach A, Sacramento, California

145 deep soil, slag, cement and bentonite walls to remediate and strengthen the existing levee embankment. This 3-year project is currently under construction and requires monitoring of strength and permeability QA/QC testing of the wall panel being installed. Joint over lap and verticality of panels must be continuously assessed to ensure closure. Design services included selecting the depth of the wall, required strength and permeability of wall and preparation of construction specifications.

Project Principal and Design Lead, Diamond Valley West Dam, Metropolitan Water District of Southern California, Hemet, California

Designed a 100+ foot deep structural diaphragm wall installed by the TRD chain excavator with 1000 psi Concrete Tremie in place. The wall was over 2000 feet long and was continuously monitored for strength and permeability.

Project Engineer, Guadalupe River Retaining Wall/Bridge Foundation, City of San Jose Public Works, San Jose, California

Designed an innovative structural diaphragm wall system by installing precast concrete wall panels in a cement – bentonite stabilized trench which then set up to allow tie backs to be installed as the waterside channel of the river bank was excavated exposing the concrete wall panels creating a realigned channel and bridge crossing.

Dr. Ulrich Rehm
Tunnelling Consultant GmbH

TBM and tunnel expert
Dr. Ulrich REHM

Dr.-Ing. Ulrich-Peter Rehm
(59, from Germany)

Studies

1985 - 1991
Civil-engineering at the Technical University of Karlsruhe/Germany; Specialised in rock- and soil mechanics.

1992 – 1998
Ph.D. on silo- and soil mechanics at the Institute for Construction Management at technical University of Karlsruhe/Germany. Research and development as scientific assistant on cohesive soils. Programming of expert systems.
Supervision and lecturing of graduands.

Career

since 2008	**Dr. Ulrich Rehm Tunnelling Consultant GmbH** Chief Executive Officer
2005	**Tunnelling expert adviser of Herrenknecht AG / Germany , worldwide consultancy**
2004	**Lecturer for mechanised tunnelling (TBM and conventional method) at University of applied science Stuttgart/Germany**
2001	**Director of research & development of TBM manufacturer Herrenknecht AG /Germany**
1998	**Director of the geotechnical department of TBM manufacturer Herrenknecht AG / Germany**

Dr. Ulrich Rehm | Tunnelling Consultant GmbH | Phone +49 (0)7821 3270606 | Fax +49 (0)7821 3270607 | ru@ tunnelling-consultant.de | www.tunnelling-consultant.de

Dr. Ulrich Rehm
Tunnelling Consultant GmbH

Experience

Geotechnical analyses for structural design of soft- and hardrock tunnel boring machines (TBM) (examples: St. Gotthard/Switzerland, Gripper TBM ⦸9m; Guadarrama/Spain, double-shield TBM ⦸9,5m; Madrid M30 EPBM⦸15,20m, Seattle/USA; EPBM ⦸m17,48m Sydney/Australia Mixshield ⦸10,7m ;Hallandsas/Sweden Mixshield ⦸10,5m; Zuerich-Thalwil/Switzerland; single-shield TBM; ⦸12,2m; Limmern/Switzerland; double-Gripper-TBM ⦸8m; Uma Oya/Sri Lanka; double-shield TBM ⦸4,2m).

- Feasibility studies and risk analysis for world-wide TBM projects in soft- and hardrock (Mexico City, Teheran, Sydney, Rio de Janeiro, Cairo, Italy, Copenhagen, Italy, Stuttgart, Sri Lanka) – including segmental lining and pipe-jacking projects.
- Technical TBM checker for various TBM types (Final acceptance test (FAT); onsite assembly.
- Lecturer for workshops for job-site personnel of segmental lining, pipe-jack and classical rock support projects.
- Application of classical rock mechanics models (CSM, NTNU, BÜCHI, EWENDT, SANIO) for prediction of performance rates and tool consumption for hardrock TBM (shielded and open gripper TBM)
- Design of TBM components (cutterhead, hardrock tools, cutter-tool distribution, muck flow, wear protection, back-up systems)
- Development of own numerical cutting-tool models for TBM-design (cutterhead drive torque, cutterhead design, cutter-tool optimization
- Design of logistical mucking solutions
- Spoil conditioning concepts for EPBM
- Annulus grouting development (single-, double components)
- Ground treatment works (jet-grouting, freezing)
- Bentonite-slurry application concepts, separation plant design
- Environmental studies for muck disposal
- Segmental lining design
- Planning of world-wide job-site logistics; concepts for assembly and disassembly of TBM
- Trouble-shooting on-site for difficult tunnel projects (Sydney, New Delhi, Rotterdam, Hamburg, Berlin, Freiburg, Teheran, Loetschberg, St. Gotthard, Mexico City, Turkey, Sri Lanka).
- Feasibility studies on several TBM tunnel projects (Germany, Spain, Australia, Georgia, Switzerland)
- Design of separation plant and slurry circuit
- Concept for TBM tunnelling within squeezing rock condtions

Dr. Ulrich Rehm | Tunnelling Consultant GmbH | Phone +49 (0)7821 3270606 | Fax +49 (0)7821 3270607 | ru@ tunnelling-consultant.de | www.tunnelling-consultant.de

Dr. Ulrich Rehm
Tunnelling Consultant GmbH

Development of tender documents (BoQ of headrace tunnel)

Member of important tunnel associations (DAUB, ITA, ÖIAV); attendance on international working groups for TBM standards

Development of numerical models for TBM design (face-pressure, cutter head drive-torque, thrust forces, slurry circuit, etc.).

Cost estimation and quantification for TBM projects (bill of quantities)

Claim Management (Dublin/Ireland, Freiburg/Germany, Singapore, Vienna, Vancouver, Santiago de Chile, Seattle)

Official court-surveyor (Canada, Austria); mediator for tunnel issues

- R&D activities:
  - Soil and rock treatment (application of foam and polymers); design of foam generators, ground treatment concepts
  - Rock support measures for Gripper-TBM.
  - Optimisation of segmental lining (gaskets etc.)
  - Optimisation of chipping process for hardrock TBM.
- Presentation at world-wide TBM-conferences, lecturer for TBM master courses on hardrock and softrock tunnelling (Germany, Switzerland, Italy, Malaysia)

Official Coach for project management system iTWO of the German Railway Company (Deutsche Bahn AG).

Official Coach for tunnel design of the German Railway Company (Deutsche Bahn AG).

Expert Witness and Expert Advisor on numerous projects

High social competence through personal practical experiences on all 5 continents

contact

Dr. Ulrich Rehm
Tunnelling Consultant GmbH
Lotzbeckstr. 25
D-77933 Lahr
Germany

+49 7821 327 0606
+49 151 15144817
ru@tunnelling-consultant.de
www.tunnelling-consultant.de

Applied GeoDynamics Inc.

Shahriar Vahdani, Ph.D., P.E.

Senior Consultant

1205 Contra Costa Drive
El Cerrito, CA 94530
(510) 816-1323

Education:

Ph.D., Geotechnical Engineering, University of California, Berkeley, 1983
M.S., Structural Engineering, University of Southern California, 1978
B.S., Civil Engineering, Tehran University, 1977

Professional Registration: Civil Engineer California, No. 45349

Dr. Vahdani has over 40 years of experience in the state-of-the-art Geotechnical Earthquake Engineering and Foundation Design. He has performed ground motion, site response, seismic soil-structure interaction, dynamic slope deformation, and liquefaction-related ground failure studies for major transportation structures including highways and commute rails, dams, tunnels, pipelines, port facilities, high-rise buildings, bridges, gravity-based LNG facilities, refineries, mining facilities, and offshore platforms.

He is skilled in geotechnical computer analyses and is a co-author of the computer code SASSI (a System for Analysis of Soil-Structure Interaction problems). Dr. Vahdani has been the project manager/ senior consultant responsible for field investigations, laboratory testing, engineering analyses, field observation during construction, and report preparation for major projects in California, Washington, Louisiana, Montana, Texas, Utah, Hawaii, Alaska, Guam, Taiwan, the Philippines, Peru, Chile, Greece, Turkey, China, and Indonesia.

Relevant Projects

Bay Tunnel Site Characterization Studies, San Francisco Bay, California. Dr. Vahdani provided technical input to the project team for geotechnical studies for the SFPUC's Bay Tunnel project. Key aspects of the project that he has/is coordinating include:

- Marine geotechnical investigations within San Francisco Bay and within sloughs adjacent to the Bay in a challenging operational environment;
- Marine bathymetric and geophysical surveys along the tunnel alignment;
- Onshore geophysical surveys along levees supporting salt ponds and roads through environmentally sensitive wetlands;
- Development of a dynamic laboratory testing program to facilitate site response analyses;
- Characterization of soil parameters required for Tunnel Boring Machine selection, access shaft design and tunnel lining design;
- Integration of all of the existing and new site data together to develop a Geotechnical Interpretive report for the project.

Black Butte Pipeline, Glenn County, California. Evaluated the cause of damage to an existing 12-foot-diameter, buried steel pipeline at the Black Butte Dam in Glenn County, California. The pipeline was damaged at its connection point to an underground powerhouse. As part of this project, Dr. Vahdani reviewed (1) available geotechnical, geological, and seismic data, (2) construction documents related

soil excavation, subsurface preparation including fill surcharge, placement and welding of pipe segments, and (3) subsurface condition and construction documents for the powerhouse.

Soil-Structure Interaction Studies of CSO Tunnel, Portland, Oregon. Dr. Vahdani performed seismic soil-structure interaction analysis of the CSO Tunnel in Portland. The structure consisted of a 150-foot-diameter, 170-foot-deep, 4-foot, thick concrete shaft connected at depth to a conveyance tunnel. The objective of the study was to evaluate the soil-structure interaction effects including the magnitude of dynamic soil pressure and its distribution along the shaft during the design earthquake.

Bay Area Rapid Transit (BART) Transbay Tube Seismic Retrofit, San Francisco, California. The Transbay Tube (TBT) is a 3.6-mile submerged twin-track tube, connecting the East side of the San Francisco Bay (i.e., Port of Oakland) to the city of San Francisco to the west. The TBT was constructed in the 1960s and carries over 300,000 passengers every day. The TBT was constructed by excavating a trench beneath the Bay, placing a gravel foundation, lowering the tube and finally backfilling with sand and gravel. The goal of the project was to propose retrofit measures to mitigate the possibility of tube uplift during a future earthquake due to liquefaction of the tube's foundation. Dr. Vahdani servrd as the senior reviewer (QA/QC, feasibility, cost effectiveness, constructability, value engineering) and provided technical advice in all geotechnical earthquake engineering aspects of the project. He provided technical input to the project execution team at key project milestones and major decision-making points.

BART SFTS Retrofit Project, San Francisco, California. As Part of the section design team, Dr. Vahdani served as the principal in-charge of all geotechnical earthquake engineering aspects of the project. The scope of work included 1) ground motion studies, development of spectrum-compatible design ground acceleration time histories, the horizon where they are applied, incoherency of ground motion, and wave passage effects, 2) equivalent linear and nonlinear site response analysis, 3) shoreline stability evaluation and stabilization analysis through static, pseudo-static, 2D-FLAC, and 3-D PLAXIS analysis, and 3) seismic soil structure interaction (SSI) analysis to develop scattered motion through kinematic SSI analysis and foundation impedance evaluation for inclusion in the nonlinear ADINA analysis of the global system.

Webster Posey Tubes Ground Improvement Demonstration Project. Dr. Vahdani was part of the team that provided third party geotechnical engineering services under contract to Layne Christensen, Inc. during the performance of the Webster Posey Tubes Ground Improvement Demonstration Project. The demonstration project consisted of installing jet grout columns and stone columns using the pipe pile and vibro-floatation methodologies. The Webster and Posey Tubes cross under the Oakland Estuary connecting the City of Oakland with the City of Alameda. Both tubes were constructed by the cut and cover method using uncontrolled sand fill as backfill. The backfill is potentially liquefiable and ground modification is required to reduce potential damage to the tubes during an earthquake.

The scope of services included observing the installation of the ground improvements, performing both rotary wash borings and cone penetration tests (CPTs) for each test sections, data reduction, preparation of log of borings following Caltrans Standards, and presenting the results to the design team.

Subsurface investigations were preformed to document existing subsurface conditions before performing ground improvement and to measure degree of improvement as a result of stone column installation. After installation jet grout columns were continuously cored and logged by project engineer or geologist. Selected cores of the soil cement were then submitted to the laboratory for bulk density and compressive strength testing.

Seismic Safety Evaluation of Intake Structures at San Andreas and Calaveras Reservoirs. Dr. Vahdani reviewed geotechnical and seismic data, and provided design recommendations related to the geotechnical aspects of seismic safety evaluation work. The scope of work included ground motion studies and evaluation of dynamic performance of slopes and embankments during the design earthquake, and performance of Seismic Soil Structure Interaction analysis to evaluate the dynamic response of the structure. In addition, the seismic safety of a concrete-lined tunnel and a brick lined tunnel was evaluated.

Pipe - Soil Interaction Studies, Taiwan. Performed pipe-soil structure interaction studies for a major water pipeline in northern Taiwan. Technical issues included effects of earthquake loading conditions and hydrodynamic uplift forces on the pipeline. The subsurface conditions consisted of loose sandy soil susceptible to settlement and generation of positive pore water pressure during the design earthquake. The soil resistance was modeled as nonlinear sprigs and a detailed nonlinear pipe-soil interaction analysis was performed to identify stresses induced in the pipe due to earthquake loading conditions, hydrodynamic forces, and settlements during the design event.

City of San Francisco Liquefaction Study, San Francisco, California. Served as the project consultant for the evaluation of potential ground failure (soil liquefaction and related ground failure such as settlement and lateral spreading), which a future 8.3-magnitude earthquake could cause in reclaimed areas along the San Francisco Bay shorelines. Estimated the magnitude of vertical and lateral movement, and the resulting damage to underground water and sewer systems, and recommended mitigation measures.

Review of Seismic Soil-Structure Interaction Studies, Islais Creek Cistern, San Francisco. Dr. Vahdani performed a peer review of seismic soil-structure interaction analyses performed for the San Francisco Cistern near Islais Creek in San Francisco, California. The scope of work consisted of a review of the two-dimensional, seismic soil-structure interaction FLUSH model including dynamic soil properties, structural properties, transmitting boundaries, and input ground motion used in the analysis.

BART Extension to Silicon Valley (BSV II – Contract 2). The project scope of work consists of design / construction of six miles of 52-foot outside diameter tunnel, three stations, and several shafts. Dr. Vahdani is currently serving as the chair of peer review panel for the project. Technical scope of peer review work includes: ground motion studies including wave passage effects, site response analysis, soil liquefaction and buoyancy effects on the tunnel, seismic soil-structure interaction (SSI) analysis of running tunnel and at three major stations.

Dale E. Berner, PhD, PE, FASCE

POSITION:	Associate Technical Director COWI North America
SPECIALIZATION:	Flood Protection, Locks/Dams and Inland Waterways Navigation
YRS EXPERIENCE:	42
EDUCATION:	Ph.D., Civil Engineering: Construction Management, Structural Materials, and Ocean Engineering, University of California, Berkeley, 1984 M.Eng., Civil Engineering, University of California, Berkeley, 1982 B.S., Civil Engineering, University of California, Berkeley, 1978
AFFILIATION:	Registered Civil Engineer, 1987, CA C41783 Registered Professional Engineer, 2009, LA 34552 Registered Professional Engineer, 2009, TX 104203

KEY QUALIFICATIONS

Mr. Berner's work has focused on the design of heavy civil structures for constructability, including: immersed tubes, dams; flood barriers and codes/criteria for various specialty concrete structures.

SELECT EXPERIENCE

Reservoirs Dams and Hydraulic Control Structures

Underwater Valve Replacement for the Copper Basin Dam/Reservoir, CA 2022 to 2023
Consultant for the constructability and specification for an underwater installation of a hydraulic isolation device to facilitate the replacement of a discharge valve for the Copper Basin Reservoir, Parker Dam, CA. Client: Metropolitan Water District of Southern California, Construction Cost: $15M.

Underwater Valve Replacement for the Gene Wash Dam/Reservoir, CA 2022
Consultant for the constructability and specification for an underwater valve replacement for the emergency outlet for Gene Wash Reservoir, Parker Dam, CA. Client: Metropolitan Water District of Southern California, Construction Cost: $10M.

.

USACE Inner Harbor Navigation Canal (IHNC) Hurricane Protection Barrier; New Orleans, LA, 2007-2016
Design Manager for the bid and final design of the $1.3B design-build project for the IHNC Hurricane Protection Barrier, which incorporates a 150-foot-wide sector gate structure, a 56-foot-wide sector gate structure, a 150-foot-wide swing gate structure, and 8,000ft of structural flood wall. Client: Shaw E&I. Construction Cost: $1.3B (total).

Olmsted Locks and Dam Project; Ohio River, OH, 1996-Present
Construction Engineer / Design Manager for the final design and construction engineering of the Olmsted Dam. The dam includes five 110-foot-wide tainter gates, a 1,400-inch-long wicket gate navigable pass, a fixed weir and two boat abutments to be built using off-site prefabricated concrete shells, infilled with tremie concrete. Client: USACE-Louisville District, Construction Cost: $800M.

California Department of Water Resources; Sacramento River, CA, 2004-2006
Consulting engineer regarding the "in-the-wet" construction of four small concrete water improvement barriers, with locks, across several small tributary rivers in the Sacramento River South Delta region. Client: Cal DWR. Construction Cost: $60M.

San Vicente Dam Raising Project; San Diego, CA, 2005-2006
Consulting engineer regarding "in-the-wet" aspects of the raising project. Client: San Diego County Water Authority and GEI. Engineering Fee: $50,000.

Rehabilitation of Emergency Drain System for Thomas Dam; Santa Catalina Island, CA, 2006
Consulting engineer regarding "in-the-wet" rehabilitation of the emergency drain system. Client: Southern California Edison. Engineering Fee: $40,000.

USACE Engineering Technical Letter (ETL) 1110-2-565, Foundation Engineering, 2005
Consulting engineer writing major portions of ETL, 1110-2-565: Foundation Engineering: In-the-Wet Design and Construction of Civil Works Projects. Client: USACE-HQ. Engineering Fee: $50,000.

USACE Proposed Design Criteria on Thin-Wall Precast Panels for Hydraulic Structures, 2000-2003
Consulting engineer. This work is being performed as input to an Engineering Circular addressing the same topic. Client: ERDC, USACE. Engineering Fee: $50,000.

Braddock Dam Reliability Study; Pittsburgh, PA, 2000
Consulting engineer for a construction risk and reliability study. Client: ERDC, USACE. Engineering Fee: $50,000.

USACE Structural Design of Precast and Prestressed Concrete, 1999-2000
Consulting engineer for the development of the Engineering Circular: EC 1110-2-6052 Structural Design of Precast and Prestressed Concrete for Offsite Prefabricated Construction of Hydraulic Structures. Client: USACE-HQ. Engineering Fee: $50,000.

Braddock Dam Conceptual and Final Designs; Pittsburgh, PA, 1996-2000
Consulting engineering for the conceptual and final designs for Braddock Dam (Monogahela Locks and Dam 2), to be built using float-in precast concrete shells in filled with tremie concrete. Client: USACE-Pittsburgh District. Construction Cost: $115M.

Montezuma Slough Salinity Control Structure; Sacramento River, CA, 1986-1987
Consulting engineer. The salinity control structure consists of three distinct components: (a) The control gate structure with three, 36-foot-wide radial gates to control flow in the Montezuma Slough, (b) a 66-foot-wide flashboard opening to allow boat and barge passage when the structure is not in operation, and (c) a boat lock structure with a lock chamber 20ft wide and 70-foot-long with miter gates to allow passage for boats when the flashboard opening is closed. Specific tasks included construction engineering, connection details, and stability calculations. Client: California DWR. Construction Cost: $30M.

Roller Compacted Concrete Study; Argentina, 1987
Preformed review on the use of roller compacted concrete in the construction of mass concrete dams. Client: Techint. Engineering Fee: $25,000.

Evaluation of Seismic Resistant Structures

Olmsted Dam Design, Ohio River; Olmsted, IL, 2007-2018
Design of the seismically resistant Dam. Client: USACE-Louisville District. Construction Cost: $750M.

Posey and Webster Street Immersed Tube Rehabilitation; Oakland, CA, 1996
Cracking/flooding analysis for the seismic retrofit of the immersed tubes using stone columns for ground stabilization. Client: Caltrans. Engineering Fee: $45,000.

Port of Oakland Wharves Review/Evaluation; Oakland, CA, 1990
Review and evaluation of numerous wharves for their ability to resist seismic loading. Client: Port of Oakland. Engineering Fee: $75,000.

I-280 Seismic Rehabilitation; CA, 1990
Evaluation of the ability of a segment of an elevated freeway to resist seismic loading. Client: CH2M-Hill. Engineering Fee: $75,000.

Professional Activities

Served as a member of the PCI committee for developing new grouting guidelines for post-tensioning ducts, 2000

Served as an advisor to the People's Republic of China on Underwater Concrete Repair, 1988

Served as an advisor to the Canadian Natural Sciences and Engineering Research Council on Composite Concrete Construction, 1987

Selected Publications

Berner, D.E., and Yao, S., *Underwater Concrete Technologies for In-the-Wet Construction*, USACE Infrastructure Systems Conference, August 2001

Gerwick, B.C., Berner, D.E., Bittner, R.B. and Yao, S., *An Assessment of Heavy Lift Equipment for In-the-Wet Construction of Navigation Structures*, USACE ERDC/GSL TR-00-2, 2001

Gerwick, B.C., Berner, D.E., and Yao, S., *An Overview of Current Prestressing Technology in Offshore Structures*, USACE ERDC/GSL TR-00-1, 2000

Gerwick, B.C., and Berner, D.E., *Design of Inland Waterways Structures Using Prefabricated Concrete Units*, FIP Congress, May 1998

Yao, S., and Berner, D.E., *Placement Methods for Underwater Repairs*, Concrete Repair Bulletin, May/June 1996

Gerwick, B.C., and Berner, D.E., *Large Concrete Structures in Development of Coastal Infrastructure in Seismic Areas*, COSU, Japan, 1995

Gerwick, B.C., Sudhakar, A., Yao, S., Ovadia, D., and Berner, D.E., *Repair of Corrosion Damage and Protection of Cooling Water Intake/Circulation Systems*, IABSE, 1995

Faerman, E., Hasan, N., and Berner, D.E., *Advances in Underwater Concreting: St. Lucie Powerplant Cooling Intake Circulating Water Velocity Cap Repairs*, ACI SP-140, High Performance Concrete in Severe Environments, 1993

Berner, D.E., *High-Ductility, High-Strength Lightweight Aggregate Concrete*, ACI SP-136 Structural Lightweight Aggregate Concrete Performance, 1992, pp.319-343

Berner, D.E., Gerwick, Jr., B.C., Hoff, G.C., *T-Headed Stirrup Bars*, Concrete International, Vol. 13, No.5, pp. 51-53, May 1991

Berner, D.E., Gerwick, Jr., B.C., Haggerty, B., *260-Meter Deep Tremie Concrete Placement for Belled Foundation Rehabilitation of the North Rankin 'A'*, Proceedings, OTC 6145, 21st Offshore Technology Conference, Houston, TX, May 1-4, 1989

Berner, D.E., Fotinos, G.C., and Gerwick, B.C., Jr., *Design of Concrete Walls for Resistance to Impact*, Proceedings, Marine Concrete '86, London, England, September 1986

Berner, D.E., and Carlson, R.W., *The Carlson R-C (Reinforced-Concrete) Meter*, ACI Journal, Proceedings, Vol. 83, No. 4, pp.629-632, July-August 1986

Attachment 2 – Group Photo

DELTA CONVEYANCE DESIGN & CONSTRUCTION AUTHORITY

DCA LEADERSHIP SPOTLIGHT SERIES

Rebekah Green, Property Acquisition Manager

Agenda Item 7d

October 17, 2024

Rebekah Green

Property Acquisition Manager

- **A Little About Me**
  - Born, raised and lives in Sacramento, CA
  - Married to a U.S. Army Sergeant
  - Loves cooking and athletic activities—Century Bike Ride / Marathon competitor
  - Has 16 nieces and nephews
- **Education – California State University Sacramento**
  - B.A. Social Work

Professional Background and Experience

- **Professional Employment**
  - **Bender Rosenthal Inc. (14 years)**
    - Project Manager & Escrow Expert
  - **1031 Real Estate Services**
  - **Social Worker**
- **Experience Highlights**
  - Long history with the Department of Water Resources (DWR) and has worked with 40 water agencies throughout CA
  - Experienced with strategic planning, implementation, and coordination of real property activities

Key Project Experience

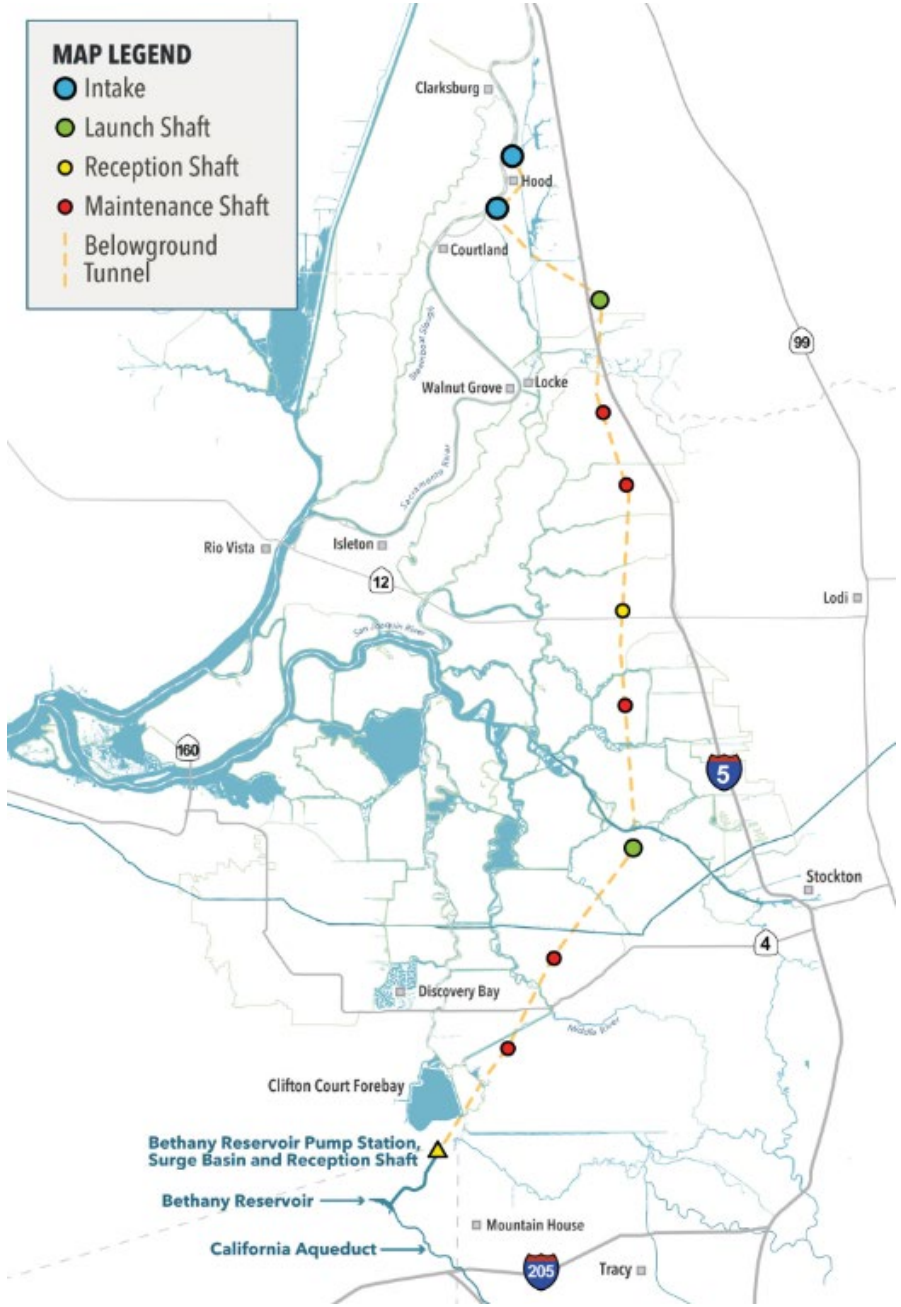
- **DWR Real Estate On-Call**
  - Completed **135** Task Orders for DWR, including **6** major Flood Control Projects and successful land transfers.
  - Rebekah helped to develop, refine and implement DWR's policy for Final Accounting Packages and LERRD Crediting Packages.

- **Related Project Experience**
  - Three Rivers Levee Improvement Authority – Upper Yuba Levee Improvement Project, Yuba-Goldfield 200-Year Project, Bear River Setback Levee, and Lower Yuba River Project
  - Sutter Butte Flood Control Agency – Feather River West Levee Project
  - West Sacramento Area Flood Control Agency - Southport Sacramento River Early Implementation Project

Property Acquisition Manager

Role on DCA

- **Property Acquisition & Real Estate Management Support**
  - Direct Real Estate Activities from Strategic Planning to Implementation
  - Coordinate with Internal Leadership Teams
  - Establish Efficient Processes/Procedures
  - Collaborate with DWR Acquisition Coordinator
  - Support Executive Director with the Real Estate Requirements for the Project



REBEKAH GREEN, PROPERTY ACQUISITION MANAGER

Thank You!

Questions?

DELTA CONVEYANCE DESIGN & CONSTRUCTION AUTHORITY

General Counsel's Report

Contact: Josh Nelson, General Counsel

Agenda Date: October 17, 2024, Board Meeting **Item No.** 8a

Subject: Status Update

Summary:
The General Counsel continues to assist the DCA on legal matters as requested.

Detailed Report:
The General Counsel continues to provide legal assistance as requested. This has included assisting with the travel policy update on the agenda. As a follow up to our August report, the legislative cycle has finished, and we are in the process of reviewing the new laws to ensure compliance going forward.

Action:
Information, only.

DELTA CONVEYANCE DESIGN & CONSTRUCTION AUTHORITY

Treasurer's Report

Contact: Katano Kasaine, Treasurer

Date: October 17, 2024 **Item No. 8b**

Subject: Treasurer's Monthly Report, July/August/September 2024

Summary:
The beginning cash balance for the Delta Conveyance Design and Construction Joint Powers Authority (Authority) as of July 1, 2024 was $752,864. Receipts for July through September 2024 totaled $9,034,148 representing contributions from the Department of Water Resources, Delta Conveyance Office (DCO), for payment of the Authority's obligations and total disbursements for the same period were $8,979,158 resulting in an ending cash balance of $807,854 as of September 30, 2024.

As of September 30, 2024, the Authority's outstanding receivables amounted to $3,857,046 consisting of 11 invoices issued to the DCO. Deposits, comprising of office lease security deposit and court ordered entry permit reserves, and prepaid expenses were $1,023,073 and $93,156, respectively, as of September 30, 2024. For the same period, balances for accounts payable and advances were $3,870,304 and $800,000, respectively. The net position as of September 30, 2024, was $1,110,825.

Attachment 1 consists of financial statements for the three months ended September 30, 2024, a Schedule of Invoices Paid through September 2024, and Aging Schedules for Accounts Payable and Accounts Receivable as of September 30, 2024.

Detailed Report:
See attached statements.

Recommended Action:
Information only.

Attachments:
Attachment 1 – July/August/September 2024 Authority Financial Statements

DELTA CONVEYANCE DESIGN AND CONSTRUCTION JOINT POWERS AUTHORITY

Statement of Net Position

As of September 30, 2024

Assets:		
Cash	$	807,854
Accounts receivable		3,857,046
Deposits [1]		1,023,073
Prepaids		93,156
Total assets	$	5,781,129
Liabilities:		
Accounts payable	$	3,870,304
Advance for prepayments		800,000
Total liabilities		4,670,304
Net position:		1,110,825
Total liabilities and net position	$	5,781,129

[1] Includes office lease security deposit and court ordered entry permit reserves for surveys, geological drilling and exploration, which are held by third parties.

DELTA CONVEYANCE DESIGN AND CONSTRUCTION JOINT POWERS AUTHORITY

Statements of Cash Receipts and Disbursements

	Three Months Ended Sep. 30, 2024
Receipts:	
Contributions [1]	$ 9,034,148
Disbursements:	
Program management office	
Executive office	816,173
Community engagement	468,407
Program controls	878,790
Administration	811,102
Procurement	192,570
Property	143,871
Permitting management	125,105
Health and safety	84,800
Quality management	177,215
Program initiation	
Engineering	2,934,352
Fieldwork	2,346,773
Total disbursements	8,979,158
Net changes in cash	54,990
Cash at July 1, 2024	752,864
Cash at September 30, 2024	$ 807,854

[1] DWR contributions invoiced through the DCO.

DELTA CONVEYANCE DESIGN AND CONSTRUCTION JOINT POWERS AUTHORITY

Statements of Revenues, Expenses and Changes in Net Position

	Three Months Ended Sep. 30, 2024
Revenues:	
Contributions [1]	$ 7,636,380
Expenses:	
Program management office	
Executive office	551,698
Community engagement	189,268
Program controls	1,108,534
Administration	816,333
Procurement	163,481
Property	74,180
Permitting management	133,487
Health and safety	103,478
Quality management	195,686
Program initiation	
Engineering	2,837,953
Fieldwork	1,421,211
Geotechnical management	55,612
Total expenses	7,650,921
Changes in net position	(14,541)
Net position at June 30, 2024	1,125,366
Net position at September 30, 2024	$ 1,110,825

* Amounts may include prior month accruals that were not previously captured due to timing.

[1] DWR contributions invoiced through the DCO.

DELTA CONVEYANCE DESIGN AND CONSTRUCTION JOINT POWERS AUTHORITY

Schedule of Invoices Paid
for the Three Months Ended September 30, 2024

	Vendor	Invoice #	Invoice Date	Payment Date	Period of Expense	Invoice Amount	Amount Paid
1	AECOM Technical Services	2000888084	05/13/24	07/03/24	03/30/24-04/26/24	$ 76,112	$ 76,112
2	FedEx Corporation	8-537-42765	06/20/24	07/03/24	06/14/24	35	35
3	Parsons	2405B359	05/07/24	07/12/24	03/30/24-04/26/24	613,330	613,330
4	VMA Communications	DCA24March	05/15/24	07/12/24	03/01/24-03/31/24	43,800	43,800
5	VMA Communications	DCA24Feb	05/20/24	07/12/24	02/01/24-02/29/24	81,050	81,050
6	Consolidated Communications	20240615	06/15/24	07/12/24	06/15/24-07/14/24	2,850	2,850
7	AT&T	9277280908	06/19/24	07/12/24	06/19/24-07/18/24	1,976	1,976
8	Prime US-Park Tower LLC	20240701	06/27/24	07/12/24	07/01/24-07/31/24	106,605	106,605
9	Alliant Insurance Services, Inc.	2714528	06/25/24	07/18/24	07/01/24-07/01/25	27,549	27,549
10	Liberty Mutual	20240705	07/05/24	07/18/24	07/01/24-06/30/25	9,604	9,604
11	Caltronics Business Systems	4115548	07/01/24	07/18/24	07/01/24-07/31/24	2,543	2,543
12	FedEx Corporation	8-545-00130	06/27/24	07/18/24	06/25/24	17	17
13	Lux Bus America Co.	108055	06/30/24	07/18/24	06/27/24	1,776	1,776
14	Bank of America	N/A*	08/22/24	07/22/24	07/22/24	482	482
15	Bender Rosenthal, Inc.	949	05/14/24	07/26/24	04/01/24-04/26/24	16,176	16,176
16	Bradner Consulting LLC	2324-04	05/13/24	07/26/24	04/01/24-04/30/24	50,560	50,560
17	Gwen Buchholz, Permit Engineer, Inc.	2324-11	06/09/24	07/26/24	05/01/24-05/31/24	13,375	13,375
18	AECOM Technical Services	2000891769	05/22/24	07/26/24	01/05/24-04/26/24	182,763	182,763
19	Associated Right of Way Services, Inc.	22302	05/02/24	07/26/24	04/01/24-04/30/24	1,194	1,194
20	Bradner Consulting LLC	2324-05	05/31/24	07/26/24	05/01/24-05/31/24	50,560	50,560
21	AECOM Technical Services	2000900674	06/17/24	07/26/24	04/07/24-05/31/24	61,836	61,836
22	Launch Consulting	PSI1031947	06/05/24	07/26/24	05/01/24-05/31/24	32,421	32,421
23	Launch Consulting	PSI1031264	05/14/24	07/26/24	04/01/24-04/30/24	30,678	30,678
24	Best, Best, & Krieger	997213	06/04/24	07/26/24	05/01/24-05/31/24	26,199	26,199
25	Bender Rosenthal, Inc.	1067	06/10/24	07/26/24	04/27/24-05/31/24	26,711	26,711
26	AECOM Technical Services	2000900707	06/17/24	07/26/24	02/22/24-05/31/24	571,421	571,421
27	VMA Communications	DCA24April	05/15/24	07/31/24	04/01/24-04/30/24	65,375	65,375
28	IRIS Intelligence, LLC	WYDCA01-002br2	05/14/24	07/31/24	06/01/23-05/31/24	10,000	10,000
29	IRIS Intelligence, LLC	WYDCA01-002ar2	05/14/24	07/31/24	06/01/24-05/31/25	26,790	26,790
30	Jacobs	W8X97006-10	05/31/24	07/31/24	03/18/24-04/26/24	1,093,335	1,093,335
31	Hamner, Jewell & Associates	203505	04/10/24	07/31/24	03/01/24-03/31/24	7,569	7,569
32	Hamner, Jewell & Associates	203601	05/14/24	07/31/24	04/01/24-04/30/24	3,372	3,372
33	Parsons	2406B006	06/10/24	07/31/24	04/27/24-05/31/24	725,559	725,559
34	Metropolitan Water District of So. Ca	501952	04/18/24	07/31/24	02/01/24-02/29/24	16,761	16,761
35	Metropolitan Water District of So. Ca	501977	06/11/24	07/31/24	05/01/24-05/31/24	18,642	18,642
36	Metropolitan Water District of So. Ca	501961	05/09/24	07/31/24	03/01/24-03/31/24	17,317	17,317
37	Metropolitan Water District of So. Ca	501976	05/16/24	07/31/24	04/01/24-04/30/24	16,384	16,384
38	Hamner, Jewell & Associates	203649	06/10/24	07/31/24	05/01/24-05/31/24	990	990
39	AVI-SPL LLC	2225853	05/31/24	07/31/24	05/31/24	4,947	4,947
40	Jacobs	W8X97006-11	06/20/24	07/31/24	04/27/24-05/31/24	1,246,019	1,246,019
41	VMA Communications	DCA24May	06/21/24	07/31/24	05/01/24-05/31/24	72,580	72,580
42	FedEx Corporation	8-517-24731	05/30/24	07/31/24	05/22/24-05/23/24	35	35
43	FedEx Corporation	8-551-02348	07/04/24	07/31/24	07/01/24	17	17
44	FedEx Corporation	8-564-49107	07/18/24	07/31/24	07/10/24-07/15/24	35	35
45	Bank of America	N/A*	08/22/24	08/02/24	08/02/24	8,306	8,306
46	Consolidated Communications	20240715	07/15/24	08/07/24	07/15/24-08/14/24	2,850	2,850
47	AT&T	7604691904	07/19/24	08/07/24	07/19/24-08/18/24	1,976	1,976
48	Prime US-Park Tower LLC	20240801	07/22/24	08/07/24	08/01/24-08/31/24	106,605	106,605
49	Prime US-Park Tower LLC	2400-071124	07/11/24	08/09/24	05/21/24-06/03/24	1,134	1,134
50	Jambo Corp	2024-127	07/01/24	08/12/24	07/01/24-06/30/25	34,920	34,920
51	Keogh Multimedia	MK-2024-03	06/28/24	08/12/24	04/01/24-06/30/24	1,105	1,105
52	FedEx Corporation	8-570-85774	07/25/24	08/14/24	07/22/24	17	17
53	FedEx Corporation	8-577-93385	08/01/24	08/14/24	07/30/24	17	17
54	Caltronics Business Systems	4141936	08/05/24	08/14/24	08/01/24-08/31/24	2,485	2,485
55	Associated Right of Way Services, Inc.	22501	07/02/24	08/23/24	06/01/24-06/30/24	367	367
56	Gwen Buchholz, Permit Engineer, Inc.	2324-12	07/14/24	08/23/24	06/01/24-06/30/24	15,250	15,250
57	Commuter Industries, Inc.	240113	06/25/24	08/23/24	06/25/24	366	366
58	Bradner Consulting LLC	2324-06	06/30/24	08/23/24	06/01/24-06/30/24	50,560	50,560
59	Convergent Systems	45052	07/05/24	08/23/24	07/01/24-09/30/24	609	609
60	VMA Communications	DCA24June	07/12/24	08/23/24	06/01/24-06/30/24	99,475	99,475
61	National Pen Co., LLC dba Pens.com	113782923	07/22/24	08/23/24	07/22/24	392	392
62	National Pen Co., LLC dba Pens.com	113789267	07/26/24	08/23/24	07/26/24	392	392
63	FedEx Corporation	8-584-69869	08/08/24	08/23/24	08/02/24	17	17

*Auto-withdrawal for Bank of America Letter of Credit fee.

DELTA CONVEYANCE DESIGN AND CONSTRUCTION JOINT POWERS AUTHORITY

Schedule of Invoices Paid
for the Three Months Ended September 30, 2024
(Continued)

	Vendor	Invoice #	Invoice Date	Payment Date	Period of Expense	Invoice Amount	Amount Paid
64	Lux Bus America Co.	109140	07/23/24	08/23/24	07/19/24	1,921	1,921
65	Parsons	2407B884	07/24/24	08/28/24	04/10/24-06/30/24	622,257	622,257
66	FedEx Corporation	8-592-05887	08/15/24	08/28/24	08/08/24	17	17
67	AECOM Technical Services	2000913560	07/25/24	09/06/24	01/31/24-06/30/24	983,634	983,634
68	AECOM Technical Services	2000912559	07/18/24	09/06/24	06/01/24-06/30/24	62,515	62,515
69	Jacobs	W8X97006-12	07/25/24	09/06/24	05/25/24-06/30/24	1,155,316	1,155,316
70	Consolidated Communications	20240815	08/15/24	09/06/24	08/15/24-09/14/24	2,850	2,850
71	FedEx Corporation	8-599-42286	08/22/24	09/06/24	08/15/24-08/16/24	35	35
72	AT&T	8875313905	08/19/24	09/06/24	08/19/24-09/18/24	1,986	1,986
73	Prime US-Park Tower LLC	20240901	08/26/24	09/06/24	09/01/24-09/30/24	106,605	106,605
74	Bender Rosenthal, Inc.	1180	07/17/24	09/18/24	06/01/24-06/29/24	20,120	20,120
75	Bradner Consulting LLC	2425-01	07/31/24	09/18/24	07/01/24-07/31/24	50,560	50,560
76	Hamner, Jewell & Associates	203844	07/30/24	09/18/24	06/01/24-06/30/24	1,771	1,771
77	Associated Right of Way Services, Inc.	22551	08/05/24	09/18/24	07/01/24-07/31/24	886	886
78	Best, Best, & Krieger	999910**	07/02/24	09/18/24	06/01/24-06/30/24	18,701	18,278
79	Parsons	2408A730	08/12/24	09/18/24	06/01/24-06/30/24	2,307	2,307
80	Launch Consulting	PSI1032695	07/18/24	09/18/24	06/01/24-06/30/24	39,501	39,501
81	FedEx Corporation	8-606-64374	08/29/24	09/18/24	08/21/24	17	17
82	Caltronics Business Systems	4165725	09/03/24	09/18/24	09/01/24-09/30/24	2,499	2,499
83	VMA Communications	DCA24July**	08/13/24	09/20/24	07/01/24-07/31/24	48,899	48,384
84	Metropolitan Water District of So. Ca	501985**	07/24/24	09/20/24	06/01/24-06/30/24	23,395	23,299
85	Gwen Buchholz, Permit Engineer, Inc.	2425-01	08/14/24	09/20/24	07/01/24-07/31/24	16,625	16,625
86	East Bay Municipal Utility District	10192267	08/21/24	09/25/24	10/01/23-07/31/24	133,547	133,547
87	FedEx Corporation	8-619-84266	09/12/24	09/25/24	09/04/24-09/11/24	35	35
					Total July - September*	$ 8,980,192	$ 8,979,158

* Totals may not foot due to rounding.
** Certain expenses were disallowed by the DCO.

DELTA CONVEYANCE DESIGN AND CONSTRUCTION JOINT POWERS AUTHORITY

Accounts Payable Aging Schedule
As of September 30, 2024

Payable To:	1 - 30	31 - 60	61 - 90	> 90	Total
AECOM Technical Services					
Invoice #2000922790	$ 122,280	$ —	$ —	$ —	$ 122,280
Associated Right of Way Services, Inc.					
Invoice #22611	917	—	—	—	917
AT&T					
Invoice #4990393905	993	—	—	—	993
Bender Rosenthal, Inc.					
Invoice #1288	11,146	—	—	—	11,146
Bradner Consulting LLC					
Invoice #2425-02	50,560	—	—	—	50,560
Commuter Industries, Inc.					
Invoice #240136	366	—	—	—	366
Consolidated Communications					
Invoice #20240915	1,425	—	—	—	1,425
Convergent Systems					
Invoice #1040231	217	—	—	—	217
FedEx Corporation					
Invoice #8-626-25762	17	—	—	—	17
Invoice #8-633-33284	35	—	—	—	35
Hamner, Jewell & Associates					
Invoice #203878	799	—	—	—	799
Invoice #203936	1,205	—	—	—	1,205
Jacobs					
Invoice #W8X97007-01	851,838	—	—	—	851,838
Invoice #W8X97007-02	1,356,652	—	—	—	1,356,652
Launch Consulting					
Invoice #PSI1033365	25,968	—	—	—	25,968
Invoice #PSI1033985	26,992	—	—	—	26,992
Miles Treaster & Associates					
Invoice #52573	26,518	—	—	—	26,518
Parsons					
Invoice #2408B511	596,822	—	—	—	596,822
Invoice #2408C786	9,632	—	—	—	9,632
Invoice #2409A601	785,854	—	—	—	785,854
Signs Now					
Invoice #109449	68	—	—	—	68
	$ 3,870,304	$ —	$ —	$ —	$ 3,870,304

* Totals may not foot due to rounding.

DELTA CONVEYANCE DESIGN AND CONSTRUCTION JOINT POWERS AUTHORITY

Accounts Receivable Aging Schedule [1]
As of September 30, 2024

Receivable From:	1 - 30	31 - 60	61 - 90	> 90	Total
Department of Water Resources					
Invoice #DCA-657	$ 606,454	$ —	$ —	$ —	$ 606,454
Invoice #DCA-658	851,838	—	—	—	851,838
Invoice #DCA-659	37,913	—	—	—	37,913
Invoice #DCA-661	785,854	—	—	—	785,854
Invoice #DCA-662	51,911	—	—	—	51,911
Invoice #DCA-663	2,885	—	—	—	2,885
Invoice #DCA-664	26,518	—	—	—	26,518
Invoice #DCA-665	28,414	—	—	—	28,414
Invoice #DCA-666	106,605	—	—	—	106,605
Invoice #DCA-667	2,003	—	—	—	2,003
Invoice #DCA-668	1,356,651	—	—	—	1,356,651
	$ 3,857,046	$ —	$ —	$ —	$ 3,857,046

* Totals may not foot due to rounding.

[1] Approval date by the DCO determines aging classification.

DELTA CONVEYANCE DESIGN AND CONSTRUCTION JOINT POWERS AUTHORITY

Statements of Cash Receipts and Disbursements

	Three Months Ended Sep. 30, 2024
Receipts:	
Contributions [1]	$ 9,034,148
Disbursements:	
Program management office	
Executive office	816,173
Community engagement	468,407
Program controls	878,790
Administration	811,102
Procurement	192,570
Property	143,871
Permitting management	125,105
Health and safety	84,800
Quality management	177,215
Program initiation	
Engineering	2,934,352
Fieldwork	2,346,773
Total disbursements	8,979,158
Net changes in cash	54,990
Cash at July 1, 2024	752,864
Cash at September 30, 2024	$ 807,854

Statements of Revenues, Expenses and Changes in Net Position

	Three Months Ended Sep. 30, 2024
Revenues:	
Contributions [1]	$ 7,636,380
Expenses*:	
Program management office	
Executive office	551,698
Community engagement	189,268
Program controls	1,108,534
Administration	816,333
Procurement	163,481
Property	74,180
Permitting management	133,487
Health and safety	103,478
Quality management	195,686
Program initiation	
Engineering	2,837,953
Fieldwork	1,421,211
Geotechnical management	55,612
Total expenses	7,650,921
Changes in net position	(14,541)
Net position at June 30, 2024	1,125,366
Net position at September 30, 2024	$ 1,110,825

* Amounts may include prior month accruals that were not previously captured due to timing.

[1] DWR contributions invoiced through the DCO.

DELTA CONVEYANCE DESIGN AND CONSTRUCTION JOINT POWERS AUTHORITY

	Statements of Cash Receipts and Disbursements	Statements of Revenues, Expenses and Changes in Net Position
	Three Months Ended Sep. 30, 2024	Three Months Ended Sep. 30, 2024
Receipts/Revenues:		
Contributions [1]	$ 9,034,148	$ 7,636,380
Disbursements/Expenses*:		
Program management office		
Executive office	816,173	551,698
Community engagement	468,407	189,268
Program controls	878,790	1,108,534
Administration	811,102	816,333
Procurement	192,570	163,481
Property	143,871	74,180
Permitting management	125,105	133,487
Health and safety	84,800	103,478
Quality management	177,215	195,686
Program initiation		
Engineering	2,934,352	2,837,953
Fieldwork	2,346,773	1,421,211
Geotechnical management	—	55,612
Total disbursements/expenses	8,979,158	7,650,921
Net changes in cash	54,990	
Cash at July 1, 2024	752,864	
Cash at September 30, 2024	$ 807,854	
Changes in net position		(14,541)
Net position at June 30, 2024		1,125,366
Net position at September 30, 2024		$ 1,110,825

* Amounts may include prior month accruals that were not previously captured due to timing.

[1] DWR contributions invoiced through the DCO.

DELTA CONVEYANCE DESIGN & CONSTRUCTION AUTHORITY

DCP Communications Report

Contact: Janet Barbieri, DWR Communications Manager

Agenda Date: October 17, 2024 Board Meeting **Item No.** 8c

Subject: DCP Communications Status Update

Summary:
The Communications Manager will update the Board on DCA/DCP Communication Efforts and Activities.

Detailed Report:
More details will be presented at the Board Meeting.

Action:
Information, only.