March 31, 2014

Mr. Sam Unger, Executive Officer
California Regional Water Quality Control Board
Los Angeles Region
320 W. 4th Street, Suite 200
Los Angeles, CA 90013

RE: Memorandum of Understanding (MOU) Quarterly Progress Report
Malibu Civic Center Wastewater Treatment Plan

Dear Sam:

The following is the quarterly progress report for the Malibu Civic Center Wastewater Treatment Plan, which covers work activities performed on this project during the period between January 1, 2014 and March 31, 2014. To date, the City continues to make progress on all MOU Milestone requirements.

Below is a list of the work performed during the last quarter:

- Continued groundwater modeling work using the MODFLOW hydraulic modeling program.
- Continued work for development of a Salt and Nutrient Management Plan (SNMP) and a Groundwater Management Plan (GWMP). These plans are necessary for recycled water use, management of the groundwater basin, and funding purposes.
- Continued mapping of slope stabilities in project area for use in the Coastal Development Permit (CDP) application.
- Prepare the required documents and continue to work with the California Coastal Commission staff regarding the amendment to the City’s Local Coastal Program (LCP).
- The design consultants submitted the Administrative Draft EIR to the City for review.
- Conducted the fourth Civic Center Wastewater Treatment Facility Technical Advisory Committee (TAC) Meeting on February 20, 2014. Committee members, which included independent experts and regional board staff, were updated on the treatment plant design and processes.
Continued preparatory work necessary for the creation of an Assessment District (AD) such as benefits analysis which includes defining loads and flows from each parcel, capital cost estimates, operation and maintenance cost estimates, and initial modeling of alternative cost allocation methodologies. The Assessment Engineering Consultant presented a preliminary assessment analysis at the November/December Stakeholders Meeting and will present an updated assessment analysis at the next Stakeholders Meeting on April 3, 2014.

- Conducted regular monthly coordination meetings with RWQCB staff to discuss project progress, areas of regulatory concern, and basis of permitting the project.

- Continue with work to refine the wastewater flow projections by RWQCB phase.

- Continue with development of site plans, flow schematics, and hydraulic profiles for designing the wastewater treatment plant at Winter Canyon location.

- Continue refinement of flow routing and alignments, hydraulic and pipe size analysis, and developed design plans and profile diagrams to identify utility conflicts for the wastewater collection system.

- Continue analysis of commercial and residential tie-in locations and hookup points along the wastewater collection system.

- Continue hydraulic analysis and developed pipeline alignments and routes and hookup points for the project’s reclaimed water system.

- Continue site analysis and sizing for collection system pumping stations.

- Continue preforming independent expert review of the project’s design concept, treatment processes, sizing, and site configuration of the wastewater treatment plant facility to ensure plant design and processes are effective and efficient.

- The design consultant submitted 95% design plans to the City for review and comments. The submittal included detailed designs of the treatment plant, the wastewater collection system, and the recycled water distribution system.

- Continue to work with Los Angeles County Water District 29 to seek possible recycled water demand opportunities further west of the Civic Center Area of Malibu.

Currently, the design of the wastewater treatment plant, the wastewater collection system, and the recycled water system is about 95% complete (Attachment 1). The City’s continued approach of performing tasks simultaneously, and on parallel tracks, has kept this project moving forward.

Since our last quarterly report, our design consultants continued performing hydraulic calibration work for the groundwater model and commenced groundwater scenarios using the results from the groundwater injection testing program. Results from this groundwater modeling work has now shown that the direction of flow of the injected waters do not flow to the Malibu Creek or Lagoon
for the full range of flows expected through phase 3 build-out conditions. Furthermore, the modeling scenarios showing groundwater levels before and after project implementation indicate that the project will actually lower groundwater levels throughout the study area. In general, the extremely detailed and voluminous modeling work performed by our design consultants confirms the engineering feasibility of the project. The positive results from this modeling work has now allowed our design consultants to confidently begin the final design work of the injection wells and allowed the overall engineering design work of the project to nearly reach the 95% completion level. Pursuant to the request of Dr. Wu regarding this positive information, the City presented a progress report of the project to the Regional Board at its meeting on March 6, 2014 (Attachment 2). Although we are very excited for this accomplishment, we have not reduced our efforts in seeking different ways to recapture additional time in order to reduce the overall critical path schedule for the completion of this project.

Our design consultant and City staff continue to meet on a monthly basis with Dr. Eric Wu and Dr. T. Don Tsai of the Board’s Groundwater & Permitting Unit (Attachment 3) to discuss the status and details of the project including the groundwater well injection and testing program, status of the City’s regulatory requirements (CDP, CEQA, EIR), WDR permit limits and requirements, water balance and recycled water use, groundwater basin, Malibu Creek Nutrient TMDL, and local Agency Management Plan. Dr. Wu has also found time to attend our Wastewater Technical Advisory Committee (TAC) Meeting (Attachment 4). Dr. Wu and his staff continues to be very helpful to our staff and has provided our team with clarity and guidance where we continue to look forward to his and the Board’s continued support throughout this project.

As mentioned above, our Assessment Engineering Consultant, David Taussig & Associates, has been performing the required work necessary for the formation of the Civic Center Wastewater Treatment Facility Assessment District. They presented their preliminary assessment analysis at the November/December Malibu Civic Center Stakeholders Meeting and will present a second update of the assessment analysis at the next Stakeholders Meeting on April 3, 2014. As you are aware, commercial property owners approved establishment of a Community Facilities District (CFD) to fund the project’s remaining field, design, and permitting work. Formation of an Assessment District (AD) will provide the funding necessary to construct and operate the wastewater treatment facility. City staff has also sought other possible sources of funding for this project such as through the State Revolving Fund.

Finally, the City continues to have monthly meetings with stakeholders about the CCWTF (Attachments 5). For several years, the City has met on a monthly basis with stakeholder groups comprised of commercial property owners, residential homeowners’ association (HOA) representatives and other interested community members. The City also makes presentations to HOA organizations within the prohibition boundary area when requested. There appears to be continued support from the commercial property owners for the wastewater treatment plan moving forward. There is however much greater concern from residential property owners with regards to cost and overall impacts.

As you can see, the City is committed to working with the community and the Board in a diligent effort towards the design and completion of the wastewater treatment facility for the Civic Center area. The Board and MOU have set out a very aggressive schedule that allowed for virtually no
delays at all. Therefore, with the delay caused by funding and formation of the CFD, the City will diligently pursue trying to comply with the deadlines. However, please realize that the MOU allows very little room for time to be recouped and the City will need cooperation from the Board if additional time is needed to complete the project.

If you have any questions, or require additional clarification, please do not hesitate to contact me at (310) 456-2489, extension 226, or jthorsen@malibucity.org.

Sincerely,

Jim Thorsen
City Manager

Attachments:

1. 95% Design Plans for the MCCWTF – Phase 1 Project.
2. Power Point Presentation to Regional Board on March 6, 2014.
3. Meeting Minutes for monthly meetings held with the RWQCB staff for the MCCWTF Project.
4. Agenda/Power Point Presentation for the MCCWTF Project TAC Meeting on February 20, 2014.
5. Power Point Presentation to the Malibu Civic Center Stakeholders at the January 30, 2014 and February 27, 2014 Meetings.

cc: Mayor Skylar Peak and Honorable Members of the Malibu City Council
Vic Peterson, Environmental Sustainability Director
Bob Brager, Public Works Director/City Engineer
Joyce Parker-Bozyinski, Planning Director
Craig George, Environmental Sustainability Manager / Deputy Building Official
Eric Wu, Ph.D., P.E., RWQCB
T. Don Tsai, Ph.D., RWQCB
City of Malibu
Public Works Department

CONTRACT DRAWINGS

CIVIC CENTER WASTEWATER TREATMENT FACILITY - PHASE 1

City Project No. 2036

95% DESIGN SUBMITTAL
NOT FOR CONSTRUCTION

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NOTES:
1. CONSTRUCTION TO FIELD VERIFY ALL ELEVATIONS, DIMENSIONS
   AND PIPE AND EQUIPMENT LOCATIONS.
2. ELEVATIONshall BE IN ACCORDANCE WITH SECTION 02030
   RECONSTRUCTION AND SEQUENCING AND SECTIONS IN
   SECTION 02020.
3. THIS SHEET TO BE CUT AND THE SUBSTANTIAL COMPLETED
   NOTES SHALL BE SUBMITTED WITH ACCORDANCE TO PROJECT
   SPECIFICATIONS NO MORE THAN 100 FEET FROM SECTIONS AND
   LOCATIONS SHOWN.
4. ALL MATERIALS IDENTIFIED TO BE REMOVED AND/OR
   NOTECHENGE OR CONSTRUCTION OR EXCAVATION OR
   COMPLETE ELEVATION OF TRENCHES MUST BE COMPLETED AND
   EXCAVATION TO UP TO ACCORDANCE WITH THE
   CONTRACT DOCUMENTS.
5. TRENCHES OF EXCAVATION SHALL BE IN ACCORDANCE
   WITH SECTIONS AND PIPE LOCATOR TO BE REMOVED AND
   BURIED OR DISPOSED OF IN ACCORDANCE WITH THE
   CONTRACT DOCUMENTS.
NOTES:
1. DEMOLITION SHALL BE IN ACCORDANCE WITH DESIG NEQUATIONS AND CONDITICTS
   AS VARIOUS SPECIFICATIONS.
2. THE DEPTH OF EXISTING INSECT PITS, REFER TO CRGS 0–8, DETAIL SHEET PLAN
   AND LOCATION GENERAL.
3. FOR INSECT PITS IN NEW ROAD ORS, MAINTAIN TOP TEN FEET OF PIT, REMOVE
   PAVEMENT AND PUT LOWER PORTION OF PITS WITH SLICE OF VLIVER. CONTRACTOR
   SHALL REMOVE MORE THAN 10 FEET OF THE INSECT PITS FOR VARIOUS
   WORK OR SHOWN ON CRGS–1.
4. OUT TANK WILL NOT PIPE AND CONNECT NEW PIPE IN ACCORDANCE WITH CRGS–1.
5. LINES THAT ARE COORDINATED FROM INSECT PITS SHALL BE CUT AND DEMPED
   AT THE REQUIRED DISTANCE.
6. CONTRACTOR SHALL PROVIDE WATER LINES AND PROVIDE DETAILS TO ENGINEER.
7. THE LINE ON THE WATER LINE AT PROPERTY LINE IS ACCORDANCE WITH LINES
   SHOWN ON THE GENERAL.
8.-water features shall be improved from the grade to the tolerances and
   adjust the pipe access spaces.
NOTE:
1. PRECAST CATCH BASIN IS ACCEPTABLE ALTERNATIVE WITH ENGINEER APPROVAL. EXHUMATION MAY BE REQUIRED FOR STANDARD PRECAST.[...
2. PRECAST CATCH BASIN SHALL BE M-30 LOAD.
3. APPLY DETAIL (C) FOR CATCH BASINS CONNECTED TO SS MANHOLE.

SECTION C

TYPICAL CATCH BASIN C182

TYPICAL FIBER ROLL INSTALLATION C183

NOTE:
1. FIBER ROLL WILL BE INSTALLED PER THE CONTRACTOR'S INSTALLATION SPECIFICATIONS.
2. CONTACT CURB IS USED IN HORIZONTAL CURB OPENINGS.
3. NOTE: IN COMPLIANCE WITH LOCAL CODES AND PROPER INSTALLATION TENET.
4. USE A他們 IN FLUSH INSTALLATION.

REVISION

CITY OF MALIBU
PUBLIC WORKS DEPARTMENT
CIVIC CENTER WASTEWATER TREATMENT FACILITY - PHASE I
CIVIL STANDARD DETAILS - 3

Plan No. GC-4 Sheet of XXI Sheets
CITY OF MALIBU
PUBLIC WORKS DEPARTMENT
CIVIC CENTER WASTEWATER TREATMENT FACILITY - PHASE 1
CIVIL STANDARD DETAILS - 4

NOTES:
1. Manhole frame and frame shall have 3/8" CLEAR SPACING AND LACKED BOLT PICK HOLE. COVER SHALL BE LENDED "COVER" and shall be RATED FREE WITHOUT USE OF SEALANT.
2. Top of cover to top of frame shall not exceed 5". Adjustment grade rings shall be 3/8" or 5/8".
3. Grade rings and manhole frame shall be sealed at each joint with butyl rubber gasket or equivalent and spaced on the inside.
4. Unless otherwise noted, manhole bollards shall be 4" MIN. inside diameter, precision cast in to form integral for concrete manholes.
5. Precast manhole shall be precast concrete conforming to ASTM C 408. Precast reinforced manhole sections. At least one of these manholes shall be specified to withstand the effects of manhole and manhole sections that may be used in the concrete manhole sections.
7. Provide water stops for discharged pipe.
8. Concrete cover shall not exceed 5' or lack of a "corrugated flange" or an "elbow pipe".
9. Grade rings shall be spaced on center to form integral for precast manhole sections. Steel, compression ring, shall be used to form integral for precast manhole sections.
10. Use in drainage wells. Provide 4' deep reinforced grout at joint.
11. All interior finishes to be stained and sealed.

STANDARD SEWER MANHOLE C200

NOTES:
1. Manhole base shall be placed on a minimum 5" clay base or gravel. Floor waterline, drain line, and utilities are connected to base.
2. See detail notes for details and notes of construction above present base.

PRECAST SEWER MANHOLE BASE C202

NOTES:
1. Manhole base shall be placed on a minimum 5" clay base or gravel. Floor waterline, drain line, and utilities are connected to base.
2. See detail notes for details and notes of construction above present base.

PRECAST MANHOLE SLAB TOP C201

NOTES:
1. Manhole frame and frame shall have 3/8" CLEAR SPACING AND LACKED BOLT PICK HOLE. COVER SHALL BE LENDED "COVER" and shall be RATED FREE WITHOUT USE OF SEALANT.
NOTES:
1. THE GATE APPEAREANCE SHALL ALSO BE APPLIED TO THE OTHER EXISTING GATE.

GATE AND FENCE AREA PLAN

GATE OPERATOR AND HANGING PAD DETAIL

GATE OPERATOR PAD DETAIL

SECTION A

AUTOMATED GATE

NOTES:
1. THE EXISTING GATE SHALL BE VARNISHED FOR SECURITY DURING CONSTRUCTION.
2. THE CONTRACTOR SHALL SHOW DETAILED 8' HIGH GATE WITH BRUSHED ALUMINUM FINISH THAT CAN BE LOCKED AS NEEDED TO SECURE THE GATE AREA DURING CONSTRUCTION OF THE NEW FENCE.
3. THE GATE OPERATOR AND HANGING PAD DETAIL IS TO SCALE

SITE DETAILS

CITY OF MALIBU
PUBLIC WORKS DEPARTMENT
CIVIC CENTER WASTEWATER TREATMENT FACILITY - PHASE 1

REV. DATE

10-10-07

DRAWN

10-10-07

CHECKED

10-10-07

PUBLIC WORKS DEPARTMENT

PUBLIC WORKING DRAWING C100-4 SHEET 1 OF 30 SHEETS
CITY OF MALIBU
PUBLIC WORKS DEPARTMENT
CIVIC CENTER WASTEWATER TREATMENT FACILITY - PHASE 1
LANDSCAPE PAVING & WALL DETAILS

Plan No. L200-3 Sheet of XXX Sheets
PLANTING NOTES:

1. Prepare a minimum of 12" depth of well-structured soil for root development and root growth in all planted areas. Use soil amendments as needed for complete information regarding soil preparation and amendment.

2. Microbial compost shall be added into the soil to a minimum depth of 6" to 12" prior to planting.

3. All exposed soil surfaces except in the root zone planting area shall receive a minimum of 2" layer of bark media, composted wood chips, or a similar material. Soil shall be amended as needed for complete information regarding soil preparation and amendment.

4. Notify owner representing promptly if field conditions encountered vary from those given above.

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CITY OF MALIBU
PUBLIC WORKS DEPARTMENT
CIVIC CENTER WASTEWATER TREATMENT FACILITY - PHASE 1

LANDSCAPE NOTES AND LEGENDS

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<td>C</td>
<td>Corner Guard</td>
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</table>
**CLEAR FLOOR SPACE FOR WHEELCHAIRS**

- A minimum of 36" (914 mm) of clear floor space shall be provided on the building floor.

**HAZARDS AND PROTRUDING OBJECTS**

- All sharp edges, projections, and protruding objects shall be guarded or guarded.

**PARKING WALKS AND SIDEWALKS**

- Suitability for wheelchair accessibility.

**ENTRANCES AND DOORS**

- Double doors shall be provided with clear space.

**STAIRS AND STAIR WAYS**

- Grabs shall be provided to accommodate wheelchair users.

**HANDRAILS ON STAIRS**

- Handrails shall be provided to accommodate wheelchair users.

**RAMPS**

- Ramps shall be provided to accommodate wheelchair users.

**SANITARY FACILITIES (GENERAL)**

- Grab bars shall be provided to accommodate wheelchair users.

**TOILET ROOM FIXTURES AND ACCESSORIES**

- Adequate clear space shall be provided for wheelchair users.

**GRAB BARS**

- Grab bars shall be provided to accommodate wheelchair users.

**IGNITION TELEPHONES**

- Telephones shall be provided to accommodate wheelchair users.

**ADDITIONAL REQUIREMENTS**

- Additional requirements shall be adhered to as necessary.

---

**CITY OF MALIBU**

**PUBLIC WORKS DEPARTMENT**

**CIVIC CENTER WASTE WATER TREATMENT FACILITY - PHASE 1**

**ACCESSIBILITY DETAILS**
CITY OF MALIBU
PUBLIC WORKS DEPARTMENT
CIVIC CENTER WASTE WATER TREATMENT FACILITY - PHASE 1
ACCESSIBILITY DETAILS

ACCESSIBLE HARDWARE REQUIREMENTS

1. HEATING UNIT
2. FLOOR PLANTER/WIDE SIDE
3. WALL MOUNTED LAVATORY
4. WALL MOUNTED TOILET

TIGHTEN DPTH

1. TOILET STALL
2. WALL MOUNTED LAVATORY
3. COUNTER MOUNTED LAVATORY

B. TOILET STALL

1. TOILET STALL
2. WALL MOUNTED LAVATORY
3. COUNTER MOUNTED LAVATORY

WATER CLOSET REQUIREMENTS

1. TOILET STALL *
2. WALL MOUNTED LAVATORY
3. COUNTER MOUNTED LAVATORY

CITY OF MALIBU
PUBLIC WORKS DEPARTMENT
CIVIC CENTER WASTE WATER TREATMENT FACILITY - PHASE 1
ACCESSIBILITY DETAILS
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<td>3.1.3</td>
<td>Parking area lighting</td>
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<td>3.1.4</td>
<td>Grading and paving (surface water away from building)</td>
<td>Yes</td>
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</table>

**5.2** Energy Efficiency

- **5.2.0.1** Reduce energy usage by 20%
- **5.2.0.2** Domestic water heating at least 85%
- **5.2.0.3** HVAC system controls
- **5.2.0.4** Envelopes, floors, and ceilings

**5.3** Water Efficiency + Conservation

- **5.3.0.1** Reduce water consumption by 30%
- **5.3.0.2** Waterless urinals
- **5.3.0.3** Waterless urinals
- **5.3.0.4** Waterless urinals
- **5.3.0.5** Waterless urinals
- **5.3.0.6** Waterless urinals
- **5.3.0.7** Waterless urinals
- **5.3.0.8** Waterless urinals
- **5.3.0.9** Waterless urinals
- **5.3.0.10** Waterless urinals

**5.4** Materials + Resources Efficiency

- **5.4.0.1** Recycled content
- **5.4.0.2** Recycled content
- **5.4.0.3** Recycled content
- **5.4.0.4** Recycled content
- **5.4.0.5** Recycled content
- **5.4.0.6** Recycled content
- **5.4.0.7** Recycled content
- **5.4.0.8** Recycled content
- **5.4.0.9** Recycled content
- **5.4.0.10** Recycled content

**5.5** Environment Quality

- **5.5.0.1** Odor control
- **5.5.0.2** Odor control
- **5.5.0.3** Odor control
- **5.5.0.4** Odor control
- **5.5.0.5** Odor control
- **5.5.0.6** Odor control
- **5.5.0.7** Odor control
- **5.5.0.8** Odor control
- **5.5.0.9** Odor control
- **5.5.0.10** Odor control

**7.0** Commissioning

- **7.0.0.1** Commissioning
- **7.0.0.2** Commissioning
- **7.0.0.3** Commissioning
- **7.0.0.4** Commissioning
- **7.0.0.5** Commissioning
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- **7.0.0.7** Commissioning
- **7.0.0.8** Commissioning
- **7.0.0.9** Commissioning
- **7.0.0.10** Commissioning

**7.1** Special Inspections

- **7.1.0.1** Special inspections
- **7.1.0.2** Special inspections
- **7.1.0.3** Special inspections
- **7.1.0.4** Special inspections
- **7.1.0.5** Special inspections
- **7.1.0.6** Special inspections
- **7.1.0.7** Special inspections
- **7.1.0.8** Special inspections
- **7.1.0.9** Special inspections
- **7.1.0.10** Special inspections

**7.2** Special Inspection Quads

- **7.2.0.1** Special inspection
- **7.2.0.2** Special inspection
- **7.2.0.3** Special inspection
- **7.2.0.4** Special inspection
- **7.2.0.5** Special inspection
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- **7.2.0.7** Special inspection
- **7.2.0.8** Special inspection
- **7.2.0.9** Special inspection
- **7.2.0.10** Special inspection

**7.3** Special Inspection Details

- **7.3.0.1** Special inspection
- **7.3.0.2** Special inspection
- **7.3.0.3** Special inspection
- **7.3.0.4** Special inspection
- **7.3.0.5** Special inspection
- **7.3.0.6** Special inspection
- **7.3.0.7** Special inspection
- **7.3.0.8** Special inspection
- **7.3.0.9** Special inspection
- **7.3.0.10** Special inspection
MEMBRANE TANK AREA FLOOR PLAN

CITY OF MALIBU
PUBLIC WORKS DEPARTMENT
CIVIC CENTER WASTE WATER TREATMENT FACILITY - PHASE 1

MEMBRANE TANK AREA FLOOR PLAN

SCALE: 1" = 1'-0"

CONTRACOR NOTUS

BY: CONSTRUCTION NOTIFICATIONS

NOT FOR CONSTRUCTION

SHEET 1 OF 1 SHEETS

ARCHITECT

PUBLIC WORKS DEPARTMENT

PUBLIC WORKS ENGINEER

CITY OF MALIBU
### ROOF FINISH SCHEDULE

#### ROOM FINISH SCHEDULE - PHasing BUILDING

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#### ROOM FINISH SCHEDULE - Drying BUILDING

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#### ROOM FINISH SCHEDULE - Cooling BUILDING

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### CITY OF MALIBU
PUBLIC WORKS DEPARTMENT

CIVIC CENTER WASTE WATER TREATMENT FACILITY - PHASE 1

ROOM FINISH SCHEDULES

**Scale:** 1/4" = 1'-0"

**Approved By:**

ROBERT HENDRICKS, P.E.
PUBLIC WORKS DIRECTOR, MALIBU

**Revised By:**

DATE: 11/09/14

**Drawing Number:**

N-01

**Revision:**

DATE: 11/09/14

**Plan No.:**

SHEET 1 OF 19 SHEETS
CITY OF MALIBU
PUBLIC WORKS DEPARTMENT
CIVIC CENTER WASTE WATER TREATMENT FACILITY - PHASE 1

DOOR DETAILS

EXTERIOR

INTERIOR

EXT. THRESHOLD

FLOOR TRANSITION

R.G. 2015

REVISION 5

DATE: 03/08/2016

PUBLIC WORKS DIRECTOR CIVIC CENTER WASTE WATER TREATMENT FACILITY - PHASE 1

NO. SHEET OF 10 SHEETS

DRAWN BY:

CHECKED BY:

APPROVED BY:

ARCHITECT NO. 00032774

NOT FOR CONSTRUCTION

SCALE

ARCHITECT

PUBLIC WORKS DIRECTOR CITY ENGINEER

PUBLIC WORKS DIRECTOR CIVIC CENTER WASTE WATER TREATMENT FACILITY - PHASE 1

1/4" = 1'-0"

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### Plumbing Fixture / Equipment Schedule

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<tr>
<td>A</td>
<td>POINT OF CONNECTION</td>
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<td>ISOLATE OR TRUSS BAR</td>
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<td>C</td>
<td>TRAP OR TRUSS BAR</td>
</tr>
<tr>
<td>D</td>
<td>STEAM BRAKE PIPING</td>
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<tr>
<td>E</td>
<td>OZONEATOR FOR BRAKE PIPING</td>
</tr>
<tr>
<td>F</td>
<td>GENERATOR (EQUIPPING)</td>
</tr>
<tr>
<td>G</td>
<td>CHAPMAN PRESSURE RELIEF VALVE</td>
</tr>
<tr>
<td>H</td>
<td>STEAM HEATER (A)</td>
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<td>TANK PUMP (A)</td>
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<td>J</td>
<td>ISOLATE PUMP (A)</td>
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<td>K</td>
<td>OZONEATOR FOR STEAM PIPING</td>
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<tr>
<td>L</td>
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<tr>
<td>M</td>
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</tbody>
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### Plumbing Legend & Abbreviations

- E  = ISOLATE OR TRUSS BAR
- B  = TRAP OR TRUSS BAR
- D  = STEAM BRAKE PIPING
- C  = OZONEATOR FOR BRAKE PIPING
- F  = GENERATOR (EQUIPPING)
- G  = CHAPMAN PRESSURE RELIEF VALVE
- H  = STEAM HEATER (A)
- I  = TANK PUMP (A)
- J  = ISOLATE PUMP (A)
- K  = OZONEATOR FOR STEAM PIPING
- L  = STEAM HEATER (B)
- M  = ISOLATE PUMP (B)
- N  = OZONEATOR FOR STEAM PIPING

### General Notes

1. **Construction Notes:** All plumbing fixtures and equipment shall be installed per the approved plans and specifications. All connections shall be made in accordance with the plumbing code. All plumbing equipment shall be certified and tested in accordance with the plumbing code.

2. **Equipment Notes:** All plumbing equipment shall be installed in accordance with the manufacturers' instructions and the plumbing code. All plumbing equipment shall be tested and approved by the plumbing inspector.

3. **Pipe Notes:** All plumbing piping shall be installed in accordance with the plumbing code. All pipes shall be tested and approved by the plumbing inspector.

4. **Valve Notes:** All valves shall be installed in accordance with the plumbing code. All valves shall be tested and approved by the plumbing inspector.

5. **Fitting Notes:** All plumbing fittings shall be installed in accordance with the plumbing code. All fittings shall be tested and approved by the plumbing inspector.

6. **Plumbing Fixtures:** All plumbing fixtures shall be installed in accordance with the plumbing code. All plumbing fixtures shall be tested and approved by the plumbing inspector.

7. ** Plumbing Equipment:** All plumbing equipment shall be installed in accordance with the plumbing code. All plumbing equipment shall be tested and approved by the plumbing inspector.

8. **Plumbing Layout:** All plumbing layout shall be in accordance with the plumbing code. All plumbing layout shall be tested and approved by the plumbing inspector.

9. ** Plumbing Access:** All plumbing access shall be in accordance with the plumbing code. All plumbing access shall be tested and approved by the plumbing inspector.

10. ** Plumbing Inspection:** All plumbing inspection shall be in accordance with the plumbing code. All plumbing inspection shall be tested and approved by the plumbing inspector.

### City of Malibu

**Public Works Department**

**Civic Center Waste Water Treatment Facility - Phase 1**

**PLUMBING BLOWER NOTES, LEGEND, AND SCHEDULES**

**Scale:** 1/4" = 1'-0"

**Sheet:** 4 of 11

**Plan Number:** P4609-1
1. **Structural Steel Shell** must be connected to the job site by a California registered engineer.

2. \[\text{Openings shall not be filled by steel members unless specifically specified.}\]

3. **Welding** of reinforcement shall be done by a California registered engineer.

4. A California registered engineer shall issue the welding plans and welding specifications.

5. **Welding Inspectors** shall be present at all times during welding operations.

6. **Welding Procedure Tests** shall be performed in accordance with AISC and AWS recommendations and specific section need.

<table>
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<th>CONTENT</th>
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<td>1.1</td>
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<tr>
<td>1.2</td>
<td>Welding Specifications</td>
<td>1.2</td>
<td>To be performed by a California registered engineer.</td>
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<tr>
<td>1.3</td>
<td>Welding Procedure Tests</td>
<td>1.3</td>
<td>To be performed as specified in AISC and AWS recommendations.</td>
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<tr>
<td>1.4</td>
<td>Welding Inspection</td>
<td>1.4</td>
<td>To be performed by a California registered engineer.</td>
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</tbody>
</table>

---

**Welder Certification**

- All welders shall be certified in accordance with AWS E7016, E7018, and E7019 electrodes.
- Welders shall be certified for the specific electrode and welding position required.
- Certification shall be maintained in accordance with AWS standards.

---

**Welding Inspectors**

- Inspectors shall be present at all times during welding operations.
- Inspectors shall be certified in accordance with AWS standards.
- Inspectors shall be responsible for ensuring that all welding procedures are followed correctly.

---

**Welding Procedure Tests**

- Tests shall be performed in accordance with AWS standards.
- Tests shall be performed on all welds to ensure compliance with established procedures.
- Tests shall be witnessed by a California registered engineer.

---

**Welding Inspection**

- Inspections shall be performed in accordance with AWS standards.
- Inspections shall be performed on all welds to ensure compliance with established procedures.
- Inspections shall be witnessed by a California registered engineer.

---

**Welder Qualification**

- All welders shall be qualified in accordance with AWS standards.
- Qualification shall be maintained in accordance with AWS standards.
- Qualification shall be performed by a California registered engineer.

---

**Welding Inspector**

- Inspectors shall be responsible for ensuring that all welding procedures are followed correctly.
- Inspectors shall be certified in accordance with AWS standards.
- Inspectors shall be responsible for witnessing all welds.

---

**Welding Procedure**

- Procedures shall be performed in accordance with AWS standards.
- Procedures shall be performed on all welds to ensure compliance with established procedures.
- Procedures shall be witnessed by a California registered engineer.

---

**Welder Certification**

- Certifications shall be maintained in accordance with AWS standards.
- Certifications shall be performed by a California registered engineer.
- Certifications shall be witnessed by a California registered engineer.

---

**Welding Inspection**

- Inspections shall be performed in accordance with AWS standards.
- Inspections shall be performed on all welds to ensure compliance with established procedures.
- Inspections shall be witnessed by a California registered engineer.

---

**Welding Inspector**

- Inspectors shall be responsible for ensuring that all welding procedures are followed correctly.
- Inspectors shall be certified in accordance with AWS standards.
- Inspectors shall be responsible for witnessing all welds.
1'-0" x 3'-0" opening with AL plan cover, see mech.

1'-0" x 3'-0" opening with single-leaf hatch over pump (typ. 3), see mech.

1'-0" x 3'-0" opening with AL plan cover, see mech.

500-lb davit crane support (typ. 3), see mech.

500-lb davit crane support (typ. 3), see mech.

AL plan cover over vault, see mech.

AL plan cover over vault, see mech.

FOR CORNER OPENINGS, 1/3 SHOWN.

CITY OF MALIBU
PUBLIC WORKS DEPARTMENT
CIVIC CENTER WASTEWATER TREATMENT FACILITY - PHASE 1

INFLUENT PS
BOTTOM AND TOP PLANS

PLAN No. S1.00-1
REVISION BY CHECK DATE
Sheet of XXX Sheets
1. **6'-0" x 6'-0" S.S. DOUBLE-LEAF HATCH, SEE W.E.D.A.**

2. **6'-0" x 6'-0" S.S. SINGLE-LEAF HATCH, SEE W.E.D.A.**

3. **1'-0" x 3'-0" SWGLE-LFAF HATCH, SEE W.E.D.A.**

4. **2'-0" x 3'-0" SWGLE-LFAF HATCH, SEE W.E.D.A.**

5. **2'-0" x 3'-0" SWGLE-LFAF HATCH, SEE W.E.D.A.**

6. **5'-0" x 4'-0" LONG DIAGONAL BARS TAB AT CORNERS OF OPENING, AS SHOWN.**

7. **(2) 6" x 8" TAB ON SIDE OF OPENING, TYP.**

8. **2'-0" x 3'-0" SWGLE-LFAF HATCH (TYP. 5), SEE W.E.D.A.**

9. **SIDE OF OPENING, NP.**

10. **500-LB SWGLE-LFAF CRANE (TYP. 5), SEE W.E.D.A.**

11. **(2) 5" TAB ON SIDE OF OPENING**

12. **TOP PLAN**

13. **EQUALIZATION BASIN TOP PLAN**

14. **1'-4" CONC. SLAB SEE W.E.D.A.**

15. **REINF. w/ 7-10" O.C.**

16. **TOP & BOTTOM EQUALIZATION BASIN**

17. **PLAN NO. - S1200-2**

18. **FOR CONSTRUCTION**

19. **CITY OF MALIBU PUBLIC WORKS DEPARTMENT CIVIC CENTER WASTEWATER TREATMENT FACILITY - PHASE 1**

20. **EQUALIZATION BASIN**

21. **TOP PLAN**

22. **REV. 01.0, DATE 01-01-14**

23. **FOR CONSTRUCTION**

24. **NOT FOR CONSTRUCTION**
CITY OF MALIBU
PUBLIC WORKS DEPARTMENT
CIVIC CENTER WASTEWATER TREATMENT FACILITY - PHASE 1

HEADWORKS
ROOF FRAMING PLAN

HEADWORKS
ROOF FRAMING PLAN

ROOF DECKING:
3/4" CD-X PLYWOOD AT 7/16" DECK (20 GA.) OR EQUAL.
SEE Q6.4 PLAN & ELEVATION FOR TYP. DECK & PLYWOOD ATTACHMENT.
ALUMINUM (HEAVY DUTY) GRATING, SEE MECH.

NOTES:
1. GRATING SHALL HAVE TWO HANDLES FOR EACH REMOVABLE SECTION. EACH REMOVABLE SECTION SHALL BE A MAXIMUM OF 80 LBS.
CITY OF MALIBU
PUBLIC WORKS DEPARTMENT
CIVIC CENTER WASTEWATER TREATMENT FACILITY - PHASE 1

MEMBRANE TANK AREA FOUNDATION PLAN

Type: F 1/8" = 1'-0"

Membrane Tank Area

Foundation Plan

6" Conc. Slab-On-Grade
Fence w/ 35" @ 18" O.C. sa. wall
At mid-depth, over 1" of sand
Over 15 mil. Vapor Barrier
Over 2" of sand

(Membrane Tank Area Foundation Plan)
PRE-ENGINEERED METAL BUILDING CANOPY

FOOTING AT PEB COLUMNS

PRE-ENGINEERING METAL BUILDING

CONCRETE ENCLOSURE AROUND PIPE

(E) 48" DIA. SEEPAGE PIT (BEYOND) INFILL W/ CDF

CITY OF MALIBU
PUBLIC WORKS DEPARTMENT
CIVIC CENTER WASTEWATER TREATMENT FACILITY - PHASE 1
MEMBRANE AREA
STRUCTURAL SECTIONS

SECTION B

PLAN NO. 5000-3
SHEET OF XXX SHEETS
12" LONG DIAGONAL GAGE TAB AT CORNERS OF OPENINGS, AS SHOWN.

REINFORCEMENT AT CORNERS.

12" CONC. SLAB
BACK AT ES 12" O.C. EA. WAY

3'-0" x 3'-0"
SINGLE-LAY HATCH, SEE MECH.

11/16" x 11/16" GAGE FOR SQUARED HATCH, SEE MECH.

TOP PLAN

BOTTOM PLAN

CITY OF MALIBU
PUBLIC WORKS DEPARTMENT
CIVIC CENTER WASTEWATER TREATMENT FACILITY - PHASE 1
RECYCLED WATER UTILITY WATER/SEWAGE TREATMENT PLANT
TOP & FOUNDATION PLAN

SCALE: 1/" = 1'-0"
SOLIDS BUILDING
FOUNDATION PLAN

6" CONCRETE SLAB-ON-GRADE
REINFORCED 6/4 @ 18" O.C.
AT MID-DEPTH OVER 2" OF SAND
OVER 15 MIL VAPOR BARRIER
OVER 2" OF SAND

SOLIDS BUILDING
ROOF FRAMING PLAN

3/8" CD-3 PLYWOOD P/F 48/24
OVER VERCO 1-1/2" M6-8
DOCK (12 GA.) OR EQUAL.
SEEFOR TYP. DECK & PLYWOOD ATTACHEMENT.
CITY OF MALIBU
PUBLIC WORKS DEPARTMENT

CIVIC CENTER WASTEWATER TREATMENT FACILITY - PHASE 1

SOLIDS BUILDING
STRUCTURAL SECTIONS

SECTION A

PLAN

CITY OF MALIBU
PUBLIC WORKS DEPARTMENT

CIVIC CENTER WASTEWATER TREATMENT FACILITY - PHASE 1

SOLIDS BUILDING
STRUCTURAL SECTIONS

SECTION A

PLAN
REINFORCED WITH 6" V 12" O.C.

AT MID-HEIGHT

UPPER AREA ODOR BEDS AND FANS
FOUNDATION PLAN

24'-4"

8" SUB-O-GRAD
REINF. 4'/ 16" O.C.
AT MID-HEIGHT

CITY OF MALIBU
PUBLIC WORKS DEPARTMENT
CIVIC CENTER WASTEWATER TREATMENT FACILITY - PHASE 1
UPPER AREA ODOR BEDS & FANS
FOUNDATION PLAN

RMC

30% SUBMITTAL
NOT FOR
CONSTRUCTION

SHEET 1 OF 1
S9100-1
FIBERGLASS LIFT STATION
PER MANUFACTURER
SPECIFICATIONS

CONCRETE BILGE RING
AROUND PERIMETER OF TANK

SECTION A

CITY OF MALIBU
PUBLIC WORKS DEPARTMENT
CIVIC CENTER WASTEWATER TREATMENT FACILITY - PHASE 1
BLUFF PARK LIFT STATION
STRUCTURAL SECTION

S9360-1
Sheet of XXX Sheets
NOTES:
1. MATERIAL-ALLOYS ALL PARTS AFTER FABRICATION.
2. ADJUSTABLE PIPE SUPPORT CORROSION RESISTANT.
3. PIPE SUPPORT S SHOWN WITH PIPE IN FABRICATED FABRIC.
4. MADE FROM ALUMINUM.
5. ELEVATIONS ARE SHOWN FOR REFERENCE.
6. STANDARD PIPE SUPPORT FOR METALLIC PIPE.
7. ONE PIPE SUPPORT.
8. TWO OR MORE PIPES.
9. ADJUSTABLE PIPE SUPPORT FOR METALLIC PIPE.
10. CORROSION RESISTANT.

WALL TYPE PIPE SUPPORT M102

NOTES:
1. PIPE SUPPORT CORROSION RESISTANT.
2. ADJUSTABLE PIPE SUPPORT FOR METALLIC PIPE.
3. ONE PIPE SUPPORT.
4. TWO OR MORE PIPES.

PIPE CLAMP DETAIL M111

NOTES:
1. ADJUSTABLE PIPE SUPPORT FOR METALLIC PIPE.
2. ONE PIPE SUPPORT.
3. TWO OR MORE PIPES.

PLANNING CENTER WASTEWATER TREATMENT FACILITY - PHASE 1

ISOLATION BETWEEN PIPE AND SUPPORT FOR METALLIC PIPE.

NOTES:
1. PROVIDE CORROSION RESISTANT PIPE CLAMP.
2. ADJUSTABLE PIPE SUPPORT FOR METALLIC PIPE.
3. ONE PIPE SUPPORT.
4. TWO OR MORE PIPES.

PIPE SUPPORT M112

NOTES:
1. ADJUSTABLE PIPE SUPPORT FOR METALLIC PIPE.
2. ONE PIPE SUPPORT.
3. TWO OR MORE PIPES.

PIPE SUPPORT M114

NOTES:
1. ADJUSTABLE PIPE SUPPORT FOR METALLIC PIPE.
2. ONE PIPE SUPPORT.
3. TWO OR MORE PIPES.

PIPE SUPPORT M110

NOTES:
1. ADJUSTABLE PIPE SUPPORT FOR METALLIC PIPE.
2. ONE PIPE SUPPORT.
3. TWO OR MORE PIPES.

PIPING CLAMP DETAIL M115

NOTES:
1. ADJUSTABLE PIPE SUPPORT FOR METALLIC PIPE.
2. ONE PIPE SUPPORT.
3. TWO OR MORE PIPES.

GALLERY CENTER WASTEWATER TREATMENT FACILITY - PHASE 1

PLAN AND SUPPORT FOR METALLIC PIPE.
1. Adjust thickness of concrete base accordingly to maintain size of steel plate feet and spacing from wall as shown on plans.
2. All belts shall be 0.5" diameter.
3. All reinforcing shall be "E" bars.
4. All reinforcing shall have 3" of concrete cover.
5. Verify pipe go prior to fabrication.

NOTES:
1. Trip belt nut and bolts are required except where noted on the drawings.
2. Use E-Z Joint for metallic steel components after fabrication.
3. Make attention to existing concrete, rebar, etc.
4. Verify pipe go prior to fabrication.

PIPE SUPPORT SCHEDULE

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<tr>
<th>Pipe Size</th>
<th>Wall Thickness</th>
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<td>2&quot; Schedule 40</td>
<td>0.75&quot;</td>
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<tr>
<td>3&quot; Schedule 40</td>
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<td>6&quot; Schedule 40</td>
<td>2.375&quot;</td>
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</table>

NOTES:
1. For double installation in existing concrete, see pipe roll bond and metal gage for specifications.
2. Where used, see plans for additional information.

CITY OF MALIBU
PUBLIC WORKS DEPARTMENT
CIVIC CENTER WASTEWATER TREATMENT FACILITY - PHASE 1
MECHANICAL STANDARD DETAILS - 2
THrust REsTAINT FOR FLEXible COUPLING
OR FLANGE COUPLING ADAPTER

TIE ROD SCHEDULE

<table>
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<th>PIPE SIZE (IN)</th>
<th>MATERIAL</th>
<th>UNDEFORMED DEFORMATION</th>
<th>TIE ROD (IN)</th>
<th>indhoven</th>
<th>TEST PRESSURE</th>
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<td>0.75</td>
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**NOTES:**
1. FORGE-ASTM A36 STEEL GR7.
2. TIE RODS: ASTM A36 GR5 EB.
3. INSTALL TIE RODS IN HORIZONTAL PLANE.
4. INSTALL TIE RODS IN HORIZONTAL PLANE.
5. TIE RODS MUST BE SECURED AT THE FLANGE WITH A MANDATORY SPECIFIED PIPE AND AGED TO AT LEAST 24 INCHES FROM THE FLANGE.
6. THE INSTALLATION SHOULD BE ADJACENT TO OTHER PIPE FLANGES WHERE POSSIBLE, WITH A MAXIMUM RECOMMENDED SPACING OF 12 INCHES.
7. INSTALL TIE RODS ALTERNATING AND EQUALLY TO AVOID EQUITY AND TO PROVIDE EQUAL STRESS ON ALL TIE RODS.
8. INSTALL TIE RODS IN HORIZONTAL PLANE.
9. INSTALL TIE RODS IN HORIZONTAL PLANE.
10. INSTALL TIE RODS IN HORIZONTAL PLANE.

CITY OF MALIBU
PUBLIC WORKS DEPARTMENT
CIVIC CENTER WASTEWATER TREATMENT FACILITY - PHASE 1
MECHANICAL STANDARD DETAILS - 5
NOTES:

1. All hose valves must be installed with a non-freezing ball valve at the hose inlet and must be installed vertically above the water supply line. See specifications.

2. All hose valves must be installed in accordance with ASTM A106 or equivalent piping materials. See specifications.

3. All hose valves must be installed with a non-freezing ball valve at the hose inlet and must be installed vertically above the water supply line. See specifications.

4. All hose valves must be installed in accordance with ASTM A106 or equivalent piping materials. See specifications.

5. All hose valves must be installed with a non-freezing ball valve at the hose inlet and must be installed vertically above the water supply line. See specifications.

6. All hose valves must be installed in accordance with ASTM A106 or equivalent piping materials. See specifications.

7. All hose valves must be installed with a non-freezing ball valve at the hose inlet and must be installed vertically above the water supply line. See specifications.

8. All hose valves must be installed in accordance with ASTM A106 or equivalent piping materials. See specifications.

9. All hose valves must be installed with a non-freezing ball valve at the hose inlet and must be installed vertically above the water supply line. See specifications.

10. All hose valves must be installed in accordance with ASTM A106 or equivalent piping materials. See specifications.
NOTES:
1. THE WALLS AND CEILINGS OF THE INFUXENT PUMP STATION SHALL BE LINED WITH T-LUCK INC. LAMIN IN ACCORDANCE WITH MANUFACTURER'S INSTRUCTIONS.
2. CONTRACTOR TO PROVIDE ONE DAVIT CRANE AND THREE PEDESTALS FOR THE INFUXENT PUMP STATION.

SECTION A

NOTES:
1. THE WALLS AND CEILINGS OF THE INFUXENT PUMP STATION SHALL BE LINED WITH T-LUCK INC. LAMIN IN ACCORDANCE WITH MANUFACTURER'S INSTRUCTIONS.
2. CONTRACTOR TO PROVIDE ONE DAVIT CRANE AND THREE PEDESTALS FOR THE INFUXENT PUMP STATION.

SECTION B

CITY OF MALIBU
PUBLIC WORKS DEPARTMENT
CIVIC CENTER WASTEWATER TREATMENT FACILITY - PHASE I
EQUALIZATION BASIN SECTIONS - I

NOTES:
1. THE WALLS AND CEILINGS OF THE INFUXENT PUMP STATION SHALL BE LINED WITH T-LUCK INC. LAMIN IN ACCORDANCE WITH MANUFACTURER'S INSTRUCTIONS.
2. CONTRACTOR TO PROVIDE ONE DAVIT CRANE AND THREE PEDESTALS FOR THE INFUXENT PUMP STATION.

PUBLIC WORKS DEPARTMENT/CITY ENGINEER
PLAN NO. M100-2 SHEET NO. " " OF XXX SHEETS

PUBLIC WORKS DEPARTMENT/CITY ENGINEER
PLAN NO. M100-2 SHEET NO. " " OF XXX SHEETS
1. The walls and covers of the intermediate pump station shall be lined with 4-inch PVC liner in accordance with manufacturer's instructions.

2. Contractor to provide one boat crane and five fenders for the intermediate pump station.

3. Tipping trough arrangement is shown. All items shall be engineered and constructed in accordance with city requirements and is subject to approval by USAEC.

CITY OF MALIBU
PUBLIC WORKS DEPARTMENT
CIVIC CENTER WASTEWATER TREATMENT FACILITY - PHASE 1
INFLUENT PUMP STATION AND EQUALIZATION BASIN SECTIONS - 1

NOTE:
1. The walls and covers of the intermediate pump station shall be lined with 4-inch PVC liner in accordance with manufacturer's instructions.
2. Contractor to provide one boat crane and five fenders for the intermediate pump station.
3. Tipping trough arrangement is shown. All items shall be engineered and constructed in accordance with city requirements and is subject to approval by USAEC.
MEMBRANE TANK AREA

SECTION 15

NOTES:
1. """" indicates equipment to be furnished by membrane equipment supplier. Membrane equipment shall be installed by contractor.
2. SEE TANK SCHEDULE IN SPEC SECTION 1701.
3. Tank selected for installation must be capable of accommodating the maximum flow without overfilling.

CITY OF MALIBU
PUBLIC WORKS DEPARTMENT
CIVIC CENTER WASTEWATER TREATMENT FACILITY - PHASE 1

MEMBRANE TANK AREA

SECTION 15

SHEET 3 OF 3
1. Existing dosing/surface tank is a fiberglass tank manufactured by Petersen Corporation. The manufacturer's fabrication drawings can be provided electronically upon request.

2. Connection to the existing dosing/surface tank shall be made using 6" PVC pipes and fittings. All equipment installed shall be compatible with 6" PVC piping.

3. Pipe outlet shall maintain a straight run for at least 18 inches and shall be designed to prevent water from entering the tank.

4. Prior to installation, the tank shall be properly flushed with water to ensure the tank is prepared for use.

5. No construction equipment is allowed on the tank, and during installation and construction activities, the tank shall be protected.

6. Construction of the additional deck to cover shall comply with the city's construction procedures and instructions in the city's installation manual and operating manual. No变化 are to be made after installation, without prior written approval from the city's public works department.

Note: All construction and installation shall be performed in accordance with the city's regulations and guidelines.

City of Malibu
Public Works Department
Civic Center Wastewater Treatment Facility - Phase 1
Recycled Water/Utility Water/Effluent PS Plan

Submittal

Net for

Commission

Plan No. M6000-1
Sheet of XXX Sheets
CITY OF MALIBU
PUBLIC WORKS DEPARTMENT

CIVIC CENTER WASTEWATER TREATMENT FACILITY - PHASE 1

HYDROPNEUMATIC TANKS
PLAN AND SECTIONS

NOTES:
1. PIPING, VALVES, INSTRUMENTS AND APPURtenances shall be mounted in accordance with the detail in the plan sheets and drawings. All materials shall be furnished on approved shop drawings.

PLAN

SECTION A

SECTION B

PLAN

SECTION A

SECTION B

SHEETS
### AIR DISTRIBUTION SCHEDULE

<table>
<thead>
<tr>
<th>Line</th>
<th>Wire</th>
<th>Dimensions</th>
<th>Manufacturer</th>
<th>Model</th>
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</table>

**NOTE:**
1. All supply/exhaust outlets shall be fitted with a condenser.**
2. Condenser outlet size shall be the same as the supply outlet.**
3. Supply to be distributed to each temperature zone.
4. Outlets to be distributed to each temperature zone.
5. Outlets to be distributed to each temperature zone.
6. Outlets to be distributed to each temperature zone.
7. Outlets to be distributed to each temperature zone.
8. Outlets to be distributed to each temperature zone.
CEILING MOUNTED EXHAUST FAN

THERMOSTAT MOUNTING DETAIL

TYPICAL DUCT TAKEOFF DETAILS
## Plan No. E'loShEEf

### Electrical Legends and Abbreviations

- **CITY OF MALIBU**
- **PUBLIC WORKS DEPARTMENT**
- **CIVIC CENTER WASTEWATER TREATMENT FACILITY - PHASE 1**

### Equipment Legends

- **EQUIPMENT IDENTIFIER:** As defined by the process
- **COI**
- **CON**: Conduit, Type of Use Noted or Connection Noted
- **W**
- **F**: Water Supply, Notes Noted
- **C**: Condenser, Notes As Noted
- **R**: Receiver, Notes As Noted
- **U**: Utility Meter

### Equipment Descriptions

<table>
<thead>
<tr>
<th>Plan</th>
<th>Description</th>
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<tbody>
<tr>
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<td>Grounding Bond Point, Note Noted</td>
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<td>Control, Rated Closed As Noted</td>
</tr>
</tbody>
</table>

### Control-Elements

- **SHP**: Shunt Switch
- **TAP**: Tap-Changer Switch
- **FUS**: Fuse, Rated As Noted
- **CIR**: Circuit Breaker, Rated As Noted
- **CON**: Contact, Rated As Noted

### Electrical Diagrams

- **GROUNDING REACTOR**
- **RBC**
- **RNC**
- **RLD**
- **RLK**
- **RLO**

### Functional Descriptions

- **SELECTOR SWITCH**
- **COI**
- **CT**
- **CUT OUT**
- **AREA**

### Wiring Diagrams

- **HIGH-VOLTAGE CIRCUIT BREAKER**
- **LOW-VOLTAGE CIRCUIT BREAKER**
- **TRANSFORMER**
- **VOLTAGE REGULATOR**

### Control Systems

- **PLANT CONTROL STATION**
- **CONTROL ROOM**
- **MOTOR STARTER**

### Electrical符号

- **REEL**
- **ELECTRIC METER**
- **GROUND**

---

**Note:** The provided image contains a detailed electrical diagram with various symbols and numbers, indicating the wiring and control elements of a wastewater treatment facility's electrical system. The text and symbols represent the interconnections and specifications of the electrical components, such as switches, transformers, and control devices. The diagram is crucial for understanding the electrical layout and functional connections within the facility.
NOTE 1
NOTE 2

1. PROVIDE BUS BARスペース FOR FUTURE LOAD CONNECTION. REFER TO MCC ELEVATIONS FOR REQUIRED WSC EVENTS.

2. NOT ALL SPACES ARE SHOWN. REFER TO MCC ELEVATIONS FOR REQUIRED SPACES WSC EVENTS.
SCHEMATIC 4A - CHEMICAL FEED PUMP SCHEMATIC

SCHEMATIC 4B - SOLENOID VALVE SCHEMATIC

NOTES:
1. CHEMICAL FEED PUMPS SHALL BE CONFIGURED FOR REMOTE CONTROL OPERATION WHEN THE ON-BOARD CONTROL SWITCH IS SET TO AUTO MODE.

CITY OF MALIBU
PUBLIC WORKS DEPARTMENT
CIVIC CENTER WASTEWATER TREATMENT FACILITY - PHASE 1
CONTROL SCHEMATIC 4
CHEMICAL FEED PUMPS AND SOLENOID VALVES

Plan No. E30-4
SCHEMATIC 6A - MBR PERMEATE PUMPS

CITY OF MALIBU
PUBLIC WORKS DEPARTMENT
CIVIC CENTER WASTEWATER TREATMENT FACILITY - PHASE 1
CONTROL SCHEMATICS - 6
MBR PERMEATE PUMPS
<table>
<thead>
<tr>
<th>CONDUCT</th>
<th>NET</th>
<th>CORRATIONS</th>
<th>SPARES</th>
<th>FROM</th>
<th>ID</th>
<th>TO</th>
<th>NOTES</th>
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<td>TBE 1 TBE 1</td>
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This is a sample of the content from the document.
### Phase I Load Schedule

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<th>No.</th>
<th>Type of Load</th>
<th>Phase A</th>
<th>Phase B</th>
<th>Phase C</th>
<th>Phase D</th>
<th>Phase E</th>
<th>Phase F</th>
<th>Total Load</th>
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<td>General Load</td>
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<td>Lighting Load</td>
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<td>3</td>
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<td>4</td>
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**Total Load**: 6600 kW

### Phase II Load Schedule

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<th>Phase A</th>
<th>Phase B</th>
<th>Phase C</th>
<th>Phase D</th>
<th>Phase E</th>
<th>Phase F</th>
<th>Total Load</th>
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<td>250</td>
<td>230</td>
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<td>760</td>
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<td>3</td>
<td>HVAC Load</td>
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**Total Load**: 6600 kW
### LIGHTING FIXTURE SCHEDULE

<table>
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<tr>
<th>TYPE</th>
<th>FIXTURE DESCRIPTION</th>
<th>LIGHT SOURCE</th>
<th>DRIVER MODULE</th>
<th>BULB WATTS</th>
<th>INPUT VOLTAGE</th>
<th>NORMAL FIXTURE SIZE</th>
<th>MOUNTING ARRANGEMENT</th>
<th>FUTURE CONSTRUCTION NOTES</th>
<th>MANUFACTURER AND MODEL NUMBER</th>
<th>NOTES</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>BOLLARD 600W LED</td>
<td>LED LIGHT</td>
<td>60W, 120V</td>
<td>60W</td>
<td>120V</td>
<td>4&quot; x 8&quot;</td>
<td>POLE MOUNT</td>
<td>LED BOLLARD (600W), 90% PERCENT UP-NIGHT, ASYMMETRIC TYPE 2 DISTRIBUTION, IP67 RATED LIGHT ENGINE, CEA CERTIFIED TO U.S. AND CANADIAN STANDARDS.</td>
<td>LUMINA, DEB-LED-120-60W-10K, AS-100-500-CH1, EQUAL OR EQUIVALENT</td>
<td></td>
</tr>
<tr>
<td>B</td>
<td>INDUSTRIAL LED AREA</td>
<td>LED LIGHT</td>
<td>60W, 120V</td>
<td>60W</td>
<td>120V</td>
<td>8&quot; x 20&quot;</td>
<td>POLE MOUNT</td>
<td>LED LIGHT AREA LUMINAIRE, CEA ELECTRONIC, 90% PERCENT POWER FACTOR, ZERO UP-LIGHT, NIGHT-FRIENDLY, IP67 RATED LIGHT ENGINE, CEA CERTIFIED TO U.S. AND CANADIAN STANDARDS.</td>
<td>LUMINA, DEB-LED-120-60W-10K, AS-100-500-CH1, EQUAL OR EQUIVALENT</td>
<td></td>
</tr>
<tr>
<td>C</td>
<td>INDUSTRIAL LED</td>
<td>LED LIGHT</td>
<td>60W, 120V</td>
<td>60W</td>
<td>120V</td>
<td>12&quot; x 20&quot;</td>
<td>WALL MOUNT</td>
<td>TWO-PIECE DIA CAST ALUMINUM HOUSING, INTEGRAL HEAT SINK, POWDER COAT FINISH, ACRYLIC LENSES, NIGHT-FRIENDLY, CEA CERTIFIED TO U.S. AND CANADIAN STANDARDS.</td>
<td>LUMINA, DEB-LED-120-60W-10K, AS-100-500-CH1, EQUAL OR EQUIVALENT</td>
<td></td>
</tr>
<tr>
<td>D</td>
<td>SELF-CONTAINED BATTERY POWERED LIGHT FIXTURE</td>
<td>LED LIGHT</td>
<td>60W, 120V</td>
<td>60W</td>
<td>120V</td>
<td>10&quot; x 3&quot;</td>
<td>WALL MOUNT</td>
<td>EMERGENCY LIGHTING UNIT, NICKEL-CADMIUM BATTERY, TEST BUTTON AND STATUS INDICATOR, UL LISTED (FOR ROUGH DRAIN APPLICATIONS).</td>
<td>LUMINA, BOL-LED-60W-10K, AS-100-500-CH1, EQUAL OR EQUIVALENT</td>
<td></td>
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<tr>
<td>E</td>
<td>EXT BOMBS</td>
<td>LED LIGHT</td>
<td>60W, 120V</td>
<td>60W</td>
<td>120V</td>
<td>11&quot; x 8&quot;</td>
<td>UNMOUNTED</td>
<td>EMERGENCY LIGHTING UNIT, NICKEL-CADMIUM BATTERY, TEST BUTTON AND STATUS INDICATOR, UL LISTED (FOR ROUGH DRAIN APPLICATIONS).</td>
<td>LUMINA, BOL-LED-60W-10K, AS-100-500-CH1, EQUAL OR EQUIVALENT</td>
<td></td>
</tr>
</tbody>
</table>

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### CITY OF MALIBU
PUBLIC WORKS DEPARTMENT

CIVIC CENTER WASTEWATER TREATMENT FACILITY - PHASE 1

**ELECTRICAL PANEL BOARD AND FIXTURE SCHEDULES**

**Panel Board:**
- **Location:** Operations Building, 3rd Floor
- **Voltage:** 208Y/120V, 3 Phase, 4 Wire
- **Main Breaker:** N/A
- **Short Circuit Rating:** N/A

**Lighting Fixtures:**
- **Type:** LED
- **Source:** LED
- **Driver:** LED
- **Lumen:** 3000
- **Watt:** 120
- **Color Temperature:** 4000K
- **Voltage:** 120V AC
- **Mounting:** Pole Mount

**Notes:**
- **Construction:** N/A
- **Manufacturer:** LUMINA
- **Model Number:** DEB-LED-120-60W-10K, AS-100-500-CH1, EQUAL OR EQUIVALENT

---

**Lighting Fixtures Schedule:**

<table>
<thead>
<tr>
<th>TYPE</th>
<th>FIXTURE DESCRIPTION</th>
<th>LIGHT SOURCE</th>
<th>DRIVER MODULE</th>
<th>BULB WATTS</th>
<th>INPUT VOLTAGE</th>
<th>NORMAL FIXTURE SIZE</th>
<th>MOUNTING ARRANGEMENT</th>
<th>FUTURE CONSTRUCTION NOTES</th>
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<th>NOTES</th>
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<tbody>
<tr>
<td>A</td>
<td>BOLLARD 600W LED</td>
<td>LED LIGHT</td>
<td>60W, 120V</td>
<td>60W</td>
<td>120V</td>
<td>4&quot; x 8&quot;</td>
<td>POLE MOUNT</td>
<td>LED BOLLARD (600W), 90% PERCENT UP-NIGHT, ASYMMETRIC TYPE 2 DISTRIBUTION, IP67 RATED LIGHT ENGINE, CEA CERTIFIED TO U.S. AND CANADIAN STANDARDS.</td>
<td>LUMINA, DEB-LED-120-60W-10K, AS-100-500-CH1, EQUAL OR EQUIVALENT</td>
<td></td>
</tr>
<tr>
<td>B</td>
<td>INDUSTRIAL LED AREA</td>
<td>LED LIGHT</td>
<td>60W, 120V</td>
<td>60W</td>
<td>120V</td>
<td>8&quot; x 20&quot;</td>
<td>POLE MOUNT</td>
<td>LED LIGHT AREA LUMINAIRE, CEA ELECTRONIC, 90% PERCENT POWER FACTOR, ZERO UP-LIGHT, NIGHT-FRIENDLY, IP67 RATED LIGHT ENGINE, CEA CERTIFIED TO U.S. AND CANADIAN STANDARDS.</td>
<td>LUMINA, DEB-LED-120-60W-10K, AS-100-500-CH1, EQUAL OR EQUIVALENT</td>
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<tr>
<td>C</td>
<td>INDUSTRIAL LED</td>
<td>LED LIGHT</td>
<td>60W, 120V</td>
<td>60W</td>
<td>120V</td>
<td>12&quot; x 20&quot;</td>
<td>WALL MOUNT</td>
<td>TWO-PIECE DIA CAST ALUMINUM HOUSING, INTEGRAL HEAT SINK, POWDER COAT FINISH, ACRYLIC LENSES, NIGHT-FRIENDLY, CEA CERTIFIED TO U.S. AND CANADIAN STANDARDS.</td>
<td>LUMINA, DEB-LED-120-60W-10K, AS-100-500-CH1, EQUAL OR EQUIVALENT</td>
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</tr>
<tr>
<td>D</td>
<td>SELF-CONTAINED BATTERY POWERED LIGHT FIXTURE</td>
<td>LED LIGHT</td>
<td>60W, 120V</td>
<td>60W</td>
<td>120V</td>
<td>10&quot; x 3&quot;</td>
<td>WALL MOUNT</td>
<td>EMERGENCY LIGHTING UNIT, NICKEL-CADMIUM BATTERY, TEST BUTTON AND STATUS INDICATOR, UL LISTED (FOR ROUGH DRAIN APPLICATIONS).</td>
<td>LUMINA, BOL-LED-60W-10K, AS-100-500-CH1, EQUAL OR EQUIVALENT</td>
<td></td>
</tr>
<tr>
<td>E</td>
<td>EXT BOMBS</td>
<td>LED LIGHT</td>
<td>60W, 120V</td>
<td>60W</td>
<td>120V</td>
<td>11&quot; x 8&quot;</td>
<td>UNMOUNTED</td>
<td>EMERGENCY LIGHTING UNIT, NICKEL-CADMIUM BATTERY, TEST BUTTON AND STATUS INDICATOR, UL LISTED (FOR ROUGH DRAIN APPLICATIONS).</td>
<td>LUMINA, BOL-LED-60W-10K, AS-100-500-CH1, EQUAL OR EQUIVALENT</td>
<td></td>
</tr>
</tbody>
</table>
NOTES:
1. CONDUIT SEALS SHALL BE INSTALLED IN EACH CONDUIT RUN PASSING FROM A CLASSIFIED AREA (CLASS 1, DN 1 OR DN 2) INTO AN UNCLASSIFIED AREA. THE CONDUIT SEAL SHALL BE LOCATED WITHIN 10 FEET OF THE CLASSIFIED BOUNDARY. THERE SHALL BE AN UNDISTURBED BOUNDARY BETWEEN THE SEALS. THE CONDUIT SEALS ARE NOT SHOWN ON THE DRAWING. REFER TO NEC ARTICLE 501.15 SEALING AND DRAINAGE FOR ADDITIONAL REQUIREMENTS.

2. CLASS 2, DIVISION 1 BOUNDARY:
   a. 3 FEET RadiUS FROM ANY VENT WITHIN THE CLASS 1, DN 1 AREA.
   b. 5 FEET RadiUS FROM ANY VENT WITHIN THE CLASS 1, DN 1 AREA.
   c. 3 FEET ENVELOPE AROUND ANY OPENING WITHIN THE CVSS 1, DN 1 AREA.
   d. 5 FEET FROM ANY VENT WITHIN THE CIVIC CENTER WASTEWATER TREATMENT FACILITY - PHASE 1.

3. MOUNTED HEIGHT MEASURED TO THE BOTTOM OF THE LIGHTING FIXTURE.
NOTES:

1. CONDUIT SEALS SHALL BE INSTALLED IN EACH CONDUIT RUN PASSING FROM A CLASSIFIED AREA (CLASS 1, DIV 1 OR DIV 2) INTO AN UNCLASSIFIED AREA. THE CONDUIT SEAL SHALL BE LOCATED WITHIN 15 FEET OF THE CLASSIFIED BOUNDARY. THERE SHALL BE NO JUNCTION, CONNECTION, OR FITTING BETWEEN THE CONDUIT SEAL AND THE POINT AT WHICH THE CONDUIT LEAVES THE CLASSIFIED AREA. FOR CLEARITY, THE CONDUIT SEALS ARE NOT SHOWN ON THE DRAWING. REFER TO NEC ARTICLE 504 FOR ADDITIONAL REQUIREMENTS.

2. CONDUIT DIVISION 1 BOUNDARY:
   a. 3 FEET RADIAL FROM ANY VENT WITHIN THE CLASS 1, DIV 1 AREA.
   b. 3 FEET AROUND AND 1.5 FEET ABOVE ANY HATCH WITHIN THE CLASS 1, DIV 1 AREA.
   c. 3 FEET ENCLOSED AROUND ANY OPENING WITHIN THE CLASS 1, DIV 1 AREA.

3. CONDUIT DIVISION 2 BOUNDARY:
   a. 3 FEET RADIAL FROM ANY VENT WITHIN THE CLASS 1, DIV 2 AREA.
   b. 5 FEET RADIAL FROM ANY VENT WITHIN THE CLASS 1, DIV 1 AREA.
1. Conduit seals shall be installed in each conduit run passing from a classified area (Class I, Div 1 or Div 2) into an unclassified area. The conduit seal shall be located within 15 feet of the classified boundary. There shall be no union, coupling, or fittings between the conduit seal and the conduit. Conduit seals shall be installed in all unclassified areas for clarity. The conduit seal is not shown on the drawing, refer to NEC Article 505.10 for additional requirements.

2. Class 1, Division 1 Boundary:
   a. 2 feet radius from any vent within the Class 1, Div 1 area.
   b. 10 feet above any hatch within the Class 1, Div 1 area.
   c. 10 feet above any opening within the Class 1, Div 1 area.

3. Class 1, Division 2 Boundary:
   a. 2 feet radius from any vent within the Class 2, Div 1 area.
   b. 10 feet above any hatch within the Class 2, Div 1 area.
   c. 10 feet above any opening within the Class 2, Div 1 area.

4. Mounted height measured to the bottom of the lighting fixture.
NOTES:

1. CONDUIT SEALS SHALL BE INSTALLED IN EACH CONDUIT RUN PASSING FROM A CLASSIFIED AREA (CLASS 1, DIV 1 OR DIV 2) INTO AN UNCLASSIFIED AREA. THE CLASSIFIED SEALS SHALL BE LOCATED WITHIN 10 FEET OF THE CLASSIFIED BOUNDARY. THERE SHALL BE NO UNION, COUPLING, BOX, OR FITTINGS BETWEEN THE CONDUIT SEAL AND THE POINT AT WHICH THE CONDUIT LEAVES THE CLASSIFIED AREA. FOR CLARITY, THE CONDUIT SEALS ARE NOT SHOWN ON THE DRAWING. REFER TO NEC ARTICLE 501.15 SEALING AND DRAINAGE FOR ADDITIONAL REQUIREMENTS.

2. CLASS 1, DIVISION 1 BOUNDARY:
   a. 3 FEET RADIUS FROM ANY VENT WITHIN THE CLASS 1, DIV 1 AREA.
   b. 3 FEET RADIUS FROM ANY VENT WITHIN THE CLASS 1, DIV 1 AREA.
   c. 3 FEET ENVELOPE AROUND ANY OPENING WITHIN THE CLASS 1, DIV 1 AREA.

3. CLASS 1, DIVISION 2 BOUNDARY:
   a. 3 FEET RADIUS FROM ANY VENT WITHIN THE CLASS 1, DIV 2 AREA.
   b. 5 FEET RADIUS FROM ANY VENT WITHIN THE CLASS 1, DIV 1 AREA.
SEE DING SANS0-1 FOR CROSSREF.

FLOOR ELEVATION

ELECTRICAL AND BLOWER ROOM PLAN

1/8" = 1'-0"

CITY OF MALIBU
PUBLIC WORKS DEPARTMENT

CIVIC CENTER WASTEWATER TREATMENT FACILITY - PHASE 1

BLOWER AND ELECTRICAL ROOM LAYOUT

LIGHTING PLAN

1/8" = 1'-0"

NCS REV3IISON BY CHKD DATE

Plan No. E3000-3 Sheet of XXX Sheets
NOTE 1:
1. Minimum heights measured to the bottom of the lighting fixture.
SOLIDS STORAGE PLAN

1/8" = 1'-0"
### Process Symbols

- **Pipeline Reference Arrow**
- **Primary Process**
- **Secondary Process**
- **Flow Direction Arrow**
- **Package System Boundary**

### Piping Identification

- **Flow Stream Identification**
  - **Gage Reference Arrow**
  - **Process Identification**
  - **Flow Stream Identification**
  - **Secondary Process**
  - **Flow Direction Arrow**

### Mechanical Equipment

- **Motor**
- **Blower**
- **Fan**
- **Shutter**
- **Mixer**
- **Magnetic Flowmeter**
- **Paddle Wheel**
- **Propeller**

### Plumbing Equipment

- **Valves**
  - Air Release Valve
  - Arterial Pressure Valve
  - Ball Check Valve
  - Butterfly Valve
  - Check Valve
  - Diaphragm Valve
  - Plug Valve
  - Pressure Reducing Valve
  - Pressure Relief Valve
- **Reduced Value**
  - Reduced Value
- **Telecomunications Valve**

### Mechanical Kneadings

- **Blind Flange**
- **Quick Connect**
- **Reducer**
- **Spray Nozzle**
- **Swivel or Floor Stand**
- **Vent**
- **Calibration Device**
- **Filter**
- **Fugation Diffuser**
- **Flushing Connection**
- **Blender**
- **Vacuum Surface Cleaner**
- **Pressure Gauge (Gauge with Dial Valve and Display Panel)**

### Flow Stream Abbreviations

- **A)** Air Relief Valve
- **A)** Arterial Pressure Relief Valve
- **B)** Blower
- **B)** Ball Check Valve
- **B)** Butterfly Valve
- **B)** Ball Valve
- **B)** Bar Check Valve
- **B)** Check Valve
- **B)** Diaphragm Valve
- **B)** Diverter
- **C)** Pump
- **C)** Centrifugal Pump
- **D)** Pressure Reducing Valve
- **D)** Relief Valve
- **E)** Screen
- **F)** Compressive Sampler
- **G)** Magnetic Valve
- **H)** Terminal Valve
- **I)** Temperature Valve
- **J)** Thermistor
- **K)** Thermocouple
- **L)** Thermometer
- **M)** Thermocouple
- **N)** Temperature
- **O)** Temperature
- **P)** Temperature
- **Q)** Temperature
- **R)** Temperature
- **S)** Temperature
- **T)** Temperature
- **U)** Temperature
- **V)** Temperature
- **W)** Temperature
- **X)** Temperature
- **Y)** Temperature
- **Z)** Temperature

### City of Malibu

**Public Works Department**

Civic Center Wastewater Treatment Facility - Phase I

**Instrumentation Legends and Abbreviations**

**Plan No.**

**Sheet of**

**Revision**

**Drawing No.**

**Scale**

**Prepared By**

**Drawn By**

**Checked By**

**Date**

**Plan No.**

**Sheet of**

**Revision**

**Scale**

**Checked By**

**Date**

**Plan No.**

**Sheet of**

**Revision**

**Scale**

**Checked By**

**Date**

**Plan No.**

**Sheet of**

**Revision**

**Scale**

**Checked By**

**Date**

**Plan No.**

**Sheet of**

**Revision**

**Scale**

**Checked By**

**Date**

**Plan No.**

**Sheet of**

**Revision**

**Scale**

**Checked By**

**Date**
TP-LCP-2
HEADWORKS
COMROL PANEL
GF04 PI, Wi RAIN
PUMP STATION
FROM FLUX1ER
WMP STATION
TO INRUEM
PUMP STATION

NOTES:
1. COMPLETE TAG NAMES FOR ALL DEVICES SHOWN INCLUDE "TP-" PREFIX.

CITY OF MALIBU
PUBLIC WORKS DEPARTMENT
CIVIC CENTER WASTEWATER TREATMENT FACILITY - PHASE 1
PROCESS AND INSTRUMENTATION DIAGRAM
HEADWORKS - COARSE SCREENS & GRIT AREA
1. This drawing is typical for biological reactors No. 1 and No. 2. Both biological reactors No. 1 and No. 2 shall be installed as shown in Plan No. 1. The loop numbers for reactor No. 1 begin with 10, and loop numbers for reactor No. 2 begin with 20.

2. Complete the names for all devices shown include "TP-" prefixed.
NOTES:

1. THE DRAWING IS TYPICAL FOR MBR TANKS NO. 1 AND NO. 2. OTHER MBR TANKS SHALL BE MARKED "MBR TANK NO. 1" OR "MBR TANK NO. 2" AS CORRECT.

2. COMPLETE TAG NAMES FOR ALL DEVICES SHOWN INCLUDING "MBR" PREFIX.

3. COMPONENTS PROVIDED BY PACKAGED SYSTEM SUPPLIER.
NOTE:
1. COMPLETE THE NAMES FOR ALL DEVICES SHOWN INCLUDING "TP-" PREFIX.
2. COMPONENTS PROVIDED BY PACKAGED SYSTEM SUPPLIER.
1. COMPLETE THE NAMES FOR ALL DEVICES SHOWN INCORRECTLY.
2. ALUM WILL BE NEXT TO HYPOCHLORITE AND CRYSTAL ACID.
3. SODIUM BICARBONATE WILL BE INSTALLED DOWN NORTHERN WORKSHOPS.
1. Complete tag names for all devices shown include "PH" prefix.
CIVIC CENTER WAY

PLAN

PROFILE

NOTE:
1. EQUALS CONSTRUCTION NOTE, SEE SHEET 2010 FOR DESCRIPTION

CITY OF MALIBU
PUBLIC WORKS DEPARTMENT
CIVIC CENTER WASTEWATER TREATMENT FACILITY - PHASE 1
CIVIC CENTER WAY - 4
LINE A

KEY MAP

PLAN

SCALE IN FT

PROFILE

SCALE IN FT
PLAN

PROFILE

NOTES:
1. NOTIFY CONSTRUCTION ATT, SEE SHEET 30-15 FOR DESCRIPTION

CITY OF MALIBU
PUBLIC WORKS DEPARTMENT
CIVIC CENTER WASTEWATER TREATMENT FACILITY - PHASE 1
MALIBU CANYON DRIVE - 2
LINE E

NOM. REVISION BY CHG/ DATE
Plan No. PP-23 Sheet.of XIX Sheets
Progress Report
Civic Center
Wastewater Treatment
Facility Design
March 6, 2014
Phase 1 – New Parcels
Tasks

- Construction
  - Begin Operation
- Permits Issued
  - EIR Draft out in April

- Assessment District
- Land Purchase
  - Studies/Model 90% Complete
  - Design 85% Complete

- Tasks
  - Collection System
  - Dispersal System
  - Recycled Water System
  - Sewer Plant Design (MBR)
  - Willing Seller
  - Appraisal Completed
  - Agreement
  - Execution upon formation of Assessment District
  - Assessment Engineer hired
  - AD will pay for:
    - Design and EIR (CFD absorbed)
    - Property purchase
    - Treatment plant
    - Collection/Recycled/Dispersal systems, O&M
  - Requires 50% +1 vote

- Offshore and onshore Geophysical Surveys Completed
- 3 Injection & 9 Monitoring wells installed
- 18 week pumping/injection testing
- Complete Groundwater Model Update
- Salt and Nutrient Management Plan
- Ocean Water Quality Analysis
Groundwater Model (MODFLOW) Update

- Update Hydrogeology
- Calibration
  - Compare modeled ground water elevations to actual field measurements
  - Compare modeled injection testing to field observations
- Scenario Planning and Analysis
- Sensitivity Analyses
Model Simulation Period
9 years

Annual Precipitation (inches)
Recalibration Shows Good Results

- Residual Mean = 0.19 ft
- Absolute Residual Mean = 1.47 ft
- Sum of Squares = 1.49e4 ft²
- Number of Observations = 3513
- Number of Locations = 101
Possible Injection Well Locations
Electrical Resistivity Survey
Mounding Analysis – Location 2
(Project lowers groundwater elevations)

Groundwater Elevation (ft NAVD88)

Model Time (days)

Constraint 2
Row 183 Col 118

Constraint 5 feet below land surface

- Land Surface
- Base Constraint
- Base (Current)
Mounding Analysis – Location 2
(Project lowers groundwater elevations)

Groundwater Elevation (ft NAVD88)

Constraint 2
Row 183 Col 118

Constraint 5 feet below land surface

- Land Surface
- Base Constraint
- Base (Current)
- Phase 1

Model Time (days)
Mounding Analysis – Location 2
(Project lowers groundwater elevations)

Groundwater Elevation (ft NAVD88)

Model Time (days)

Constraint 2
Row 183 Col 118

Constraint 5 feet below land surface

- Land Surface
- Base Constraint
- Base (Current)
- Phase 1
- Phase 2
Mounding Analysis – Location 2
(Project lowers groundwater elevations)

Constraint 2
Row 183 Col 118

Constraint 5 feet below land surface

Groundwater Elevation (ft NAVD88)

Model Time (days)

Land Surface
Base Constraint
Base (Current)
Phase 1
Phase 2
Phase 3

Draft
Mounding Analysis – Location 1
(Project lowers groundwater elevations)

Constraint 1
Row 200 Col 118

Constraint 5 feet below land surface

Groundwater Elevation (ft NAVD88)

Model Time (days)
Mounding Analysis – Location 1
(Project lowers groundwater elevations)

Groundwater Elevation (ft NAVD88)

Model Time (days)

Constraint 1
Row 200 Col 118

Constraint 5 feet below land surface

Land Surface
Base Constraint
Base (Current)
Mounding Analysis – Location 1
(Project lowers groundwater elevations)

Constraint 1
Row 200 Col 118

Constraint 5 feet below land surface

Groundwater Elevation (ft NAVD88)

Model Time (days)
Mounding Analysis – Location 1
(Project lowers groundwater elevations)

**Groundwater Elevation (ft NAVD88)**

- Constraint 1
  - Row 200 Col 118
  - Constraint 5 feet below land surface

- Land Surface
- Base Constraint
- Base (Current)
- Phase 1
- Phase 2

**Model Time (days)**

0 500 1,000 1,500 2,000 2,500 3,000 3,500 4,000
Mounding Analysis – Location 1
(Project lowers groundwater elevations)

Constraint 1
Row 200 Col 118

Constraint 5 feet below land surface

Groundwater Elevation (ft NAVD88)

Model Time (days)
Mounding Analysis – Location 2
(Project lowers groundwater elevations)

Groundwater Elevation (ft NAVD88)

Model Time (days)

Constraint 2
Row 183 Col 118

Constraint 5 feet below land surface

Land Surface
Base Constraint

Draft
Flow Analysis – Where does the injected water go?

- Used MODPATH6 for particle tracking
- Simulated flow paths of injected water
- Used MODFLOW results as basis
Phase 1 – Flow Location
(no flow to Lagoon or Creek)
Phase 2 – Flow Location
(no flow to Lagoon or Creek)

Phase 2 - Injection Only
497,642 gal/day
Phase 3 – Flow Location
(no flow to Lagoon or Creek)
Model Results Demonstrate Sufficient Injection Capacity

<table>
<thead>
<tr>
<th>Particles to Lagoon?</th>
<th>Phase 1</th>
<th>Phase 2</th>
<th>Phase 3</th>
</tr>
</thead>
<tbody>
<tr>
<td>No</td>
<td>No</td>
<td>No</td>
<td>No</td>
</tr>
</tbody>
</table>

**Design Requirements**

<table>
<thead>
<tr>
<th></th>
<th>Phase 1</th>
<th>Phase 2</th>
<th>Phase 3</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total Treated Recycled Water (gpd)</td>
<td>191,000</td>
<td>361,000</td>
<td>507,000</td>
</tr>
<tr>
<td>Estimated Reuse/Irrigation (gpd)</td>
<td>68,000</td>
<td>176,000</td>
<td>299,000</td>
</tr>
<tr>
<td>Needed Injection Rate (gpd)</td>
<td>123,000</td>
<td>185,000</td>
<td>208,000</td>
</tr>
</tbody>
</table>

**Model Results (assuming no reuse/100% Buildout/largest rainfall year)**

<table>
<thead>
<tr>
<th></th>
<th>Phase 1</th>
<th>Phase 2</th>
<th>Phase 3</th>
</tr>
</thead>
<tbody>
<tr>
<td>Available Injection Capacity (gpd)</td>
<td>311,135</td>
<td>497,642</td>
<td>611,654</td>
</tr>
<tr>
<td>Percent Factor of Safety</td>
<td>252%</td>
<td>269%</td>
<td>295%</td>
</tr>
</tbody>
</table>
## Model Results Demonstrate Sufficient Injection Capacity

<table>
<thead>
<tr>
<th>Particles to Lagoon?</th>
<th>Phase 1</th>
<th>Phase 2</th>
<th>Phase 3</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>No</td>
<td>No</td>
<td>No</td>
</tr>
</tbody>
</table>

### Design Requirements

<table>
<thead>
<tr>
<th></th>
<th>Phase 1</th>
<th>Phase 2</th>
<th>Phase 3</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total Recycled Water Produced - No Irrigation (gpd)</td>
<td>191,000</td>
<td>361,000</td>
<td>507,000</td>
</tr>
<tr>
<td>Estimated Annual Reuse for Irrigation (gpd)</td>
<td>68,000</td>
<td>176,000</td>
<td>299,000</td>
</tr>
<tr>
<td>Needed Injection Rate (gpd)</td>
<td>123,000</td>
<td>185,000</td>
<td>208,000</td>
</tr>
</tbody>
</table>

### Model Results (assuming no reuse for irrigation)

<table>
<thead>
<tr>
<th></th>
<th>Phase 1</th>
<th>Phase 2</th>
<th>Phase 3</th>
</tr>
</thead>
<tbody>
<tr>
<td>Available Injection Capacity (gpd)</td>
<td>311,135</td>
<td>497,642</td>
<td>611,654</td>
</tr>
<tr>
<td>Percent Factor of Safety</td>
<td>252%</td>
<td>269%</td>
<td>295%</td>
</tr>
<tr>
<td>Winter Canyon Backup Percolation Capacity (gpd)</td>
<td>50,000</td>
<td>100,000</td>
<td>100,000</td>
</tr>
</tbody>
</table>
## Checkpoints to Project Implementation

<table>
<thead>
<tr>
<th>Checkpoint</th>
<th>Yes</th>
<th>No</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Has recycled water reuse been maximized?</td>
<td>✔️</td>
<td></td>
</tr>
<tr>
<td>2. Is there sufficient groundwater injection capacity?</td>
<td>✔️</td>
<td></td>
</tr>
<tr>
<td>3. Will injected water flow to Malibu Creek and/or Lagoon?</td>
<td></td>
<td>✔️</td>
</tr>
<tr>
<td>4. Will groundwater quality be impacted by the injection?</td>
<td></td>
<td>✔️</td>
</tr>
<tr>
<td>5. Will there be ocean water quality impacts?</td>
<td></td>
<td>✔️</td>
</tr>
<tr>
<td>6. Is the project permissable?</td>
<td>✔️</td>
<td></td>
</tr>
</tbody>
</table>
Groundwater Model
Conclusions

• Project will lower groundwater levels

• Groundwater Basin has sufficient injection capacity for all project phases

• Injection capacity has large safety factor
Final Steps in Groundwater Modeling

• Sensitivity Analysis

• Sea Level Rise Evaluation
Plant Site – 5-years Post-Construction

View 1 – Plant Site as seen from Condos
Plant Site – 5-years Post-Construction

View 2 – Plant Site as seen from Pacific Coast Highway (PCH)
Cooperation

- RWQCB Staff
- Coastal Staff
- Ca Department of Public Health
- NGO’s
- Stakeholders (residential/commercial owners /chamber/realtors/etc)
- Technical Advisory Committee Experts
- Pepperdine and LVMWD
- County Water and WW District
Thank you
Additional Monitoring Wells

Key
- New Monitoring Well
- Existing Test Well
Community Facilities District

Phase 1 Boundary

15 CFD Properties
1. Purpose of Meeting

The purpose of the meeting was to provide a project status update for the City of Malibu’s Civic Center Wastewater Treatment Facility Project.

2. Discussion Summary

2.1 Status of Injection Program & Modeling

- The first runs of the model have been completed and indicate that between 700,000 and 770,000 gallons per day (gpd) can be injected in the Civic Center area. But the calibration could have been better, so the modelers have gone back to do more calibration. We are waiting on the results from the optimization runs.

- Initial runs also included particle tracking and there were some traces that went towards the Lagoon, but the amount going there was not quantified.

- The optimization model did have head constraints of no water level increases to within 5 feet of the ground surface except at certain locations.

- The geotechnical review evaluated the potential for problems relating to groundwater levels within 5 feet of the ground surface and they found no problems.

- We will be running sensitivity analyses, with one scenario being water level rise relative to ground surface (for example using 7 feet instead of 5 feet).

- Eric noted that, at the end of the day, we don’t know if all the OWDSs will be removed so we need to plan for that situation.

- One question the RWQCB has to grapple with is how far to take the WDR – through Phase 2 or through Phase 3. A lot will depend on the percentage of injected flow going to the Lagoon.

- We may want to have another stakeholder workshop to pass on technical information about the program as there is uncertainty if the stakeholders realize the extent of analyses being conducted.

- There will be City elections this April, and we may want to set up outreach during this period.

2.2 Status of City’s Regulatory Obligations

- We’re about 2/3rd to 3/4th of the way completed with the administrative draft EIR (ADEIR) and the first compile draft will be done by the end of January.

- It will take between 45 and 60 days to get the ADEIR to a public draft (looking at having this done by the end of March/beginning of April).
• One key issue to be addressed in the potential impacts of offshore water quality. RMC has started coordinating with Peter Swarzenski of the USGS about groundwater movement offshore into near-shore waters. He’s been involved in the research that’s been conducted in Maui and Malibu.

• We are going to need to help the public understand the differences in ocean water quality that are/will be occurring under the current situation versus under the proposed project conditions.

• Per Don, for other wastewater treatment plants (such as Oxnard and Terminal Island), they have been given dilution credits already approved.

• Sam would like Eric to talk with the NPDES folk at the RWQCB to make sure we don’t get this discharge permit mixed up with ocean disposal (via an outfall); it’s not the same thing.

• Don noted that at these other locations, they are injecting MF/RO treated water into the wells and for their permits, they did not have to evaluate ocean water quality impacts.

• The salt-nutrient management plan (SNMP) is moving forward.

• Regarding the CDP, the City is continuing to add information to the file. We are also finalizing the concept report for inclusion in the CDP application.

2.3 Design Update
• The design is progressing towards 95% completion with 100% completion scheduled to be completed by the end of March.

• Basically, the design is on schedule, barring hiccups.

2.4 Recycled Water Use
• Barbara talked with Jim about the expanded recycled water use area (Malibu Country Estates and PCH from Malibu Canyon to Puerco Canyon). Jim says to hold firm on the recycled water boundaries for Phase 1 for several reasons:
  1. The time required to revamp the EIR with push the schedule out
  2. Without guaranteed grant funding, including the area may move the Phase 1 yes votes to no.
  3. No environmental need as we’re currently working towards recycled water demand within the prohibition zone
  4. There is a plan in place that will be tied to expansion of the system.

• The EIR includes a general statement with respect to expanding the recycled water use area to outside the prohibition zone to allow for tiering for a future EIR.

2.5 WDR Permitting
• The self-monitoring reports for the discharge and ASR-related permits have been submitted into Geotracker and the ASR reports moved over to the appropriate WDR number.

2.6 Project WDR
• The LARWQCB will set up a meeting with the California Department of Public Health (CDPH) once we have an idea of the amount of water going to the Lagoon (per model results). After discussion, it was agreed to invite Kurt Souza/CDPH to our next meeting.
City of Malibu Civic Center Wastewater Treatment Facility Project

Project Status Meeting Minutes

DRAFT

- If we have model results by January 17th, Eric can schedule a meeting with Sam. Our next meeting (February 12th) would be the earliest he can bring back information regarding WDR limits.

- In the last TAC meeting, Heal the Bay said that they would like to be involved in the process the RWQCB will implement to get the discharge limits. It would be nice to bring information regarding discharge limits to the next TAC meeting.

- For his meeting with Sam on January 20th, Eric needs an estimate of the volume of water going to the Lagoon and the flow paths.

- Submittals for the WDR application will include documents we are already preparing (including the model report geophysical survey report, the injection testing report, the geochemical analysis TM, the SNMP); a summary TM will be prepared cross-referencing the above requirements and addressing each concern.

2.7 Questions and Answers

- The next TAC meeting will be on February 20th at the City offices.

- Regarding the La Paz property, at the last set of meetings, the owner’s rep said that they don’t think that they will need to connect and use the WWTP. They know that their permit requires them to connect, but they are not clear on what ‘connect’ means. At present, per the owner’s rep, they are planning to continue use their existing system.

- The RWQCB’s current understanding is that the La Paz permit requires them to hook up to the centralized system, and if they don’t connect, they will be in violation. If the CCWTF doesn’t get constructed, then the RWQCB may reopen their permit to address the ‘zero discharge’ requirements.

- Our Lady of Malibu (OLM) has been required to drill two monitoring wells and collect water quality samples to determine if their discharges are impacting groundwater. They contacted the RWQCB to ask, if they could connect with Phase 1 of the system, could the monitoring well and sampling requirements be waived.

- Winter Canyon and the County WWTP are both located downgradient of the OLM and have monitoring wells.

- Richard Laton has been looking into well locations and water quality data for the area but couldn’t find any.

- The question is, has the OLM OWDS impacted groundwater and does the system need to be upgraded. The RWQCB has the same question for Country Mart 1, 2 and 3.

- OLM has now been placed in Phase 1 of the project.

3. Other

- The next meeting will be held on February 12, 2014 at 9 AM
4. **Action Items**

<table>
<thead>
<tr>
<th>Organization</th>
<th>Responsible Party</th>
<th>Task/Action Item</th>
</tr>
</thead>
<tbody>
<tr>
<td>RMC</td>
<td>Steve Clary/Marc Nakamoto</td>
<td>Provide the City with information as to the dimensions of the proposed lab and recommendations for making it into a certified lab</td>
</tr>
<tr>
<td>LA RWQCB</td>
<td>Eric Wu</td>
<td>Talk with LA County regarding how to coordinate with City to connect residents with centralized system</td>
</tr>
<tr>
<td>City of Malibu</td>
<td>Craig George/Bob Brager</td>
<td>Start discussions with Water District 29 regarding duplication of services agreement</td>
</tr>
<tr>
<td>City of Malibu</td>
<td>Craig George/Bob Brager</td>
<td>The City needs to decide if they will be charging for recycled water.</td>
</tr>
</tbody>
</table>
MEETING AGENDA
CCWTF

Wednesday, February 12, 2014, 9:00 AM
City Hall – Westward Conference Room
23825 Stuart Ranch Road

1. Status of the Injection Program – Leslie
2. Status of the City's Regulatory Obligations – CDP, CEQA, EIR – Craig/Leslie
3. Design Update – Steve
4. Recycled Water Use – Barbara/SteveWDR – Permit Project Permit – Craig/Leslie
5. Questions and Answers
6. Next Meeting Date and Time
Figure showing depth to water limit at constraints.
<table>
<thead>
<tr>
<th>Phase</th>
<th>Injection Needed - No Reuse (gpd)</th>
<th>Estimated Annual Reuse for Irrigation (gpd)</th>
<th>Individual Well Injection Rates (gpm)</th>
<th>Total Injection Rate (gpd)</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>191,000</td>
<td>95,955</td>
<td>0 0 216</td>
<td>311,135</td>
<td>No particles to lagoon</td>
</tr>
<tr>
<td>2</td>
<td>361,000</td>
<td>158,909</td>
<td>66 0 280</td>
<td>497,642</td>
<td>No particles to lagoon</td>
</tr>
<tr>
<td>3</td>
<td>507,000</td>
<td>228,182</td>
<td>210 5 210</td>
<td>611,654</td>
<td>Same as above reduced 75%, no particles go to lagoon</td>
</tr>
<tr>
<td>3</td>
<td>507,000</td>
<td>228,182</td>
<td>280 6 280</td>
<td>815,540</td>
<td>Particles go to the lagoon</td>
</tr>
</tbody>
</table>
Constraint 1
Row 200 Col 118

Constraint 3 feet below land surface;

Groundwater Elevation (ft NAVD88)

Model Time (days)

Constraint 3 feet below land surface;

- LS
- Base Constraint
- Base Constraint Ph3
- Base (Current)
- Phase 1 W1-W3 Dry
- Phase 2 W1-W3 Dry
- Phase 3 W1-W3 Dry Reduced
Constraint 2
Row 183 Col 118

Constraint 5 feet below land surface; 2 feet in Phase 3

Groundwater Elevation (ft NAVD88)

Model Time (days)

LS
Base Constraint
Base Constraint Ph3
Base (Current)
Phase 1 W1-W3 Dry
Phase 2 W1-W3 Dry
Phase 3 W1-W3 Dry Reduced
Constraint 14
Row 167 Col 168

Constraint 5 feet below land surface; 2 feet in Phase 3

- LS
- Base Constraint
- Base Constraint Ph3
- Base (Current)
- Phase 1 W1-W3 Dry
- Phase 2 W1-W3 Dry
- Phase 3 W1-W3 Dry Reduced

Groundwater Elevation (ft NAVD88)

Model Time (days)
IOKE Project: FAR .20 - Proposed New Grading Plan
Phase 1 - Injection Only

311,135 gal/day
Phase 3 - Injection Only Reduced 75%

611,655 gal/day
MEETING AGENDA
CCWTF

Monday, March 17, 2014, 9:00 AM
City Hall – Westward Conference Room
23825 Stuart Ranch Road

1. Status of the Injection Program – Leslie
2. Status of the City’s Regulatory Obligations – CDP, CEQA, EIR – Craig/Leslie
3. Design Update – Steve
4. Recycled Water Use – Barbara/Steve
5. WDR – Project Permit Status – Craig/Leslie/Steve
6. Questions and Answers
7. Next Meeting Date and Time
1. Purpose of Meeting
The purpose of the meeting was to provide a project status update for the City of Malibu’s Civic Center Wastewater Treatment Facility Project.

2. Discussion Summary

2.1 Status of Injection Program & Modeling
- The modeling team held a conference call with the RWQCB on March 12, 2014 to discuss the sensitivity analyses to be conducted on the MODFLOW model. It was decided that four runs would be conducted:
  1. Increased hydraulic conductivity for the low permeable zone – simulating the potential for greater impacts on shallow groundwater levels as a result of injection.
  2. Decreased hydraulic conductivity for the Civic Center Gravels – simulating a potential reduction in the volume of water that can be injected into the lower zone and/or changes in flow patterns.
  3. Increased precipitation – simulated as increased recharge to the groundwater basin to simulate potential changes in flow patterns resulting from wetter winters.
  4. Sea level rise

- In regards to sea level rise, Barbara noted that in the Malibu area, there appears to be greater concern with storm surges and not as much from direct sea level rise.

- The USGS is presently doing a study (with their sub, Phillip Williams and Associates) to conduct a vulnerability assessment of impacts from sea level rise in Santa Monica Bay. The Malibu area is part of that study. Barbara will see if she can find out what the status of that study is. 26,473 sq.ft.

- The California Coastal Commission issued draft guidance for evaluating sea level rise for projects in the Coastal Development Zone. They use the NRC study that indicated that sea levels will rise between approximately 16 inches and 65 inches by 2100.

- It was noted that our project life is not that long, so it would be best if we use the sea level rise estimated by 2030, or a range between 1.56 and 11.76 inches.

- RMC will prepare a memorandum showing where the anticipated sea level rise will occur (distance inland), noting that the proposed CCWTF is outside that area of influence and that the City’s plan for managing potential impacts on facilities within the sea level rise zone is adaptive management and planned retreat.
• One comment made during the meeting with the modelers and RWQCB was the concern regarding the depth from which the particle tracks are occurring. The modelers can provide a profile figure showing this information.

• There is a lot of monitoring already occurring in the Malibu area and Santa Monica Bay, including some sampling the Hyperion is doing in the Malibu area. The RWQCB will provide the Hyperion monitoring locations, sampling plan and schedule so that the City can consider this information in developing an ocean water quality monitoring program and to avoid duplication of efforts.

• The RWQCB noted that for this project, we will be doing a WDR (not a NPDES permit) as we are injecting into the groundwater basin and not using an ocean outfall. So our points of compliance for monitoring should be within the groundwater basin.

• Present thinking is to have an end-of-the-pipe point of compliance, similar to what is being used in Orange County for the injection barrier projects.

• The RWQCB is still discussing whether they will require an ocean water quality monitoring program as part of the WDR as the ocean is not a point of compliance for the WDR.

• Water quality monitoring is being conducted on a frequent (daily?) basis at Surfrider Beach.

• The City will have three points to be rested upgradient of the injection locations per the MOU.

• RMC prepared a blackbox ocean water quality analysis, estimating what dilution ratios would be achieved over the area where groundwater is anticipated to dissipate up from the ocean floor. These resulting dilution ratios are large, as there is little groundwater moving offshore relative to the volume of ocean water in the overlying ocean column. Further, these analyses show that a 1:10 dilution ratio can be achieved within 2 feet of the ocean floor.

• The RWQCB will likely require collection of water quality samples from both shallow and deep wells along Malibu Road and Malibu Colony Road. This could help with the evaluation of potential ocean water quality impacts in that they could provide onshore controls for offshore water quality.

• RMC will prepare a memorandum summarizing the ocean water quality analysis as a foundation for the work included in the EIR.

• The SNMP assimilative capacity and anti-degradation analysis modeling should be done by the end of this week.

2.2 Status of City’s Regulatory Obligations

• RMC is currently preparing the draft Title 22 report. It is anticipated to be completed by the first week of April.

• The RWQCB will need to have the CDPH review the Title 22 report and comment on it before they can draft the WDR.

• Regarding the well prohibition zone ordinance, CDPH can issues report approvals contingent on the City passing the ordinance.

• The City is presently drafting the ordinance and will be working to get it through the planning department.

• The project milestone schedule was reviewed with a focus on key dates as they relate to the draft EIR and the issuance of the WDR.

• The RWQCB can be revising and finalizing the WDR/WRR concurrent with completion of the final EIR, but they can’t release it until after the Final EIR is certified.
• The WDR needs to be adopted before the City can finalize and officially form the assessment district.
• There will have to be a 45 day comment period on the draft WDR/WRR.
• The final EIR can be completed by mid-October, but the City needs to take it before the planning commission (in November) and the City Council (in December) before it is certified.
• The City has to do a 7-day public notice period before the planning commission and city council meetings.
• The City cannot advertise the city council meeting until after the planning commission meeting is done. And the City needs a 21-day noticing period for the City Council meeting, which is why it’s a month after the planning commission meeting.
• If the Final EIR is certified mid- to late-December of 2014, then:
  o The RWQCB can release the draft WDR for public comment at the beginning of December (December 1)
  o There will be a 45-day comment period, which will take us to the end of January.
  o Two weeks to incorporate comments with a revised WDR by mid-February.
  o A board package will also have to be prepared and time given for board member review (mid-February)
  o The WDR can be adopted (at the earliest) at the March 5, 2015 board meeting. (The board meets the first Thursday of each month). The fallback date would April 2, 2015.
• Jim believes that we have to have the final WDR before the City can get the assessment district engineers’ report finalized, which has to happen before the assessment district can be formed. Forming the assessment district will take between 45 days and 3 months, although the assessment engineer can do the pre work prior to the actual vote.
• For scheduling purposes, assume that the City will need 6 months to form the assessment district, from the time the parameters of the draft WDR are available.
• One possible work-around is to have the RWQCB establish draft WDR criteria that the assessment district can work from. So if the RWQCB can provide those criteria by the end of May, things can get going on the City’s end.
• RMC will prepare an updated project schedule with a draft WDR release date of the end of May.
• Eric will check with the RWQCB attorney about how soon they can release the WDR after the EIR is certified.

2.3 Design Update
• The MOU plus 9 months means that the design must be done by the end of March.
• The project should be at 90% design by the end of this month.

2.4 Recycled Water Use
• There are no updates on recycled use.

2.5 WDR Permitting
• See the discussion above.
2.6 Project WDR

- Nothing new to report.

2.7 Questions and Answers

- The next stakeholder meeting will be on April 24th.

3. Other

- The next meeting will be held on April 30, 2014 at 9 AM
4. **Action Items**

**Action Item Summary Table**

<table>
<thead>
<tr>
<th>Organization</th>
<th>Responsible Party</th>
<th>Task/Action Item</th>
</tr>
</thead>
<tbody>
<tr>
<td>LA RWQCB</td>
<td>Eric Wu</td>
<td>Talk with LA County regarding how to coordinate with City to connect residents with centralized system</td>
</tr>
<tr>
<td>City of Malibu</td>
<td>Craig George/Bob Brager</td>
<td>Start discussions with Water District 29 regarding duplication of services agreement</td>
</tr>
<tr>
<td>City of Malibu</td>
<td>Craig George/Bob Brager</td>
<td>The City needs to decide if they will be charging for recycled water.</td>
</tr>
<tr>
<td>LA RWQCB</td>
<td>Eric Wu</td>
<td>Eric will send an ‘email of introduction’ to Ginachi Amah at the RWQCB regarding the Malibu SNMP.</td>
</tr>
<tr>
<td>City of Malibu</td>
<td>Barbara Cameron</td>
<td>Find out status of USGS sea level rise vulnerability study</td>
</tr>
<tr>
<td>RMC</td>
<td>Leslie Dumas</td>
<td>Prepare memorandum documenting sea level rise analysis</td>
</tr>
<tr>
<td>LA RWQCB</td>
<td>Eric Wu</td>
<td>Provide Hyperion monitoring plan for ocean water quality (monitoring locations, constituents and frequency)</td>
</tr>
<tr>
<td>RMC</td>
<td>Leslie Dumas</td>
<td>Prepare memorandum documenting ocean water quality analysis</td>
</tr>
<tr>
<td>RMC</td>
<td>Leslie Dumas</td>
<td>Update project schedule to reflect release of draft WDR criteria by end of May and adding 6 months for formation of the assessment district</td>
</tr>
<tr>
<td>City of Malibu</td>
<td>Craig George</td>
<td>Draft groundwater well prohibition zone ordinance</td>
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</table>
### Mixing Length

<table>
<thead>
<tr>
<th>Mixing Length</th>
<th>270 feet</th>
<th>1,000 ft</th>
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<tbody>
<tr>
<td>Mixing Volume (cu.ft.)</td>
<td>$30 \times 1,320 \times 270$</td>
<td>$30 \times 1,320 \times 270$</td>
</tr>
<tr>
<td>Mixing Volume (mgd)</td>
<td>80</td>
<td>296</td>
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<tr>
<td>Daily Mixing Volume*</td>
<td>160</td>
<td>592</td>
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* Daily mixing volume assumes two tidal cycles a day
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<thead>
<tr>
<th></th>
<th>Current Conditions</th>
<th>Phase 1</th>
<th>Phase 2</th>
<th>Phase 3</th>
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</thead>
<tbody>
<tr>
<td>Annual average flux to ocean</td>
<td>117,635</td>
<td>130,763</td>
<td>133,532</td>
<td>136,008</td>
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<tr>
<td>(from MODFLOW model in cu.ft./day)</td>
<td></td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>Annual flux to ocean</td>
<td>0.88</td>
<td>0.98</td>
<td>1.00</td>
<td>1.02</td>
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<tr>
<td>(mgd)</td>
<td></td>
<td></td>
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<td></td>
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<tr>
<td>Dilution ratio assuming</td>
<td>1:182</td>
<td>1:163</td>
<td>1:160</td>
<td>1:157</td>
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<tr>
<td>160 mgd dilution volume</td>
<td></td>
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<td></td>
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<tr>
<td>Flux rate required for</td>
<td>8.8</td>
<td>9.8</td>
<td>1.0</td>
<td>1.02</td>
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<tr>
<td>1:10 dilution (mgd)</td>
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<td></td>
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<tr>
<td>Depth from ocean floor for</td>
<td>1.65</td>
<td>1.83</td>
<td>1.87</td>
<td>1.91</td>
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<tr>
<td>1:10 dilution (ft)*</td>
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* Assumes mixing length of 270 feet offshore
1. **Purpose of Meeting**

Discuss project scheduling relative to preparation of the Waste Discharge Requirements for the CCWTF.

2. **Discussion Summary**

- The City of Malibu (City) is going to coordinate a meeting with the State Water Resources Control Board (SWRCB) on the State Revolving Fund (SRF) application for the project.

- Eric sent out a schedule that the Regional Water Quality Control Board (RWQCB) put together to continue to meet the MOU + 9 months schedule.

- The RWQCB is on board with this schedule, but the RWQCB needs lots of information from the City and RMC to prepare the draft waste discharge requirements (WDR).

- The RWQCB cannot adopt the WDR until the EIR is certified.

- The Board package needs to go out on October 24th for a November meeting date.

- The RWQCB got a call from Health the Bay and BayKeeper. They want to see a copy of the draft WDR before it’s released.

- The RWQCB can agendize approval of the WDR for now.

- The schedule does not include a lot of wiggle room. If we don’t make the November SWRCB meeting, it’ll likely be 3 months before the next one.

- The CCWTF is being designed for a Total N level of between 7 and 8 mg/L, almost all of which will be nitrate.

- The Water Quality Objective (WQO) in the Basin Plan for the groundwater basin for nitrate is 10 mg/L nitrate-N. The Ocean Plan does not have any numerical WQOs for nitrate, but does have an ammonia-N WQO of 2.4 mg/L.

- The CCWTF will produce very little ammonia.

- Deb told Eric that they don’t have to consider Total Maximum Daily Limits (TMDLs) in the WDR.

- So, left with the anti-degradation analysis, we can use up to 20% of assimilative capacity.

- Based on the RWQCB’s estimates, existing groundwater quality for nitrate is ~3.6 mg/L. We would need to have a resulting groundwater concentration of around 4.8 to 4.9 mg/L for 20% assimilative capacity.

- The RWQCB would like to know how much more it would cost to get down to 5 mg/L nitrate-N in the treatment process and what will this do in terms of costs to the assessment district. The RWQCB
will need this information to justify and accept the current plant design. They would like a TM summarizing the cost differential (by April 16th).

- We need to make sure we note in the TM that there are no downgradient users of the basin.
- The RWQCB is presently considering issuing the WDRs for Phases 1 and 2 only (without TMDLs).
- The Current plant site can fit the wastewater treatment plant for all three phases if the discharge limit is around 7 or 8 mg/L for nitrate-N. If we have to go lower, the City may be facing site constraints in terms of size and may require a second plant to meet Phase 3.
- The City should provide the RWQCB with a current table of flows used in the wastewater treatment design (showing totals by phase).
- The City of Malibu should submit Form 200 with signatures and with the Concept Project Report prepared for the CDP application as their ‘formal’ submittal. The RWQCB will then open up a file and website where we can upload additional documents.
- The City is planning to do special meetings for the planning commission and city council meetings in for the EIR.
Meeting Agenda

I. Introductions
II. Update on Design
   • Wastewater Treatment Plant
   • Wastewater Collection System
   • Recycled Water Distribution System
III. Groundwater Injection Studies and Findings
   • Model Update
   • Salt and Nutrient Management Plan
   • Ocean Water Quality Analysis
IV. Permitting and CEQA Documentation
V. Conclusions/Next Steps/Future Meetings

Introductions

<table>
<thead>
<tr>
<th>Person</th>
<th>Role</th>
<th>Person</th>
<th>Role</th>
</tr>
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<tbody>
<tr>
<td>Jim Thorsen</td>
<td>City of Malibu</td>
<td>Michael Steenstrom</td>
<td>UCLA</td>
</tr>
<tr>
<td>Bob Brager</td>
<td></td>
<td>Steve Clary</td>
<td>RMC Design Team</td>
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<tr>
<td>Rob Duboux</td>
<td></td>
<td>Leslie Dumas</td>
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<td>Craig George</td>
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<td>Richard Laton</td>
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<tr>
<td>Bonnie Blue</td>
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<tr>
<td>Barbara Cameron</td>
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<tr>
<td>Eric Wu</td>
<td>RWQCB</td>
<td></td>
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<tr>
<td>Don Tsai</td>
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<tr>
<td>Rebecca Chou</td>
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<tr>
<td>Patricia Leary</td>
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<tr>
<td>Jack Topel</td>
<td>SWRCB</td>
<td></td>
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<tr>
<td>Kirsten James</td>
<td>Heal the Bay</td>
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<tr>
<td>Ric Vardel</td>
<td>Integrated Performance Consultants</td>
<td></td>
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<tr>
<td>Jeff Bouse</td>
<td>LAOPW</td>
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</table>
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I. Introductions
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Treatment Plant Design 80% Complete

Collection System Design 80% Complete
Distribution and Injection System Design 65% Complete

Remaining Design Issues

- Exact location of injection wells
  - Along Malibu Rd in public right-of-way
- Percolation capacity in Winter Canyon
  - Next modeling scenarios to estimate
- Waste Discharge Requirements (WDR)
  - Under development at RWQCB

Meeting Agenda

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### Checkpoints to Project Implementation

<table>
<thead>
<tr>
<th>Checkpoint</th>
<th>Yes</th>
<th>No</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Is there sufficient groundwater injection capacity?</td>
<td></td>
<td></td>
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<tr>
<td>2. Will injected water flow to Malibu Creek and/or Lagoon?</td>
<td></td>
<td></td>
</tr>
<tr>
<td>3. Will groundwater quality be impacted by the injection?</td>
<td></td>
<td></td>
</tr>
<tr>
<td>4. Will there be ocean water quality impacts?</td>
<td></td>
<td></td>
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<tr>
<td>5. Is the project permittable?</td>
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</table>

### 2013 Field Program

- 9 additional monitoring wells (7 to bedrock; 2 shallow alluvium)
- Shoreline Resistivity Survey
- Pumping and Injection Testing
- Groundwater Model Update (in progress)

### Modeling Strategy to Support Permitting

- Groundwater Injection Analysis (MODFLOW)
- Salt-Nutrient Loading and Mixing Models
- Analytical Ocean Diffusion Analysis
Sources and Sinks for Groundwater Flow System

Groundwater Model (MODFLOW) Update

- Update Hydrogeology
- Calibration
- Scenario Planning and Analysis
- Sensitivity Analyses

Model Calibration Strategy

- Compare model-calculated groundwater elevations to field measurements for transient simulation 2003-2012
- Compare model-calculated hydraulic responses with field observations during injection testing
Recalibration Shows Good Results

Model Application Runs

- Effects of proposed injection on groundwater elevations
- Maximum injection rates
- Effects of proposed percolation in Winter Canyon

Model Simulation Period
**Project Phasing**

**Scenarios Evaluated**
- Baseline (current conditions)
- All disposal to injection (no percolation or irrigation)
  - Phase 1
  - Phase 2
  - Phase 3
- All disposal to injection and Winter Canyon percolation
  - Phase 1
  - Phase 2
  - Phase 3

**Possible Injection Well Locations**
Groundwater Elevation Analysis Locations

Model Results Demonstrate Sufficient Injection Capacity

<table>
<thead>
<tr>
<th></th>
<th>Phase 1</th>
<th>Phase 2</th>
<th>Phase 3</th>
<th>Phase 3</th>
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</thead>
<tbody>
<tr>
<td>Site Requirements</td>
<td>No</td>
<td>No</td>
<td>No</td>
<td>Yes</td>
</tr>
<tr>
<td>Total Recycled Water Produced (gpd)</td>
<td>191,000</td>
<td>361,000</td>
<td>507,000</td>
<td>507,000</td>
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<tr>
<td>Estimated Annual Need for Irrigation (gpd)</td>
<td>68,000</td>
<td>174,000</td>
<td>299,000</td>
<td>299,000</td>
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<tr>
<td>Needed Injection Rate (gpd)</td>
<td>122,000</td>
<td>181,000</td>
<td>298,000</td>
<td>298,000</td>
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<tr>
<td>Model Results</td>
<td>No</td>
<td>No</td>
<td>No</td>
<td>Yes</td>
</tr>
<tr>
<td>Available Injection Capacity (gpd)</td>
<td>311,135</td>
<td>482,642</td>
<td>611,954</td>
<td>1,135,619</td>
</tr>
<tr>
<td>Percent Factor of Safety</td>
<td>252%</td>
<td>269%</td>
<td>295%</td>
<td>546%</td>
</tr>
</tbody>
</table>

Draft
Mounding Analysis – Location 1
(Project lowers groundwater elevations)

Groundwater Elevation (ft NAVD88)

Model Time (days)

Constraint 1
Row 100 Col 118
Constraint 2
Row 100 Col 118

Land Surface
Base Constraint
Base (Current)
Phase 1
Phase 2

Draft

Mounding Analysis – Location 2
(Project lowers groundwater elevations)

Groundwater Elevation (ft NAVD88)

Model Time (days)

Constraint 2
Row 183 Col 118
Constraint 5
Row 183 Col 118

Land Surface
Base Constraint

Draft
Mounding Analysis – Location 2
(Project lowers groundwater elevations)

Groundwater Elevation (ft NAVD88)

Model Time (days)

Constraint 2
Row 183 Col 118
Constraint 5 feet below land surface

Land Surface Base Constraint Base (Current)

Phase 1

Phase 2

Phase 3

Phase 4

Phase 5

Draft
Land Surface at Limiting Location – Post Development

Mounding Analysis – Location 15
(Project lowers groundwater elevations)

Mounding Analysis – Location 15
(Project lowers groundwater elevations)
Mounding Analysis – Location 15
(Project lowers groundwater elevations)

Groundwater Elevation (ft NAVD88)

Model Time (days)

Constraint 15
Row 150 Col 168

Constraint 2 feet below land surface

Phase 1

Ph3 Base (Current)

Phase 2

Phase 3

Land Surface

Draft
Flow Analysis – Where does the water go?

- Used MODPATH6 for particle tracking
- Simulated flow paths of injected water
- Used MODFLOW results as basis
Phase 2 – Flow Location
(no flow to Lagoon or Creek)

Phase 3 – Flow Location; No Tracks to Lagoon
(no flow to Lagoon or Creek)

Phase 3 – Flow Location; Tracks to Lagoon
Winter Canyon Percolation Modeling Goals

• Evaluate the impacts of percolation in Winter Canyon while injecting in Civic Center
• Focus on potential mounding effects at base of Canyon (mounding analysis locations 1 and 2)
• Goal is to determine if Winter Canyon percolation can be conducted jointly with injection or as back-up

Winter Canyon Percolation Modeling Results

• Winter Canyon percolation is backup to Civic Center injection
• Can percolate 50,000 gpd in Phase 1
• Can percolate 100,000 gpd in Phases 2 and 3

Groundwater Model Conclusions

• Groundwater Basin has sufficient injection capacity for all project phases
• Injection capacity has large safety factor
• Groundwater levels are presently close to land surface elevations in several locations
• Project will lower groundwater levels
Next Steps in Groundwater Modeling

- Sensitivity Analysis
  - Lower hydraulic conductivity and storage coefficient for Civic Center Gravels
  - Higher hydraulic conductivity for Low Permeability Layer
- Sea Level Rise Evaluation

Model Strategy to Permitting

Salt-Nutrient Loading and Mixing Models

- Allows for estimate of assimilative capacity used by Project
- Results feed into ocean water quality analysis
- Utilizes water balance components from MODFLOW model
- Being conducted ‘as we speak’
- Results will simulate changes in groundwater quality
Loading Approach Uses Land Use and Applied Water

List of Land Uses

- Agricultural Commodities
- Apartments
- Auto Sales
- Banks
- Burial Property
- City Government Properties
- Clubs/Lodge Halls
- County Government Properties
- Dance Halls (Private)
- Duplexes and Doubles
- Federal Government Properties
- Field Crops
- Food Stores
- Golf Courses (Private)
- Hardwoods and Chaparral
- Homes
- Horse Ranches
- Hospitals (Private)
- Hotels
- Irrigated Dairies
- Irrigated Orchards
- Irrigated Pastures
- Irrigated Poultry Ranches
- Irrigated Vineyards
- Light Manufacturing
- Lumber
- Mfg Home/Trailer Parks
- Mineral Processing
- Miscellaneous Commercial Spaces
- Miscellaneous Industrial
- Motels
- Non-irrigated Vineyards
- Nurseries
- Office Buildings
- Orchards
- Orphanages
- Outdoor Recreational Facilities (Private)
- Parking Lots (Private)
- Pastures
- Processing Plants
- Professional Buildings
- Religious Properties
- Residential Common Areas
- Restaurants and Bars
- Roadways
- Rural Residences
- School District Property
- Schools
- Service Shops
- Service Stations
- Shopping Centers
- Single Family Dwellings
- Special Districts Properties
- Specialty Farms
- State Government Properties
- Store and Office Combinations/Single Story
- Stores
- Theaters
- Three and Four Unit Complexes
- Tidelands
- Transitional Use
- Utilities
- Vacant Commercial Land
- Vacant Industrial Land
- Vacant Residential Land
- Volunteer Fire Departments
- Warehouses
- Wastelands
- Water Sources
- Crop Coefficient
- Irrigation
- Fertilizer/Amendment (Salts)
- Livestock (Salts)
- Fertilizer/Amendment (Nutrients)
- Livestock (Nutrients)
- Uptake/Offtake (Nutrients)
- Other losses (Nutrients)
- Municipal Inputs (Salts)
- Municipal Inputs (Nutrients)

Basin Characteristics are Analyzed to Yield Load Estimates

- Population and Water Use
- Salt Load
- Nutrient Load

Mixing Modeling Results - Example

- Evaluate future scenario based on projected land and water use
- Compare projected future concentrations to Water Quality Objectives
Model Strategy to Permitting

Groundwater Injection Analysis (REDFORCE)

Self-Nutrient Loading and Mixing Models

Analytical Ocean Diffusion Analysis

Flow in & out of groundwater basin

Ocean Water Quality Analysis

- Analytical model (spreadsheet model) – Fischer et. al. 1979
- Using solution for two-dimensional buoyant plume
- Simulates ‘fresh water’ plume rising from ocean floor
- What level of ocean nutrient loading is acceptable

Meeting Agenda

I. Introductions
II. Update on Design
   - Wastewater Treatment Plant
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   - Ocean Water Quality Analysis
IV. Permitting and CEQA Documentation
V. Conclusions/Next Steps/Future Meetings
Primary Permits

• Coastal Development Permit (CDP)

• Water Reclamation Requirements (WRR)/Waste Discharge Requirements (WDR)

• Salt-Nutrient Management Plan (SNMP)

Coastal Development Permit

• Coastal Development Permit is being drafted
  • Slope analysis
  • Site plan
  • Functionally-equivalent Engineer’s Report

• CDP application file has been open in City Planning Department

• Draft LCP Amendment has been before Zoning Ordinance Revision and Code Enforcement Subcommittee (1/21/14)

Water Reclamation Requirements/Waste Discharge Requirements

• Ongoing discussions with RWQCB as to requirements

• Modeling results eliminates need to consider TMDLs in setting compliance and monitoring requirements
EIR Status

• Biology/Habitat, Tree and Cultural Surveys completed
• Presently completing impacts analysis
• Work on design aspects of project – architecture and landscape architecture
• Anticipated release date for Draft EIR – April 14, 2014

Plant Site View Perspectives

View 3 – Plant Site as seen from Pacific Coast Highway (PCH) & Civic Center Way

Plant Site – 5-years Post-Construction

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Question for the TAC:

Have we addressed environmental concerns?
Malibu Civic Center Stakeholders Meeting

January 30, 2014
Malibu City Hall
8:30 a.m.
Meeting Agenda

- Regional Water Quality Control Board
- Community Facilities District (CFD)
- Outreach Meetings/Presentations
- Assessment District (AD)
- Wastewater Facility Design
- Questions/Comments
- Next Meeting February 27, 2014
- Adjourn
Regional Water Quality Control Board

- Joint Progress Meetings with Board Staff (Dr. Eric Wu and Dr. Don Tsai of Groundwater and Permitting Unit)
- Monthly Meetings:
  - April 17, 2013 ✔
  - June 19, 2013 ✔
  - July 17, 2013 ✔
  - August 28, 2013 ✔
  - September 24, 2013 ✔
  - October 30, 2013 ✔
  - October 30, 2013 ✔
  - November/December 8, 2013 ✔
  - January 8, 2013 ✔
  - February 12, 2013 (Next Meeting)
Regional Water Quality Control Board

Topics of Discussion:
- Status of the Injection and Modeling Program
- Status of the City’s Regulatory Obligations
  - CDP
  - CEQA
  - EIR
  - LCPA
- Design Updates
- Recycled Water Use and Opportunities
- WDR Discharge Limits
- WDR – Project Permits for Injection Program
- Public Outreach

Quarterly Progress Reports to RWQCB’s Executive Officer, Mr. Sam Unger (4th Quarter Report sent 12-30-13).
Community Facilities District (CFD)

- Bond sale closed in February 2013 ✔
- City received funds in February 2013 ✔
- No other updates
Outreach Meetings/Presentations

- **August 6, 2013**: Project Technical Advisory Committee (TAC) at City Hall.
- **August 17, 2013**: Project Presentation to Malibu Knolls HOA.
- **August 21, 2013**: Discussions with Pepperdine University Officials regarding possible future recycled water use and opportunities.
- **August 22, 2013**: Project Presentation to Wastewater Advisory Committee.
- **September 12, 2013**: City Manager presentation of project update to the RWQCB.
- **October 6, 2013**: Project update to Malibu Colony HOA.
- **November 21, 2013**: Issued Notice of Preparation (NOP) for Draft EIR.
- **December 11, 2013**: Held Public Project Scoping Meeting.
- **December 11, 2013**: Held Nov/Dec Stakeholders Meeting.
- **December 12, 2013**: Held 3rd Project Technical Advisory Committee (TAC).
Assessment District (AD)

- **June 24, 2013**: Sent out RFP for Assessment Engineering Consultant.
- **August 1, 2013**: Two proposals received.
- **September 23, 2013**: City Council approved David Taussig & Assoc., Inc. as the Assessment Engineering Consultant for the formation of the Assessment District for the project.
- **October 3, 2013**: Notice to Proceed/Kick-off Meeting.
- **December 11, 2013**: At Stakeholders Meeting, Presentation of Preliminary Assessment Analysis for Phase 1.
- **Current**: Further refining analysis as additional information is obtained.
**Wastewater Facility Design**

- **Groundwater Injection Study**
  - Phase 1 – cursory modeling and scoping
  - Phase 2 – preliminary feasibility assessment
  - Phase 3 – monitoring & injection wells
    - Construction
    - Testing
    - Analysis
    - Modeling (preliminary results are positive)
    - Injection and Pre-design (began this task based on positive modeling results)
    - At last Stakeholders Meeting, 1) Presentation of Salt & Nutrient Management Plan (SNMP), 2) Groundwater Management Plan (GWMP).
Wastewater Facility Design

- **Regulatory Obligations**
  - **LCPA**
    - Amend existing site use for Public Facilities ✓
    - Zoning Ordinance Revisions & Code Enforcement Subcommittee (ZORACES) ✓ (This item was heard on January 28, 2014)
    - Planning Commission (Scheduled for Public Hearing on Feb. 18, 2014) ✓
    - City Council
    - Coastal Commission for certification
  - **EIR**
    - Project description ✓ + Planning Commission
    - NOP ✓ + City Council for certification for Final EIR
    - Scoping Meeting ✓
    - Administrative Draft EIR
    - Draft EIR
    - ERB
Wastewater Facility Design

- CDP
  - Application Package
    - Project Plans
    - Preliminary Reports
      - Biology Assessment
      - Cultural Resources
      - Geology
      - Tree Survey
  - ERB
  - Planning Commission
  - City Council
Wastewater Facility Design

- **Design**
  - Treatment Plant Facility
  - Injection System
  - Collection System
  - Recycled Water System
  - **Current: Plans are 70% complete!**
Questions / Comments
Next meeting February 27, 2014
Thank you
Prohibition Area

Phase 1

Phase 2

Malibu Creek
Community Facilities District

Phase 1 Boundary

15 CFD Properties
Meeting Agenda

I. Introductions
II. Project Implementation
III. Groundwater Injection Studies and Findings
   • Model Update
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   • Ocean Water Quality Analysis
IV. CEQA/EIR Analysis
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Project Implementation

- Phase 1 Project
  - Wastewater collection system
  - Civic Center Wastewater Treatment Facility
  - Recycled water distribution pipeline
- Phase 2 Project
  - Wastewater collection system pipeline extension
  - Civic Center Wastewater Treatment Facility expansion
  - Recycled water distribution pipeline
- Phase 3 Project
  - Wastewater collection system pipeline extension
  - Recycled water distribution pipeline

Project Phasing

Priorities for Reuse

1. Maximize reuse for landscape irrigation
2. Maximize reuse for other non-potable uses
3. Groundwater injection
4. Winter Canyon percolation
Meeting Agenda

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2013 Field Program

• 9 additional monitoring wells (7 to bedrock; 2 shallow alluvium)
• Shoreline Resistivity Survey
• Pumping and Injection Testing
• Groundwater Model Update (in progress)
Additional Monitoring Wells

Electrical Resistivity Survey

Injection Testing
- Step-Injection Testing
- 24-hour Continuous Injection Testing
- 7-day Continuous Injection Testing
Groundwater Model (MODFLOW) Update

- Update Hydrogeology
- Calibration
- Scenario Planning and Analysis
- Sensitivity Analyses

Model Calibration Strategy

- Compare model-calculated groundwater elevations to field measurements for transient simulation 2003-2012
- Compare model-calculated hydraulic responses with field observations during injection testing
Recalibration Shows Good Results

- Residual Mean = 0.19 ft
- Absolute Residual Mean = 1.47 ft
- Sum of Squares = 1.49e4 ft²
- Number of Observations = 3513
- Number of Locations = 101

Model Application Runs

- Effects of proposed injection on groundwater elevations
- Maximum injection rates
- Effects of proposed percolation in Winter Canyon

Model Simulation Period
Scenarios Evaluated

- Baseline (current conditions)
- All disposal to injection (no percolation or irrigation)
  - Phase 1
  - Phase 2
  - Phase 3
- All disposal to injection and Winter Canyon percolation
  - Phase 1
  - Phase 2
  - Phase 3

Possible Injection Well Locations

Model Results Demonstrate Sufficient Injection Capacity

<table>
<thead>
<tr>
<th>Particles to Lagoon?</th>
<th>Phase 1</th>
<th>Phase 2</th>
<th>Phase 3</th>
</tr>
</thead>
<tbody>
<tr>
<td>No</td>
<td>101,000</td>
<td>161,000</td>
<td>257,000</td>
</tr>
<tr>
<td>Estimated Annual Reuse for Irrigation (gpd)</td>
<td>68,000</td>
<td>176,000</td>
<td>299,000</td>
</tr>
<tr>
<td>Needed Injection Rate (gpd)</td>
<td>123,000</td>
<td>185,000</td>
<td>258,000</td>
</tr>
<tr>
<td>Model Results (assuming no reuse for irrigation)</td>
<td>Available Injection Capacity (gpd)</td>
<td>101,135</td>
<td>497,042</td>
</tr>
<tr>
<td>Factor of Safety</td>
<td>2.626</td>
<td>2.696</td>
<td>2.8516</td>
</tr>
</tbody>
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Model Results Demonstrate Sufficient Injection Capacity

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<tr>
<td>Design Requirements</td>
<td>No</td>
<td>No</td>
<td>No</td>
</tr>
<tr>
<td>Total Recycled Water Produced - No Injection (gpd)</td>
<td>106,000</td>
<td>361,000</td>
<td>527,000</td>
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<tr>
<td>Estimated Annual Use for Irrigation (gpd)</td>
<td>48,000</td>
<td>176,000</td>
<td>299,000</td>
</tr>
<tr>
<td>Needed Injection Rate (gpd)</td>
<td>123,000</td>
<td>185,000</td>
<td>208,000</td>
</tr>
<tr>
<td>Model Results (assuming no use for irrigation)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Available Injection Capacity (gpd)</td>
<td>311,135</td>
<td>497,642</td>
<td>611,654</td>
</tr>
<tr>
<td>Percent Factor of Safety</td>
<td>252%</td>
<td>269%</td>
<td>295%</td>
</tr>
<tr>
<td>Winter Canyon Backup Percolation Capacity (gpd)</td>
<td>50,000</td>
<td>100,000</td>
<td>100,000</td>
</tr>
</tbody>
</table>

Draft

Groundwater Elevation Analysis Locations

Mounding Analysis – Location 1
(Project lowers groundwater elevations)
Mounding Analysis – Location 1
(Project lowers groundwater elevations)

<table>
<thead>
<tr>
<th>Model Time (days)</th>
<th>Groundwater Elevation (ft NAVD88)</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>0.00</td>
</tr>
<tr>
<td>500</td>
<td>0.00</td>
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<tr>
<td>1,000</td>
<td>0.00</td>
</tr>
<tr>
<td>1,500</td>
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<td>0.00</td>
</tr>
<tr>
<td>3,500</td>
<td>0.00</td>
</tr>
<tr>
<td>4,000</td>
<td>0.00</td>
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Model Time (days)

Groundwater Elevation (ft NAVD88)
Mounding Analysis – Location 1
(Project lowers groundwater elevations)

Mounding Analysis – Location 2
(Project lowers groundwater elevations)
Mounding Analysis – Location 2
(Project lowers groundwater elevations)

Groundwater Elevation (ft NAVD88)

Model Time (days)

Constraint 2
Row 183 Col 118
Constraint 5 feet below land surface

Land Surface
Row Constraint
Base (Current)
Phase 1
Phase 2
Draft
Groundwater Elevation Analysis Locations

Mounding Analysis – Location 14
(Project lowers groundwater elevations)

Mounding Analysis – Location 14
(Project lowers groundwater elevations)
Mounding Analysis – Location 14
(Project lowers groundwater elevations)

Groundwater Elevation (ft NAVD88)

Model Time (days)

Constraint 14
Row 167 Col 168

Constraint 2 feet below land surface

Land Surface
Base Constraint
Phase 1
Phase 3

Constraint 14
Row 167 Col 168

Constraint 2 feet below land surface

Land Surface
Base Constraint
Phase 1
Phase 3

Constraint 14
Row 167 Col 168

Constraint 2 feet below land surface

Land Surface
Base Constraint
Phase 1
Phase 3

Constraint 14
Row 167 Col 168

Constraint 2 feet below land surface

Land Surface
Base Constraint
Phase 1
Phase 3

Draft
Land Surface at Limiting Location – Post Development

Mounding Analysis – Location 37
(Project lowers groundwater elevations)
Mounding Analysis – Location 37
(Project lowers groundwater elevations)

Groundwater Elevation (ft NAVD88)

Model Time (days)

Constraint 37
Row 159 Col 163
Constraint 1 foot below land surface

Land Surface – PD
Constraint – PD
Base (Current)

Land Surface – PD
Constraint – PD
Base (Current)

Land Surface – PD
Constraint – PD
Base (Current)

Land Surface – PD
Constraint – PD
Base (Current)

Model Time (days)

Draft
Mounding Analysis – Location 37
(Project lowers groundwater elevations)

Groundwater Elevation Analysis Locations
Mounding Analysis – Location 12
(Project lowers groundwater elevations)

Groundwater Elevation (ft NAVD88)

Model Time (days)

Constraint 12
Row 200 Col 168

Constraint 5 feet below land surface

Land Surface Base

Land Surface Base (Current)

Phase 1

Draft
Mounding Analysis – Location 12
(Project lowers groundwater elevations)

Mounding Analysis – Location 31
Mounding Analysis – Location 45
(Project lowers groundwater elevations)

- Constraint 45 Row 209 Col 227
- Constraint 1 foot below land surface

Groundwater Elevation (ft NAVD88)

Model Time (days)

Land Surface Base Constraint Base (Current)

Phase 1

Phase 2

Phase 3

Draft
Flow Analysis – Where does the injected water go?

- Used MODPATH6 for particle tracking
- Simulated flow paths of injected water
- Used MODFLOW results as basis

Phase 1 – Flow Location
(no flow to Lagoon or Creek)

Phase 2 – Flow Location
(no flow to Lagoon or Creek)
Phase 3 – Flow Location
(no flow to Lagoon or Creek)

Winter Canyon Percolation Model Goals
• Evaluate the impacts of percolation in Winter Canyon while injecting in Civic Center
• Focus on potential mounding effects at base of Canyon (mounding analysis locations 1 and 2)
• Goal is to determine if Winter Canyon percolation can be conducted jointly with injection or as back-up

Winter Canyon Percolation Model Results
• Winter Canyon percolation is backup to Civic Center injection
• Can percolate 50,000 gpd in Phase 1
• Can percolate 100,000 gpd in Phases 2 and 3
Groundwater Model Conclusions

• Groundwater Basin has sufficient injection capacity for all project phases
• Injection capacity has large safety factor
• Groundwater levels are presently close to land surface elevations in several locations
• Project will lower groundwater levels

Next Steps in Groundwater Modeling

• Sensitivity Analysis
  ▪ Lower hydraulic conductivity and storage coefficient for Civic Center Gravels
  ▪ Higher hydraulic conductivity for Low Permeability Layer

• Sea Level Rise Evaluation

Model Strategy to Support Design and Analysis
Salt-Nutrient Loading and Mixing Models

- Allows for estimate of assimilative capacity used by Project
- Results feed into ocean water quality analysis
- Utilizes water balance components from MODFLOW model
- Being conducted ‘as we speak’
- Results will simulate changes in groundwater quality

Loading Approach Uses Land Use and Applied Water

Basin Characteristics are Analyzed to Yield Load Estimates
Mixing Modeling Results - Example

- Evaluate future scenario based on projected land and water use
- Compare projected future concentrations to Water Quality Objectives

Model Strategy to Support Design and Analysis

- Groundwater Injection Analysis (MODFLOW)
- Salt-Nutrient Loading and Mixing Models
- Analytical Ocean Diffusion Analysis

Ocean Water Quality Analysis

- Compare nitrate load from groundwater basin with Project to that from Hyperion
- Consider Ocean Plan water quality objectives
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Plant Site View Perspectives

View 1 – Plant Site as seen from Condos
Plant Site View Perspectives

View 2 – Plant Site as seen from Pacific Coast Highway (PCH)

Plant Site View Perspectives

View 3 – Plant Site as seen from Intersection of PCH and Civic Center Way

Plant Site – 5-years Post-Construction

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Plant Site – 5-years Post-Construction

View 2 – Plant Site as seen from Pacific Coast Highway (PCH)

Draft

Plant Site – 5-years Post-Construction

View 3 – Plant Site as seen from Intersection of PCH and Civic Center Way

Draft

Plant Site – Landscape at Maturity

View 1 – Plant Site as seen from Condos

Draft
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• in progress

Questions?

Stakeholder Meeting
Civic Center Wastewater Treatment Facility
February 27, 2014