

SANITARY DISTRICT NO. 5 OF MARIN COUNTY
2001 Paradise Drive
Tiburon, California 94920

AGENDA

Capital Improvement Program Committee Meeting
Wednesday, April 12th, 2023, 4:30 p.m.

I. Roll Call

II. Public Comments

III. New Business

1. Verbal update regarding the 2022 Sewer Rehabilitation Project
2. Verbal update regarding the upcoming Digester Rehabilitation Project
3. Review and discuss CIP program review and Occupancy Optimization draft report from HDR
4. Verbal Discussion regarding status of FY 22/23 Capital Improvement Projects

IV. Adjournment

This Committee may be attended by Board Members who do not serve on this committee. In the event that a quorum of the entire Board is present, this Committee shall act as a Committee of the Whole. In either case, any item acted upon by the Committee or the Committee of the Whole will require consideration and action by the full Board of Directors as a prerequisite to its legal enactment.

Accessible public meetings: Any member of the public who needs accommodations should email the Office Manager, at rdohrmann@sani5.org, who will use her best efforts to provide as much accessibility as possible while also maintaining public safety.



Marin Sanitary District 5

Occupancy Spacing and CIP Evaluation
(DRAFT)

Tiburon, California

PREPARED and PRODUCED BY
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Michael Lambert, RA
HDR Inc.

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INTRODUCTION

Marin Sanitary District 5 Main Wastewater Treatment Plant and the Paradise Cove Wastewater Treatment Plant were the subject of site visit discussions aimed at improving overall office space/layout as a means to improve operations. Furthermore, the costs associated with the Capital Improvement Program (CIP) is presented as it includes funding for the occupancy evaluations as well.

Over the course of two days in late 2022 (December 14 and 15, 2022), treatment plant staff provided HDR with plant tours. As part of the site visits, HDR led individual interviews with plant staff. A follow-up site visit occurred on February 9, 2023 to update plant staff and verify/validate draft findings.

Project Objectives:

- Collect information and develop conceptual office space layouts for future project scoping.
- Verify and organize the Capital Improvement Projects over time

Report Organization: the report includes a summary of findings for the occupancy concepts and CIP, followed by the detailed notes from the site visits plus appendices that capture details.

SUMMARY OF FINDINGS

The findings are separated by the occupancy concepts for both treatments plants, as well as the CIP for the Main Plant.

Occupancy Concepts

HDR spent two full days in late Fall 2022, followed by a follow-up site visit in February 2023 to review and verify/present draft occupancy concepts and costs. The concepts at the Main Plant range from securing office and parking lot space off-site (e.g., Bank of America in Tiburon is a strong potential candidate) to multi-million-dollar options. Several of the concepts are smaller scale (e.g., upgraded the locker room(s)) that could be used in tandem with most of the concepts.

Main Plant Concepts

The concepts for the Main Plant were sorted by “Top Tier” and “Second Tier”. The Top Tier is based on a piecemeal approach of solutions over time, whereas the Second Tier is based on a larger more global approach. While the Second Tier approach addresses numerous long-term issues, the solutions come at a cost (over \$9 Mil). As a result, the Top Tier options are recommended as they have a means to eventually achieve the larger more global approach solutions associated with the Second Tier.

An aerial plan for the Top Tier concepts for the Main Plant is provided in Figure 1 and a brief description with benefits/challenges and costs is provided in Table 1. The recommended sequence order for the Main Plant projects are as follows:

1. Elevated office space over chlorine contact basin (KN2): up to \$2.4 Mil

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- | | |
|--|------------------|
| 2. Office over Dewatering Building Roof (KN3): | up to \$0.86 Mil |
| 3. Move desks out of Laboratory (KN5): | To Be Determined |
| 4. Locker Room modifications (KN6): | Up to \$0.65 Mil |
| 5. Remove office spaces from Break Room (KN7): | Up to \$0.32 Mil |
| 6. Convert Surge Tank roof into offices (KN9): | Up to \$0.86 Mil |
| 7. Convert roof into 3 executive offices (KN8): | Up to \$0.46 Mil |
| 8. Convert Blower Building roof into offices (KN10): | Up to \$0.86 Mil |
| 9. Replace General Manager office (KN1): | Up to 0.06 Mil |
| 10. Build offices over Maintenance Building (KN4): | Up to \$1.3 Mil |

Note: this list is predicated on the notion that the off-site office lease is not feasible and there will be a signed waiver from the District permitting ADA noncompliance in many key areas. In the event that the off-site facility is available, it offers numerous benefits such as additional space and storage as noted in Table 1 that would need to be considered.

The total cost for all the listed Main Plant projects in Table 1 is \$7.8 Mil. Such improvements would provide long-term benefits in terms of occupancy space. While relatively expensive, the unit costs for such improvements divided by the treatment capacity is on the order of \$7.9/gpd (the average dry weather capacity is 0.98 million gallons per day (mgd)). For perspective, a new wastewater treatment plant would likely cost \$35 - \$70/gpd (i.e., \$35 to \$70 Mil).

Paradise Cove Plant Concepts

The Paradise Cove Plant site visit was less focused on occupancy spacing and more focused on general improvements. The concepts for Paradise Cove Plant are presented as an aerial plan in Figure 2 and a brief description with benefits/challenges and costs is provided in Table 2. The recommended sequence order for are as follows:

- | | |
|---------------------------------|-------------------------------------|
| 1. Radio repeater (KN22): | To Be Determined |
| 2. Pave access road. (KN14): | To Be Determined |
| 3. Potable water source (KN21): | To Be Determined |
| 4. New Building (KN19): | Up to \$1.3 Mil |
| 5. Tower (KN15): | Up to \$0.36 Mil |
| 6. Headworks (KN25): | Up to \$0.45 Mil |
| 7. Remove storage bins (KN20): | To Be Determined |
| 8. Remove utility pole (KN16): | To Be Determined |
| 9. Boat Dock (KN23): | Up to \$0.60 Mil (Excludes Permits) |

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- | | |
|----------------------------|-------------------|
| 10. Bridge (KN18): | To Be Determined |
| 11. Automatic gate (KN24): | Up to \$0.015 Mil |
| 12. Catwalk (KN17): | To Be Determined |

Note: while a building concept was developed (KN19), most of the concepts are for general improvements (e.g., removing a storage bin as it is an obstacle). The new building concept is estimated to cost approximately \$1.3 Mil. The majority of those that are general improvements were not costed out as the emphasis was on occupancy spacing.

The total cost for all the listed and projects costed out at Paradise Cove in Table 2 is \$2.2

Mil. Such improvements would provide long-term benefits in terms of operational ease and overall occupancy space. While relatively expensive, the unit costs for such improvements divided by the treatment capacity is on the order of \$55/gpd (the average dry weather capacity is 0.04 mgd). This is considerably more expensive than those projects listed for the Main Plant (\$7.9/gpd versus \$55/gpd). Such a large increase is attributed to economies of scale coupled with the need for a new building.

Capital Improvement Program

HDR was provided the current CIP for the Main Treatment Plant. Note: costs for the collection system CIP projects are not included as they can be found in the Collection System Master Plan. Besides equipment identified in the Main Treatment Plant and Collection System CIP, HDR added several new line items (those highlighted in orange): i) digester valve/piping replacement, digester cleaning, and digested solids chopper pump replacement, ii) secondary clarifier mechanisms replacement, iii) routine maintenance of structures/equipment (annualized over time), iv) unspecified maintenance (annualized over time), and v) ArcFlash electrical system improvements to enhance safety (annualized over time). Note: no costs were provided for ArcFlash as the extent of equipment replacement for safety purposes is unclear at this time.

In general, the values from the District provided CIP understate costs. While the equipment replacement costs were derived from historical purchasing and engineer's best judgment, the original values were based on pre-supply chain issues and inflation. Such challenges have become evident the last couple years (i.e., since COVID19). The pricing in 2023 does seem to be more stable than during COVID19, but supply chain and inflation are still of concern.

HDR updated the costs to reflect costs in 2023 dollars and added potential projects from the Site Visits based on Engineer's Best Judgment. The updated CIP over time is provided in Table 3.

The total amount to address CIP items through year 2032 is just under \$13.4 Mil. This value is approximately double the amount listed in the CIP provided by the District.

The largest line item is the Main Plant Occupancy Project, as it includes all the items listed in Table 1 (represents over half of the monies). The increase in funds for the Main Plant Occupancy Project is \$6.3 Mil greater than the original value in the CIP provided to HDR by the District. While improving the occupancy spacing is essential for providing a safe and long-term viable working environment, the decision on which components are included/excluded for the Occupancy Project is less firm than replacing essential equipment at the end of its useful life (e.g., wet weather influent pump). Regardless, it is apparent that the funds required to address the

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Occupancy Project will exceed the originally slated \$1.5 Mil as part of the Main Treatment Plant and Collection System CIP.

It is recommended that the District prioritize and score the various components that make up the \$7.8 Mil for the Occupancy Project. Otherwise, it will be difficult to make an informed decision on which components to include/exclude.

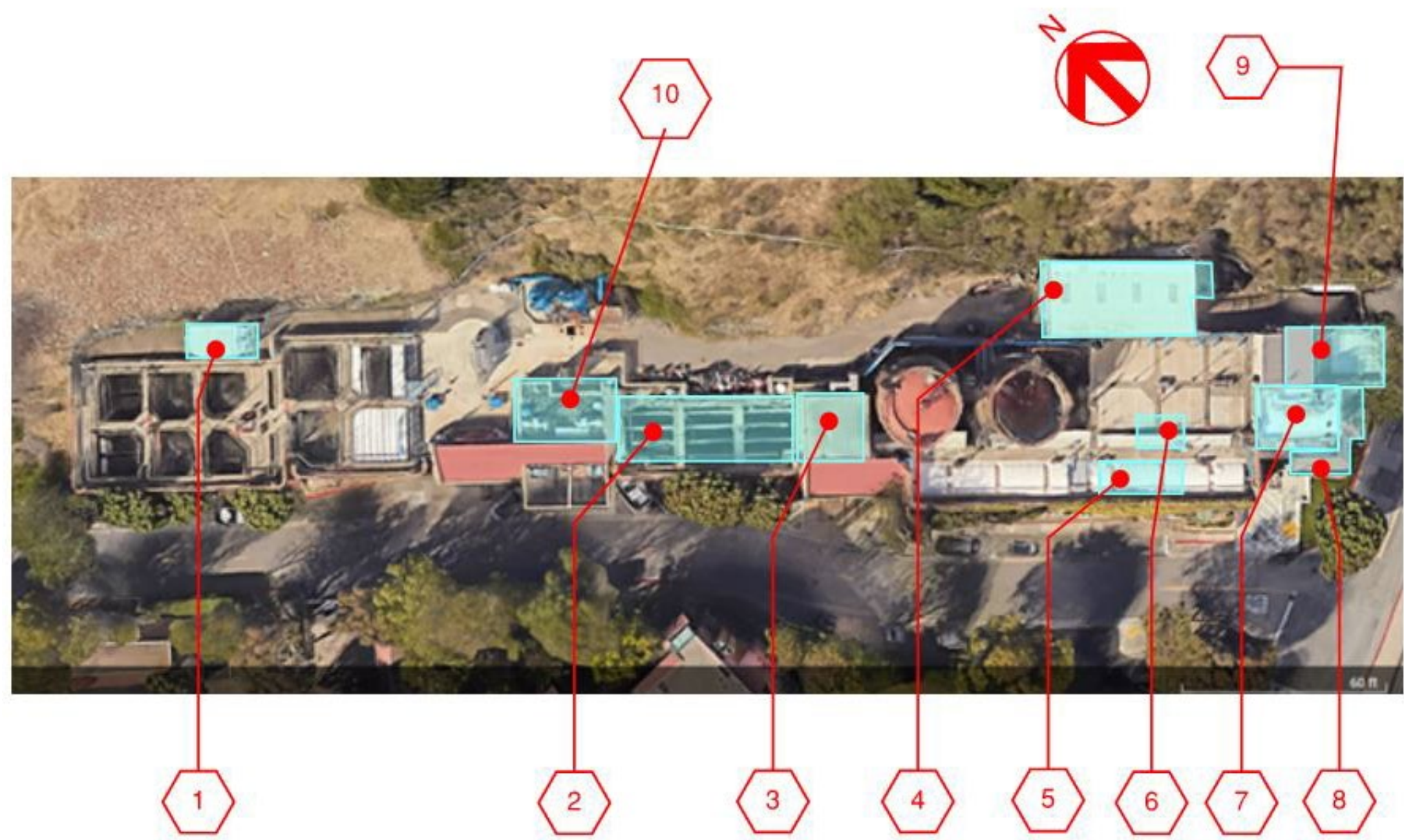


Figure 1. Top Tier Occupancy Concepts for the Main Plant in Tiburon, CA

Table 1. Summary of Occupancy Spacing Concepts at the Main Plant and the Corresponding Comments/Ideas

ID Number	Brief Description	Footprint, sf	Benefits	Challenges	Costs
Outside the Plant (Not Shown)	Move the administrative facilities to downtown Tiburon (possibly at the Bank of America Facility)	--	i. Moves the administrative facilities elsewhere and frees up space at the Main Plant. ii. Potential to store large equipment. iii. Public access outside of the Main Plant.	i. Moving administrative facilities. ii. Effective coordination with the Main Plant. iii. Long-term and affordable contract with the City.	To be determined
1	Replace current General Manager Office with 50'x10' furnished mobile office trailer	500 sf	i. This option would remove the shipping container serving as in favor of a pre-fabricated modular trailer office. ii. Relatively fast track improvement. iii. Utilities are fairly easy to provide. iv. A scum trough to headworks could be installed.	i. At the toe of a stabilized landslide. ii. Adding underground utilities. iii. Trailer will have to be delivered by crane as route through maintenance building is too narrow.	Up to \$60,000
2	Construct office level elevated above chlorine contact basin at same elevation as the Dewatering Building Roof	2,200 sf	i. This option would add open flexible floor area. ii. Does not require breaking of new ground. iii. Utilities can be routed through plant. iv. Potentially great office views. v. This option would not inhibit maintenance operations of chlorine contact basin. vi. Connected to Option 3.	i. Potential chlorine smell. ii. Corrosive vapors nearby. iii. Egress stairs would be required on uphill side and on street side. Uphill side driveway width would be affected. iv. Elevator recommended. v. Structural viability of existing plant building required. vi. Ground leading up to the proposed stair and elevator uneven.	Up to \$2.4 Mil
3	Construct office level on Dewatering Building Roof	800 sf	i. This option would add open flexible floor area. ii. Connected to Option 2. iii. Utilities can be routed through plant. iv. Potentially great office views. v. One exit stair required if not connected to Option 2.	i. Potential chlorine smell. ii. Corrosive vapors nearby. iii. Egress stair would impact width of uphill side driveway. iv. Structural viability of existing plant building required. v. Ground leading up to the proposed stair uneven.	Up to \$864,000
4	Construct office level above Maintenance Building Roof	1,200 sf	i. This option would add open flexible floor area. ii. Utilities routed in existing building. iii. Great office views.	i. Code modification letter would be required to get an elevator waiver. Elevator is recommended. ii. Extensive upgrade of existing moment frame and exterior skin. iii. Ground leading up to the stairway uneven or sloped more than 1:20. iv. Bio-gas torch is very close on the south end. v. Exhaust stack from the boiler produces odor and corrosive gases. vi. Standby generator exhaust points in the direction of proposed improvement.	Up to \$1.3 M
5	Laboratory: move desks and related furniture to another location	200 - 300 sf	i. Laboratory space will be at optimal size with desks relocated elsewhere. ii. Cleaner air with mechanical modifications.	i. Desks potentially move out of laboratory adjacency.	No construction (cost = to be determined)
6	Modify locker rooms by adding footprint and bathroom and stall(s)	600 sf	i. Improve and enlarge men’s locker room, add toilet and shower.	i. No major challenges.	Up to \$648,000

ID Number	Brief Description	Footprint, sf	Benefits	Challenges	Costs
			ii. Plumbing is available for toilet and shower improvements.		
7	Remove office cubicles and create separate break room and conference room	600 sf	i. Conference and Break Room functions will be better accommodated without office space.	i. This room is served by less than standard access and egress. ii. This option works only if other floor space option accommodates. iii. Assuming there is no intention of making this space ADA accessible, a code modification letter will be required. iv. Matching floor with Option 8. v. Windows will be removed with Option 8 employed.	Up to \$324,000
8	Convert roof into three executive offices	425 sf	i. Great views. ii. Privacy for executive staff. iii. Can connect to Option 9.	i. Roof top HVAC ducts and equipment will need to move elsewhere. ii. Assuming there is no intention of making this space ADA accessible, a code modification letter will be required. iii. Space is served by less than standard access and egress.	Up to \$459,000
9	Surge tank roof conversion	800 sf	i. Can connect to Option 8 ii. Space can be set up for a flexible office space and toilet room. iii. Utilities can be routed from existing building below.	i. Assuming there is no intention of making this space ADA accessible, a code modification letter will be required. ii. Space is served by less than standard access and egress.	Up to \$864,000
10	Blower building roof floor area	800 sf	i. Could connect to Option 2. ii. Space can be set up for a flexible office space and toilet room. iii. Utilities can be routed through existing building below.	i. Assuming there is no intention of making this space ADA accessible, a code modification letter will be required. ii. Space is served by less than standard access and egress. iii. Congested ductwork will need to be removed and put somewhere else. iv. Different elevation heights with Option 2.	Up to \$864,000

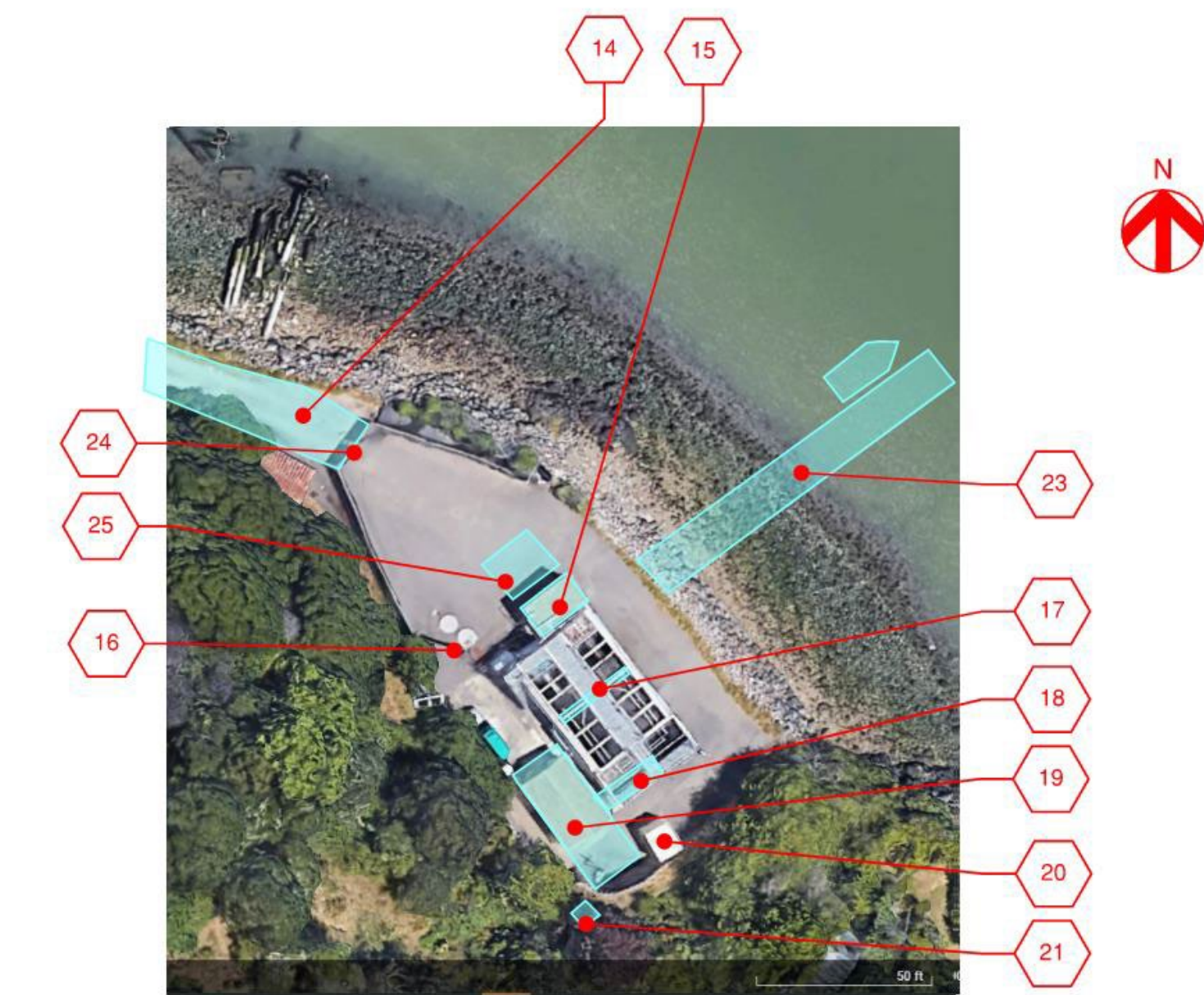


Figure 2. Concepts Developed for the Paradise Cove Plant

Table 2. Summary of Concepts/Improvements for the Paradise Cove Plant and the Corresponding Comments/Ideas

ID Number	Brief Description	Footprint, sf	Benefits	Challenges	Costs
14	Pave the access road	N/A	i. Frequent use of dirt access road is a cause of wear on vehicles and potholes. ii. Improve air quality by less dirt in the air.	i. N/A	To Be Determined
15	Tower: lower part would house a sound deadening chamber for the blower equipment. Upper part would have a gantry crane, rail, and hoisting improvements. It would also have a roof over the deck and building code compliant standard stairs. Also, an area at the top is needed for powdered chemical storage and mixer. Chemicals are currently in 75-gallon drums (heavy).	400 sf	i. Operational ease for storing, moving, and mixing chemicals. ii. Reduce noise. iii. Ability to reliably and easily move blower and other equipment (crane).	i. Pick spot needs a concrete pad. ii. Gantry crane needs to be configured so that hoisting can clear the guardrail. Otherwise, if height is an issue, fall protection with removable rail sections could be explored.	Up to \$360,000
16	Remove the utility pole and place power and communications underground from off-site power pole.	N/A	i. This would allow better access by trucks.	i. N/A	To Be Determined
17	Additional catwalk over treatment trains.	N/A	i. Flexibility to access locations throughout the train.	i. N/A	To Be Determined
18	Bridge between Option 19 and treatment trains.	N/A	i. This would allow direct access from residence to top deck.	i. N/A	To Be Determined
19	New building that would include various features: two floors, lower floor includes the following (laboratory/analyzer room, chemical storage with chemicals in separate rooms, chemical storage and laboratory separated by an exterior breezeway, toilet room), and an upper floor that includes a residential suite with sleeping quarters and full bath, connection to upper level of wastewater treatment trains.	1,400 sf	i. Fully functional and well-laid out facility to improve working conditions. ii. Residential quarters provide staff a place for rest that is needed during wet weather events. iii. Updated laboratory iv. Multiple toilet rooms. v. Direct access to wastewater treatment plant.	i. Funding	Estimated cost: \$1.3 Mil
20	Remove storage bin as it is an obstacle	N/A	i. This would allow for better truck access.	i. N/A	To Be Determined
21	Potable water source (multiple Options): Option A – A freshwater tank regularly replenished by truck delivery. Option B to consider – A water main buried along the existing power utility easement.	N/A	i. Potable water access on-site	i. N/A	To Be Determined
22	Radio repeater (not referenced in diagram).	N/A	i. Improve operational communication. ii. Make emergency communications more reliable.	i. N/A	To Be Determined
23	Boat dock (boat not included).	1,500 sf	i. This will enable a second way off site in case the road is blocked.	i. Securing permits can be timely and costly.	Estimated cost: \$60,000 (Excludes Permits)
24	Automatic gate: a sliding vehicle gate activated by access control. Recommend a pedestrian gate to allow egress to public way (easement).	N/A	i. Gate activated by access control (ease for operators) ii. Egress to public way	i. N/A	Estimated cost \$15,000. This estimate can vary widely

ID Number	Brief Description	Footprint, sf	Benefits		Challenges		Costs
							depending on accessories and design.
25	Headworks concrete masonry building	500 sf	i.	Protect equipment and improve longevity by keeping it indoors.	i.	N/A	Estimated cost for building only: \$450,000.
			ii.	Ease of working on equipment as it is all indoors.			

Table 3. Summary of CIP Projects and Costs over Time*

Main Plant Projects	2023 / 2024	2024 / 2025	2025 / 2026	2026 / 2027	2027 / 2028	2028 / 2029	2029 / 2030	2030 / 2031	2031 / 2032	2032 / 2033	TOTAL	Description
Dry Weather Influent Pump						55,000					55,000	Replace one new dry weather influent pump in-kind.
Wet Weather Influent Pump				82,500							82,500	Replace one new wet weather influent pump in-kind.
Headworks Influent Screen Project	550,000										550,000	Replace three grinders in-kind with an influent screen to capture and remove rags and inert matter.
Odor Control System Rehabilitation							682,500				682,500	Evaluate current odor control system and options to replace in-kind, expand, or enhance the current system.
Headworks Valve and Check Valve Replacement	11,000										11,000	Replace the existing valves/check valves in-kind.
Secondary Clarifier Scum Collector Project	330,000										330,000	Replace in-kind the current scum collector troughs and helical skimmers with new stainless-steel skimmer from Polychem/ Brentwood. It will also convert the existing three shaft system sludge collector mechanisms with a four shaft to better assist with skimming and the mitigation of mosquito formation on the tank surface.
Aeration Basin Diffuser Upgrade									210,000		210,000	Replace diffusers in-kind in the off-line basin with a similar style as the on-line basin.
Cl ₂ Flash Mixer			38,500			38,500				38,500	115,500	Replace in-kind the existing chlorine flash mixer as it is at the end of its useful life.
Dewatering Redundancy -- Screw Press					330,000						330,000	Add a mechanical dewatering screw press for redundancy purposes.
Emergency Generator Replacement						287,500					287,500	Replace the existing generator in-kind (Note: the existing generator is serviceable)
Occupancy Project		866,667	866,667	866,667	866,667	866,667	866,667	866,667	866,667	866,667	7,800,000	This project consists of creating appropriate restroom and locker room space along with office space for continuous occupancy for staff and laboratory improvements for continued effective and efficient process control and compliance with NPDES permit. Details on the various components and sequence were previously provided in this report.
Digester Roof Recoating and Cleaning								250,000			250,000	Recoating of the roof and clean-up as it is at the end of its useful life.
Landscaping Improvements Project		50,000									50,000	Improve the landscaping around the Main Plant.
HVAC Replacement Project				210,000							210,000	Replace the existing HVAC system in-kind as it is at the end of its useful life.

Commented [FM1]: Tony: please confirm that a 2nd unit will be added OR the existing will be replaced. Feel free to update accordingly.

Main Plant Projects	2023 / 2024	2024 / 2025	2025 / 2026	2026 / 2027	2027 / 2028	2028 / 2029	2029 / 2030	2030 / 2031	2031 / 2032	2032 / 2033	TOTAL	Description
Boiler Replacement							78,750				78,750	Replace the existing Boiler in-kind as it is at the end of its useful life.
Electric Roll Up Door Install	82,500										82,500	This project consists of installing new powered roll up doors in the chemical room, replacing the roll up doors on the dewatering storage building in-kind, and replacing the front entrance to headworks roll up doors with new power operated units. The projects will include controls to minimize injuries.
Corrosion Protection Project	157,500									157,500	315,000	Replacement of non-working valves and rusted-out pipes in-kind in the shipping/receiving area, as well as next to the secondary clarifiers.
(Utility) Truck Purchase				220,000				110,000		110,000	440,000	Replace District trucks in-kind as they are at the end of their useful life.
Maintenance Shop-Rehabilitation	105,000										105,000	Replace the existing corrugated metal roof and siding on the maintenance shop as both are at the end of their useful life. The project also includes replacing the existing roll up doors in-kind, installing LED lighting, and adding proper equipment storage racks and hazardous waste storage cabinets.
MPR Bond Refi	752,848	752,534	751,848	750,793	749,360	752,496	750,198	752,466			6,012,543	Main Plant Rehabilitation (completed in 2014) - bond payments to show true annual CIP projections.
Undesignated Capital Projects	50,000	50,000	50,000	50,000	50,000	50,000	50,000	50,000	50,000	50,000	500,000	These funds will be used for unforeseen projects, which may come up after the MPR project is complete.
Digester Rehab, Digester Valve/Pip Replacement, and Digested Solids Chopper Pump Replacement	287,500										287,500	This project will replace various valves/piping at the digesters, as well as clean-out the digesters. The chopper pump located downstream of the digesters will also be replaced.
Secondary Clarifier Mechanisms				100,000							100,000	Replace the existing secondary clarifier mechanisms in-kind.
Routine Structures/Equipment Maintenance	10,000	10,000	10,000	10,000	10,000	10,000	10,000	10,000	10,000	10,000	100,000	These funds will be used for unforeseen structures/equipment maintenance projects.
Unspecified Maintenance	40,000	40,000	40,000	40,000	40,000	40,000	40,000	40,000	40,000	40,000	400,000	These funds will be used for unforeseen maintenance projects.
ArcFlash Electrical Improvements												To Be Determined. No cost provided as the extent of equipment replacement for safety purposes is unclear at this time.
Total	1,336,000	1,016,667	1,005,167	1,579,167	1,296,667	1,347,667	1,727,917	1,326,667	1,176,667	1,272,667	13,372,750	

* Note: costs for the collection system CIP projects are not included as they can be found in the Collection System Master Plan.

Commented [FM2]: Tony: please confirm that this is the appropriate write-up. Feel free to update accordingly.

DETAILED NOTES FROM SITE VISITS

The subsections that follow provide detailed notes in a tabular format for both the Main Plant and the Paradise Cove Plants.

Main Plant Site Visit on December 14, 2022

The HDR Team met Tony Rubio and other plant staff on December 14, 2022. A plan view of the main plant located in Tiburon, CA is provided in Figure 3. The locations visited with notes is provided in Table 4.



Figure 3. Plan View of the Main Plant Located in Tiburon, CA

Note: the top of the figure is approximately northeast. Assume property line on the northeast side is the toe of the hillslope, not the fence line.

Table 4. Summary of Site Locations Visited at the Main Plant and the Corresponding Comments/Ideas

Location	Comments/Ideas
Existing Administration Office on 1 st Floor	Size of Administration Office space on first floor is approximately 570 sf.
Walked along the southwest perimeter; Mar West Drive.	The primary issue is parking. This is where District vehicles are parallel parked out in view of condominiums across the street. Also, there is not enough parking for personal vehicles and delivery vehicles. When chemical trucks arrive, the cars parked must be moved.

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Location	Comments/Ideas
	<p>An idea to add parking was discussed between two buttresses along the building façade. By taking out landscaping, a tree and a sidewalk that does not have clear beginning or end, either diagonal parking for personal vehicles or a screened pull in parking spot for the vector truck could be added.</p> <p>Regarding noise and odor, no complaints have been received.</p> <p>The plant overall is outdated in appearance. Brick veneer has damage around an oval window. Some veneer brick is stained with efflorescence.</p> <p>Suggest with improvements come updated aesthetic improvements. The plant is in very close proximity to high value real estate.</p>
Walked into the delivery entrance next to the Administration entrance.	There is a condensation problem dripping from one of the large ducts overhead to the floor.
Laboratory.	This is very cramped. Laboratory would be appropriate size if desks were removed.
Men's Locker.	<p>There are eight full sized lockers and two half sized lockers, no shower, a toilet in a stall, a urinal, and a gang lavatory with three faucets and a mirror.</p> <p>The biggest issue here is the lack of a shower for men. Another concern is the need for more toilets and more privacy. The locker space is small, and it is difficult to take care of getting dressed and keeping out of each other's way.</p>
Women's Locker	There is a shower, one double locker, a toilet, and a lavatory with a mirror. There is no complaint here except that the door has to be locked.
Laundry Room	<p>Laundry service is available; however staff has the option of washing their own clothes.</p> <p>Loads for each person has to be done one at a time.</p> <p>Additional washer and dryer would be helpful to relieve congestion.</p>
Wet storage	There is a bank of ventilated lockers for storage of raincoats. Includes a bench. This seems to be a space carved out of a pump room.
Stairway	All stairways within the plant are noncompliant with current building code. Width is too narrow with handrail on one side.

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Location	Comments/Ideas
	<p>Since the building appears to be fully sprinklered, egress stairs could be 44” wide. If occupancy load could be determined to be less than 10, egress stair could be as little as 36” wide. Extensions and handrails on both sides would be required.</p> <p>2022 California Existing Building Code provides relief in Section 503.1 Exception 1 and 2. Exceptions allow existing stairs to remain as is as long as the stair is not made steeper. Handrail extensions are not required where extensions would cause a hazard. Handrails on both sides are still required which would make the already narrow stair narrower.</p>
Office Break Room	<p>The second floor office and break room need to be one or the other. Break room and conference room activities are disruptive to office activities. Zoom calls seem to be the biggest challenge.</p> <p>This room was recently given fresh finishes including floor and cabinetry.</p> <p>Note that the elevation of the floor of this room is not at the same elevation of the Surge Tank Deck.</p> <p>Also note that there is an awkward stair entry to this room.</p>
Surge Tank Deck	<p>The surge tank is used as a wet storage room. The deck at the top of the tanks is currently used as a patio. This space is a prime location for additional office space.</p> <p>This option could provide 900 sf of new office space.</p> <p>Note that the elevation of the floor of this room is not the same elevation of the Office Break Room.</p>
Roof adjacent to Surge Tank Deck and Office Break Room.	<p>If the roof top ducts, exhaust vents, and mechanical equipment could be relocated, office space along the perimeter of the lower floor roof could be a candidate for executive administration offices with a view of the Golden Gate.</p> <p>This option could provide about 650 sf of office space.</p>
Over Back Driveway	<p>An option to build floor area over the back driveway was discussed. This would have to be high enough to clear trucks moving below.</p>

Marin Sanitary District 5 – Occupancy Spacing and CIP Evaluation (DRAFT)

Location	Comments/Ideas
	Potential floor area is estimated at 500 sf.
	The challenge would be to connect the Surge Tank Deck office space and have a clear path to egress.
Recommendation for Elevator(s)	This plant has a lot of vertical circulation. A passenger elevator is recommended.
	Due to driveway access at the northeast edge of the lot, a freight elevator is not considered essential. However, if improvement necessitates developing this part of the lot and vertical access becomes more of a challenge, a freight elevator might become more viable so that this kind of access is provided along Mar West Street.
At the top of the Digester roof. (Edited 02 10 2023)	Overlooked the Dewatering Roof below. Substantial floor area could be utilized at this location. A stair would be required along the side of the current driveway. Resolution of keeping driveway width and providing egress stair may be a challenge.
	This option will require acoustic sound deadening.
	This could realize an estimated 550 sf of office space.
Chlorine Contact Basin (Edited 02 10 2023)	An idea to roof over the chlorine contact basin with an elevated floor for office space was discussed. In combination with the floor space over the Dewatering roof, this could realize an estimated 2,700 sf floor area. The area over chlorine contact basin by itself is approximately 2,150 sf.
	One concern to work through is proximity to a corrosive agent. This addition would require concrete construction with ferric metals either covered or coated.
	This option will require acoustic sound deadening.
	12 feet of clear head height will be required over the chlorine contact basin deck for maintenance.
	This idea shall be coordinated with a one or two level addition over the Dewatering Building.
	Dewatering building could have 4 feet of height removed before two levels are added.
Maintenance Shed	As proposed in May 2020, a floor over this building would provide an estimated 1,300 sf of office space.

Marin Sanitary District 5 – Occupancy Spacing and CIP Evaluation (DRAFT)

Location	Comments/Ideas
District Manager Office	This is a metal shed at the toe of a landslide in the back part of the lot. Need to get this back into the main building.
Office Trailer	A trailer for an office can be an option; temporary or permanent. The constraint is getting the trailer through the two overhead doors at the Maintenance Shed. The size of the overhead door openings are each 12' wide by 14'-9" high. Office Trailers come in varying lengths but come in two standard widths that could fit through these openings: 8 and 10 feet. Vertical dimension will need to be verified with vendor.

Paradise Cove Plant Site Visit on December 15, 2022

The HDR Team met plant staff on December 15, 2022. A plan view of the Paradise Cove Treatment Plant is provided in Figure 4. The locations visited with notes is provided in Table 5.



Figure 4. Plan View of the Paradise Cove Plant

Note: the Top of figure is north.

Table 5. Summary of Site Locations Visited at the Paradise Cove Plant and the Corresponding Comments/Ideas

Location	Comments/Ideas
Introduction (Edited 02 10 2023)	<p>This small wastewater treatment plant is at the end of an unpaved private easement road situated next to the shore of San Francisco Bay and at the base of a steep forested hill.</p> <p>There are two buildings and two wastewater package plant trains. Building to the north is known as the “Blower Shed”. The building to the southwest is known as the “Analyzer Shack”.</p> <p>Next to the Blower Shed is a Telemetry Cabinet.</p> <p>Between the Analyzer Shack and the package trains, up against the train, are the power breakers. The power line goes from the pole under the paving and rises into the electrical cabinet.</p>
Analyzer Shack - Drainage	<p>Building is not elevated. Storm water seeps in under the walls of the building. The floor of the building is at the same level as the concrete outside.</p> <p>Flexible rainwater leaders have been added to the bottom of the metal rainwater leaders to help direct water away from the building.</p>
Analyzer Shack – Interior (Edited 02 10 2010)	<p>The building is very small.</p> <p>Metering and testing are all done in the same room.</p> <p>Building has no potable water.</p> <p>There is a small toilet room with a shower curtain for a door. To flush the toilet, one must first fill the tank with a five gallon bucket. There are terrible stains on the porcelain of the fixture. There is a sewer line to the plant.</p> <p>Sodium hypochlorite, sodium bisulfite and sodium bicarbonate are stored and fed to the system in the same room. Sodium bicarbonate comes in powder form in large paper bags. Some bags arrive at the site damaged. Powder residue shows evidence of the difficulties in storing and transferring chemical.</p> <p>Pumps are noisy.</p> <p>If two chemicals come in contact, there is a risk of explosion. Questionable if they should be in the same room.</p>

Marin Sanitary District 5 – Occupancy Spacing and CIP Evaluation (DRAFT)

Location	Comments/Ideas
Analyzer Shack - “What we would like.”	<p>There is a tank supplied emergency eye wash, but no shower.</p> <p>Two story building with sleeping accommodations and an office at the second level and laboratory and pumps on the lower floor.</p> <p>Potable water could be provided by a refillable water tank at the top of the retaining wall, or a water line could be brought in within the same easement as the aerial power line.</p> <p>From the second floor, have a catwalk that connects over to the plant platforms.</p> <p>Exercise equipment would be nice.</p> <p>This site is fairly isolated. Self sufficiency and livability are need for extended shifts.</p> <p>Climate control is required. Summers can get hot.</p> <p>For new building, hold the existing wall line on the northeast side.</p> <p>Lower floor should have a chemical storage room and an analyzer room separated by an exterior breezeway.</p> <p>Upper floor should span the entire foot print below.</p> <p>A kitchenette is needed with refrigerator and pantry for self sufficiency required due to remote location and need to stay on site.</p> <p>Since there is no natural gas on site, everything should run on electricity.</p>
Blower Shed – “What we would like.”	<p>Blowers are noisy. Encase within concrete masonry walls.</p> <p>Create a building code compliant stair to the second level.</p> <p>Utilize gantry crane to pick up drums, tools etc. to the plant platform level. This would possibly affect existing railing configuration. Basically, this structure would become a roofed tower with blowers on first floor and mobilization area at top with the gantry crane.</p> <p>Powdered chemical storage and mixer would be at the top level with mobilization. Chemicals are in 75 gallon drums. Sodium Bicarbonate is very heavy.</p>

Marin Sanitary District 5 – Occupancy Spacing and CIP Evaluation (DRAFT)

Location	Comments/Ideas
	<p>There is an adequate pick spot at ground level for the crane in its existing location, but it is on asphalt. Should be a concrete paved pick point.</p> <p>Gantry crane needs to be higher so load can clear guardrails. The idea of putting a gate in the guardrail is problematic since one side of the gate would be a high drop.</p>
<p>Site – “What we would like” and other comments.</p>	<p>Move the power pole from its current location. This would allow better truck access.</p> <p>A 20 yard dewatering box could help lessen the number of trips. This would be in conjunction with the Isuzu truck procurement. Dimensions are 8.5 feet x 15 feet. Currently Mill Valley would have to be contracted for this work.</p> <p>Site has only a vehicular gate for access. To have access to public way, a separate pedestrian gate should be added.</p> <p>Unmarked parking is ok. Typically only one car a day.</p> <p>Site serves as storage site for empty totes due to lack of space at the Main Plant. There are 4 to 5 totes stored here per year.</p> <p>There is an aerial power easement serving the plant. Adding a water line for potable water to serve the new Analyzer Shack would be very expensive.</p> <p>There is a metal storage shed on the south part of the site that would be good to get rid of in the interest of better truck access.</p> <p>A boat and dock could help when the road is out. Access is important.</p> <p>Need automatic gate.</p> <p>The site is not secure on the shore side. Graffiti is not a problem; however vandals have made there way on site and have turned switches off. This is a minor security issue.</p> <p>Kayakers frequently use the waters nearby for recreation.</p> <p>Noise from the blowers is a steady constant noise that disturbs the area beyond the site.</p>

Marin Sanitary District 5 – Occupancy Spacing and CIP Evaluation (DRAFT)

Location	Comments/Ideas
	<p>There are early signs of the key block retaining wall failing. There is a noticeable bulge in the wall.</p> <p>There is an emergency generator on site near the power pole.</p>
Publicity	<p>Recently received media attention for being the second most vulnerable wastewater treatment plant to sea level rise in the bay area.</p> <p>There is ongoing discussion statewide on the massive amount of freshwater from wastewater treatment plants discharging directly into the ocean waters and not put back into aquifers. This plant and the main plant discharge into the bay.</p> <p>Originally, this site was going to be a pump station to pump sewage to Main Plant. But turned into a wastewater treatment plant.</p> <p>Two package trains were brought in by barge and set on the site by crane during a high tide event.</p>
Package Plants – “What we would like” and other comments.	<p>There is no grit or rag removal. This plant could use a headworks instead of the grinder.</p> <p>Vactor comes down to remove solids.</p> <p>Stairs to the top of plant are very steep. They would like building code compliant stairs.</p> <p>Existing stairs are compliant with CAL OSHA but not the building code.</p> <p>A platform needs to be added spanning midway across each of the plant trains.</p> <p>At south end is a tsunami warning system. The sound is reported to be surprisingly low level considering how far the sound is supposed to reach.</p> <p>Pole lights were just installed and are long life LED fixtures. No need to improve access for changing.</p> <p>There are two trains. One gets used for a year and the other remains empty or used for overflow. The empty one get cleaned. After a year the trains switch.</p>

Marin Sanitary District 5 – Occupancy Spacing and CIP Evaluation (DRAFT)

Location	Comments/Ideas
	As noted previously in the Blower Shed section, a less steep stair is needed. It is particularly hazardous in inclement weather and when carrying something.
Access Road	<p>This is a private road crossing through an estate.</p> <p>Unpaved portion is frequently muddy or dusty.</p> <p>There is a single light vehicle that travels this route once a day.</p> <p>The vactor truck travels this road on average six times per week.</p>
Communications	<p>Emergency communication relies on a “two bar” cell coverage.</p> <p>There is no internet service available.</p> <p>Line of sight radio is preferred, but the hill blocks the signal. This would be justification for a repeater.</p> <p>Because of the remoteness of the site and weak communication, to service this site properly, visits should not be by a single person. Two minimum should be the policy.</p> <p>Fiber optic would be another option and could be accommodated at the same time of potable water line construction.</p>
Miscellaneous	<p>Boards tend to respond to state demands better than staff requests.</p> <p>There are very few pests with two notable exceptions of paper wasps and deer.</p>

Interviews

A series of interviews were held for plant staff. A summary of the questions and responses for each interviewee is provided below.

Tony Rubio – District Manager

Q: What are the priorities?	A: #1 Office space. #2 Restrooms. #3 Lockers and Showers.
Q: What is the breakdown of staff?	A: Operations = 5 Maintenance = 4 Administration = 2 New Hire = 1 District Manager = 1 Total = 13 This planning number should be adequate for the next ten (10) years.
Q: What are the locker room needs?	A: Members of the Operations and Maintenance each need a locker. There are nine (9) total members with eight (8) male and one (1) female. Currently there is one shower and that is located in the normally locked women's locker room. The men do not have a shower. A shower for the men's locker room is a critical need.
Q: Do you think a mud room would be useful?	A: This would be a "nice to have" item, but not essential.
Q: Are there any current projects?	A: Yes, a new headworks screening in the next year to replace the grinders.
Q: Where are the big opportunities to resolve some or all of these space needs?	A: Dewatering Building roof. Blower Building Roof. Former Surge Tank. This is currently the wet weather storage that will no longer be needed.
Q: What positions will need privacy (an office with a door)?	A: District Manager. Office Manager. Operations Superintendent. Collections Superintendent.

Marin Sanitary District 5 – Occupancy Spacing and CIP Evaluation (DRAFT)

	Permits/Business Administrator.
Q: What are the current electrical standards used?	A: CAT5 for internet and computer. Ethernet for SCADA.
Q: Describe current break room, office, and conference room issue.	A: Offices are in the break room. Break room activities disrupt office activities (zoom calls). Break room also serves as a conference room. All of these functions need to be separate.
Q: HDR provided a proposal for a second floor to the existing workshop in May 2020. Is that still being considered as an option?	A: Yes.

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Casey Cottrell – Operations Supervisor/Laboratory Director

Q: Describe your job.	A: Responsible for compiling lab data, chief plant operations, process control and lab tests that are not reported to the state. Provides weekly reports.
Q: Lab testing.	A: Most of the testing goes to outside labs. We don't have the accreditation or equipment, and we are not planning to get the equipment. We are not wanting to expand the lab.
Q: Lab space.	A: Lab space is adequate if it is just the lab. Need more counter space for process testing. Hood is a red flag for lack of air exchange. Need mechanical air balance evaluation. Emergency eyewash and shower will destroy the microscope and centrifuge if used in an emergency. It does not have a drain and must use a bucket to test. Currently glassware is washed by hand. Need glassware washer. SCADA is located in lab. (Envision)
Q: Thoughts on Improvements	A: Dewatering roof would be a good place for office space, namely cubicles.
Q: What do you think about ADA?	A: For current administration office only. No public tours. Only able bodied people work on staff. If injury happens, they take disability.
Q: What are the priority issues for improvement?	A: 1. Parking 2. Lockers 3. Administration office. 4. Place to sleep.
Q: Describe the need for a sleeping area.	A: This is not a 24/7 plant. When there are stormy days and 16 hour shifts, it is not worth traveling home and returning. Some have up to two hour commutes one way in evening rush hour.

There needs to be two rooms set aside as sleeping quarters. Cots would be appropriate.

Reference: Storm in October 2021.

Q:
Who do you supervise?

A:
Two operators in training (OIT) and 3 operators.

Q:
What are some of your best ideas?

A:

1. Control building over Dewatering.
2. Purchase building downtown.
Advocate for acquiring the Bank of America building. It is centrally located and the parking would be a huge benefit.
Currently, parking is not guaranteed. This goes for personal and district vehicles.
Parking is very problematic with chemical deliveries. Staff has to coordinate and move vehicles with each delivery.
3. Partnership with Richardson Bay.
Taxes would help this district.
4. Locker room needs shower stalls.

Marin Sanitary District 5 – Occupancy Spacing and CIP Evaluation (DRAFT)

Chad Bilsborough – Senior Operator – 4 years with MSD5

Q: What do you perceive as problems?	A: Everything.
Comment:	Chad appreciates a holistic approach to problem solving rather than quick fixes.
Q: What works well?	A: Watson Marlow parasol pump for chemical feed. 33:1 turnout ratio.
Q: What are critical needs?	A: <ol style="list-style-type: none"> 1. Staffing needs space. 2. State reporting is becoming more of a challenge. 1 cuvet needed originally, now 3 are required. 3. Supply storage is insufficient. Need more room for “ph buffers” and “pillow packets”.
Q: Describe lab needs.	A: <p>If the desks were out of the way, there would be sufficient lab space. Storage would also be sufficient if desks were moved out.</p> <p>The furnace is not being used.</p> <p>There is oxygen piped into the laboratory but not used.</p> <p>There is a need for compressed air.</p> <p>Need more counter space.</p>
Q: Describe locker needs.	A: <p>Need more toilets and a shower.</p> <p>Except for the two narrow lockers, the wide lockers store both dirty and clean clothes.</p>
Q: Describe laundry situation.	A: <p>Laundry is done individually, not collectively. Adding another washer and dryer would be helpful.</p> <p>Slope of steps above current location prevents stacking.</p>
Q: Any concerns decontaminating when returning to the plant?	A: <p>It will be helpful to have both a mud room and wet storage.</p> <p>Need to add a shower fixture.</p>

	Regularly staff will be exposed to splashing of sodium bisulfite and 12% sodium hypochlorite. The drops (pointing to examples) produce white spots on clothing.
Q: Is noise an issue?	A: The noise levels in the shop and biosolids can be bothersome.
Q: Describe the parking concerns.	A: There is no proper place to store the vector truck. The trip to Redwood Sanitary Landfill can take up to 1 ½ hours. Discussed the possibility of removing a tree, landscaping and side walk, and building a screened pull through parking stall parallel along Mar West Street. Advocated for a wash rack with spray jets to wash out containment vessel. Currently the vector truck is parked at the far end of the plant along Mar West Street.
Q: Do you have any solutions in mind for some of the problems?	A: The Bank of America building would solve a lot of problems. This would be a valuable asset. Location for board meetings, storage, record storage, and administration staff offices. Collections staff could be also based here. Parking lot could easily have a big truck wash. This kind of a move could free up space for a properly sized locker room at the plant.
Q: Do you have any solutions in mind for some of the problems? (continued).	A:

	<p>There is a short wheelbase Isuzu truck that can haul a grit box among other useful things. This purchase would save on fuel and the wear and tear of the dirt road to Paradise Cove. See Appendix A.</p> <p>Instead of collecting the grit in the vactor truck, a grit box could be set up for pickup and delivery with the Isuzu truck.</p> <p>On average, there are six trips per week to remove grit by the vactor truck.</p> <p>The Isuzu truck can haul 450 to 500 gallons of grit and sludge.</p>
<p>Q: Do you have any solutions in mind for some of the problems? (Continued).</p>	<p>Belvedere PS 1 is currently under discussions for sea level rise improvements. The pump station will be made higher. The area under the pump station could be used to store three generators, a trailer and a water buffalo. Current unbuilt design will have to be modified to accommodate this idea.</p>
<p>Q: What are your thoughts on complying with ADA?</p>	<p>A: In favor of not complying since being able-bodied is a pre-requisite for working at the plant.</p>
<p>Q: What are your thoughts on traffic?</p>	<p>A: A one hour commute one way is common. No one on staff lives in Tiburon. 2 to 6pm is heavy traffic.</p> <p>When rain happens, 16 hour shifts are common. The commute required makes going home impractical during these days.</p>

Marin Sanitary District 5 – Occupancy Spacing and CIP Evaluation (DRAFT)

Abby Balf – Operator – 1 year with MSD5

Q: What are your responsibilities?	A: “Everything”. Performs the lab tests. Adjusts the pump valves (chemical, sludge, wastes). Performs the same tasks for Paradise Cove. Repairs equipment.
Q: What are your responsibilities? (Continued.)	A: Every day goes over to Paradise Cove. Everything is adjusted manually. Usually leave the Main Plant by 7:40am. School traffic gets heavy after 8:30am.
Q: Are you providing maintenance to the truck fleet?	A: Truck maintenance is done off-site.
Q: Do you have any safety concerns?	A: The operation to fill up drums with sodium bisulfite and sodium hypochlorite are problematic. Spillage is a constant issue and chemical gets splashed onto face and clothing. Drums are heavy, especially the sodium bisulfite. A mention about hauling this over a curb was a big obstacle.
Q: Do you have any issues with the locker room?	A: No issues. Does not use the shower. There is a work-around to allow the men to use the shower.
Q: Any concerns about the lab?	A: Remove the desks and there will be enough room for lab work. More counterspace is needed. Abby will probably take over lab responsibilities at some point. Sample room is not being used to store samples.
Q: How do you collect samples?	A: There is a daily 250 mil samples for chlorine, pH, chlorinated and dechlorinated, and colorimetric analysis. In addition to Main Plant and Paradise Cove, samples for Mill Valley are also taken.

Marin Sanitary District 5 – Occupancy Spacing and CIP Evaluation (DRAFT)

Q: What works well?	A: Staff. The team works well together and is very open to resolving problems. Abby delegates to OIT staff.
Q: What are some additional safety concerns?	A: Abby regularly handles nitric acid and sulfuric acid. She has to refill analyzer. She has had sulfuric acid on her face before and used the eyewash. Water is not tempered in eyewash stations.
Q: What are top concerns?	A: Personal space is at a premium. Wednesdays are very busy. Parking spaces are a problem. Abby drives to the Main Plant herself on Wednesdays. Monday and Tuesdays shares a ride. She has a 45 minute commute. Sleep overs are a concern.
Q: What are top concerns? (Continued)?	A: Aging infrastructure. There are two separate teams: operations and maintenance. Each team seems to delegate to the other.
Q: List the vehicles in the District's fleet.	A: Operations truck. Volkswagen Ford Ranger Ford F250 Boom truck. Vactor Joe-the Electrician's vehicle Rodder The rodder is equipment to keep collection lines clean.
Q:	A: Look into utilizing the blower room.

Are there any solutions you have thought about?	
Q: Last safety concern.	A: Generator is very loud. Estimated sound level is 120 dB given that 65 is ambient, and 85 is low level when hearing protection might be needed. When the power fails, there are a few seconds to relocate or put on ear protection

Marin Sanitary District 5 – Occupancy Spacing and CIP Evaluation (DRAFT)

Ignacio Salzar – Operator in Training (OIT) – 5 months with MSD5

Q: Describe your responsibilities.	A: Same as an operator, except more “hands-on”. Provides trouble shooting, maintains pumps and valves, and plumbing. No collections experience. His domain starts where the influent comes into the plant. Will be taking the operator exam in April 2023. May become an operator as soon as July 2023.
Q: What do you think are critical needs?	A: Layout space for breaking down pumps and valves that are not repaired in place. Many repairs are done in place. Contractors are used to move large equipment through the plant. When the RAS pump was taken off-line, it was a challenge to navigate through the congested plant and out.
Q: What works well for you?	A: Ignacio likes the challenge of “figuring it out.” Nothing else comes to mind.
Q: Are there any safety concerns?	A: As Abby expressed, the transfer of chemicals is a problem. Ignacio helps out Abby with the lab work. PH and chlorine tests are what he does.
Q: What are the top problems with plant operations?	A: Office space. His space is in the lab. Zoom calls are a challenge. District needs to “figure out” goals. Is the staff going to increase? Will the improvements made to the plant satisfy future needs?

Marin Sanitary District 5 – Occupancy Spacing and CIP Evaluation (DRAFT)

Q:
What are the top problems with plant operations? (Continued.)

A:
He thinks that the District should look into peracetic acid for treatment. It is growing in popularity in Europe but is rare in the United States. It has the potential of using less floor space.

Q:
Do you have any safety concerns?

A:
Need protection system for when workers are in the tank. This is a confined space situation.

Respirators and gas monitors are available.

Marin Sanitary District 5 – Occupancy Spacing and CIP Evaluation (DRAFT)

Arle Hill – Operator – 3 months with MSD5

Q: What are your responsibilities?	A: Arle has previous operator experience in Richmond and Discovery Bay districts. Arle's day-to-day responsibilities include working in the, general housekeeping, and sometimes maintenance.
Q: What are your concerns with the lab?	A: The desks need to be moved out. Lab is sufficient size without desks. Eyewash is next to electrical equipment and possibly a shock hazard. There is no drain for the emergency eyewash and shower (EEWS). They use a bucket to test the shower. Arle has never used the hood. Normally, samples are sent out to a lab.
Q: What are your concerns about the locker room?	A: Arle likes having two smaller lockers to separate clean and dirty laundry.
Q: Any comment on the laundry facilities?	A: Laundry works well.
Q: What works well?	A: Arle likes to be in the field.
Q: Any issues with parking or commute?	A: 1 hour 15 minutes to get to the main plant. 2 hours to get home. His home is in Antioch. This is a daily commute. Sometimes he will carpool.
Q: Are there any specific solutions you have been thinking about?	A: Bank of America building seems like the best option.

	His previous employers had larger plants with lots of room. “Spread out” is better for organizing and housekeeping. This plant is very complex.
Q: What are your current challenges?	A: Becoming familiar enough with the plant so he knows where everything is without really thinking about it.
Q: Do you have any comments regarding safety?	A: Arle has a passion for safety to the point that he would welcome any leadership opportunities that are offered to him. Need wayfinding plaques for orientation during an emergency. Fall protection is lacking in some locations. Some location of height have no way to attached a lanyard. Would like to see more safety yellow applied to hazards including curbs that might be obstacles or tripping hazards. He does not work in confined spaces.

Marin Sanitary District 5 – Occupancy Spacing and CIP Evaluation (DRAFT)

Joel Alvarez – Permits and Business Administration Technician – 3 years with MSD5

Q: Background.	A: Joel is a veteran of the Marine Corps and served at Camp Pendleton in the mid 2000s.
Q: What are your responsibilities?	A: Involved in the process of intake permitting including remote reviews, report drafting, and interactions with owners, general public, agents, and contractors. He conducts site visits. He is available for helping in emergencies.
Q: What space is required?	A: Joel mostly works at his desk, communicating via phone and email. Before COVID, many conversations were face-to-face at the conference table, looking over plans. Now, everything is electronic. Rarely does the public visit. Joel prefers that they come into the office to deliver checks. Face-to-face visits generally happen at the site.
Q: What are the filing needs?	A: There is still a significant need for paper files. Need for filing space is increasing. No longer keeping full sized plans. Plans are on PDFs. Video records are cloud based. AlienVault is used or was used. Used in connection to stormwater infiltrating into sewer(?). File cabinet space is split between Joel and Robin.
Q: What improvements are needed in the office environment?	A: Larger and more private office would be nice. White noise needed to deaden background noise distractions on phone calls.

Conference room functions need to be separated from office.

It would be nice have a chair for visitors next to the desk.

Q:
What are some solutions that you have been thinking about?

A:

1. Space mitigation. Joel works with John mostly, with some work with Tony.
2. Parking for facility.
3. IT server system in MEP room. Not the best place. It is not cool. Needs separate server room with dedicated air conditioning. This might actually need to be a “technology room” that would also include SCADA and FAX.

Marin Sanitary District 5 – Occupancy Spacing and CIP Evaluation (DRAFT)

John Rosser – Inspector – 23 years with MSD5

Q: Describe your responsibilities.	A: Field work, final inspections, sewer replacements, final reports, and manages keeping of photo and video records. Also, help with maintenance part of the time.
Q: How many permits do you accomplish per day on average?	A: Five.
Q: What vehicle do you use?	A: Volkswagen sedan.
Q: What works well for you?	A: Transitioning from paper records to computer based files. Anticipates need for more paper file storage.
Q: What do you think about compliance with ADA?	A: Sympathetic, but not realistic. The front office is the only place it should be required.
Q: What problems are the top priority to resolve?	A: <ol style="list-style-type: none">1. Office space.2. Safety trainings. John would like to see more training offered.3. Small locker rooms. Plus lockers are small.
Q: Where do you do laundry?	A: Here (at Main Plant). Laundry facilities are sufficient.
Q: What would be nice to have?	A: An exercise room. Some exercise equipment is located in the Blower Room.
Q: What is your commute like?	A: 45 minutes in; 1 hour 20 minutes home daily. Exercising before going home would be better use of time and reduce time on the road. School traffic in Tiburon starts around 3:30pm weekdays.

Robin Dohrmann – Office Manager – 10 years at MSD5

Q: What are your responsibilities?	A: Not involved with Operations. Accounts Payable Accounts Receivable Answer phones. Provides board meeting agenda and invitations. Expanding to more bills and more payroll. Health and benefits. Meet and greeter. Robin has one assistant, Jane, who works four days per month. Robin enjoys a very special view from her desk of the San Francisco Bay and the Golden Gate Bridge.
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Q: What works well?	A: Her view of the San Francisco Bay. She is given a lot of independence to get her work done in the way she wants. Robin reports directly to Tony and helps prioritize his work.
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Q: What are your concerns?	A: To give some perspective related to her comments, Robin had the role of “Den Mother” for nine years being the only female on staff. Now there are three women on staff. They had to put a lock on the women’s restroom because delivery drivers were using the women’s toilet for “number 2” because it afforded more privacy. They didn’t clean up after themselves. It is a hassle now that the women’s restroom has to be locked. Shower has to be shared and coordination has to take place for the men to use it.
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Q: What are your concerns? (Continued.)	A: The Board meets at the conference table in the first floor administration office. They love using this table and this space. However,
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Marin Sanitary District 5 – Occupancy Spacing and CIP Evaluation (DRAFT)

	Robin said that it would be better use of space if conference table were elsewhere, and the recovered space turned into cubicles.
Q: What are your concerns? (Continued.)	A: Robin has 30 years worth of files in plastic bins. These are paper files with major transactions. There needs to be an effort made to go through and scan them. There is a rat infestation. Robin has seen a rat during business hours running through these files. Also outside there are rats during the day that are very bold. One instance a rat came right up to the front door. Vermin proof design needs to be part of future improvements.
Q: What are your concerns? (Continued.)	A: The current website software used is one of the most difficult to manipulate. Need a more user-friendly program.
Q: Do you have any safety concerns?	A: None.
Q: Do you have any ideas to offer facility improvements?	A: Robin suggested adding solar panels.

Peter Collodi – Collection Systems Maintenance – 1 ½ years with MSD5

Q: Background.	A: Peter has 37 years of experience as a plumber. He is a Navy veteran who served in the boiler room of the USS Midway.
Q: What are your responsibilities?	A: Clean and maintain sewer lines. Plant maintenance. Services and maintains 24 pump stations in Tiburon and Belvedere. Limited video. Mostly done by a contractor. Property owner is responsible for their line up to sewer connection. Maintenance of vehicles – small repairs and housekeeping.
Q: What vehicles do you use?	A: The vactor and the rodder.
Q: What works?	A: Loves the work. Loves coming to work every day. Likes physical work and being out in the field. He does some “shovel” work.
Q: What improvements would you like to see?	A: Spacious locker room. Separate lockers for clean and dirty. Peter takes all of his laundry home. Does not use the plant facilities. Equipment room. Currently there is equipment in the Blower Room.
Q: What improvements would you like to see? (Continued.)	A: Parking. Peter has to get to the plant by 5:30 to get a parking spot. Work trucks are a problem. Chemical deliveries and removal of the grit box requires special coordination.
Q: Describe your current office.	A: A desk and computer in the lunchroom. Limited time spent on computer.
Q:	A:

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What are some thoughts and concerns related to the shop?	<p>Shop is chaotic. Nothing has a home. Stuff is everywhere.</p> <p>Peter likes clean, well-organized shop spaces. He likes to take the time to put things away in their proper order after tools and materials have been used. There should be time to organize and put everything back.</p> <p>Would like additional rack space, consumables, stock storage. Need about 20'x20' space for plumbing storage.</p> <p>Peter is starting to rebuild pumps. Need layout space. Some of these kind of repairs are in place.</p> <p>Peter does not have a tool crib. It would be nice to have his own tools and control over their care and organization.</p> <p>No problems moving vertically within the plant. Although would prefer no stairs.</p>
Q: Identify the top three problems needing to be addressed.	<p>A:</p> <ol style="list-style-type: none">1. Space for organizing.2. Parking.3. Lockers. Enough space to keep out of each other's way. Sleeping accommodations would also be nice.

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Dan Latorre – Maintenance and Collections Superintendent – 17 ½ years with MSD5

Q: What are your responsibilities?	A: Similar to what Peter does. In addition, setting up service arrangements for equipment. Email with district manager, city officials, and receives complaints. City of Tiburon and City of Belvedere coordination.
Q: What works?	A: Dan likes field work. Likes “turning a wrench”. He is in the office 30 to 40% of the time. The alarm systems work well at 24 lift stations. Low level and high level parameters are all fed through SCADA.
Q: Shipping and receiving.	A: Shipping and receiving is all done independently. Each person orders and receives what they need.
Q: Shop Spaces:	A: Downstairs shop is okay. However, forklift is too tight to move things around. Need more room for new tools. Need separate storage for electrical, plumbing, and consumable supplies. Need layout space. Roof leaks in upstairs shop. Lots of obstacles in the way. Need to get things up and off the ground. Need deep racks for motor storage. Pipes 2 inches and smaller need to be stored inside. Need an area equal to half the existing downstairs shop added to the shop.

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Q: Locker Room.	A: Separate lockers for clean/dry and dirty/wet would be nice. Need showers for men. Need more toilets. Need more room.
Q: What are your top priorities?	A: Room for staff. Break room, four office spaces and conference need to go from one room to three separate rooms.
Q: What are your top priorities? (Continued.)	A: Adding more building space at Main Plant. More equipment storage space. 60 to 70% of the plant are on backup systems waiting for parts. These are supply chain issues that storage space could help improve. Dan advocates for keeping parts storage on site. This helps with supply chain issues. A current wait time on a pump is one year. Parts have been ordered, but many parts have several months for a lead time. Repair leaking roof is needed.
Q: What are your top priorities? (Continued.)	A: Complete sewer system cleaning and video project. Rehabilitation of pump stations. The walls of the wet well at T and 9 th streets are tilting. This makes it very difficult to install systems that are intended for plumb construction. Need to order tripods, winches and harnesses.
Q:	A:

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What are your top priorities? (Continued.)	<p>Safety training and equipment are improving.</p> <p>There are not enough staff members for properly operating the vactor truck and rodder. Each piece of equipment should have four people on the crew.</p>
Q: What is your commute like?	<p>A: Dan get a start from home at 4:15am. It takes 35 minutes to get to the Main Plant.</p> <p>It takes him 45 minutes to get home.</p>
Q: Miscellaneous.	<p>A: Digester needs ½ of the contact tank for possible construction logistics.</p> <p>Turning the vehicles around on Mar West Street is not a problem. Vehicles are able to navigate the narrow streets.</p>

APPENDIX A – ISUZU TRUCK

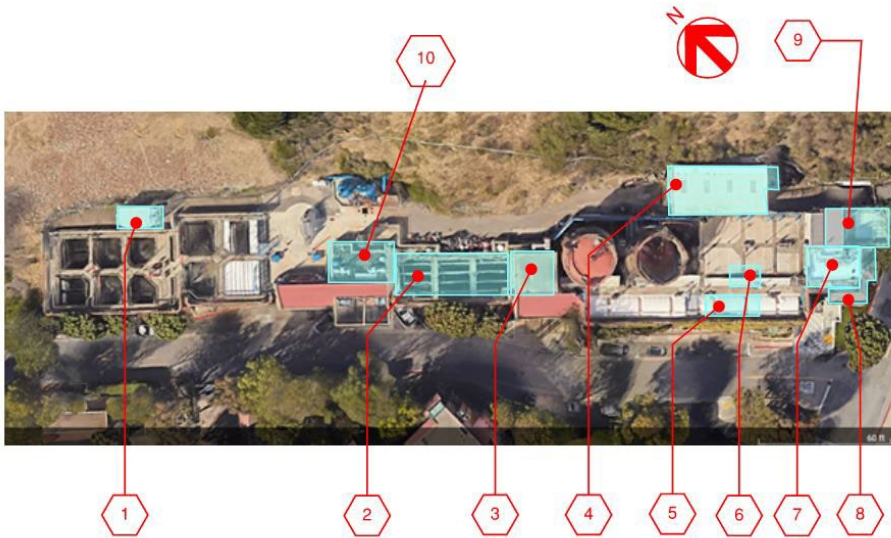


The link below has a good picture of a Roll Off truck using three different platforms (skids)

<http://www.westerncascade.net/Water%20Tanks.htm>

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APPENDIX B – TOP TIER OPTIONS (MAIN PLANT)



- Conventional construction costs assume \$900/sf relative to a proposal submitted from HDR in 2020.
 - Contingency is 20% plus and minus.
 - Small Cubicle = 60 square feet
 - Large Cubicle = 80 square feet
 - Private Office = 100 square feet
 - Executive Office = 120 square feet
 - Unisex Toilet Room = 60 square feet.
1. Replace current General Manager Office with 50'x10' furnished mobile office trailer.
 - a. Square feet: 500 sf
 - b. Vendor provided.
 - c. Estimated Cost: \$46,000 to purchase, plus hookups. Disposal of existing not included.
 - i. (Range: \$36,800 to \$55,200)
 - d. Potential for 2 offices and a toilet room.
 - e. Benefits
 - i. This option would remove the shipping container serving as in favor of a pre-fabricated modular trailer office.
 - ii. Relatively fast track improvement.
 - iii. Utilities are fairly easy to provide.
 - iv. A scum trough to headworks could be installed.

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- f. Challenges
 - i. At the toe of a stabilized landslide.
 - ii. Adding underground utilities.
 - iii. Trailer will have to be delivered by crane as route through maintenance building is too narrow.
- 2. Construct office level elevated above chlorine contact basin at same elevation as the Dewatering Building Roof.
 - a. Square feet: 2,200 sf.
 - b. Conventional construction.
 - c. Estimated Cost: \$2 million.
 - i. *(Range: \$1,584,000 to \$2,376,000)*
 - d. Potential to satisfy cubicle level office layout.
 - e. Benefits
 - i. This option would add open flexible floor area.
 - ii. Does not require breaking of new ground.
 - iii. Utilities can be routed through plant.
 - iv. Potentially great office views.
 - v. This option would not inhibit maintenance operations of chlorine contact basin.
 - vi. Connected to Option 3.
 - f. Challenges
 - i. Potential chlorine smell.
 - ii. Corrosive vapors nearby.
 - iii. Egress stairs would be required on uphill side and on street side. Uphill side driveway width would be affected.
 - iv. Elevator recommended.
 - v. Structural viability of existing plant building required.
 - vi. Ground leading up to the proposed stair and elevator uneven.
- 3. Construct office level on Dewatering Building Roof.
 - a. Square feet: 800 sf.
 - b. Conventional construction.
 - c. Estimated cost: \$720,000.
 - i. *(Range: \$576,000 to \$864,000)*
 - d. Potential for 4 offices and a toilet room.
 - e. Two floor version of this option could potentially double the floor area (and cost).
 - f. Benefits
 - i. This option would add open flexible floor area.
 - ii. Connected to Option 2.
 - iii. Utilities can be routed through plant.
 - iv. Potentially great office views.
 - v. One exit stair required if not connected to Option 2.
 - g. Challenges

Marin Sanitary District 5 – Occupancy Spacing and CIP Evaluation (DRAFT)

- i. Potential chlorine smell.
 - ii. Corrosive vapors nearby.
 - iii. Egress stair would impact width of uphill side driveway.
 - iv. Structural viability of existing plant building required.
 - v. Ground leading up to the proposed stair uneven.
- 4. Construct office level above Maintenance Building Roof.
 - a. Square feet: 1,200 sf.
 - b. Conventional construction.
 - c. Estimated cost: \$1.1 million.
 - i. *(Range: \$864,000 to \$1,296,000)*
 - d. Potential to satisfy office needs and one toilet room.
 - e. Benefits
 - i. This option would add open flexible floor area.
 - ii. Utilities routed in existing building.
 - iii. Great office views.
 - f. Challenges
 - i. Code modification letter would be required to get an elevator waiver.
Elevator is recommended.
 - ii. Extensive upgrade of existing moment frame and exterior skin.
 - iii. Ground leading up to the stairway uneven or sloped more than 1:20.
 - iv. Bio-gas torch is very close on the south end.
 - v. Exhaust stack from the boiler produces odor and corrosive gases.
 - vi. Standby generator exhaust points in the direction of proposed improvement.
- 5. Laboratory.
 - a. 200-300 sf.
 - b. No construction.
 - c. Estimated cost: To be determined.
 - d. Move desks and related furniture to one of the other options to create better working space for the existing laboratory.
 - e. Air quality issues may justify moving laboratory to one of the new options.
 - f. Benefits
 - i. Laboratory space will be at optimal size with desks relocated elsewhere.
 - ii. Cleaner air with mechanical modifications.
 - g. Challenges
 - i. Desks potentially move out of laboratory adjacency.
- 6. Modify locker rooms.
 - a. Square feet: 600 sf.
 - b. Conventional construction.
 - c. Estimated cost: \$540,000.
 - i. *(Range: \$432,000 to \$648,000)*

Marin Sanitary District 5 – Occupancy Spacing and CIP Evaluation (DRAFT)

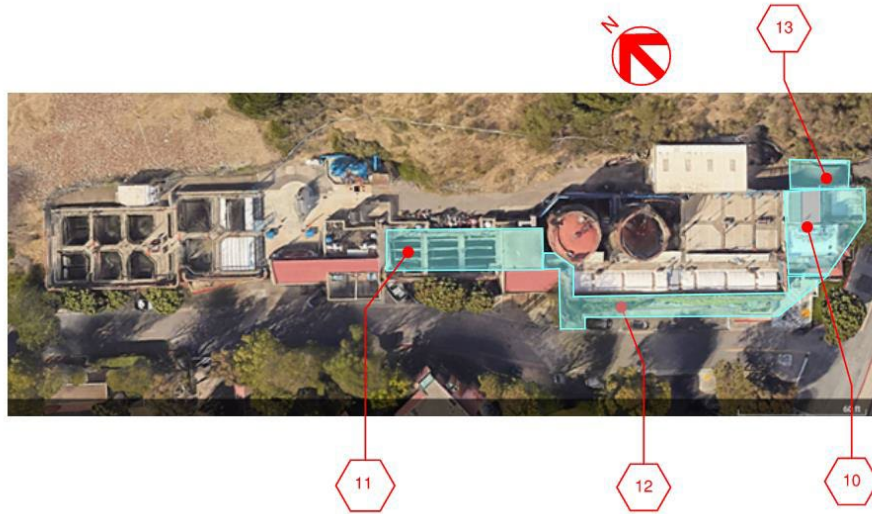
- d. Sub options.
 - i. Move the women's locker room to another location and recover floor area for modified men's locker room. Or vice versa.
 - ii. Move men's locker room to another location and modify women's locker room and expand laundry.
 - iii. Current laboratory becomes additional restroom and locker space. Laboratory is incorporated into another option.
 - e. Benefits
 - i. Improve and enlarge men's locker room, add toilet and shower.
 - ii. Plumbing is available for toilet and shower improvements.
 - f. Challenges
 - i. No major challenges.
7. Remove office cubicles and create separate break room and conference room.
- a. Square feet: 600 sf.
 - b. Conventional construction.
 - c. Estimated cost: \$270,000
 - i. *(Range: \$216,000 to \$324,000)*
 - d. Benefits
 - i. Conference and Break Room functions will be better accommodated without office space.
 - e. Challenges
 - i. This room is served by less than standard access and egress.
 - ii. This option works only if other floor space option accommodates.
 - iii. Assuming there is no intention of making this space ADA accessible, a code modification letter will be required.
 - iv. Matching floor with Option 8.
 - v. Windows will be removed with Option 8 employed.
8. Convert roof into three executive offices.
- a. Square feet: 425 sf.
 - b. Conventional construction.
 - c. Can add floor space to connect with existing stair well.
 - d. Estimated cost: \$382,000.
 - i. *(Range: \$306,000 to \$459,000)*
 - e. Benefits
 - i. Great views.
 - ii. Privacy for executive staff.
 - iii. Can connect to Option 9.
 - f. Challenges
 - i. Roof top HVAC ducts and equipment will need to move elsewhere.
 - ii. Assuming there is no intention of making this space ADA accessible, a code modification letter will be required.
 - iii. Space is served by less than standard access and egress.

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9. Surge tank roof conversion.
 - a. Square feet: 800 sf.
 - b. Conventional construction.
 - c. Estimated cost: \$720,000.
 - i. *(Range: \$576,000 to \$864,000)*
 - d. Benefits
 - i. Can connect to Option 8
 - ii. Space can be set up for a flexible office space and toilet room.
 - iii. Utilities can be routed from existing building below.
 - e. Challenges
 - i. Assuming there is no intention of making this space ADA accessible, a code modification letter will be required.
 - ii. Space is served by less than standard access and egress.
10. Blower building roof floor area.
 - a. Square feet: 800 sf
 - b. Conventional construction
 - c. Estimated cost: \$720,000.
 - i. *(Range: \$576,000 to \$864,000)*
 - d. Benefits
 - i. Could connect to Option 2.
 - ii. Space can be set up for a flexible office space and toilet room.
 - iii. Utilities can be routed through existing building below.
 - e. Challenges
 - i. Assuming there is no intention of making this space ADA accessible, a code modification letter will be required.
 - ii. Space is served by less than standard access and egress.
 - iii. Congested ductwork will need to be removed and put somewhere else.
 - iv. Different elevation heights with Option 2.

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APPENDIX C – SECOND TIER OPTIONS (MAIN PLANT)

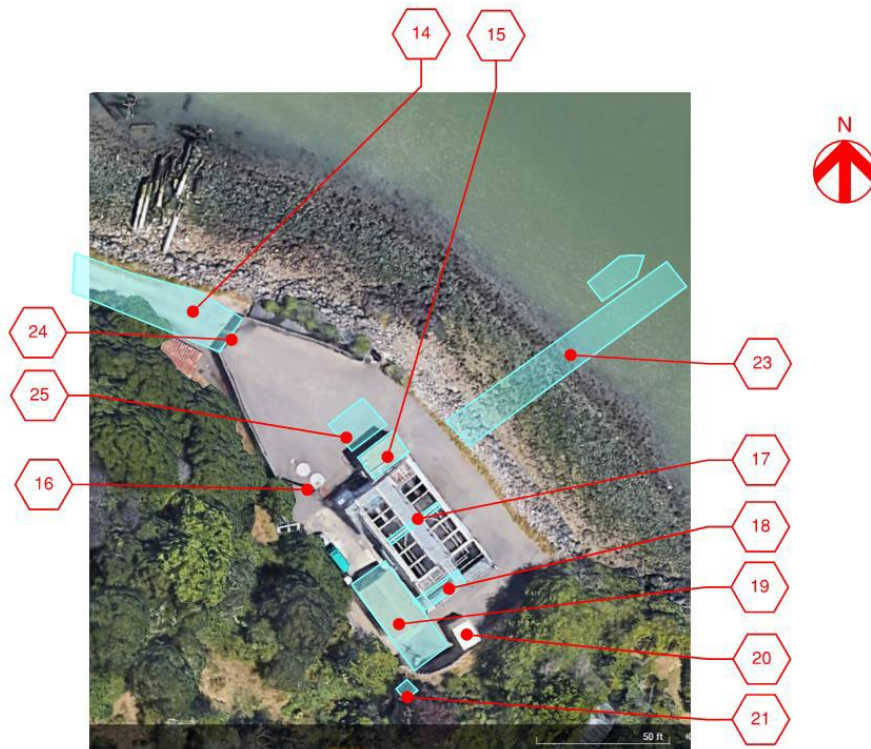


10. Construct a new two-story elevated office building.
 - a. Square footage: Approximately 4,400 sf
 - b. Conventional construction
 - c. Estimated cost: \$4 million
 - d. Features:
 - i. Demolish the entire existing administration wing and unused surge tank.
 - ii. Ground level would be parking for one ADA accessible stall plus up to four conventional stalls.
 1. *Based on the public parking stall across Mar West as an example, with 4,000 sf, 8 conventional stalls and one ADA accessible stall.*
 - iii. ADA compliant office levels. Potentially could provide all of the office, conference room and locker room needs. Areas suggested are approximate.
 1. Thirteen 80 sf office spaces (1,040 sf)
 2. One large 500 sf conference room.
 3. One large 500 sf break room and conference room.
 4. One 600 sf area for 13 lockers, 2 showers, 4 toilets, 2 urinals, 2 lavatories.
 5. One 100 sf area for female locker, toilet, and shower.
 6. 440 sf for circulation (10% of total area).
 7. This scope comes to 3,180 square feet. When taken to the next level of design, the scope can be adjusted to meet the proposed building footprint. Surplus floor area could improve or augment

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- other administration and operational functions, such as making a limited number of the office spaces larger or adding amenities to the locker rooms.
 - iv. Potential option for a 3 or 4 story building within same footprint. Possible lease out to other parties. High value office space with view would be the draw.
 - v. Proposed building would be equipped with an elevator and egress stairs compliant with current building codes.
- 11. Similar to Option #4, flexible floor area over chlorine contact basin and dewatering building.
 - a. Square footage: Approximately 2,600 sf.
 - b. Conventional construction.
 - c. Estimated cost: \$2.3 million
 - d. Benefits:
 - i. With a freight elevator, this could provide shop space and layout space for repairs.
 - ii. Could be used for office space.
 - e. Challenges
 - i. Corrosive vapors nearby. Chlorine is diluted; it may not be a problem.
- 12. Bridge between administration and flexible floor over chlorine contact basin.
 - a. Square footage: Approximately 2,700 sf.
 - b. Conventional construction.
 - c. Estimated cost: \$2.4 million.
 - d. Features:
 - i. Freight elevator.
 - ii. Passenger elevator.
 - iii. Bridges from upper floor administration to proposed flexible floor over chlorine contact basin.
 - iv. Can cover a proposed screened parallel parking area for District vehicles. The screen could enhance elevation seen by high value property across the street.
- 13. Deck over rear access driveway.
 - a. Deck area: 350 sf.
 - b. Estimated cost: \$200,000.
 - c. Features:
 - i. Exterior deck space for employee use.
 - ii. Elevated over driveway to allow traffic below to pass through.

APPENDIX D – PARADISE COVE OPTIONS



14. Pave the access road

- Frequent use of dirt access road is a cause of wear on vehicles and potholes.
- Estimated cost: To be determined.

15. Tower

- Lower part would house a sound deadening chamber for the blower equipment.
- Upper part would have a gantry crane, rail, and hoisting improvements. It would also have a roof over the deck and building code compliant standard stairs. Also, an area at the top is needed for powdered chemical storage and mixer. Chemical are in 75 gallon drums. Sodium Bicarbonate is very heavy.
- Pick spot needs a concrete pad.

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- d. Gantry crane needs to be configured so that hoisting can clear the guardrail. Otherwise, if height is an issue, fall protection with removable rail sections could be explored.
 - e. Estimated square footage: 400 sf
 - f. Estimated cost: \$360,000
- 16. Remove utility pole.
 - a. Place power and communications underground from off-site power pole. This would allow better access by trucks.
 - b. Estimated cost: To be determined.
- 17. Additional catwalk over treatment trains.
 - a. Estimated cost: To be determined.
- 18. Bridge between Option 19 and treatment trains.
 - a. This would allow direct access from residence to top deck.
 - b. Estimated cost: To be determined.
- 19. New building.
 - a. Lower floor:
 - i. Laboratory/analyzer room.
 - ii. Chemical storage with chemicals in separate rooms.
 - iii. Chemical storage and laboratory separated by an exterior breezeway.
 - iv. Toilet room.
 - b. Upper floor:
 - i. Residential suite with sleeping quarters and full bath.
 - ii. Connection to upper level of wastewater treatment trains.
 - c. Total square footage: 1,400 sf.
 - d. Estimated cost: \$1.3 million.
- 20. Remove storage bin.
 - a. This would allow for better truck access.
 - b. Estimated cost: To be determined.
- 21. Potable water source.
 - a. Option A to consider – A freshwater tank regularly replenished by truck delivery.
 - b. Option B to consider – A water main buried along the existing power utility easement.
 - c. Estimated cost: To be determined.
- 22. Radio repeater (not referenced in diagram).
 - a. Improve operational communication.
 - b. Make emergency communications more reliable.
 - c. Estimated cost: To be determined.

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- 23. Boat dock (boat not included).
 - a. This will enable a second way off site in case the road is blocked.
 - b. Area: 1,500 sf.
 - c. Estimated cost: \$60,000.
- 24. Automatic gate.
 - a. A sliding vehicle gate activated by access control.
 - b. Recommend a pedestrian gate to allow egress to public way (easement).
 - c. Estimated cost \$15,000. This estimate can vary widely depending on accessories and design.
- 25. Headworks
 - a. 500 sf concrete masonry building.
 - b. Estimated cost for building only: \$450,000.

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