

15. Location of Project

Water Intake: 63.4968 N, 162.2311 W

RWTL Causeway: 63.5216 N, 162.2847 W

Sewage Lagoon Access Road: 63.5132 N, 162.2872 W

Force Main: 63.5132 N, 162.2834 W

Sewage Lagoon: 63.5139N, 162.2775 W

16. State Tax Parcel ID

Water Intake: Clear Lake Subdivision (2001-6). Section 18, T23S, R18W, Kateel Meridian.

RWTL Causeway: SNC Subdivision Replat (2011-10) Tract B-1. Section 2, T23S, R19W, Kateel Meridian.

Part of Sewage Lagoon Access Road, Force Main, Sewage Lagoon: U.S. Survey No. 4491 Tract I. Lot 4, Section 11, T23S, R19W, Kateel Meridian.

Part of Sewage Lagoon of Access Road: U.S Survey No. 4491 Tract C. Section 11, T23S, R19W, Kateel Meridian.

17. Directions to the Site

Water Intake:

From Stebbins Airport follow Caribou Street North for approximately 1,000 feet, before turning east onto the Stebbins – Saint Michael Road. Follow the Stebbins – Saint Michael Road for approximately 4.5 miles before turning west onto the Clear Lake Access Road. Follow this road for approximately 1.5 miles until water intake site is reached.

Sewage Lagoon:

From Stebbins Airport head west on Terminal Street for approximately 400 feet before turning left and heading south on the existing access trail along the beach. Follow the trail south for approximately 700 feet. Then follow access trail east for approximately 1,750 feet until sewage lagoon project area is reached.

18. Nature of Activity (Description of Project)

The City of Stebbins proposes to construct and operate new water and wastewater systems to address sanitation deficiencies in the community.

Water System

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The new water system will include the upgrades to the existing Clear Lake Access Road, construction of a new intake structure in Clear Lake, repair of the existing raw water transmission line (RWTL), 2,400 linear feet of new RWTL from the Clear Lake water intake to the raw water impoundment, construction of a raw water impoundment, 6,450 linear feet of new RWTL from the impoundment to the existing water treatment plant (WTP) and three circulating water distribution loops.

Raw water will be pumped from Clear Lake to a new raw water impoundment via an extension of the existing RWTL. The raw water impoundment will be constructed in the existing Reindeer Gravel Pit and will not result in the filling or disturbance of any wetlands. The pumping will take approximately 90 days each summer. Raw water will be stored through the winter in the impoundment and flow via gravity to the existing WTP through a new glycol heat traced RWTL. After filtration, chlorinated water will be stored in the existing 500,000-gallon water storage tank (WST) where chlorine contact time requirements are achieved. Treated water will then be transferred to the existing 750,000-gallon WST for storage and distributed throughout the three future circulating water distribution loops. Future Phases 3, 4, and 5 will design and install water and sewer mains and service lines. Geotechnical studies show that soils in these areas are predominantly sand. These phases are not expected to impact wetlands. Prior to completion of the new mains and services lines, the community will access and haul treated water from the watering point at the WTP.

The Clear Lake Access Road will be upgraded by placing and grading gravel within the existing road footprint and will not result in the filling or disturbance of any wetlands. Wetlands will be permanently filled to construct the water intake structure in Clear Lake and portions of the new RWTL where it crosses an unnamed pond south of the Stebbins-St. Michael Road.

An overview of the water system layout is shown on Figure 3.

Water Intake Structure:

The existing water intake in Clear Lake will be replaced with a new intake structure. The new intake structure will pump water from Clear Lake using a submersible pump in a 12-inch HDPE casing. The HDPE casing will be anchored to the bottom of the lake for approximately 120 feet below ordinary high water (OHW) before reaching the intake screen assembly. At the edge of OHW, approximately 65 cubic yards (CY) of class 1 rip rap will cover the pipe to a depth of 2 feet below OHW (an area approximately 20 feet long) to protect against erosion and wave action. Above OHW, the 12-inch HDPE casing will extend approximately 40 feet to the existing RWTL connection. Approximately 30 CY of fill will be placed to ensure a smooth transition from shore to lake bottom.

The water intake structure is shown on Figures 4, 5 and 6.

Raw Water Transmission Line:

The RWTL for the water system is divided into two sections; Alignment A and Alignment B. Alignment A runs from the water intake structure to the raw water impoundment and will utilize approximately 15,000 feet of existing RWTL. An additional 2,400 linear feet of new RWTL will be constructed aboveground and placed on the existing grade and anchored with duckbill anchors every 20 feet. No wetlands will be filled or cut for this section of the alignment. Alignment B runs from the raw water impoundment to the existing WTP and will consist of 6,450 linear feet of new RWTL. This section of the RWTL will also be placed on the existing grade and anchored with duckbill anchors every 20 feet, except in areas where the RWTL crosses existing roads. In these areas, the RWTL will be placed in 24-inch culverts within the existing roadbed, and wetlands will not be disturbed. This section of RWTL will require the construction of a causeway across an unnamed pond. This causeway will be 300 feet long X 69 feet wide at the base X 23 feet wide at the top and 11 feet tall. It will permanently fill 0.48 acres of wetlands.

The RWTL is shown on Figures 7 through 24. The causeway is shown on Figures 21, 23 and 24.

Wastewater System

The new wastewater system will include the construction of a vacuum sewer station building, sewer force main extension, upgrades and extension of an existing access road, a new sewage lagoon system with three total cells, and a sewage lagoon outfall pipe. Wastewater from the vacuum sewer system will flow to a collection tank in the vacuum station building where it will be pumped through an arctic pipe sewer force main to the primary cell of the sewage lagoon. The primary cell provides a quiescent settling zone for solids capture and subsequent treatment. The primary cell is hydraulically connected to the secondary cell with a transfer manhole and level control weir. The secondary cell is designed to provide storage for seasonal discharge during the summer months and a second stage facultative treatment. Treated effluent from the secondary cell will be discharged to the tidal slough via the seasonal discharge outfall. The secondary cell will be discharged annually. The vacuum sewer station building will be located on an existing pad with no disturbance to wetlands. The sewage lagoon outfall pipe will be a bare HDPE pipe laid on the existing grade. Wetlands will be permanently filled to construct the force main, access road, and sewage lagoon.

An overview of the wastewater system is shown on Figure 28.

Force Main:

Approximately 830 feet of arctic sewer force main will extend from the existing main. The sewer force main extension will be buried approximately four feet below ground surface (bgs). The sewer force main extension is located entirely in wetlands. The temporary disturbance area is 830 feet long X 4 feet wide (~ 0.08 acres) to bury the pipe. Approximately 492 CY of native material will be excavated to install the sewer force main. Approximately 246 CY of fill will be used to bed and cover the force main piping and approximately 246 CY of native material will be used as

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backfill to fill the trench. All excavated material that is not returned to the excavation once the pipe is in place will be transported and temporarily stockpiled on plastic sheeting adjacent to the sewage lagoon project area. The stockpiled material will be used during sewage lagoon construction. The sewer force main pipe will cross two small tundra ponds. The pipe will be placed on helical piles across these ponds, and no fill will be discharged into them. The area where the sewer force main is buried will be seeded to promote vegetation regrowth.

The sewer force main extension is shown on Figures 35 and 36.

Sewage Lagoon Access Road:

The existing access road used to access the existing force main will be upgraded and extended starting at the end of Terminal Street. The access road is approximately 2,480 feet long X 20 to 60 feet wide at the base and 12 feet wide at the top X 3 feet in height. Approximately 1,450 feet of this road will be upgrades of the existing road and 1,030 feet will be the new extension. No road work will take place on the portion of the access road that crosses the west end of existing ADOT&PF runway (approximately 150 feet). The upgrade of the existing portion of the road will be constructed by placing and grading embankment fill and surface course material over the existing road. The extension of the access road will be constructed by placing geotextile fabric on the existing ground surface followed by embankment fill and surface course material. No excavation is planned. Vegetation will be removed to prepare the surface for the geotextile fabric and the fill material, and approximately 6,000 CY of embankment fill and 551 CY of surface course will be used to construct the access road upgrades and extension. The access road extension footprint is approximately 1 acre.

The sewage lagoon access road upgrades are shown on Figures 29 and 30. The sewage lagoon access road extension is shown on Figures 30 and 31.

Sewage Lagoon:

The new sewage lagoon will include three total cells, two sewage lagoon cells (primary holding cell and secondary seasonal discharge cell) and a sewage solids cell for honeybucket waste. The total footprint is approximately 12 acres.

The sewage solids cell is for use by residents who currently use honeybuckets and in the future for those who opt not to install piped water and sewer to their homes. Liquid waste from the sewage solids cell will flow into the primary cell via an overflow channel.

Excavation between one to two feet bgs will occur at the sewage lagoon cells project area. Approximately 6,856 CY of material will be excavated from the sewage lagoon area. The excavated soils will be temporarily stockpiled adjacent to the project area on plastic sheeting (Figure 38). Approximately 88,490 CY of embankment fill and 527 CY of surface course will be used to construct the sewage lagoon and honeybucket cells. Soils and overburden excavated from the sewer force main and sewage lagoon cells area will be used and evenly distributed on the

exterior slopes of the sewage lagoon cell berms to stabilize and form slopes no steeper than a 3:1 ratio. This is accounted for in the total footprint of the sewage lagoon system. After construction is complete, the plastic sheeting will be removed, and the perimeter berms and temporary stockpile area will be seeded to promote vegetation regrowth. A locally appropriate seed mixture will be used.

The sewage lagoon is shown on Figures 38 through 41.

19. Project Purpose

The purpose of the project is to provide the community of Stebbins with year-round access to potable water and sanitary wastewater disposal. After future phases 2, 3, and 4 are complete, the project will provide the community with piped water and wastewater disposal with bathroom and kitchen facilities constructed in each home and community building. The project is needed to address sanitation deficiencies. Residents currently haul drinking water from the temporary washeteria watering point. However, it is not permitted by ADEC to provide drinking water. Residents used the school for bathroom facilities until it was destroyed by fire in 2024. Wastewater disposal is via honeybuckets. Wastewater is disposed of in an over-capacity, failing honeybucket disposal site near the landfill. The existing septic tank serving the clinic, clinic housing and temporary washeteria discharges to four seepage pits and is failing. RWTL from Clear Lake to the WTP freezes every winter and does not thaw until late spring. The RWTL is above-grade arctic pipe with no glycol or heat trace. Water is treated during the summer.

Upgrades to the Clear Lake intake, repairs to the existing RWTL, new sections of the RWTL, and the new wastewater treatment and disposal system are needed to alleviate potential health hazards by providing a safe, reliable source of potable water and sanitary sewage disposal.

20. Reasons for Discharge

Water Intake Structure: The new water intake structure will require the discharge of Class 1 rip rap in Clear Lake from the edge of OHW to a depth of two feet to protect the intake casing from wave action and erosion. Fill will also be used above OHW to ensure that the intake casing has a smooth surface to be placed on.

Raw Water Transmission Line: The RWTL alignment will require the construction of a causeway across an Unnamed Pond. This alignment is required for the water within the RWTL to maintain enough gravity flow to reach the WTP without requiring mechanical pumping. The causeway will also be used to support the future Phase 5 circulating water distribution loop serving the northern portion of the community.

Force Main: Approximately 1,000 feet of new force main will be installed and connected to the existing force main. The new force main will be buried in wetlands and require bedding material

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to be placed within the trenches. The additional 1,000 feet of force main is required to transport wastewater to the new sewage lagoon.

Sewage Lagoon Access Road: The existing access road that follows the existing force main will be improved into an access road and extended through wetlands to allow access to the new sewage lagoon project area. Fill will be discharged into wetlands to construct the road.

Sewage Lagoon: The new sewage lagoon will require the discharge of fill in wetlands to construct three cells of the sewage lagoon

21. Type(s) of Material Being Discharged and the Amount of Each Type

Water Intake Structure:

Class 1 Rip Rap: 65 CY

Class 1 Fill: 30 CY

Cut Volume: 0 CY

Raw Water Transmission Line Causeway:

Class 1 Rip Rap: 2,800 CY

Embankment Fill: 1,200 CY

Surface Course: 125 CY

Cut Volume: 0 CY

Sewer Force Main:

Fill: 246 CY

Cut: 492 CY

Sewage Lagoon Access Road:

Embankment Fill: 6,000

Surface Course: 551 CY

Cut Volume: 0 CY

Sewage Lagoon:

Embankment Fill: 88,490 CY

Surface Course: 527 CY

Cut Volume: 6,856 CY

22. Surface Area in Acres of Wetlands Filled

Water Intake Structure: 0.006 acres

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RWTL: 0.48 acres

Force Main: 0.08 acres

Sewage Lagoon Access Road Extension: 1 acre

Sewage Lagoon: 12 acres

23. Description of Avoidance, Minimization, and Compensation

Avoidance: Wetlands cannot be avoided. The project area and land surrounding the community is comprised almost entirely of wetlands. The project was designed to avoid wetland impacts to the extent practicable by choosing the shortest distance and best terrain and still provide adequate separation distance from the community to the proposed sewage lagoon system.

The existing RWTL is aboveground and will be rehabilitated to provide continuing service. Additional sections of RWTL will be installed aboveground to avoid filling wetlands. The raw water impoundment will be located within an abandoned gravel pit with existing access to avoid wetland impacts.

Minimization: The project boundaries will be surveyed and flagged prior to construction to avoid inadvertent encroachment on wetlands. Natural drainage patterns will be maintained along the access road using 24-inch culverts. The sewage lagoon system size was minimized to the extent practicable to provide adequate sewage disposal for the population for the next 20+ years. The existing sewage lagoon access road and existing sewer force main will be upgraded and extended to minimize wetland impacts. Overburden and excess fill material will be placed on plastic sheeting to minimize impacts to wetlands. The areas will be seeded with locally appropriate seed mix once the plastic sheeting is removed following completion of construction.

The width of the causeway across the Unnamed Pond is minimized to the extent practicable to provide a stable platform for the RWTL and future Phase 5 supply and return water mains necessary to provide service to the Hillside portion of the village.

Existing roads will be used to access the project area. All excess construction material will be removed from the construction site and disposed of at the permitted Stebbins Landfill. All petroleum products will be managed in accordance with state and federal regulations. Spill control equipment will be available at the staging areas and stored in all construction vehicles in case of an accidental spill or leak.

Compensation: No compensatory mitigation is proposed. The project area and community are surrounded by numerous high-quality, well-preserved wetlands. The new sewage lagoon will be fenced and gated to prevent accidental access. Construction of the sewer force main extension, access road, sewage lagoon and outfall is needed to reduce the environmental and health risks associated with the current over-capacity, failing honeybucket disposal site and seepage pits. The

new raw water reservoir and extension to the RWTL are required to provide a year-round supply of potable water to the community.

26. List of Other Certificates or Approvals/Denials Received from other Federal, State or Local Agencies

ADEC Drinking Water Approval to Construct – In progress
ADEC Wastewater Approval to Construct – In progress
SOA Fire Marshall – In progress
ADEC NOI Construction General Permit – In progress
ADEC APDES Discharge Permit – In progress
ADNR Easement – In progress
FAA Obstruction Evaluation – In progress
ADOT Airport Building Permit – In progress
ADOT Boundary Crossing Permit – In progress
ADOT Utility Permit – In progress

Figures

Phase 1 – Water System Design (Figures 3-27)

Overview: Figure 3
Clear Lake Water Intake: Figures 4, 5 and 6
RWTL Causeway: Figures 21, 23 and 24
RWTL Existing Section Overview: Figure 9, 10
RWTL New Section from Intake to Impoundment (aboveground): Figures 7, 11, 12, and 13.
RWTL New Section from Impoundment to WTP (aboveground): Figures 8, 14 through 22
Raw Water Impoundment Overview (no wetland impacts): Figure 25
Clear Lake Access Road Overview (no wetland impacts): Figures 26 and 27

Phase 2 – Wastewater Disposal Design (Figures 28-42)

Overview: Figure 28
Sewage Lagoon Access Road: Figures 29 through 33
Sewage Lagoon Force Main: Figures 34 through 37
Sewage Lagoon: Figures 38 through 41
Sewage Lagoon Outfall: Figure 42