LOS OLIVOS COMMUNITY SERVICES DISTRICT **Posted: 10-22-2024**
TECHNICAL SUBCOMMITTEE MEETING
October 28, 2024 – 8:30 AM
St Mark's in the Valley Episcopal Church
2901 Nojoqui Ave, Los Olivos CA 93441
Please observe decorum and instructions from the Subcommittee Chair

Subcommittee Members: Director Fayram (Chair), Director Parks, and General Manager Guy Savage

This meeting will be held both in-person and electronically via Zoom Meetings. In-person the meeting will be held at the location above.

The public will also be able to hear and participate electronically via Zoom by using the following links:

Zoom:	https://us06web.zoom.us/j/81937722522?pwd=SWpSU0RYZFljZTBLNGphZG41TGs4dz09		
By Phone:	+1 669 900 6833 US (San Jose)	Meeting ID: 819 3772 2522	Passcode: 914085
One tap mobile:	+14086380968,,81937722522#,,,,*914085# US (San Jose)		

The Los Olivos Community Services District is committed to ensuring equal access to meetings. In compliance with the American Disabilities Act, if you need special assistance to participate in the meeting or need this agenda provided in a disability-related alternative format, please call 805.500.4098 or email to losolivoscsd@gmail.com. Any public records, which are distributed less than 72 hours prior to this meeting to all, or a majority of all, of the District's Board members in connection with any agenda item (other than closed sessions) will be available for public inspection at the time of such distribution at a location to be determined in Los Olivos, California 93441.

MEETING AGENDA

1. **CALL TO ORDER**

2. **ROLL CALL**

3. **PUBLIC COMMENTS**
   Members of the public may address the Subcommittee on any items of interest within the subject matter and jurisdiction of the Board but not on the agenda today (Gov. Code - 54954.3). The public may also request future agenda topics at this time. Speakers are limited to a maximum of 3 minutes. Due to the requirements of the Ralph M. Brown Act, the Subcommittee cannot take action today on any matter not on the agenda, but a matter raised during Public Comments can be referred to District staff for discussion and possible action at a future meeting.

ADMINISTRATIVE ITEMS:
All matters listed hereunder constitute an administrative / consent agenda and will be acted upon by a single vote of the Board. Matters listed on the Consent Agenda will be read only on the request of a member of the Subcommittee, in which event the matter may be removed from the Consent Agenda and considered as a separate item. Public may comment on any of the items prior to the vote being taken by the Subcommittee.

4. **CONSENT AGENDA**
   A. **MINUTES APPROVAL**
      Approval of the minutes from October 4, 2024.

BUSINESS ITEMS:
All matters listed hereunder will be acted upon separately and public comment will be held for each item. As a Subcommittee of Thea full Board of Directors, Business Items may include one or more recommendations for further discussion or action at a full Board of Directors meeting.

5. **DISCUSSION REGARDING POSSIBLE LOCSD CONNECTION TO THE CITY OF SOLVANG'S WASTEWATER TREATMENT PLANT AND RELATED INFRASTRUCTURE, INCLUDING WSC AND CAROLLO CONTRACTED EFFORTS AND CLOACINA ESTIMATES**
   The Subcommittee will discuss potential connection to the City of Solvang, including technical and financial issues raised by the potential connection. See the attached draft reports from WSC and Carollo, as well as estimates from Cloacina for a local solution.

6. **GENERAL DISCUSSION OF COLLECTION, TREATMENT, AND DISPOSAL OPTIONS**
   The Subcommittee will discuss options for the collection, treatment, and disposal of wastewater for the District. Given the Regen contract, this discussion will focus heavily on Treatment options, including Membrane Bioreactor (MBR), connection to Solvang's treatment plant, and other solutions previously brought up by members of the public.

7. **ADJOURNMENT**

MINUTES

LOS OLIVOS COMMUNITY SERVICES DISTRICT **Posted: 9-28-2024**
TECHNICAL SUBCOMMITTEE MEETING
October 4, 2024 – 9:00 AM
St Mark's in the Valley Episcopal Church
2901 Nojoqui Ave, Los Olivos CA 93441
Please observe decorum and instructions from the Subcommittee Chair

Subcommittee Members: Director Fayram (Chair), Director Parks, and General Manager Guy Savage

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MEETING AGENDA

1. **CALL TO ORDER**
   Chair Fayram called the meeting to order at: 9:00 AM

2. **ROLL CALL**
   Present: Chair Fayram, Director Parks, GM Savage
   Absent: None

3. **PUBLIC COMMENTS**
   Members of the public may address the Subcommittee on any items of interest within the subject matter and jurisdiction of the Board but not on the agenda today (Gov. Code - 54954.3). The public may also request future agenda topics at this time. Speakers are limited to a maximum of 3 minutes. Due to the requirements of the Ralph M. Brown Act, the Subcommittee cannot take action today on any matter not on the agenda, but a matter raised during Public Comments can be referred to District staff for discussion and possible action at a future meeting.

   The Chair opened the floor for public comment.
   No requests to speak.

ADMINISTRATIVE ITEMS:
All matters listed hereunder constitute an administrative / consent agenda and will be acted upon by a single vote of the Board. Matters listed on the Consent Agenda will be read only on the request of a member of the Subcommittee, in which event the matter may be removed from the Consent Agenda and considered as a separate item. Public may comment on any of the items prior to the vote being taken by the Subcommittee.

4. **CONSENT AGENDA**
   A. **MINUTES APPROVAL**
      Approval of the minutes from August 21, 2024.

The Chair opened the floor for public comment.
No requests to speak.

Motion to approve the Consent Agenda.
Motion by: Director Parks , Second: Chair Fayram
Voice vote: 3-0

BUSINESS ITEMS:
All matters listed hereunder will be acted upon separately and public comment will be held for each item. As a Subcommittee of the full Board of Directors, Business Items may include one or more recommendations for further discussion or action at a full Board of Directors meeting.

5. **CONSIDERATION OF TWO CONTRACTS THAT WOULD CREATE A WASTEWATER TRANSMISSION PIPELINE BETWEEN THE LOCSD AND THE CITY OF SOLVANG. CONTRACT #1 – STANTEC IN THE AMOUNT OF $99,500 (NINETY-NINE THOUSAND AND FIVE HUNDRED DOLLARS) AND CONTRACT #2 – REGEN IN THE AMOUNT OF $50,000 (FIFTY THOUSAND DOLLARS)**
The Subcommittee will consider making a recommendation to the full Board of Directors regarding the two submitted proposals for the creation of 30% engineering and design, plus costs for connecting the District to the City of Solvang. For the purposes of the contractor's proposals, they were instructed to estimate the roughly the 18,000 feet of distance involved. They were also instructed, pursuant to discussions with the City of Solvang, to include an equalization tank. Flows from the District were to be consistent with the Basis of Design documents each contractor used when creating their 30% engineering designs and based on the technology approach used. Stantec's proposal therefore assumes a gravity fed collection system, while REGEN's proposal focuses more heavily on effluent sewer collection.

GM Savage introduces the item. Director Fayram comments on the differences between the two proposals. Stantec is proposing to do topo / maps, whereas REGEN does not. He goes on to comment about using County of Santa Barbara approved consultants. He proposes that the District go back and remove the topo piece for the 30% design, noting that it is probably not necessary at this time: essentially scaling it back. Director Parks concurs. GM Savage wonders how best to move this forward without delaying the whole process a month. Director Fayram suggests focusing online sizing, creek crossings, some level of depth for the pipe. At the request of Chair Fayram, Paeter Garcia from #ID1 comments on their piping that travels down Alamo Pintado.

The Chair opened the floor for public comment.
Mike Buchardi comments.

Chair Fayram and GM Savage respond to public comment, noting that the District is only focused on service District constituents. Director Fayram asks if Stantec can come back with a revised proposal, a special meeting could be held to review and/or approve the contracts.

Direction to staff to put on agenda as is, with a push to get Stantec to revise their proposal along the lines that Director Fayram suggests. He adds that he does want to see a plan, with costs, for the force main from Stantec. Director Parks comments that he will not make next Wednesday's meeting but would like to see this moving forward.

6. **DISCUSSION REGARDING POSSIBLE LOCSD CONNECTION TO THE CITY OF SOLVANG'S WASTEWATER TREATMENT PLANT AND RELATED INFRASTRUCTURE, INCLUDING WSC AND CAROLLO CONTRACTED EFFORTS**
The Subcommittee will discuss potential connection to the City of Solvang, including technical issues raised by connection, requests from the two contractors who the LOCSD has engaged to perform studies related to the connection.
GM Savage briefly introduces the item. Director Parks asks GM Savage if he has made any comparisons between the District's flows, and the community of Santa Ynez. GM Savage responds he has not, because of differences between the two communities.

Chair Fayram opened the floor for public comment.
No requests to speak.

7. GENERAL DISCUSSION OF COLLECTION, TREATMENT, AND DISPOSAL OPTIONS

The Subcommittee will discuss options for the collection, treatment, and disposal of wastewater for the District. Given the Regen contract, this discussion will focus heavily on Treatment options, including Membrane Bioreactor (MBR), connection to Solvang's treatment plant, and other solutions previously brought up by members of the public.

GM Savage comments that he has spoken to Jake Lincoln at Cloacina about providing estimates for both effluent (Option A) and gravity fed collection. Cloacina has committed to providing the cost estimates by the end of the month. He adds that he asked Cloacina to focus on the full implementation as opposed to spending much time for a phased approach. Director Parks asks that Cloacina do Option B (all effluent) as well.

8. ADJOURNMENT

Motion to adjourn at 9:32 AM.
Motion by: Director Parks, Second: Director Fayram
Voice vote: 3-0

Respectfully submitted:

Guy W. Savage
General Manager – Los Olivos Community Services District

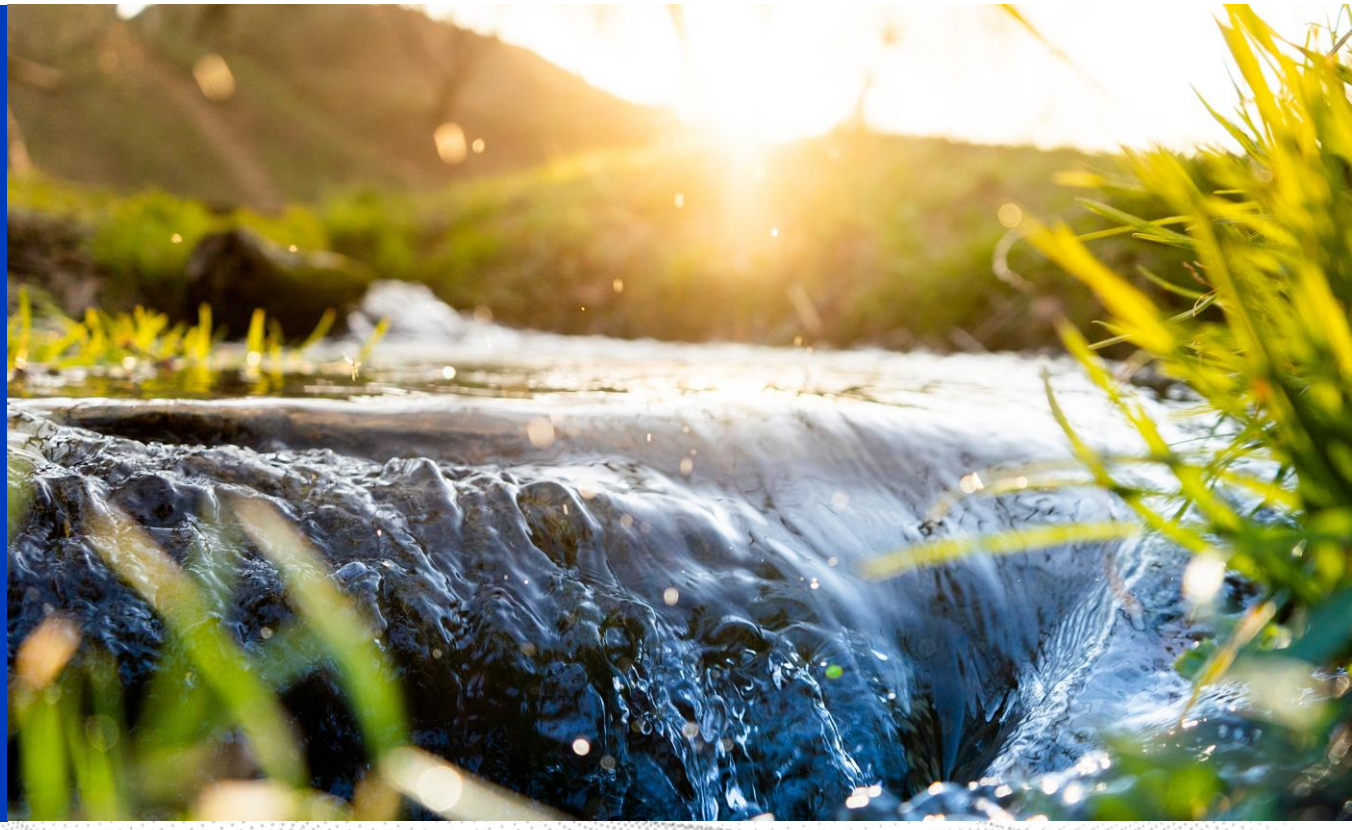
Approved:

_____
Director Tom Fayram, Chair

ITEM 5 – CITY OF SOLVANG VS LOCAL SOLUTION COSTS

CITY OF SOLVANG VS LOCAL SOLUTION COSTS

Evaluation of Los Olivos Flows on Solvang WWTP



TECHNICAL MEMORANDUM 1

Wastewater Connection Evaluation

DRAFT / October 2024

Evaluation of Los Olivos Flows on Solvang WWTP

TECHNICAL MEMORANDUM 1

Wastewater Connection Evaluation

DRAFT / October 2024

This document is released for the purpose of information exchange review and planning only under the authority of Jeffrey A. Weishaar, October 17, 2024, California C-75245.

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INTRODUCTION

Background

In August 2024, the Los Olivos Community Services District (LOCSD) contracted with Carollo Engineers, Inc. (Carollo) to evaluate the impact of connecting the LOCSD's wastewater flows to the City of Solvang's existing wastewater treatment plant (WWTP). This evaluation is part of a larger project to convert residential and commercial septic tanks within the LOCSD to a wastewater pipeline conveyance system.

As part of the evaluation, Carollo analyzed data from the City of Solvang and the LOCSD, including water quality of drinking water and wastewater within both service areas. Carollo analyzed this data to determine what effect the addition of LOCSD wastewater will have on the Solvang WWTP, and if any changes to treatment processes or plant capacity would be required in order to accept and treat LOCSD wastewater. The findings of this analysis are presented in this technical memorandum.

During this analysis, the ability of the Solvang WWTP to accept and treat wastewater flow from LOCSD was gauged by the WWTP's ability to comply with its effluent permit limits. The treatment processes at the WWTP were simulated using a biological process model which is discussed later in this memo.

Data Review

LOCSD provided Carollo with several sources of background information used in this evaluation. These sources include a report authored by Stantec in 2022 titled "Wastewater Collection and Treatment Basis of Design Report" (BODR), which estimated design wastewater flows and loads from the LOCSD as well as established design criteria for the future wastewater collection system within the LOCSD.

The wastewater constituents estimated in the BODR included 5-day biological oxygen demand (BOD_5), total suspended solids (TSS), and total kjedahl nitrogen (TKN). BOD_5 is a measure of the amount of oxygen required by microorganisms to break down matter in wastewater over a 5-day period. TSS is a measure of the amount of particles suspended in wastewater, and TKN is a measure of the amount of ammonia and organic nitrogen in wastewater. These parameters are all important ways of assessing the level of pollution in wastewater, and all three are regulated in some form and part of the Solvang WWTP's effluent permit.

Lastly, Carollo obtained information on the LOCSD's drinking water supply from the Santa Ynez River Water Conservation District, Improvement District No. 1 (SYRWCD ID1), which provides all of the drinking water within the LOCSD service area.

Wastewater Data

The 2022 Stantec BODR divided the septic to sewer conversion project into three phases. Phase I captured the core downtown area within the LOCSD which includes the commercial area and neighboring residential properties. Phase II includes the residential area to the east and south of Phase I. Finally, Phase III includes the remaining property in the LOCSD boundary that were not included in the previous phases, and also accounts for future growth within the LOCSD over the next 20 years.

For the purposes of this evaluation, Carollo considered the scenario where the full Phase III wastewater flows and loads would be connected to the Solvang WWTP. These future flows and wastewater concentrations are presented in Table 1 below alongside Solvang wastewater flows and concentrations. The flows are presented as average daily max month flows (ADMMF), which are the highest 30-day average flows that occur within a year. Influent wastewater concentrations provided are monthly averages. The combination of ADMMF flow with average wastewater concentrations typically provides a 'worst-case' loading scenario for the WWTP, which was used for the analysis conducted in this report.

Additionally, the Solvang WWTP has an agreement with the Santa Ynez Community Services District (SYCSD) to provide up to 0.3 million gallons per day (mgd) of WWTP treatment capacity as shown in Table 1. A 2017 report prepared for the SYCSD titled "Recycled Water Facilities Plan" characterized the strength of SYCSD's wastewater, which is also included in Table 1.

Table 1 Wastewater Quality Parameters

Source	Constituent	ADMMF Flow (gpd)	Avg. Influent Wastewater Concentration (mg/L)	WWTP Influent Load (lb/day)
City of Solvang Wastewater(1)	BOD_5	713,000	263	2,018
	TSS		201	1,542
	TKN		59	453
LOCSD Phase III Wastewater(2)	BOD_5	133,800	416	451
	TSS		320	347
	TKN		63	68
SYCSD Wastewater(3)	BOD_5	300,000	320	658
	TSS		176	503
	TKN		63	148

Notes:
Abbreviations: gpd = gallons per day; lb/day = pounds per day; mg/L = milligrams per liter; avg = average
(1) WWTP average influent concentrations provided by City of Solvang.
(2) LOCSD estimated wastewater concentrations from 2022 Stantec BODR.
(3) SYCSD wastewater concentrations from 2017 Recycled Water Facilities Plan.

Salt Loading Data

An additional concern when considering the ability of the Solvang WWTP to accept wastewater flow from LOCSD is the concentration of certain constituents in the wastewater including total dissolved solids (TDS), sodium, and chloride. The Central Coast Regional Water Quality Control Board (RWQCB) has imposed WWTP effluent limits for these constituents on the City of Solvang and has recently altered those limits to be more stringent. However, none of these constituents are removed by conventional wastewater treatment such as is employed at the Solvang WWTP.

Drinking water in the City of Solvang is comprised of a blended mixture of water from the State Water Project (SWP) as well as local groundwater wells. The flow-weighted drinking water quality concentrations for the City of Solvang are presented in Table 2 alongside the drinking water quality for the LOCSD, which is comprised entirely of water from ID1.

Table 2 Salt Loading Parameters

Constituent	Solvang Wastewater Concentrations[1] (mg/L)	Solvang Blended Drinking Water Concentrations[2] (mg/L)	LOCSD ID1 Concentrations[3] (mg/L)
TDS	1,017	931	581
Sodium	185	61	46
Chloride	239	81	39

Notes:
Abbreviations: mg/L = milligrams per liter
(1) Average of Solvang wastewater data from 2012 to 2023.
(2) Average of flow-weighted concentrations of all active Solvang drinking water sources from 2012 to 2023.
(3) Average of ID1 water quality data sourced from Consumer Confidence Reports from 2012 to 2023.

Carollo has water and wastewater data for these constituents provided by the City of Solvang, but the concentrations of these parameters were not considered in the 2022 Stantec BODR. Therefore, Carollo has estimated the LOCSD wastewater concentrations by first subtracting the background Solvang drinking water concentrations from the total wastewater concentrations for these constituents, resulting in an estimated contribution in wastewater loading from water use, called the user contribution.

The user contribution loads were then converted to concentrations, and these same concentrations from the users in Solvang were used to calculate the user contribution load for LOCSD based on the Phase III flow estimate. The LOCSD drinking water contribution loads were calculated using the ID1 concentrations from Table 2 as well as the Phase III flow estimate. The user contribution loads and drinking water loads were added to form the LOCSD total contribution load in Table 3. Finally, the total LOCSD load was added to the loading data from Solvang to calculate an estimated WWTP load that includes wastewater from Solvang and LOCSD. The total WWTP load was converted to concentrations and compared alongside the WWTP effluent permit limits in Table 3.

Table 3 Estimated Wastewater Salt Loads

Constituent	LOCSD Avg Drinking Water Contribution (lb/day)	LOCSD Avg User Contribution[1] (lb/day)	LOCSD Avg Total Contribution (lb/day)	Total Avg WWTP Load (lb/day)	WWTP Concentration (mg/L)	WWTP Effluent Permit Limit[2] (mg/L)
TDS	648	101	749	6,303	949	1,500
Sodium	51	81	132	1,147	173	100
Chloride	44	97	140	1,455	219	150

Notes:
Abbreviations: lb/day = pounds per day; mg/L = milligrams per liter; avg = average
(1) Assumed same concentrations contributed by users in Solvang service area.
(2) 25-month rolling median effluent permit limit provided.

FINDINGS

Wastewater Data Analysis and Discussion

The influent wastewater flows and concentrations from Table 1 were input into the biological model developed by Carollo using BioWin modeling software. An diagram of the model configuration is included in Figure 1 on the following page. The model reflects the future treatment processes at the WWTP following the upcoming Phase 2 Upgrades project that is meant to address treatment deficiencies at the plant, as discussed below.

Currently, the plant is equipped with sequencing batch reactors (SBRs) that carry out biological treatment of the wastewater. New effluent permit limits imposed by regulators have caused the plant to struggle to treat all incoming flow while also complying with the effluent limits, and this is largely due to the operation of the SBRs.

The Phase 2 Upgrades project will include reconfiguring the existing SBRs to operate as flow through aeration basins, a process that allows more flow to be treated while also removing enough nitrogen to comply with effluent limits. The Phase 2 project will also add secondary clarifiers in order to further remove solids while contributing to the successful biological treatment of nitrogen. The Phase 2 Upgrades Project is currently entering the preliminary design phase and construction is anticipated to be completed in April 2028.

The model was run at the worst-case condition, using ADMMF and average wastewater concentrations to simulate the typical highest wastewater loads on the WWTP. The model results for BOD_5, TSS, and total nitrogen (TN) are summarized in Table 3 alongside the Solvang WWTP permit limits for comparison.

Table 4 Solvang WWTP Effluent Concentrations

Constituent	WWTP Effluent Permit Limit (mg/L)	Modelled Effluent Concentration (mg/L)
BOD_5(1)	30	2.4
TSS(1)	20	4.2
TN(2)	10	8.8

Notes:
Abbreviations: mg/L = milligrams per liter
(1) 30-day average effluent permit limit provided.
(2) 25-month rolling median effluent permit limit provided.

As can be seen from Table 4, even at worst-case maximum month wastewater loading, the future planned WWTP is able to effectively meet effluent permit limits while accepting full Phase 3 buildout ADMMF from LOCSD. This will only be possible, however, after the WWTP Phase 2 Upgrades project is constructed.

The Solvang WWTP is rated to treat 1.5 mgd of influent wastewater flow. Presently, however, the WWTP struggles to meet the effluent limits at current flows due to process limitations that the Phase 2 project is intended to address, and it is considered highly unlikely that the WWTP in its current state would continue to meet permit limits with higher flows from LOCSD.

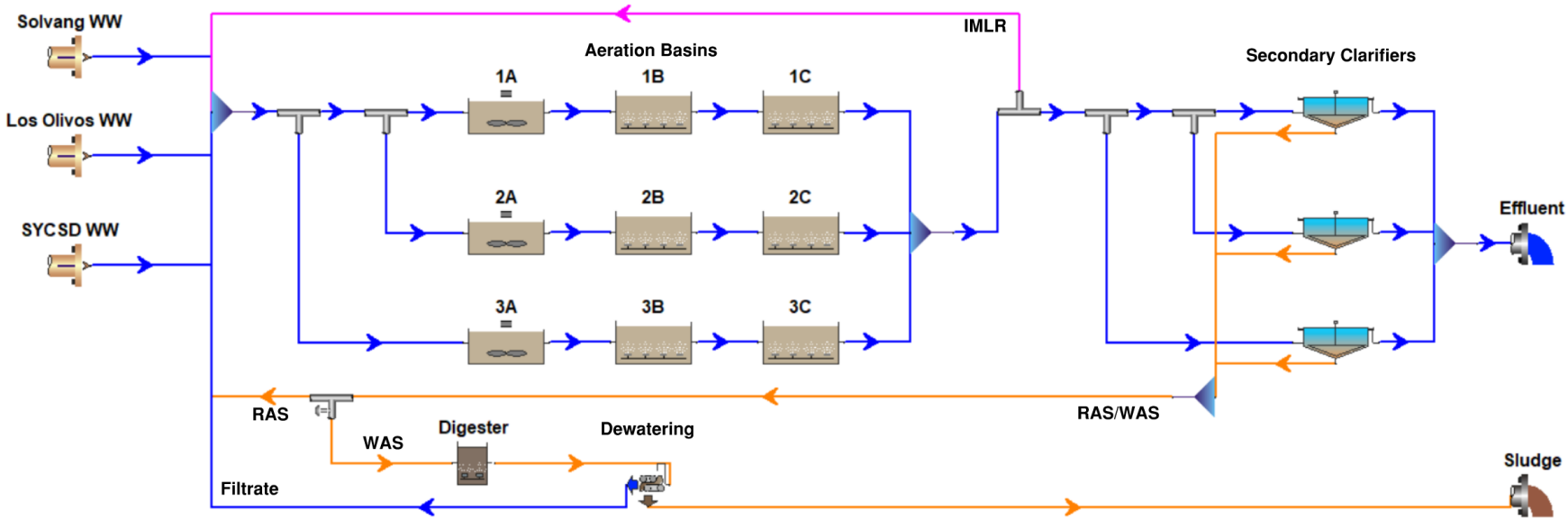


Figure 1 BioWin Model Diagram

Salt Data Analysis and Discussion

As shown previously in Table 2, the average background concentrations of TDS, sodium, and chloride in the LOCSD's drinking water are lower than those in the City of Solvang's blended drinking water, but still contribute to the salt load at the WWTP in addition to the estimated user contribution. Since salt is not removed at the WWTP, it simply passes through and exits with the WWTP effluent. Table 2 shows that the estimated salt load, including that from LOCSD, will violate the effluent permit limits at the WWTP.

This is an issue that has been ongoing for the City of Solvang, even before the permit limits were updated. Due to the hardness of Solvang's drinking water supply, many residents use automatic water softeners (AWS) in their homes to soften their water before consumption. These AWS units discharge salt into the sewer every time they regenerate, which Carollo believes is a significant source of TDS, sodium, and chloride in Solvang's wastewater. The City of Solvang currently has a ban on the use of commercial AWS units but does not have any restrictions on residential use.

As discussed previously, the RWQCB has updated Solvang's permit for these constituents to require more restrictive limits which the WWTP is unable to meet. Solvang has contracted with Carollo to develop a compliance plan to provide to the RWQCB that will outline several options for compliance with the salt permit limits at the WWTP. The first option being considered is not enact a ban or rebate program on residential AWS systems in an effort to eliminate them within Solvang city limits. While this likely won't solve the salt issue entirely, Carollo hopes that it will appease the regulators by demonstrating that Solvang is attempting to address the problem.

Summary and Recommendations

After analyzing estimated wastewater data and drinking water data from the LOCSD, Carollo has concluded that the Solvang WWTP will be able to receive Phase III LOCSD wastewater flows in the future. The addition of LOCSD wastewater will not affect the ability of the WWTP to meet its effluent permit limits, and the flow rate will not cause the WWTP to exceed its rated capacity. These conditions were checked at max-month flow and loading scenario, which is a conservative scenario. Additionally, Carollo does not foresee the background concentrations of TDS, sodium, or chloride in the LOCSD's drinking water as negatively affecting the WWTP's ability to meet permit limits for these constituents.

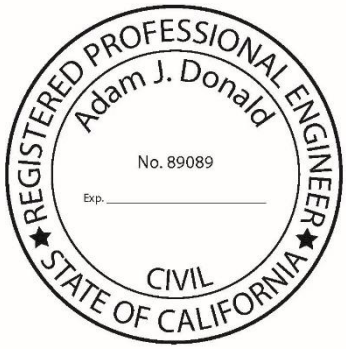
However, Carollo does not recommend that the LOCSD wastewater flows be connected to the Solvang WWTP until after completion of the Phase 2 Upgrades Project at the plant. This will allow the plant to be able to effectively receive and treat the additional flows from LOCSD and will also allow the LOCSD the time necessary to construct a new sewer collection system and connect it to the Solvang WWTP.

The Phase 2 Upgrades Project is currently underway as it is entering preliminary design. Construction of the project is anticipated to be completed in April 2028, which is the earliest that the Solvang WWTP would be able to receive wastewater flow from LOCSD.

Additionally, Carollo recommends that LOCSD implement an AWS ban or rebate program to eliminate AWS systems within its service area. Carollo believes this is a necessary step to comply with WWTP permit limits and appease the RWQCB, as discussed previously, and it is a step currently being pursued by the City of Solvang in its service area.

DRAFT Technical Memorandum

Date:	10/7/2024
To:	Guy Savage, General Manager
CC:	Doug Pike, PE
Prepared By:	Adam Donald, PE
Reviewed By:	Joshua Reynolds, PE
Project:	2582-11920 Solvang Wastewater Treatment Plant and Infrastructure Analysis
Subject:	Los Olivos CSD Flow Impacts on Solvang Wastewater Treatment Plant



1.0 Introduction

In June 2024, Los Olivos Community Services District (Los Olivos) contracted with Water Systems Consulting (WSC) to evaluate the impacts of adding the District's wastewater to the City of Solvang's collection system for treatment at the City of Solvang's (Solvang's) wastewater treatment plant. Los Olivos currently treats their wastewater through septic systems but there is mutual interest in having Solvang treat Los Olivos's wastewater. The goal of this analysis is to understand what capacity upgrades would be required in Solvang's collection system to allow Los Olivos to have their wastewater treated by Solvang.

This analysis utilized the Solvang's collection system hydraulic model. WSC developed and calibrated this model in 2022 as part of Solvang's Sewer Master Plan. For the purposes of this analysis, the model was assumed to be calibrated and that no major infrastructure changes have occurred in Solvang's collection system since the completion of Solvang's Sewer Master Plan.

2.0 Los Olivos CSD Loading

2.1 Loading Estimate

Since Los Olivos currently treats their wastewater using septic systems, there is no metering data to represent their current wastewater loading. In January 2022, Stantec Consulting Services, Inc. (Stantec) prepared the Wastewater Collection and Treatment Basis of Design Report to provide design criteria for a wastewater collection and reclamation system and treatment plant to serve Los Olivos. These design criteria represent the best estimation of

existing and buildout flows and loading that would be conveyed to the Solvang's wastewater treatment plant and is shown in Table 2-1. Stantec estimated the peak hour wet weather flow (PHWWF) has a peaking factor of 4.0 relative to the average dry weather flow. This is consistent with what was observed within Solvang's collection system.

Table 2-1: Los Olivos Flow Projections, Prepared by Stantec

Development Condition Number	Development Condition	Average Dry Weather Flow (gpd[1])	Peak Hour Flow (gpd[1])
1	Existing (Phase I Residential and Commercial)	43,800	175,200
2	Residential Buildout (Phase I+II)	54,500	218,000
3	Overall Buildout (Phase I+II+III)	117,752	471,008
4	Buildout + Inflow (Phase I+II+III+ADU)	120,400	481,600

[1]gpd = gallons per day

For the purposes of loading the hydraulic model, each development condition (as shown in Table 2-1) was added to the appropriate model scenario as a point load at Solvang manhole MD-114, which is located near Sunny Fields Park and is assumed to be the point of connection for a Los Olivos wastewater pipeline. A peaking factor of 4.0 was applied to the average dry weather flow in Table 2-1 to evaluate the peak hour wet weather flow scenarios for existing and buildout development conditions.

2.2 Sensitivity Analysis Loading

Los Olivos hired Regen AEC, PLLC (Regen) to prepare a Basis of Design Report looking at alternative collection system configurations that utilized both gravity sewer and pressurized effluent sewer to serve Los Olivos. The Regen report was completed in May 2024. The Regen analysis utilized pressurized effluent sewers[1], which tend to have lower infiltration and inflow than gravity sewers since any infiltration or inflow must overcome the pressure in the pipeline to enter the system. This assumption resulted in wastewater flows prepared by Regen being lower than that used in the Stantec analysis. However, the flow projections prepared by Stantec were used for the analysis of impacts to Solvang's collection system (this Technical Memorandum)

[1] Pressurized effluent sewers utilize grinder pumps at each individual user's location to pump sewage into a small diameter force main. The pumped flow allows the sewers to be smaller diameter and at a lower depth of cover than a gravity system but require ongoing pumping costs.

since the Stantec flow projections are more conservative. However, the Regen analysis flow projections were utilized in a sensitivity analysis to determine how sensitive the recommended projects (Section 4.0) are to variable wastewater flow projections.

The Regen analysis looked at four options for providing wastewater collection service to Los Olivos. These options are summarized in Table 2-2. The peak hour flows of each scenario were evaluated with Solvang's existing loading to perform a sensitivity analysis. The results of the sensitivity analysis are provided in Section 3.2.6.

Table 2-2: Regen Analysis Loading

Option	Description	Peak Hour Flow (gpm[1])	Peak Hour Flow (gpd[2])
A	Gravity sewer for collection of wastewater within Zones 1 & 2 (commercial) and effluent sewer within Zones 3, 4, 5, & 6.	308	443,520
B	Effluent sewer in all zones.	134	192,960
C	Gravity sewer for collection of wastewater within Zones 1 & 2 (commercial) and effluent sewer within Zones 3, 4, & 5, and advanced onsite systems in Zone 6.	287	413,280
D	Effluent sewer in Zones 1, 2, 3, 4, & 5 and advanced onsite systems in Zone 6.	113	162,720

[1]gpm = gallons per minute
[2]gpd = gallons per day

3.0 Hydraulic Modeling Results

This section establishes the evaluation criteria and summarizes the results of the hydraulic modeling effort. The hydraulic modeling effort focused on the flow projections from the Stantec basis of design report as discussed in Section 2.1. No pipe segments were identified as over-capacity under average annual flow conditions; therefore, the results below are focused on PHWWF conditions.

3.1 Evaluation Criteria

To evaluate capacity constraints, the evaluation criteria from Solvang's Sewer Master Plan were utilized to provide a consistent metric in determining when a pipe is undersized. These criteria are presented in Table 3-1 and Table 3-2.

Table 3-1: Pipeline Evaluation Criteria

Pipe Size	Maximum Depth/Diameter (d/D)
10" diameter and smaller	0.50
Greater than 10" diameter	0.75

Table 3-2: Pump Evaluation Criteria

Parameter	Criteria
Pump Capacity	Capacity should be sufficient to meet PHWWF, with one pump available as a backup.

SewerGEMS has multiple calculations for d/D within its results. For the purposes of this analysis, the "dnormal/D" value was utilized. This parameter calculates the normal depth in the pipe under steady flow conditions and does not consider backwater flow in the pipe.

3.2 Pipeline Capacity Evaluation

The hydraulic model was used in conjunction with the gravity pipeline evaluation criteria, described in Table 3-1, to identify capacity deficiencies in the collection system under the various flow scenarios. Modeling flow scenarios are shown in Table 3-3. No pipe segments were identified as overcapacity under the average annual flow scenarios; therefore, the results below are focused on PHWWF scenarios.

For the purposes of this memo, the results are focused solely on the pipes that are impacted by the addition of Los Olivos wastewater flows. These impacted mains are highlighted in Figure 3-1.

Table 3-3: Modeling Flow Scenarios

Scenario	Description
Baseline Existing Average	Existing average annual flow for Solvang only
Baseline Existing PHWWF	Existing peak hour wet weather flow for Solvang only
Existing Average	Existing average annual flow for Solvang with the addition of Los Olivos existing average dry weather flows (Development Condition 1)
Existing PHWWF	Existing peak wet weather flow for Solvang with the addition of Los Olivos existing peak wet weather flows (Development Condition 1)
Baseline Buildout Average	Buildout + infill average annual flow for Solvang only
Baseline Buildout PHWWF	Buildout + infill peak hour wet weather flow for Solvang only
Buildout Average	Buildout average annual flow for Solvang with the addition of Los Olivos buildout average dry weather flows (Development Condition 3)
Buildout PHWFF	Buildout peak wet weather flow for Solvang with the addition of Los Olivos buildout peak wet weather flows (Development Condition 3)
Buildout + Infill Average	Buildout + infill average annual flow for Solvang with the addition of Los Olivos average dry weather buildout + infill flows (Development Condition 4)
Buildout + Infill PHWWF	Buildout + infill peak wet weather flow for Solvang with the addition of Los Olivos buildout + infill peak wet weather flows (Development Condition 4)

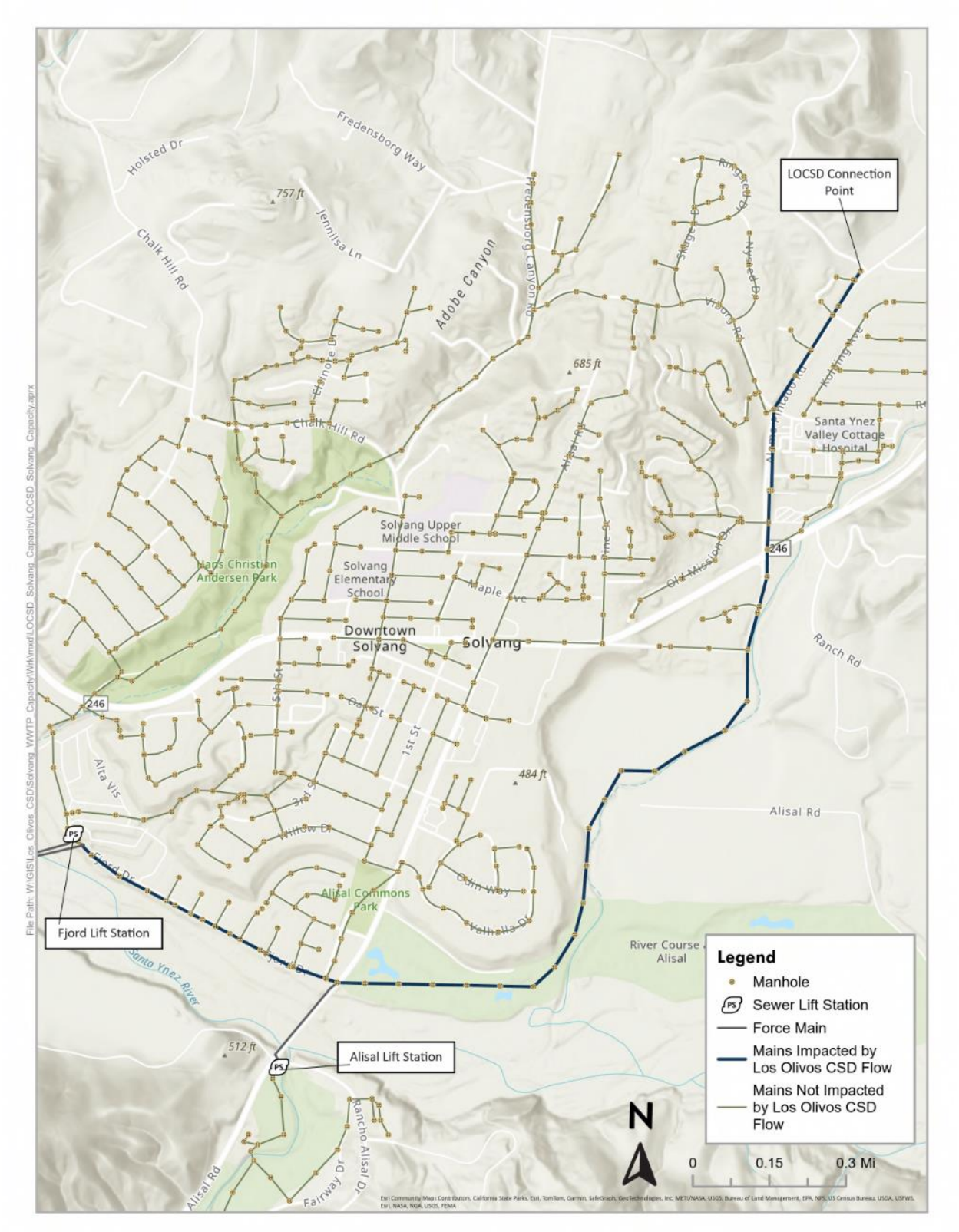


Figure 3-1: Mains impacted by Los Olivos's flows

3.2.1 Baseline Existing Peak Hour Wet Weather Flow

The baseline existing PHWWF scenario identifies the capacity constrained mains within Solvang's current collection system amongst the mains that would be impacted by the addition of Los Olivos's wastewater to Solvang's collection system. This scenario identified nine mains (0.32 miles) along Fjord Drive that exceed the capacity criteria under existing conditions (Figure 3-2). These five mains are triggered for two primary reasons: (1) they have low slopes and (2) they only exceed the capacity criteria when the Alisal Force Main is actively pumping and discharging into the collection system. Solvang's master plan recommended these mains be surveyed to determine if the slopes are actually as low as Solvang's GIS indicated and that flow be monitored to determine if the peak flows are actually triggering these conditions.

3.2.2 Existing Peak Hour Wet Weather Flow

Analysis of Solvang's collection system under existing PHWWF conditions with the addition of Los Olivos's wastewater flow identified 11 pipe segments (0.43 miles) that exceed the capacity criteria. A map showing these capacity constrained pipe segments is shown in Figure 3-3. The pipes impacted by Los Olivos loading are primarily located along Fjord Drive. The additional flow above the baseline Solvang flow causes these low slope mains to exceed the capacity criteria. There is also one main exceeding capacity criteria near the proposed connection point. This area consists of end of the line mains that were not anticipating future flows and the smaller size results in a capacity constraint. A summary of the pipe segments that exceeded the capacity criteria is contained in Appendix A.

3.2.3 Baseline Buildout Peak Hour Wet Weather Flow

The baseline buildout PHWWF scenario identifies the capacity constrained mains within Solvang's collection system under full buildout conditions amongst the mains that would be impacted by the addition of Los Olivos's wastewater to Solvang's collection system. This baseline scenario assumes Solvang is fully built out including the addition of accessory dwelling units (ADUs). The baseline buildout PHWWF scenario identified nine pipe segments (0.32 miles) that exceeded the capacity criteria, all along Fjord drive. A map showing these capacity constrained pipe segments is shown in Figure 3-4. As with the existing PHWWF baseline scenario, these nine mains are triggered for two primary reasons: (1) they have low slopes and (2) they only exceed the capacity criteria when the Alisal Force Main is actively pumping and discharging into the collection system. Solvang's master plan recommended these mains be surveyed to determine if the slopes are actually as low as Solvang's GIS indicated and that flow be monitored to determine if the peak flows are actually triggering these conditions.

3.2.4 Buildout Peak Hour Wet Weather Flow

The buildout PHWWF analysis used the overall buildout flow from Table 2-1 as it is more conservative than the residential buildout flow. Analysis of the collection system under buildout PHWWF conditions identified 19 pipe segments (0.87 miles) that exceed the capacity criteria. A

map showing pipe segments with capacity constraints under buildout PHWWF conditions is shown in Figure 3-5. The pipes impacted by Los Olivos loading are primarily located near the proposed connection point as these are end of the line mains that were not anticipating future flows as well a section of trunk main that was identified as potentially capacity constrained in Solvang's Sewer Master Plan. Adding Los Olivos's loading to this trunk main, further creates a capacity concern within the trunk. A summary of the pipe segments that exceeded the capacity criteria is contained in Appendix A.

3.2.5 Buildout + Infill Peak Hour Wet Weather Flow

Analysis of the collection system under buildout + infill PHWWF conditions identified 19 pipe segments (0.87 miles) that exceed the capacity criteria. A map showing pipe segments with capacity constraints under buildout + infill PHWWF conditions is shown in Figure 3-6. The pipes impacted by Los Olivos loading are primarily located near the proposed connection point as these are end of the line mains that were not anticipating future flows as well a section of trunk main that was identified as potentially capacity constrained in Solvang's Sewer Master Plan. Adding the Los Olivos's loading to this trunk main further creates a capacity concern within the trunk. A summary of the pipe segments that exceeded the capacity criteria is contained in Appendix A.

3.2.6 Sensitivity Analysis

A sensitivity analysis was performed in the hydraulic model to evaluate the lower peak wet weather flows estimated in the Regen Basis of Design Report (Section 2.2). Each Regen loading scenario was added at Manhole MD-114 in the model and evaluated with Solvang's existing flows. The Regen results are listed below and generally aligned with the Stantec loading scenarios used in this analysis.

- Regen Option A identified the same over capacity pipes as the Buildout + Infill Peak Wet Weather Flow scenario.
- Regen Option B identified the same over capacity pipes as the Existing Peak Wet Weather Flow scenario.
- Regen Option C identified the same over capacity pipes as the Buildout + Infill Peak Wet Weather Flow scenario with the exception of mains SWP0126 and SWP0110.
- Regen Option D identified the same over capacity pipes as the Existing Peak Wet Weather Flow Scenario.

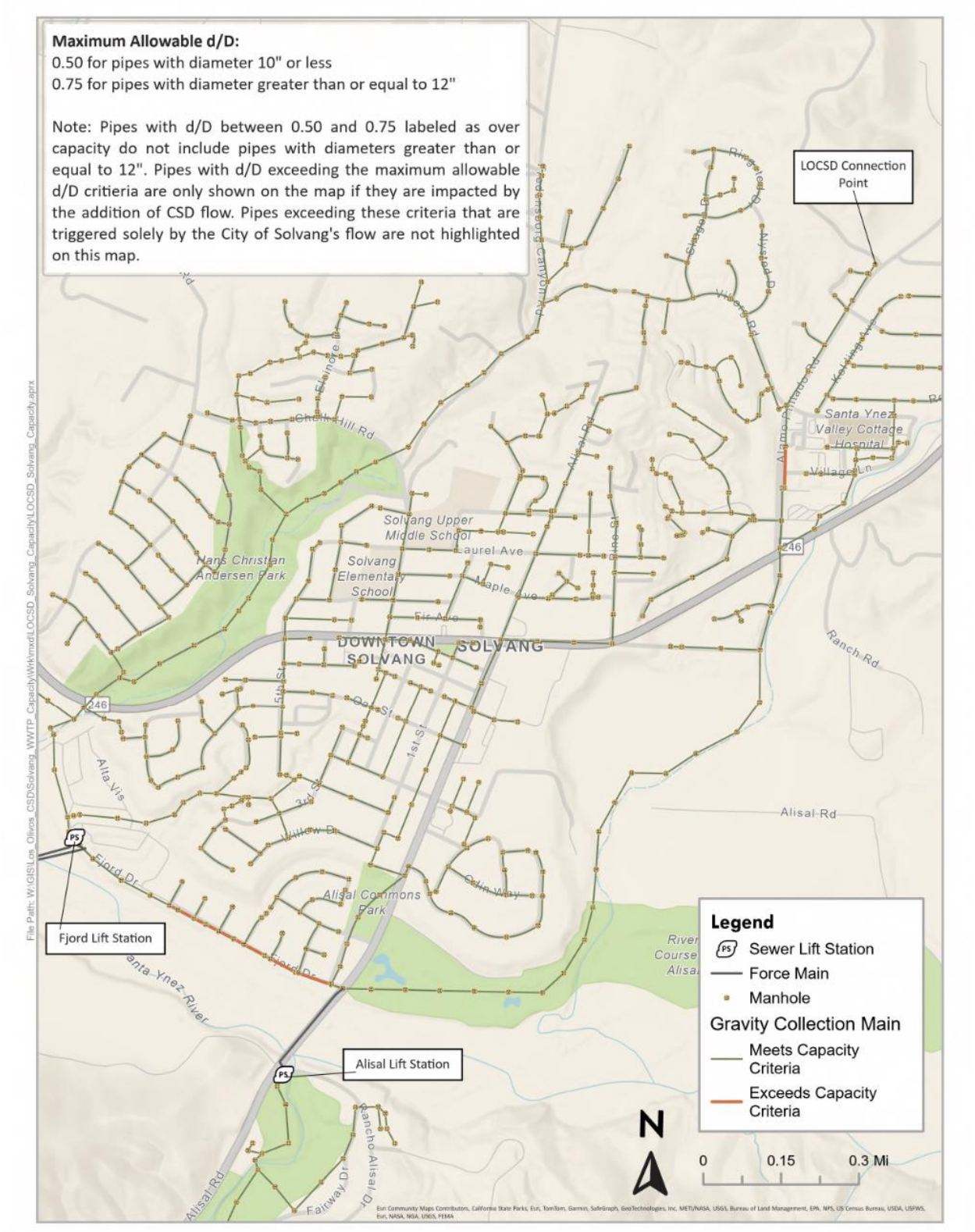


Figure 3-2: Baseline (Solvang Only) Existing PHWWF Capacity Constraints

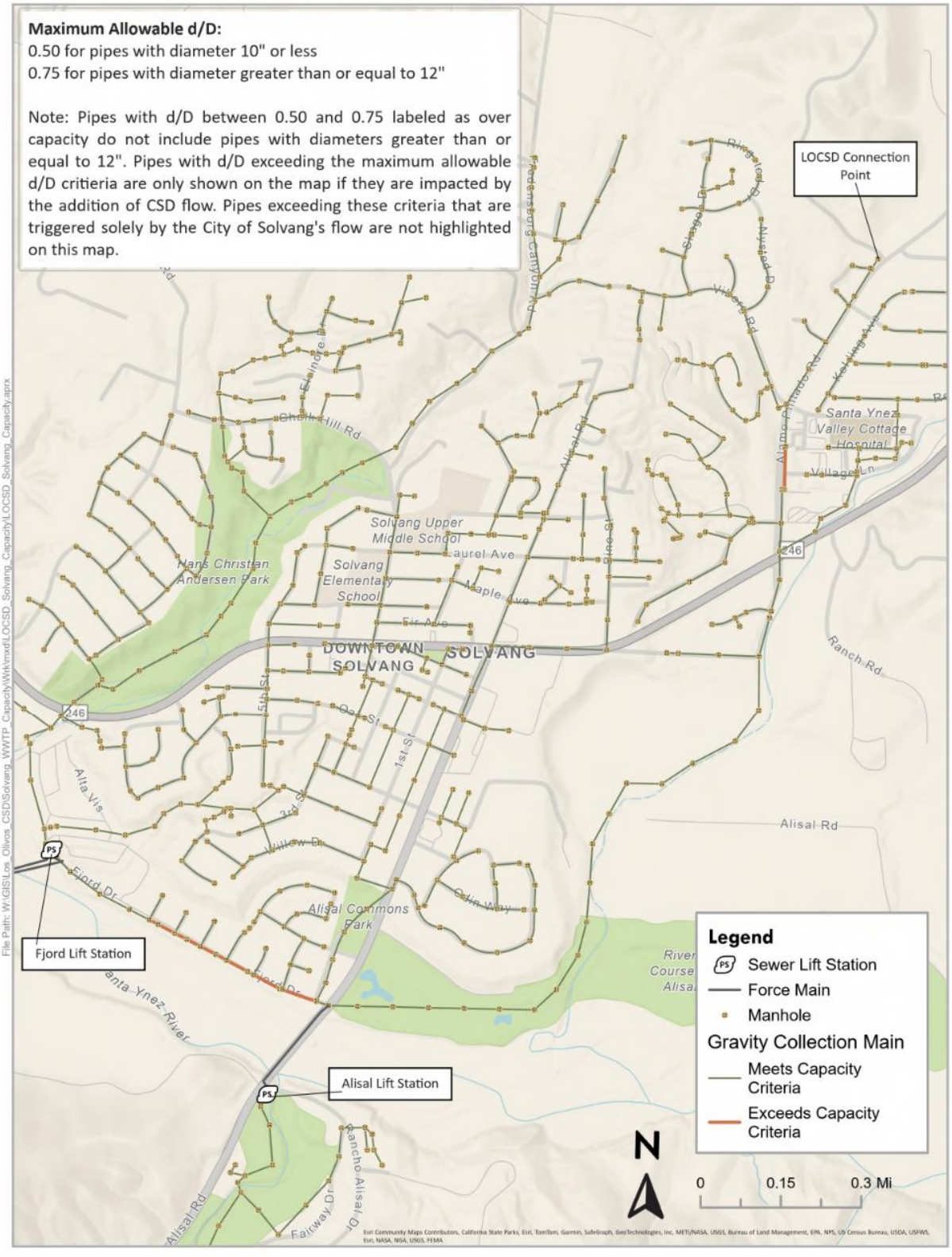


Figure 3-3: Existing PHWWF Capacity Constraints

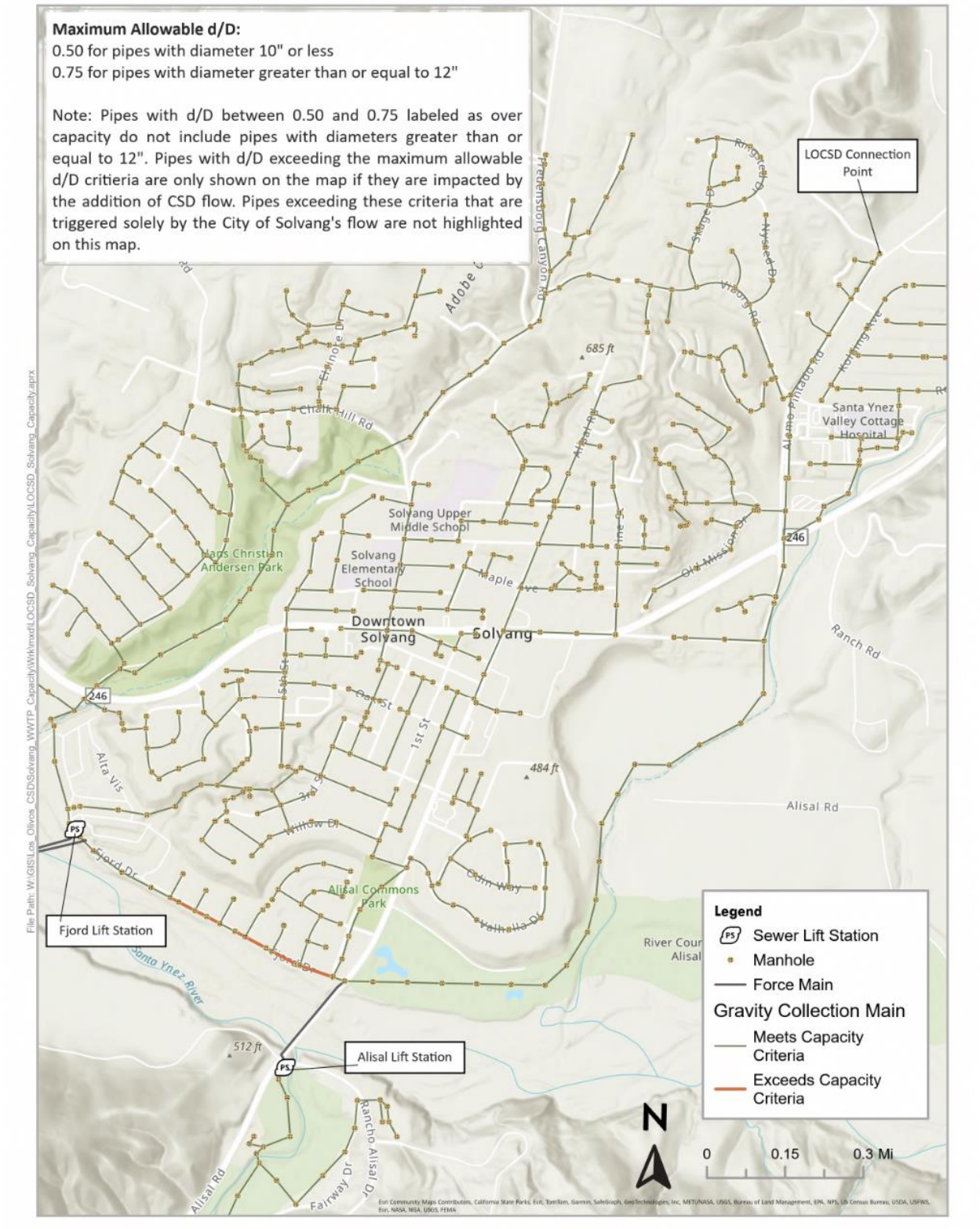


Figure 3-4: Baseline (Solvang Only) Buildout PHWWF Capacity Constraints

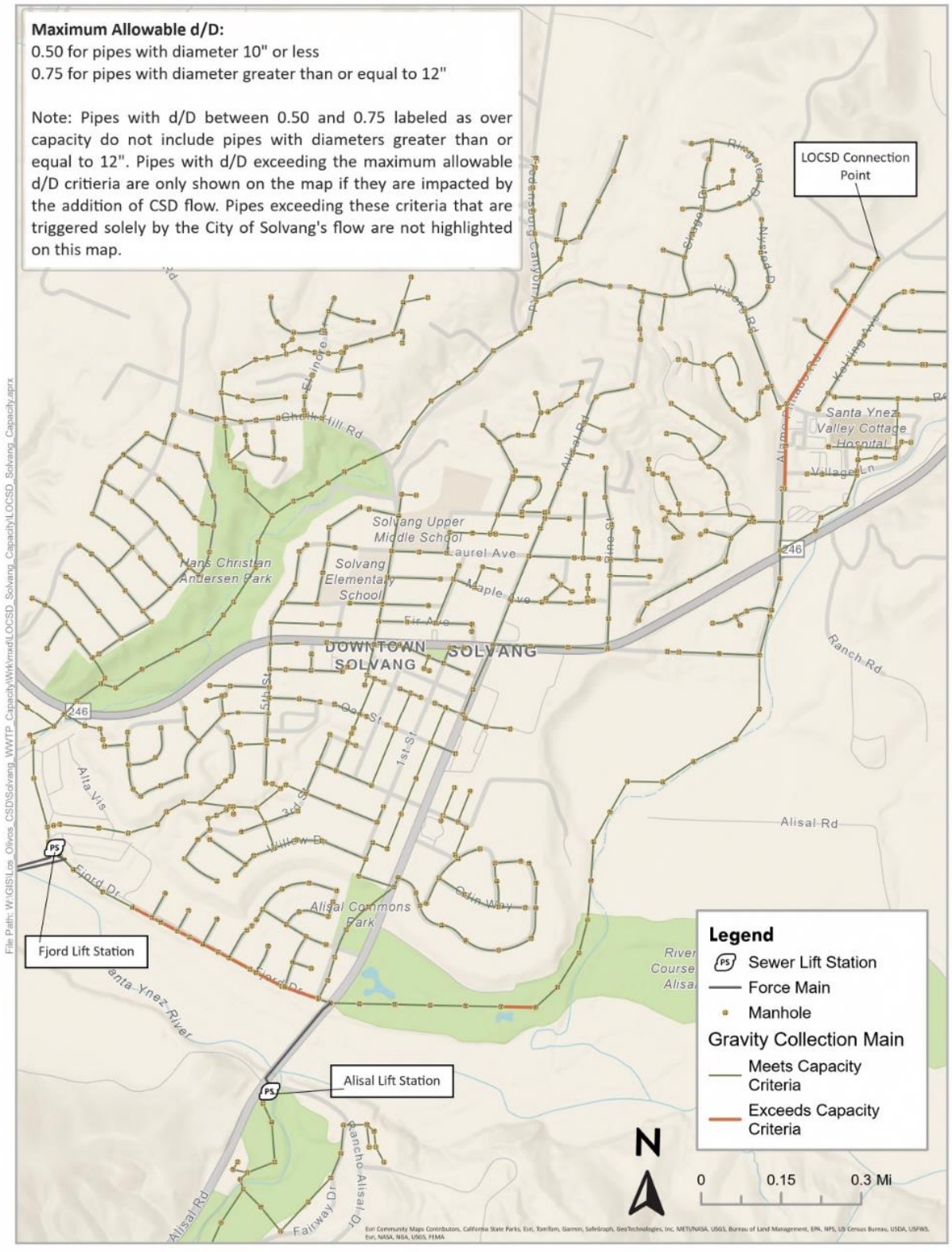


Figure 3-5: Buildout PHWWF Capacity Constraints

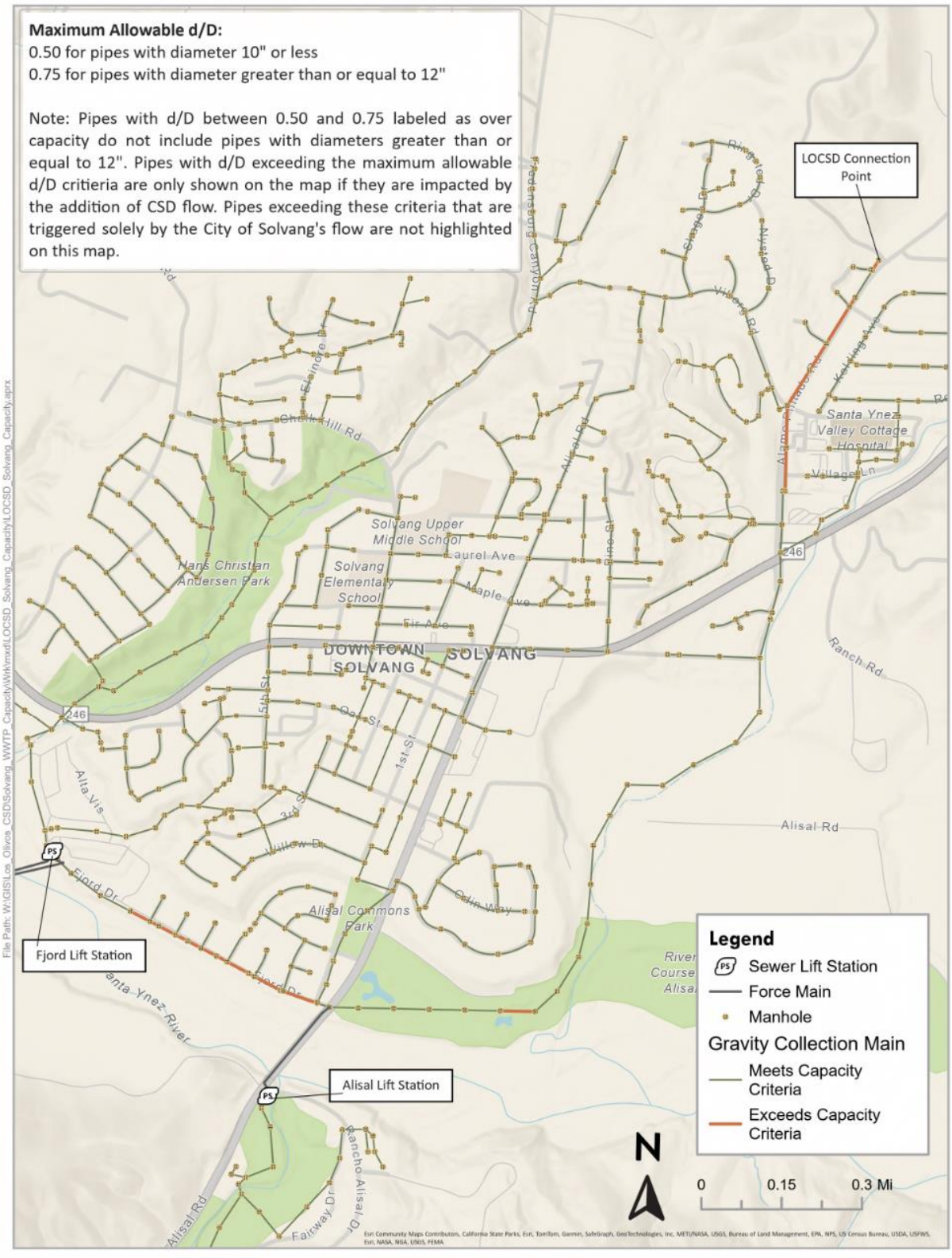


Figure 3-6: Buildout + Infill PHWWF Capacity Constraints

3.3 Fjord Lift Station Capacity Evaluation

The capacity of the Fjord Lift Station was also assessed based on the various PHWWF scenarios. PHWWF inflow rates were compared to the lift station's reliable capacity. Results of the lift station capacity evaluation are presented in Table 3-4. As shown, the Fjord Lift station has sufficient capacity to accommodate existing PHWWF, buildout PHWWF, and buildout + infill PHWWF. It should be noted that Santa Ynez Community Services District (SYCSD) owns 20% of the capacity (0.30 MGD) at Solvang's 1.5 MGD wastewater treatment plant but operational restrictions can limit their flow to 0.24 MGD. All SYCSD flow is discharged at the Fjord Lift Station prior to being pumped to the treatment plant. Even if SYCSD were to discharge their full 20% of the reliable capacity (777,600 gpd) under PHWWF conditions, the reliable capacity of Fjord Lift Station is sufficient to meet the pumping needs of Solvang and Los Olivos under existing and future buildout scenarios. No capacity upgrades are required at the Fjord Lift Station at this time. However, Solvang's Sewer Master Plan recommended upgrades at the Fjord Lift Station to address needed structural improvements and ultimately recommends the pumps at the lift station be replaced by 2032.

A sensitivity analysis was performed at Fjord Lift Station with the various Regen development conditions. Since the Regen development conditions have less overall flow than the scenarios used in this analysis, none of the Regen development conditions triggered any upgrades at the Fjord Lift Station.

Table 3-4: Fjord Lift Station Capacity and Demand Summary

Lift Station Condition	Reliable Capacity (gpm)[1]	Reliable Capacity (gpd)	Existing PHWWF (gpd)	Residential Buildout PHWWF (gpd)	Overall Buildout PHWWF (gpd)	Buildout + Infill PHWWF (gpd)	Future Capacity Available
Fjord Lift Station[2]	2,700	3,888,000	2,275,953	2,306,813	2,306,813	2,362,659	Yes
Fjord Lift Station with Santa Ynez CSD Flow[3]	2,700	3,888,000	3,053,553	3,084,413	3,084,413	3,140,259	Yes
Fjord Lift Station with Santa Ynez and Los Olivos CSD Flow[3]	2,700	3,888,000	3,228,746	3,302,413	3,555,421	3,621,853	Yes

1. Lift station reliable capacity is based on calculated lift station pump capacity with one pump in reserve.
2. Values shown do not include flows from the Santa Ynez Community Services District that are discharged into Fjord Lift Station.
3. Values shown assume Santa Ynez Community Services District is using 20% of the Fjord Lift Station's reliable capacity (777,600 gpd).

gpm = gallons per minute

gpd = gallons per day

4.0 Recommended Projects

The following sections provide an overview of the cost opinion assumptions and the recommended projects needed in Solvang's collection system in order to accommodate Los Olivos discharging their wastewater into Solvang's collection system.

4.1 Cost Opinion Basis and Assumptions

The cost opinions (estimates) in this analysis have been prepared in conformance with industry practices as planning level cost opinions and are classified as Class 5 Conceptual Report Classification of Opinion of Probable Construction Costs as developed by AACE International. The purpose of a Class 5 Estimate is to provide a conceptual level of effort that is expected to range in accuracy from -25% to +50%. A Class 5 Estimate also includes an appropriate level of contingency so that it can be used in future planning and feasibility studies. The design concepts and associated costs presented in this analysis are conceptual in nature due to the limited design information that is available at this stage of project planning. These cost estimates have been developed using a combination of data from RS Means CostWorks® and recent bids, experience with similar projects, current and foreseeable regulatory requirements, and an understanding of necessary project components. As the projects progress, the designs and associated costs could vary significantly from the project components identified in this analysis.

The recommended projects and these cost opinions are based on the following assumptions:

1. The scope of this analysis was limited to addressing pipeline capacity constraints through upsizing the existing mains. All prices are based on upsizing the existing mains. In some instances, where feasible, parallel mains may provide a better solution to address the capacity constraints. This should be evaluated during the design process.
2. For projects that have applicable cost data available in the RS Means Costworks® (e.g. pipeline installation), cost data for Quarter 4 of 2024, adjusted for Santa Barbara County, is used. Material prices were further adjusted in some cases to provide estimates that align more closely with actual local bid results.
3. For projects where RS Means CostWorks® data is not available, cost opinions are generally derived from bid prices from similar projects, vendor quotes, material prices, and labor estimates, with adjustments for inflation, size, complexity, and location.
4. Cost opinions are in 2024 dollars (ENR Construction Cost Index of 13,632.23 for September 2024). When budgeting for future years, appropriate escalation factors should be applied. The past 5-year average increase of the ENR CCI 20 City Average is considered a reasonable factor to use for escalation.
5. Cost opinions are "planning-level" and may not fully account for site-specific conditions that will affect the actual costs, such as soil conditions and utility conflicts.
6. Construction Costs include the following mark-up items:

a. 25% construction contingency based on construction sub-total.

7. Total Project Costs include the following allowances:
    a. 15% of Construction Total for project development, including administration, alternatives analysis, planning, engineering, surveying, etc.
    b. 10% of Construction Total for construction phase support services, including administration, inspection, materials testing, office engineering, construction administration, etc.

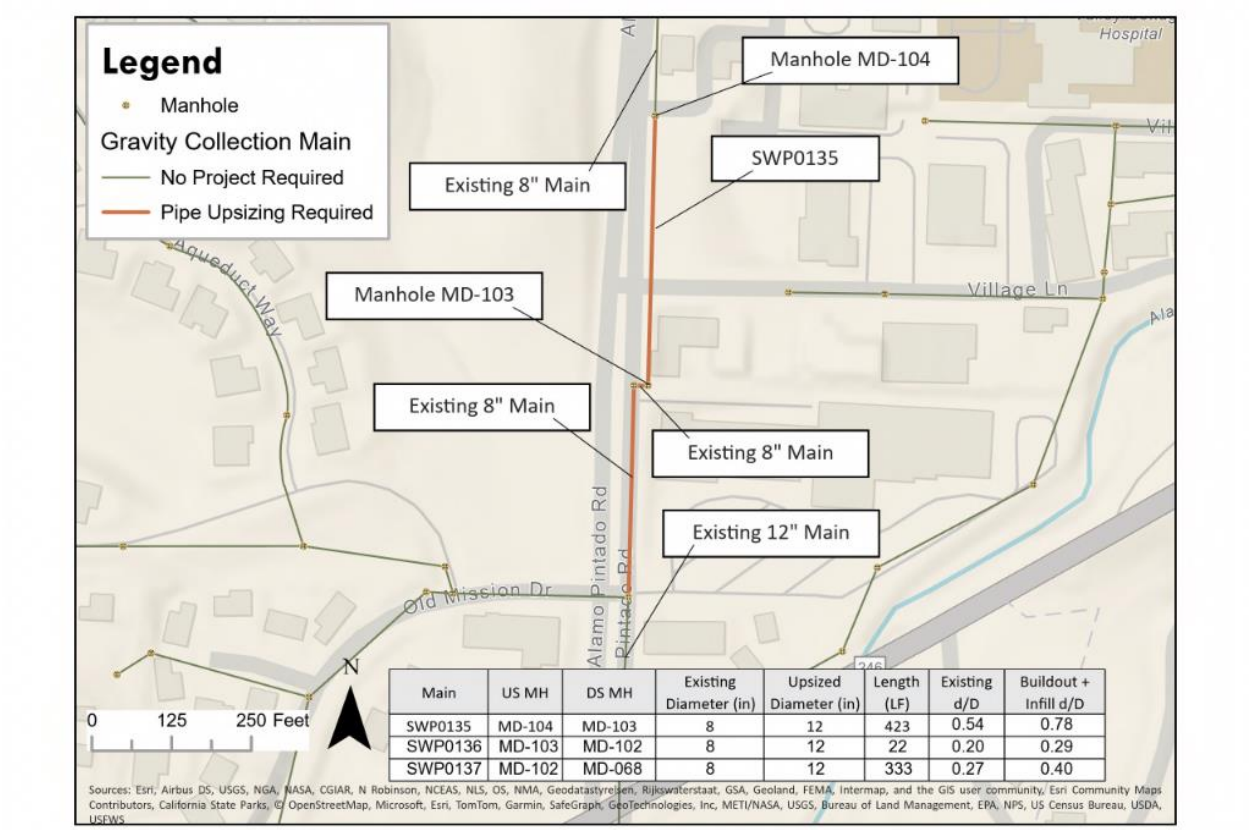
4.2 Gravity Collection Mains

The modeling results (Section 0) identified 11 pipe segments under existing conditions, 19 pipe segments under buildout conditions, and 19 pipe segments under buildout + infill conditions that have capacity constraints and are impacted by the addition of Los Olivos's wastewater flow. Detailed descriptions of recommended projects based on these results are provided in the following subsections.

4.2.1 Alamo Pintado Phase 1

The existing 8-inch sewer main (SWP0135) along Alamo Pintado Road near Village Lane is capacity deficient under existing, buildout, and buildout + infill peak wet weather loading. The hydraulic model indicates that upsizing this main to a 10-inch main addresses the existing deficiency but is insufficient for handling buildout flows. To fully accommodate buildout flows, this main must be upsized to a 12-inch pipe. The two downstream mains (SWP0136 and SWP0137) are both 8-inch vitrified clay pipes that are recommended to be upsized to 12-inch mains for continuity.

The recommended project consists of removing the existing 8-inch sewer mains and constructing 778 linear feet of 12-inch PVC sewer in its place. The project extents are shown in Figure 4-1. Estimated project costs are shown in Table 4-1. A detailed cost opinion is provided in Appendix B.



Main	US MH	DS MH	Existing Diameter (in)	Upsized Diameter (in)	Length (LF)	Existing d/D	Buildout + Infill d/D
SWP0135	MD-104	MD-103	8	12	423	0.54	0.78
SWP0136	MD-103	MD-102	8	12	22	0.20	0.29
SWP0137	MD-102	MD-068	8	12	333	0.27	0.40

Figure 4-1: Alamo Pintado Phase 1 Map

Table 4-1: Estimated Costs for Alamo Pintado Phase 1

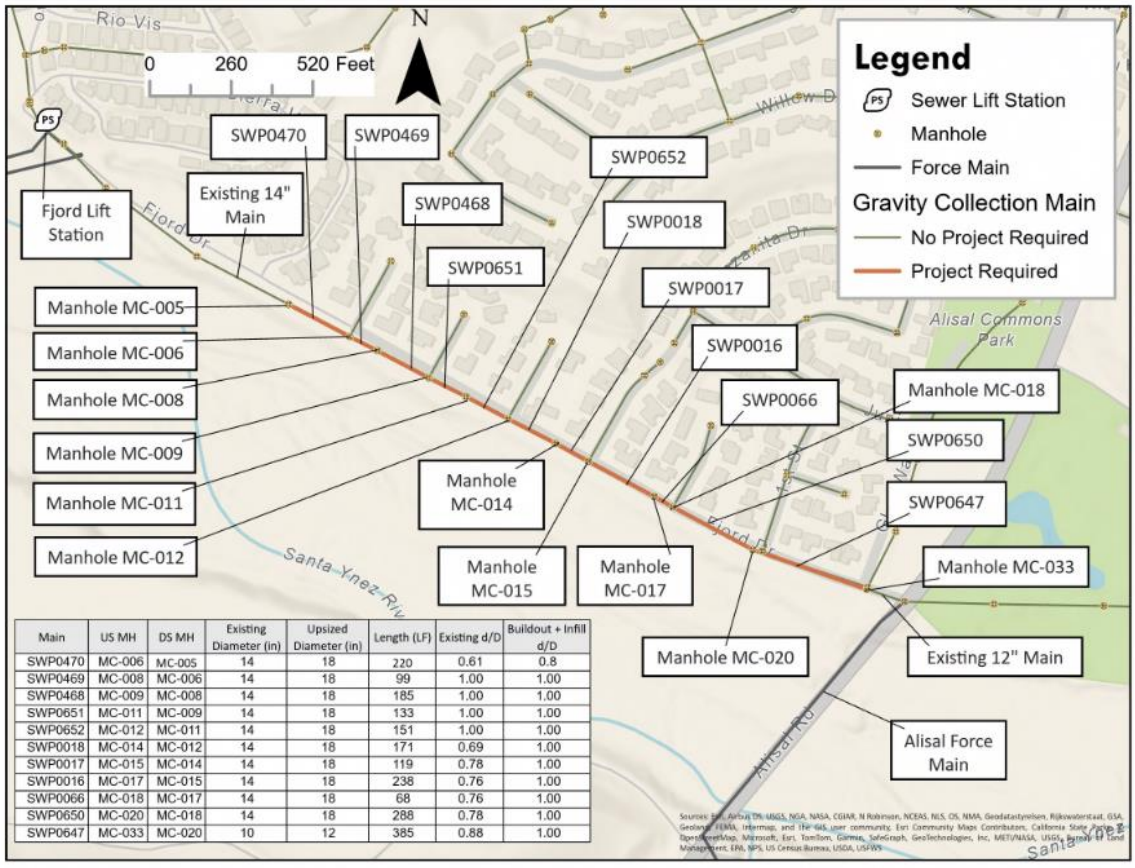
Item	Cost
Base Construction Cost	$176,500
Construction Contingency (25%)	$44,000
Construction Total	$220,500
Project Development and Implementation (25%)	$55,000
Opinion of Total Project Cost	**$275,500**

4.2.2 Fjord Drive

The existing 14-inch sewer mains between manholes MC-006 and MC-020 and the 10-inch sewer main between manholes MC-020 and MC-03 are capacity deficient under existing, buildout, and buildout + infill peak wet weather loading. Under buildout and buildout + infill peak wet weather loading, the existing 14-inch sewer main between manholes MC-005 and MC-006 is also capacity deficient. The hydraulic model indicates upsizing the 14-inch mains to 18-inch

mains and the 10-inch main to a 12-inch main addresses the capacity deficiencies. The recommended project consists of removing these existing mains and constructing 1,673 linear feet of 18-inch PVC sewer and 385 LF of 12-inch PVC sewer in its place. The project extents are shown in Figure 4-2. Estimated project costs are shown in Table 4-2. A detailed cost opinion is provided in Appendix B.

The stretch of pipe between manhole MC-008 and manhole MD-001 where the Alisal Lift Station discharges into the system was identified as having capacity constraints in Solvang's Sewer Master Plan. The master plan identified the need to survey this area as the pipes in this section consisted of low slopes and seemed to only exceed capacity criteria when the Alisal Lift Station turned on. As an alternative to upsizing the existing piping, WSC also evaluated reconfiguring the Alisal Force Main to discharge directly to Solvang's wastewater treatment plant. Modeling results indicated that this stretch of pipe remains capacity deficient with the addition of the Los Olivos flows even when the flows from the Alisal Force Main are diverted. Therefore, the optimal project for this section of pipe is to upsize the existing alignment.



Main	US MH	DS MH	Existing Diameter (in)	Upsized Diameter (in)	Length (LF)	Existing d/D	Buildout + Infill d/D
SWP0470	MC-006	MC-005	14	18	220	0.61	0.8
SWP0469	MC-008	MC-006	14	18	99	1.00	1.00
SWP0468	MC-009	MC-008	14	18	185	1.00	1.00
SWP0651	MC-011	MC-009	14	18	133	1.00	1.00
SWP0652	MC-012	MC-011	14	18	151	1.00	1.00
SWP0018	MC-014	MC-012	14	18	171	0.69	1.00
SWP0017	MC-015	MC-014	14	18	119	0.78	1.00
SWP0016	MC-017	MC-015	14	18	238	0.76	1.00
SWP0066	MC-018	MC-017	14	18	68	0.76	1.00
SWP0650	MC-020	MC-018	14	18	288	0.78	1.00
SWP0647	MC-033	MC-020	10	12	385	0.88	1.00

Figure 4-2: Fjord Drive Map

Table 4-2: Estimated Costs for Fjord Drive Improvements

Item	Cost
Base Construction Cost	$798,300
Construction Contingency (25%)	$200,000
Construction Total	$998,300
Project Development and Implementation (25%)	$250,000
Opinion of Total Project Cost	**$1,248,300**

4.2.3 River Course Golf Course

The existing 12-inch sewer main between manholes MD-006 and MD-007 runs full (d/D equal to 1) under buildout and buildout + infill peak wet weather loading. The hydraulic model indicates that upsizing this main to a 15-inch main addresses this deficiency.

The recommended project consists of removing the existing 12-inch sewer main (SWP0248) and constructing 344 linear feet of 15-inch PVC sewer in its place. The project extents are shown in Figure 4-3. Estimated project costs are shown in Table 4-3. A detailed cost opinion is provided in Appendix B.

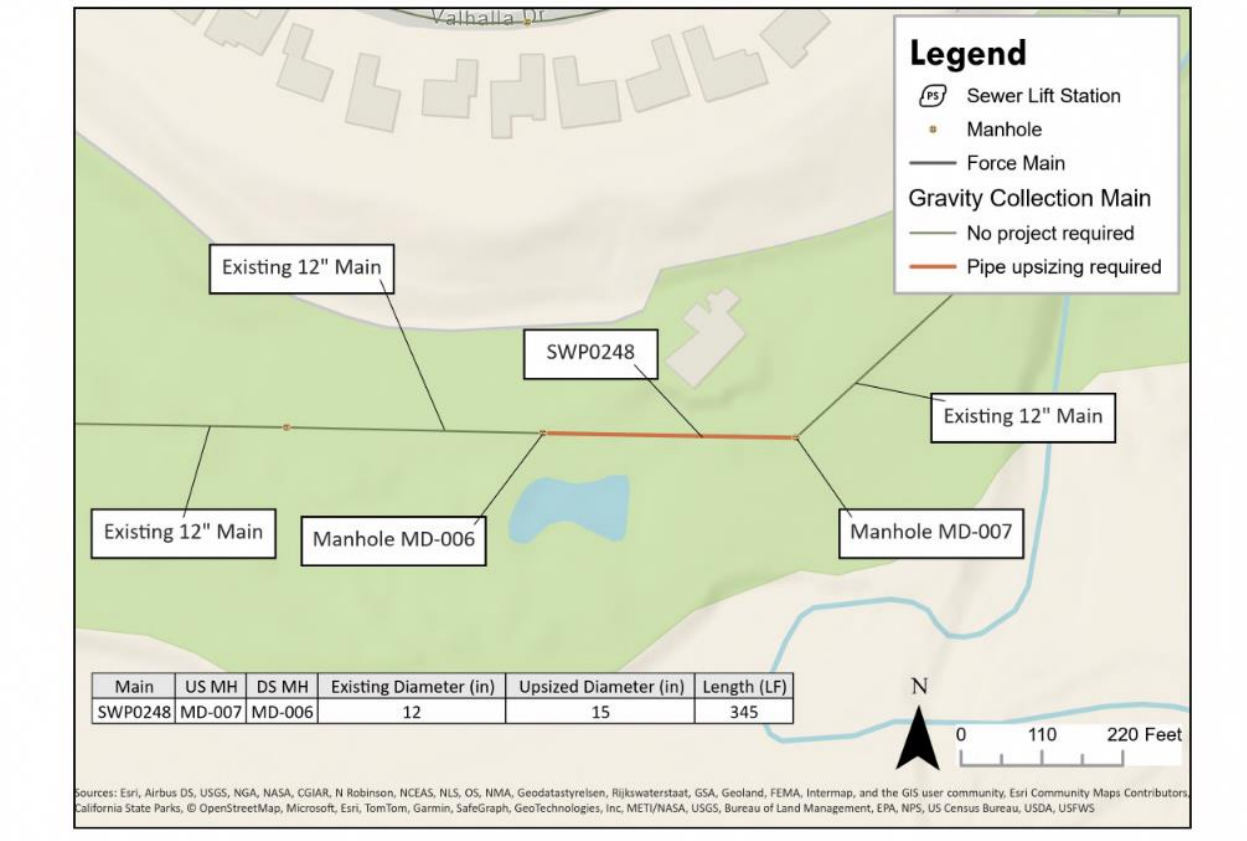


Figure 4-3: River Course Golf Course Map

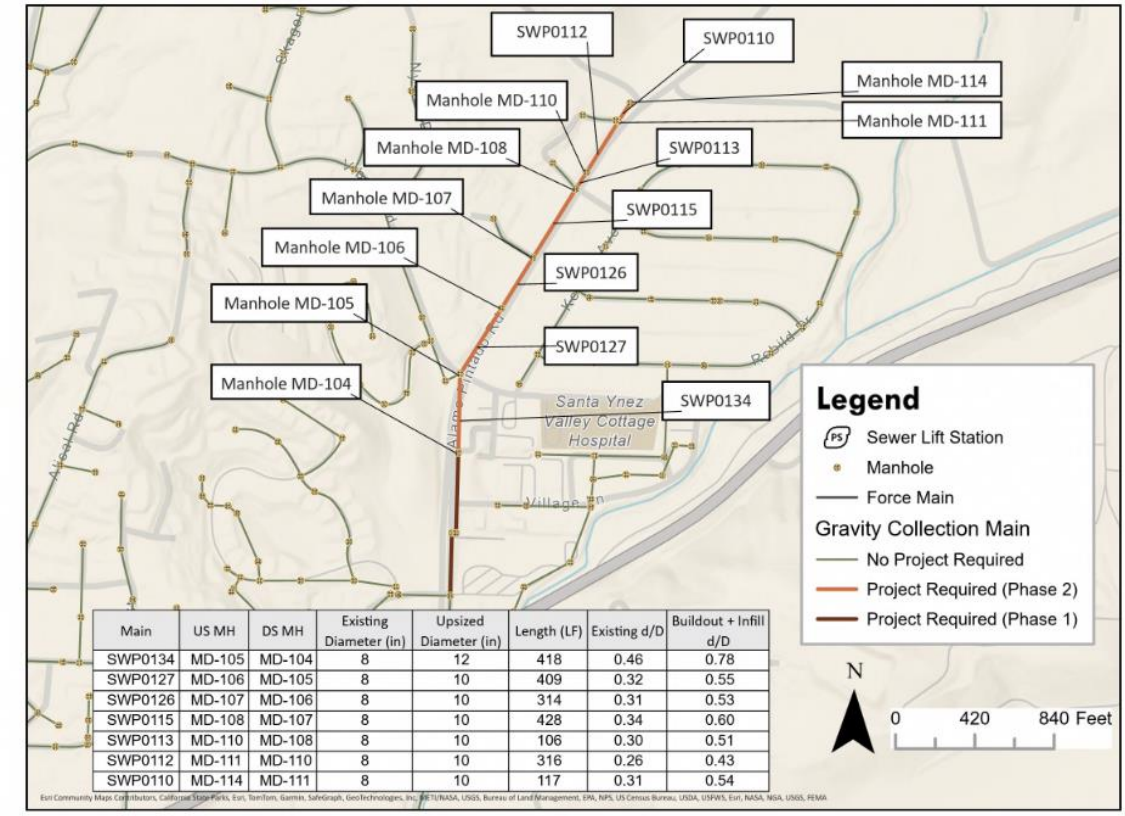
Table 4-3: Estimated Costs for River Course Golf Course

Item	Cost
Base Construction Cost	$88,300
Construction Contingency (25%)	$22,000
Construction Total	$110,300
Project Development and Implementation (25%)	$28,000
Opinion of Total Project Cost	**$138,300**

4.2.4 Alamo Pintado Phase 2

The existing 8-inch sewer mains from manhole MD-068 to manhole MD-114 along Alamo Pintado Road near Village Lane is capacity deficient under buildout and buildout + infill peak wet weather loading. The hydraulic model indicates upsizing these mains to 12-inch and 10-inch mains addresses these deficiencies.

The recommended project consists of removing the existing 8-inch sewer mains and constructing 418 linear feet of 12-inch PVC sewer and 1,691 linear feet of 10-inch PVC sewer in its place. The project extents are shown in **Error! Reference source not found.**. Estimated project costs are shown in Table 4-4. A detailed cost opinion is provided in Appendix B.



Main	US MH	DS MH	Existing Diameter (in)	Upsized Diameter (in)	Length (LF)	Existing d/D	Buildout + Infill d/D
SWP0134	MD-105	MD-104	8	12	418	0.46	0.78
SWP0127	MD-106	MD-105	8	10	409	0.32	0.55
SWP0126	MD-107	MD-106	8	10	314	0.31	0.53
SWP0115	MD-108	MD-107	8	10	428	0.34	0.60
SWP0113	MD-110	MD-108	8	10	106	0.30	0.51
SWP0112	MD-111	MD-110	8	10	316	0.26	0.43
SWP0110	MD-114	MD-111	8	10	117	0.31	0.54

Figure 4-4: Alamo Pintado Phase 2 Map

Table 4-4: Estimated Costs for Alamo Pintado Phase 2

Item	Cost
Base Construction Cost	$690,000
Construction Contingency (25%)	$173,000
Construction Total	$863,000
Project Development and Implementation (25%)	$216,000
Opinion of Total Project Cost	**$1,079,000**

4.3 Sewer Lift Stations

As discussed in Section 3.3, the Fjord Lift Station is anticipated to have sufficient capacity to accommodate Los Olivos's peak wastewater flow with the station's existing firm capacity. While this does not trigger any immediate upgrades, Solvang's Sewer Master Plan identified the need to perform structural upgrades, upgrade the electrical (programmable logic controller (PLC) and modular multilevel converter (MMC)), SCADA system, and install an HVAC system for optimal variable frequency drive operation, and to replace the pumps. The time frame and the cost of these projects from the Sewer Master Plan, escalated to 2024 dollars, are shown in Table 4-5. Should Los Olivos choose to partner with Solvang and send their wastewater into Solvang's collection system, Solvang may require Los Olivos to share in the costs of these upgrades.

Table 4-5: Fjord Lift Station Project Costs

Project	Estimated Start Date Range	Estimated Cost (2024 $)
Lift Station Structural Improvements (Fjord Only) (Sewer Master Plan Project A4)	2024 - 2027	$74,000
Fjord Lift Station Cathodic Protection (Sewer Master Plan Project A5)	2024 -2027	$56,000
Fjord Lift Station Electrical, Instrumentation, and Controls Improvements (Sewer Master Plan Project B1)	2028 - 2032	$401,000
Fjord Lift Station Emergency Storage Evaluation (Sewer Master Plan Project B2)	2028 -2032	$17,000
Fjord Lift Station Pump Upgrades (Sewer Master Plan Project C1)	2033-2042	$384,000

Appendix A Los Olivos Flow Impacted Pipes Exceeding Capacity Criteria

Table A-1: Pipes Exceeding Capacity By Scenario

Pipe ID	Diameter (in)	Length (LF)	Over Capacity Under Baseline Existing PHWWF?	Over Capacity Under Existing PHWWF?	Over Capacity Under Baseline Buildout PHWWF?	Over Capacity Under Buildout PHWWF?	Over Capacity Under Buildout + Infill PHWWF?
SWP0016	14	237.5	Yes	Yes	Yes	Yes	Yes
SWP0017	14	119.4	Yes	Yes	Yes	Yes	Yes
SWP0018	14	171	No	Yes	No	Yes	Yes
SWP0066	14	68.4	Yes	Yes	Yes	Yes	Yes
SWP0110	8	116.8	No	No	No	Yes	Yes
SWP0113	8	106.3	No	No	No	Yes	Yes
SWP0115	8	428.2	No	No	No	Yes	Yes
SWP0126	8	314.2	No	No	No	Yes	Yes
SWP0127	8	409.3	No	No	No	Yes	Yes
SWP0134	8	417.7	No	No	No	Yes	Yes
SWP0135	8	423.2	No	Yes	No	Yes	Yes
SWP0248	12	344.4	No	No	No	Yes	Yes
SWP0468	14	185.3	Yes	Yes	Yes	Yes	Yes
SWP0469	14	99	Yes	Yes	Yes	Yes	Yes
SWP0470	14	219.9	No	No	No	Yes	Yes
SWP0647	10	385.3	Yes	Yes	Yes	Yes	Yes
SWP0650	14	288.2	Yes	Yes	Yes	Yes	Yes
SWP0651	14	133.2	Yes	Yes	Yes	Yes	Yes
SWP0652	14	151.1	Yes	Yes	Yes	Yes	Yes

Table A-2: Pipes Exceeding Capacity d/D Values

Pipe ID	Diameter (in)	Length (LF)	Baseline Existing PHWWF d/D	Existing PHWWF d/D	Baseline Buildout PHWWF d/D	Buildout PHWWF d/D	Buildout + Infill PHWWF d/D
SWP0016	14	237.5	76.2	88.8	78.6	100.0	100.0
SWP0017	14	119.4	77.6	100.0	80.2	100.0	100.0
SWP0018	14	171	68.6	76.3	70.3	100.0	100.0
SWP0066	14	68.4	76.4	89.4	78.8	100.0	100.0
SWP0110	8	116.8	2.6	31.0	2.6	53.5	54.2
SWP0113	8	106.3	6.0	29.7	6.1	50.3	51
SWP0115	8	428.2	8.1	34.2	8.2	58.8	59.7
SWP0126	8	314.2	8.7	31.2	9.0	52.3	53.1
SWP0127	8	409.3	9.4	32.2	9.7	54.3	55.1
SWP0134	8	417.7	25.6	46.0	26.4	75.7	77.7
SWP0135	8	423.2	29.5	53.8	30.7	100.0	100.0
SWP0248	12	344.4	43.2	59.4	45.4	100.0	100.0
SWP0468	14	185.3	100.0	100.0	100.0	100.0	100.0
SWP0469	14	99	100.0	100.0	100.0	100.0	100.0
SWP0470	14	219.9	60.8	66.6	62.3	78.0	79.7
SWP0647	10	385.3	88.1	100.0	100.0	100.0	100.0
SWP0650	14	288.2	78.0	100.0	80.7	100.0	100.0
SWP0651	14	133.2	100.0	100.0	100.0	100.0	100.0
SWP0652	14	151.1	100.0	100.0	100.0	100.0	100.0
		d/D values are given as a percentage					

Appendix B Recommended Project Cost Opinions

Opinion of Probable Construction Cost

Project CSD1: Alamo Pintado Phase 1

Los Olivos Community Services District

10/7/2024

Bid Item	Description	Quantity	Unit	Unit Price	Cost
1	Mobilization	1	LS	$ 7,900.00	$ 7,900.00
2	Sawcut & Remove	433	SY	$ 8.50	$ 3,700.00
3	Hauling Pavement	217	LCY	$ 11.10	$ 2,400.00
4	Pavement Repair	433	SY	$ 60.70	$ 26,300.00
5	Shoring	15683	SF Wall	$ 1.50	$ 23,400.00
6	Excavation-Trench	849	BCY	$ 7.30	$ 6,200.00
7	Pipe Bedding (sand import)	52	LCY	$ 46.20	$ 2,400.00
8	Bedding Compaction	42	ECY	$ 4.80	$ 200.00
9	Native Backfill & Compaction	797	ECY	$ 5.00	$ 4,000.00
10	Hauling Excavation	1019	LCY	$ 5.50	$ 5,600.00
11	Abandon Existing Main in Place - 8" Pipe	778	LF	$ 2.60	$ 2,000.00
12	12" PVC SDR 35	778	LF	$ 101.80	$ 79,200.00
13	Service Connections to 12" Gravity Main	2	EA	$ 600.00	$ 1,200.00
14	Bypass Pumping	1	LS	$ 12,000.00	$ 12,000.00
				Subtotal	$ 176,500.00
				Construction Contingency (25%)	$ 44,000.00
				Construction Total	$ 220,500.00
				Project Development & Implementation (25%)	$ 55,000.00
				Project Costs	$ 275,500.00

Opinion of Probable Construction Cost

Project CSD2: Fjord Drive

Los Olivos Community Services District

10/7/2024

Bid Item	Description	Quantity	Unit	Unit Price	Cost
1	Mobilization	1	LS	$ 36,700.00	$ 36,700.00
2	Sawcut & Remove	1237	SY	$ 8.50	$ 10,500.00
3	Hauling Pavement	619	LCY	$ 10.70	$ 6,600.00
4	Pavement Repair	1237	SY	$ 60.60	$ 75,000.00
5	Shoring	44501	SF Wall	$ 1.50	$ 66,300.00
6	Excavation-Trench	19150	BCY	$ 7.30	$ 139,800.00
7	Pipe Bedding (sand import)	156	LCY	$ 44.90	$ 7,000.00
8	Bedding Compaction	124	ECY	$ 4.00	$ 500.00
9	Native Backfill & Compaction	18994	ECY	$ 4.90	$ 93,100.00
10	Hauling Excavation	22980	BCY	$ 5.50	$ 126,400.00
11	Abandon Existing Main in Place - 10" Pipe	385	LF	$ 3.60	$ 1,400.00
12	Abandon Existing Main in Place - 14" Pipe	1673	LF	$ 5.20	$ 8,700.00
13	12" PVC SDR 35	385	LF	$ 72.70	$ 28,000.00
14	18" PVC SDR 35	1673	LF	$ 101.80	$ 170,300.00
15	Bypass Pumping	1	LS	$ 28,000.00	$ 28,000.00
				Subtotal	$ 798,300.00
				Construction Contingency (25%)	$ 200,000.00
				Construction Total	$ 998,300.00
				Project Development & Implementation (25%)	$ 250,000.00
				Project Costs	$ 1,248,300.00

Opinion of Probable Construction Cost

Project CSD3: River Course Golf Course

Los Olivos Community Services District

10/7/2024

Bid Item	Description	Quantity	Unit	Unit Price	Cost
1	Mobilization	1	LS	$ 4,000.00	$ 4,000.00
2	Sawcut & Remove	201	SY	$ 8.50	$ 1,700.00
3	Hauling Pavement	101	LCY	$ 10.90	$ 1,100.00
4	Pavement Repair	201	SY	$ 60.70	$ 12,200.00
5	Shoring	9527	SF Wall	$ 1.50	$ 14,200.00
6	Excavation-Trench	558	BCY	$ 7.30	$ 4,100.00
7	Pipe Bedding (sand import)	25	LCY	$ 44.00	$ 1,100.00
8	Bedding Compaction	20	ECY	$ 5.00	$ 100.00
9	Native Backfill & Compaction	533	ECY	$ 4.90	$ 2,600.00
10	Hauling Excavation	670	BCY	$ 5.50	$ 3,700.00
11	Abandon Existing Main in Place - 12" Pipe	344	LF	$ 4.40	$ 1,500.00
12	15" PVC SDR 35	344	LF	$ 101.90	$ 35,100.00
13	Service Connections to 15" Gravity Main	1	EA	$ 900.00	$ 900.00
14	Bypass Pumping	1	LS	$ 6,000.00	$ 6,000.00
				Subtotal	$ 88,300.00
				Construction Contingency (25%)	$ 22,000.00
				Construction Total	$ 110,300.00
				Project Development & Implementation (25%)	$ 28,000.00
				Project Costs	$ 138,300.00

Opinion of Probable Construction Cost

Project CSD4: Alamo Pintado Phase 2

Los Olivos Community Services District

10/7/2024

Bid Item	Description	Quantity	Unit	Unit Price	Cost
1	Mobilization	1	LS	$ 31,500.00	$ 31,500.00
2	Sawcut & Remove	1140	SY	$ 8.50	$ 9,700.00
3	Hauling Pavement	570	LCY	$ 10.70	$ 6,100.00
4	Pavement Repair	1140	SY	$ 60.60	$ 69,100.00
5	Shoring	47213	SF Wall	$ 1.50	$ 70,400.00
6	Excavation-Trench	13304	BCY	$ 7.30	$ 97,100.00
7	Pipe Bedding (sand import)	135	LCY	$ 44.40	$ 6,000.00
8	Bedding Compaction	107	ECY	$ 3.70	$ 400.00
9	Native Backfill & Compaction	13169	ECY	$ 4.90	$ 64,500.00
10	Hauling Excavation	15965	BCY	$ 5.50	$ 87,800.00
11	Abandon Existing Main in Place - 8" Pipe	2108	LF	$ 2.50	$ 5,300.00
12	10" PVC SDR 35	1691	LF	$ 101.80	$ 172,100.00
13	12" PVC SDR 35	418	LF	$ 72.80	$ 30,400.00
14	Service Connections to 10" Gravity Main	18	EA	$ 433.30	$ 7,800.00
15	Service Connections to 12" Gravity Main	3	EA	$ 600.00	$ 1,800.00
16	Bypass Pumping	1	LS	$ 30,000.00	$ 30,000.00
				Subtotal	$ 690,000.00
				Construction Contingency (25%)	$ 173,000.00
				Construction Total	$ 863,000.00
				Project Development & Implementation (25%)	$ 216,000.00
				Project Costs	$ 1,079,000.00

Opinion of Probable Construction Cost

Project CSD1: Alamo Pintado Phase 1

Los Olivos Community Services District

10/7/2024

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Los Olivos Community Services District

10/7/2024

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Opinion of Probable Construction Cost

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Los Olivos Community Services District

10/7/2024

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				Project Costs	$ 1,079,000.00

MEMPAC-M2 MEMBRANE BIOREACTOR PROPOSAL

PROJECT NAME	Los Olivos	**PROPOSAL DATE**	3/20/17
CONTACT NAME	Guy Savage	**PROJECT NUMBER**	CL17-033
CONTACT EMAIL	gm.locsd@gmail.com	**REVISION NUMBER**	5
CONTACT NUMBER	(805) 403-5384	**REVISION DATE**	10/18/24

THE DOCUMENTS CHECKED BELOW AND ATTACHED TO AND/OR FOLLOWING THIS COVERSHEET CONTAIN TRADE SECRETS AND CONFIDENTIAL AND PROPRIETARY INFORMATION OWNED BY CLOACINA, LLC:

CHECK ALL THAT APPLY:

- ☐ Referral Fee Agreement
- ☒ Proposal, Terms and Conditions, Warranty, Process Guarantee and Contract Documents
- ☐ Specification Documents
- ☒ Illustrations, Drawings, Models and Plan Sets
- ☐ Submittals
- ☐ Installation and Commissioning Documents
- ☐ Operation and Maintenance Manual and all other Manuals
- ☐ Other:
- ☐ Other:
- ☐ Other:
- ☐ Other:

Cloacina submits the Trade Secrets and Confidential and Proprietary Information (CPI) attached to and/or following this coversheet for evaluation by Client **only**. By receiving and possessing this CPI, Client agrees not to reveal or share part or all of it with any third party, except those in their organization necessary for evaluation, without the prior written consent of Cloacina. Copies and/or facsimiles of the CPI may not be made in whole or in part without the prior written consent of Cloacina. Client may not use the CPI in any manner that is adverse or detrimental to the interests of Cloacina, including and/or using any part of it to compete with Cloacina.

Client understands that the intrinsic value of any manufacturer trade secret or CPI is in its inherently secret nature and that a leak or disclosure of any CPI would cause a reduction in its value for which Client will be responsible for. Client is hereby notified that improper use or disclosure of Cloacina's CPI to any third party will result in legal action against Client.

TABLE OF CONTENTS

1. PROJECT INFORMATION

1.1 PROCESS FLOW DESCRIPTON

The following describes the process flow of the MEMPAC-M unit:

Headworks

The influent flow will pass through a Cloacina provided influent flow meter prior to discharge into the influent screen inlet. The influent screen will be a 1-2MM fine bar screen with a washer and compactor. Screened solids will be discharged through the compactor discharge piping into either an open-ended discharge or if chosen an optional endless bagger unit to be dumped into a client provided receptacle, typically a 2-4 yard dumpster. Screened influent will discharge either directly into one of the following (dependent on M-path options):

1. Directly into the M-Path anoxic tank
2. Directly into an integrated EQ tank
3. Directly into an integrated flow control box where flow above PEAK Hour Flow will be transferred, by gravity, to equalization storage (by Cloacina or others, project dependent), all other flow will flow into the anoxic chamber.

Biological Nutrient Removal

Screened influent will mix with return activated sludge (RAS) which has gravity-returned from the pre-anoxic chamber to form “mixed liquor.” Nitrates conveyed by RAS flow from the aeration basin to the oxygen-lean anoxic chamber serve to oxidize some of the influent biological oxygen demand (BOD) by which process these nitrates are converted to nitrogen gas, ultimately lowering effluent total nitrogen (TN). Mixed liquor travelling through the anoxic tankage will stay suspended and homogenized by utilizing submersible mixers.

Secondary Treatment

Mixed liquor proceeds from the anoxic process to the aeration process where nitrification occurs by which process BOD is oxidized and ammonia is converted to nitrates, ultimately lowering their respective effluent concentrations. This is achieved by introducing compressed air through fine bubble diffusers on a carefully designed aeration network.

Forward Activated Sludge (FAS) Chamber

At the end of the aeration process, wastewater gravities into the FAS Chamber, where mixed liquor is pumped from the FAS chamber to the individual membrane cassette chambers using forward activated sludge (FAS) pumps. These FAS pumps are submersible style pumps on slide rail systems, each individually metered for the purposes of providing the ideal Q rate for its respective membrane train’s permeate rate. It also allows for tuning for idealistic BNR results.

Membrane Clarification

Cloacina utilizes 2-4 membranes for M-path projects in order to meet the necessary redundancy requirements for the project. These membrane cassettes have a vacuum applied across them by permeate pumps, pulling clear water “permeate” through the membranes and leaving solids at the membrane barrier. The permeate pumps convey their permeate to a “clear well” reservoir sufficiently sized for periodic membrane cleaning, i.e. “backpulsing,” and clean-in-place (CIP) procedures which are fully automated. FAS flow will gravity overflow weirs in each membrane chamber, which allows for consistent membrane chamber operating levels and the most accurate TMP readings possible.

Pre-Anoxic
All membrane chambers online will overflow each membrane chamber weir into the communal pre-anoxic chamber, which has an underflow interconnect with the anoxic chamber. The pre-anoxic chamber serves to both, convey all the now return activated sludge as well as allows for pre-releasing of dissolved oxygen as a result of the cascade effect from the membrane chamber overflow weirs, thus reducing the oxygen going into the anoxic chamber.

Waste Activated Sludge
Solids concentration will be monitored by an on-line suspended solids meter located in the FAS Chamber. A sludge wasting pump will remove a calibrated portion of waste activated sludge (WAS) to an exterior sludge storage (by others, unless a DRYPAC system is provided by Cloacina). This WAS will be pulled from the pre-anoxic chamber, which is the most concentrated activated sludge point in the system, thereby providing the most effective WAS rate.

Flow Channels
Flow will be transferred between anoxic, aerobic and FAS chambers by way of flow channels, with integrated isolation plates which allow the Operator to isolate individual chambers for the purposes of internal tank inspection/equipment replacement/repairs.

Clearwell Chamber
Permeate drawn from the membranes will be pumped into the clearwell, which is specifically designed to store a requisite volume of treated effluent for the purposes of CIP's, maintenance cleans and/or recovery cleans. It also can serve as the final conjoined sampling point for many systems. Flow leaves the clearwell by gravity, typically at 9' elevation. This chamber is covered with an access hatch, for the purposes of maintaining the clearwell cleanliness.

2. PROJECT DESIGN

The following outlines the parameters used to design standard supplied package:

2.1 INFLUENT PARAMETERS

Total Daily Flow (Q)	Average Annual (AAF)	Maximum Month (MMF)	Peak Day (PDF)	Peak Hour (PHF)
Peaking Factor	1.0*	1.5	2.0*	4.9
Gallons per Day	89,933	134,900	179,867	443,520
Gallons per Minute	62	94	125	308

*Flow value was not provided and therefore was assumed from Cloacina's standard design peaking factor.

Organic Concentration	BOD5*	TSS*	TKN*	NH3*	TP*	ALK*
Standard Influent (mg/L)	360	350	60	37	10	300
Design Influent (mg/L)	180	143	53	33	5	300
Screen Removal (%)	4%	9%	2%	0%	2%	0%
Screened Influent (mg/L)	173	130	52	33	5	300

*Influent concentration was not provided and therefore was assumed from Cloacina's standard influent concentration values per the project application.

Total Organic Loading	BOD5	TSS	TKN	NH3	TP	ALK
lbs/day at AAF	130	98	39	25	4	225
lbs/day at MMF	194	146	58	37	6	338

2.2 EFFLUENT PARAMETERS

Effluent Limitations	BOD5*	TSS*	TN*	NH3*	TP*
Limit	10	10	10	5	N/A
Unit	mg/L	mg/L	mg/L	mg/L	mg/L

*Effluent limit was not provided and therefore was assumed from Cloacina's standard effluent limits or identified as not applicable to the project.

**Engineering to verify once under contract. During due diligence Cloacina may find the need to modify processes and/or scope to achieve effluent requirements.

2.2.1 FLOW DEFINITIONS

Wastewater flow can be described in a multitude of ways, related to varied time periods, wet and dry weather, seasonal populations, and permit definitions. To ensure that the estimated package meets the project needs, the following terms **shall** be used to define the capacity of the proposed system:

Term	Definition
Average Annual Flow (AAF)	The average flow of a one-day period which is the influent volume in one year divided by the number of days in that year. AAF is typically the nominal capacity of a plant.
Maximum Month Flow (MMF) "Design Flow"	The maximum flow over a 30-day period. Cloacina utilizes MMF for **maximum biological design** and the maximum sizing of the treatment equipment.
Peak Daily Flow (PDF)	The single greatest flow of a one-day (24hr) period in a year. **PDF serves for design of plant hydraulic capacity**. Flow rates greater than PDF, including Peak Hour Flow (defined below), are to be equalized to PDF by influent storage (by others) that augments the treatment plant.
Peak Hour Flow (PHF)	The flow over a 60-minute period which is the influent flow of the highest flow hour in the Peak Day. For applications in which influent is screened prior to equalization, screens shall be sized for PHF. In the absence of a PHF specified by the Client, PHF will be calculated as a function of the plant's service population per "Metcalf & Eddy".

2.2.2 INFLUENT LOADING

The following outlines the organic loading used to develop this proposal.

Term	Definition
Maximum Month Flow (MMF) Loading	It is assumed that the influent concentrations outlined below are applied 100% to the Maximum Month Flow (MMF), unless otherwise indicated.
PEAK Daily Flow (PDF)	It is assumed that no additional influent constituent loading is contributed by flows more than MMF. Loading defined for MMF is assumed to be diluted at PDF such that PDF loading shall equal MMF loading multiplied by the ratio of MMF to PDF.

2.3 PROCESS DESIGN PARAMETERS

Activated Sludge	Design Value (MMF)
Volume Under Aeration (gal)	42,947
Hydraulic Residence Time (hrs)	9.5
Design MLSS (mg/L)	5,000
Design MLSS (lbs)	2,527
MLSS/MLVSS Ratio	0.69
Design MLVSS (lbs)	1,743
Design F/M Ratio	0.11
Design SRT (days)	25.8
Return Activated Sludge Factor (x Q)	4
Return Activated Sludge Rate (gpm)	375

Aeration	Design Value (MMF)
Project Altitude (ft)	400
lb O_2 / lb BOD	1.25
lb O_2 / lb NH_3-N	4.6
Design Air Requirement (SCFM)	336
Design Aeration Residence Time (hrs)	7.1

Nutrient Reduction	Design Value (MMF)
Design Anoxic Residence Time (hrs)	2.5

Waste Activated Sludge (WAS)	Design Value (MMF)
lbs WAS / lbs Influent BOD	0.50
Design lbs WAS / day	98
Design WAS Concentration (mg/L)	6,250
Design WAS Production Rate (gpd)	1,881

2.4 MEMBRANE DESIGN PARAMETERS

Membrane Clarification	N	N+1
Cassettes Supplied	1	2
Membrane Area (ft^2)	11,180	22,360
Flux at AAF ($gal/ft^2/day$)	8.0	4.0
Flux at MMF ($gal/ft^2/day$)	12.1	6.0
Flux at PDF ($gal/ft^2/day$)	16.1	8.0
PEAK Permeation per Cassette (gpm)	68	34
Design Air Flow (DCFM)*	0	0
Estimated Production Time (min/day)	1,329	
Membrane Cassette Type**	ZW500D-52/26	
Total Cassettes Supplied	2	

*Design air flow based on LEAP Aeration Protocol

**Accelerated schedules may result in a different PVDF membrane configuration

CIP Chemical Usage	Sodium Hypochlorite	Citric Acid
Gallons per CIP Cycle	4.1	2.8
Gallons per Recovery Clean	40.2	33.5
Estimated Volume per Year (gal)*	1,014	358

*Volume based on: 2 NaOCl CIP per week, 1 Citric CIP per week, 2 NaOCl Recovery Cleans per year, and 1 Citric Recovery Cleans per year.

2.5 PRE-ENGINEERED PACKAGE PARAMETERS

Please refer to the attachments section 9 at the end of the proposal for general arrangement drawings. There may be multiple drawings to represent phased projects.

3. SCOPE OF SUPPLY

3.1 HEADWORKS

Equipment	Description	Quantity
Influent Flowmeter	Endress+Hauser, electromagnetic flowmeter	1
Influent Screen	2 mm fine screen with washer compactor	1

3.2 ANOXIC PROCESS

Equipment	Description	Quantity
Level Sensor	Endress+Hauser hydrostatic level transducer	1
ORP Probe	Endress+Hauser, ORP probe	1
Anoxic Mixer	Submersible on Slide Rail	2

3.3 AERATION PROCESS

Equipment	Description	Quantity
Level Sensor	Endress+Hauser, level transducer	1
Dissolved Oxygen Sensor	Endress+Hauser, DO Sensor	1
Aeration Blower	FPZ regenerative blower	2
Blower Pressure Sensor	Endress+Hauser, pressure sensor	4
Aeration Diffusers	OTT, Magnum 2000 Flexsil fine bubble	36

3.4 MEMBRANE PROCESS

3.4.1 FORWARD ACTIVATED SLUDGE (FAS) PROCESS

Equipment	Description	Quantity
Level Sensor	Endress+Hauser hydrostatic level transducer	1
FAS Pump	Submersible pump with slide rail and base	2
FAS Flowmeter	Endress+Hauser, electromagnetic flowmeter	2

3.4.2 MEMBRANE EQUIPMENT

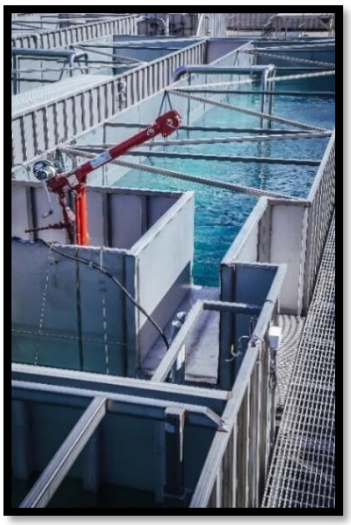
Equipment	Description	Quantity
Level Sensor	Endress+Hauser hydrostatic level transducer	2
Membrane Cassette	SUEZ ZW500D	2
Permeate Pump	Positive Displacement Rotary Lobe Pump	2
Permeate Flowmeter	Endress+Hauser, electromagnetic flowmeter	2
Permeate Pressure Sensor	Endress+Hauser, pressure sensor	2
Air Scour Blower	FPZ regenerative blower	2
Blower Pressure Sensor	Endress+Hauser, pressure sensor	4
Mass Air Flowmeter	Endress+Hauser, thermal mass flowmeter	2

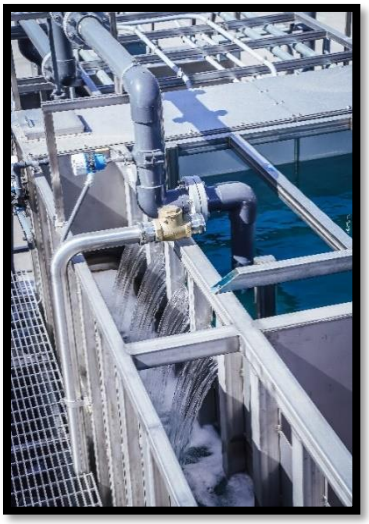
3.4.3 CLEAN IN PLACE (CIP) EQUIPMENT

Equipment	Description	Quantity
Clear Well Level Sensor	Endress+Hauser hydrostatic level transducer	1
Chemical Pump	Peristaltic Metering Pump	2
Injector Solenoid	Hayward SV, True union solenoid valve	4

3.4.4 WASTE ACTIVATED SLUDGE (WAS) PROCESS

Equipment	Description	Quantity
MLSS Sensor	Endress+Hauser, TSS Sensor	1
WAS Pumps	Progressive cavity pump	2
WAS Flowmeter	Endress+Hauser, electromagnetic flowmeter	1





3.5 EFFLUENT EQUIPMENT

Equipment	Description	Quantity
Effluent Flow Meter	Endress+Hauser, electromagnetic flowmeter	1
Effluent Turbidity	Endress+Hauser, Turbidity Sensor	1

3.6 UTILITY EQUIPMENT

Equipment	Description	Quantity
Probe Wash Solenoid	ASCO Solenoid valve	1
Water Regulator	ZURN Water pressure regulator	1
Water Y-Strainer	HIPCO Y-Strainer	1

3.7 ELECTRICAL AND CONTROL EQUIPMENT

Equipment	Description	Quantity
Control Panel	U.L. Listed 480V, 3-Phase, NEMA 4X, Stainless Steel Panel	1
HMI	15-inch touch screen computer	1
Control Transmitter	Endress+Hauser Liquiline, digital transmitter	1

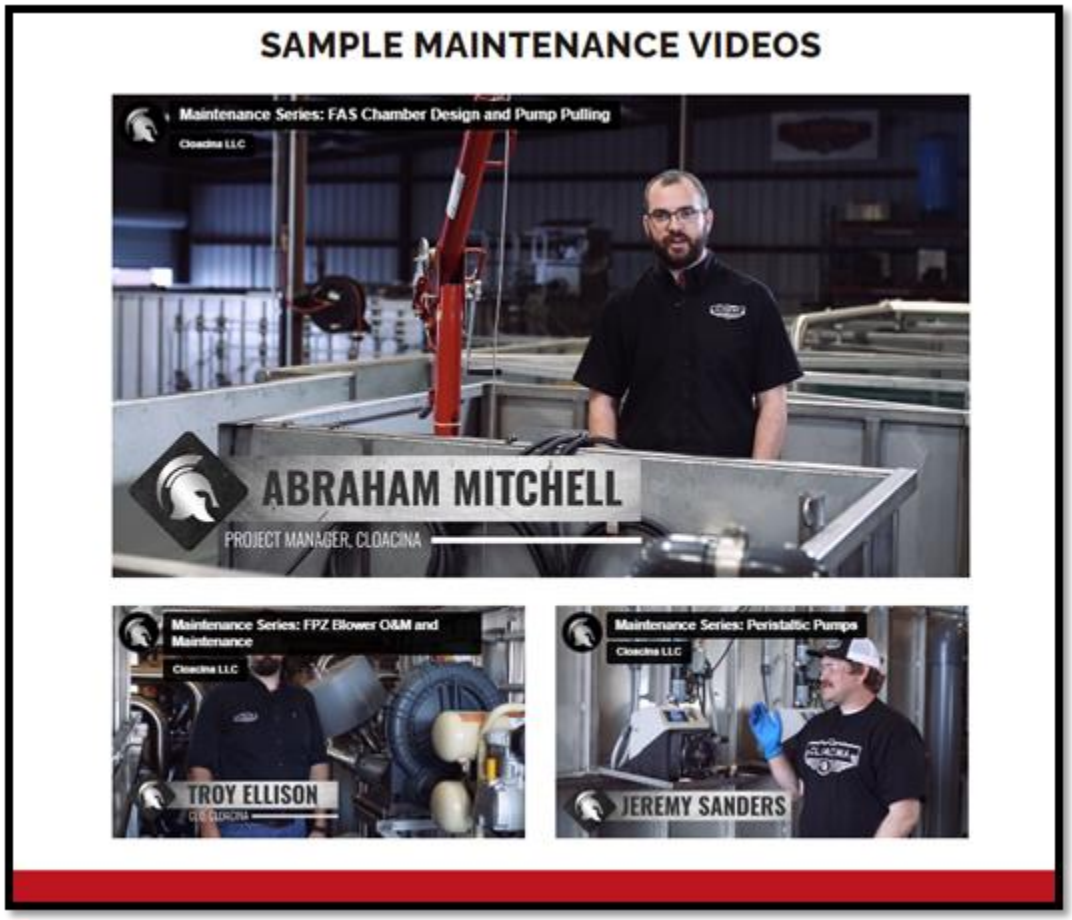
4. PROJECT SUPPORT

4.1 DOCUMENTS

Document	Description	Quantity
Electrical Control Panel	Equipment drawings	1
Project Submittals	Detailed information for all supplied equipment	1
Factory Acceptance Testing Documents	Detail of all equipment tests prior to shipping	1
Equipment Manual	Detailed Operations and Maintenance Manual	1

4.2 LABOR

Scope	Description	Hrs
On-site Startup	On-site startup and commissioning	64
Operator Training	On-site Operator training	16
Remote Support	Phone and web support after completion of startup	20



5. OPTIONAL EQUIPMENT

5.1 PACKAGE LIFT STATION

Cloacina will provide a packaged lift pump station. The fiberglass pump station will be supplied complete with pumps, slide rails, attached valve vault and controls.

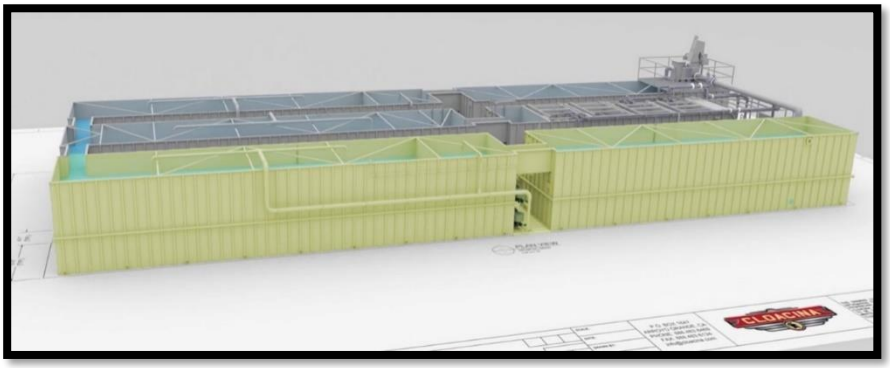
EQUIPMENT	DESCRIPTION	Quantity
Fiberglass Vessel	48” Diameter X 120” Deep pump well	1
Valve Vault	48” X 48” attached valve vault	1
Attached Pipe and Valves	3” PVC piping, check valves and isolation valves	2
Hardware	316 SS studs, hardware, rails and brackets	2
Connection	3” inlet hub (link seal)	1
Non-Traffic Rate Lid(s)	Attached aluminum lid with access hatches	2
Lift Pump	Non-clog pump rated at or below 330 gpm @ Max 80’ TDH	2
Pump Base	Attached pump base	2
Controls	Level transducer	1
Controls	Redundant/Alarm Floats	3
Remote Control Panel	NEMA-4X Control Panel with remote I/O	1

**Note: Assumes lift station will be installed within 200ft of screen inlet.*

5.2 EQUALIZATION STORAGE

Cloacina can provide Equalization tanks integrated and controlled by the Cloacina control panel.

Equipment	Description	Quantity
Equalization Tank	Stainless Steel Equalization Tank (10’W X 10’H X 50’L) for about 32,000 gallons of storage each tank. See *Figure 1.*	1
Aeration Equipment	(2) Aeration Blowers and diffusers factory installed necessary to keep stored influent fresh.	1 Lot
Submersible Transfer Pumps	Transfer pumps necessary to return stored influent to Phase 1 anoxic process factory mounted on slide rail systems and pre-plumbed with tank interconnects to influent line for metering	2
Controls	All necessary electrical components, sensory, controls and programming necessary to operate Phase 1 EQ equipment in panel expansion of MCC	1 lot



Example of (2) stainless steel equalization tanks provided by Cloacina.

5.3 DUPLEX SCREEN ON SINGLE PLATFORM

Cloacina will provide a factory installed, completely redundant influent screen. *See Figure*

Equipment	Description	Quantity
Redundant Screen	Self-Cleaning 2MM perforated screen with auger, compaction zone, chute extension, spray wash system and endless bagger system.	1
Installation/Integration	Includes all hardware necessary for mounting on the Cloacina primary screen platform, platform extension, additional grating and handrail, electrical disconnect, integration, controls and Factory Acceptance Testing of equipment.	(1) Lot

Example Duplex Screen arrangement (not project specific).

5.4 DRYPAC - AERATED SLUDGE HANDLING SYSTEM

Cloacina can provide sludge dewatering and storage of liquid waste activated sludge by the Cloacina DRYPAC package. The sections below include all the primary components of a Cloacina DRYPAC package along with the associated design parameters.

Equipment	Description	Quantity
Treatment Train	DRYPAC™ Treatment Train (10' H X 10' W X 30'L)	1
Treatment Train	Elevated Equipment Skid	1
Treatment Train	Inspection stairs	1
Aeration Chamber	Sound Attenuated PD Blower sized for the requisite sludge storage volume	1
Aeration Diffusers	Aeration Header with 15 diffusers	1
Aeration Chamber	Press Feed Pump (Progressive Cavity)	1
Polymer Addition	Velodyne Polymer Preparation System	1
Volute Press	PWT Model ES-202 (2 installed dewatering drums) capable of 35 gpm of throughput	1

Sludge Storage Tank Size	30 FT
Average WAS Production (gpd)	1,093
Number of Tanks	1
Available Storage Volume* (gal)	19,186
Storage Time (days)	17.6

*Storage Volume is calculated based on a freeboard of 1 foot.

DRYPAC Press Model	ES-201
Base Press Capacity (gpm)	18
Expandable Press Capacity (gpm)	N/A
Number of Press Units	1
AAF Base Operating Time (hrs/wk)	10
MMF Base Operating Time (hrs/wk)	17
AAF WAS Percent Solids	0.625
MMF WAS Percent Solids	0.625
Press Cake Percent Solids	15.0

*Weekly operating hours are based on a recommended press operation of 75% of the listed capacity

NOTE: Cloacina can offer a variety of sludge storage volumes and press sizes. Some presses have phasing capability and should be considered for any phased projects.

5.5 SOUND ATTENUATED BLOWER ENCLOSURE

If necessary, all provided process blowers can be supplied with sound attenuating enclosures.

Equipment	Description	Quantity
Enclosures	The blowers supplied with the MBR and Aeration trains will include sound enclosures.	(3) Lots

5.6 EFFLUENT DISPOSAL PUMP

In addition to the treatment package outlined in this proposal, Cloacina can provide integrated equipment necessary to pump treated effluent to downstream disposal.

5.6.1 EFFLUENT PUMP DESIGN

Equipment	Description	Quantity
Effluent Pumps	Multi-Stage Centrifugal Vertical Pumps sized for PDF	2
Instrumentation	Effluent Flow Meter	1
Instrumentation	Level Transducer	1
Effluent Pressure Sensor	Endress+Hauser Cerabar, pressure sensor	1
Associated Valves	Isolation Valves, Check Valves, and piping	1
Control Panel	U.L Listed 508A NEMA4X Stainless Steel Control Panel	1

5.7 LOW-FLOW CONFIGURATION

Cloacina can provide a low-flow solution which allows the system to operate as low as 15% of the average daily flow. Any typical flow rate less than 20% of the average daily flow will require additional evaluation from engineering. The Low Flow package includes the following:

- Extended Mixer Shaft(s)
- Process modeling/simulations
- Low level interconnect lines
- TEBC motors for permeate systems for maximal turn-down

5.8 UV DISINFECTION

Cloacina can provide a separate package UV Disinfection system installed on a stainless-steel skid. The skid includes a break tank and cooling loop system in addition to the necessary valves, piping, and instrumentation integrated into the MEMPAC Controls system for alarming, graphing and trending of the UV Disinfection components.

5.8.1 DESIGN PARAMETERS:

Parameter	Value	Unit
PEAK Daily Flow Rate	214	gpm
%UVT	65	%
Dose	80	mj/cm2

Equipment	Description	Quantity
Skid	304SS skid with pipe supports, (17'L x 8'W)	1
Cooling loop system	Cooling pump with piping and valves necessary to return flows during low flow periods to reduce bulb striking.	(1) system
Break Tank	Effluent will flow by gravity to and from the break tank sized appropriately for the UV cooling loop system.	1
UV Reactor	Medium Pressure Reactor*	3
Instrumentation	UV Transmittance Analyzer	1
Instrumentation	Effluent Flow Meter	1
Control Panels	Vendor supplied control panel(s). Independent NEMA 12* UV Control Panel with all electrical/controls pre-wired	1 per Reactor
Awning	Equipment awning for each reactor for outdoor installation	1 per Reactor
Cloacina Control Panel	Cloacina NEMA4X Control Panel provided for integration	1
Spares	Includes: Extra lot of spares; UV Lamp, Quartz thimble, wiper ring, electronic ballast	1 (lot)

*For indoor installation only. Awnings will be provided for outdoor installations.

5.9 COLD WEATHER INSULATION

Should the project location experience freezing conditions and the Cloacina MBR will be installed outside as opposed to inside of a building, Cloacina has provided a budget for 3rd party piping insulation onsite of the following items:

- Compactor wash water
- Utility water line
- Priming pumps and lines
- WAS lines
- Kunkle valve connection line
- All sample ports
- Drain valves
- Chemical lines

NOTE: This price is preliminary and will be confirmed at time of installation.

5.10 ADVANCED BIOLOGICAL NUTRIENT REMOVAL

Cloacina can provide the following advanced BNR (Bardenpho) equipment for projects where;

- Influent criteria is out of typical domestic ratios
- The MLE process cannot produce requisite effluent criteria alone.
- A carbon feed source supplementation of the MLE process produces a short return on investment.

The following equipment/scope of services comprise the Bardenpho process.

Equipment	Description	Quantity
Internal Recycle Pumps	Submersible pump with slide rail and base, VFD controlled (matching FAS Pumps, where possible)	1
IR Flowmeter	Endress+Hauser, electromagnetic flowmeter	1
Slide Rail System	Cloacina T-bolt system for slide rail base elbow mounting, Coated ductile base elbow system	1
FAS Piping	Ductile Iron Piping, fittings with SS nuts/bolts, gaskets, Epoxy Exterior coating on all piping/fittings to tank edge connection	1
FAS Valves	Ductile iron Plug valves and Exterior weighted swing check valves	1
Carbon Feed System	Chemical Injection pump, chemical tubing and secondary containment conduit, valves and skidded assembly to match CIP system. Chemical suction line, storage, secondary containment by others.	1
Alkalinity Injection System	Chemical Injection pump, chemical tubing and secondary containment conduit, valves and skidded assembly to match CIP system. Chemical suction line, storage, secondary containment by others.	1

Anoxic Mixers	Conversion of MA-Aeration to Anoxic includes following anoxic equipment;
	• (2) submersible mixers each with:
	  ○ slide rail system
	  ○ Davit arm thimble
	  ○ SS cable and cable stop
	  ○ Electrical disconnect at mixer location
		1

MCC Upgrades	Control panel updates to include; • VFD's for IR pumps, with all relays, breakers • Analytics incorporation, including necessary analyzers/converters in panel with din rail terminal connections for field connections • Additional Mixer Contactors, seal fails, thermal relays • Wiring in panduits for the above • Factory Acceptance Testing of above	1 lot
Programming	Package to include controls narrative and functionality which includes; • Independent IR Q rate with BNR overrides for ORP optimization, hooked to Permeate Rates • Implementation of Carbon Feed Source (if equipped/necessary) • Implementation of alkalinity feed pump • DO controls system changes/optimization • Mixer controls • Graphing, Charting, Trending, Alarming for equipment	1 lot

*Note: Internal recycle lines require underslab field installation and tie-in to Cloacina provided flanges at IR pump location and pre-anoxic connection. Cloacina can provide this piping mounted to the tank(s) if desired for an additional cost. Consult with Cloacina for further pricing/availability.

6. EXTENDED WARRANTIES

6.1 5-YEAR MEMBRANE WARRANTY

Cloacina will provide a 5-year membrane warranty on submerged membrane modules. Warranty includes (2) years non pro-rated and (3) years pro-rated. Refer to the terms and conditions for additional information.

6.2 10-YEAR MEMBRANE WARRANTY

Cloacina will provide a 10-year membrane warranty on submerged membrane modules. Warranty includes (2) years non pro-rated and (7) years pro-rated. Refer to the terms and conditions for additional information.

6.3 24-MONTH EXTENDED EQUIPMENT WARRANTY

Cloacina can extend the equipment warranty per the Cloacina Terms and Conditions to 24-months (total). Does not include membranes. Refer to the terms and conditions for additional information.

6.4 36-MONTH EXTENDED EQUIPMENT WARRANTY

Cloacina can extend the equipment warranty per the Cloacina Terms and Conditions to 36-months (total). Does not include membranes. Refer to the terms and conditions for additional information.

NOTE: Refer to the terms and conditions for additional information.

7. PRICING SUMMARY

SECTION	EQUIPMENT/SERVICE	DESCRIPTION	PRICE
Base Price	MEMPAC-M	MEMPAC-M2 BASE	**$2,230,539.21**
5.1	Package Lift Station	Per Scope	**$130,653.75**
5.2	Equalization Storage	Per Scope	**$355,281.88**
5.3	Duplex Influent Screen	Per Scope	**$113,117.60**
5.4	DRYPAC and Awning	Per Scope	**$590,143.35**
5.5	Sound Attenuated Blower Enclosure	Per Scope	**$48,489.60**
5.6	Effluent Disposal Pump	Per Scope	**$83,805.20**
5.7	Low-Flow Configuration	Per Scope	**$46,612.20**
5.8	UV Disinfection	Per Scope	**$491,105.48**
5.9	Cold Weather Insulation	Per Scope	**$26,604.00**
5.10	Advanced Biological Nutrient Removal (Bardenpho)	Per Scope	**$200,201.50**
6.1	5 Year Membrane Warranty	Per Scope	**$15,366.77**
6.2	10 Year Membrane Warranty	Per Scope	**$34,575.24**
6.3	24-Month Extended Warranty	Per Scope	**$133,155.72**
6.4	36-Month Extended Warranty	Per Scope	**$221,926.19**

Note: The above pricing subject to the Cloacina Standard Terms and Conditions

8. STANDARD ASSUMPTIONS

8.1 DOMESTIC FACILITY

The system will be designed to receive only domestic wastewater, as outlined in Section 2, above.

8.2 UNNECESSARY WASTE

All unnecessary process waste will be diverted from entering the treatment system. Examples of unnecessary process waste are:

- Rainwater, excess flow during rain events should be prevented by identifying areas with potential for Infiltration and Intrusion (I & I).
- Industrial Dischargers, high strength dischargers should be identified, and associated waste streams should be evaluated for impact on the treatment facility. Industrial waste can increase the loading on the treatment facility and result in poor performance or reduction in hydraulic capacity.
- Inorganic Solids, efforts should be made to keep excess dirt and grit from entering the treatment facility.
- Fats, Oils and Greases (FOG) should be prevented from entering the facility by ensuring all restaurants have properly installed and maintained grease traps.

8.3 EFFLUENT DISPOSAL

Effluent will flow by gravity from Clear Well, the final disposal location is to be determined. Effluent pumps can be provided in addition to this package.

8.4 INSTALLATION LOCATION

The package will be installed outdoors on an engineered concrete slab. The site will have enough access to allow the delivery of the individual treatment tanks fully assembled.

9. EXCLUSIONS

9.1 TAXES ARE NOT INCLUDED IN THE ABOVE PRICING

9.2 EQUALIZATION
Any diurnal flows needing to be attenuated are by others.

9.3 INSTALLATION
Treatment package quoted does not include installation costs.

9.4 CIVIL ENGINEERING
Site civil engineering is not provided as part of this budgetary proposal.

9.5 SLAB
Equipment slab design and construction is not included as part of this budgetary proposal

9.6 PERMITTING
Permit costs of any kind are not included as part of this budgetary proposal

9.7 SECONDARY CONTAINMENT
Secondary containment is not included in this budgetary proposal.

9.8 THERMAL PROTECTION
Thermal protection of hydraulic piping is not included in this budgetary proposal.

9.9 PAINTING
No surface preparation and/or painting of any surfaces is included in above pricing unless specifically mentioned.

9.10 SECURITY
Safety and security items such as fencing, locking ladders, lighting etc. are not included in this budgetary proposal.

9.11 SHIPPING
Shipping and crane costs are not included in this budgetary proposal unless otherwise stated.

9.12 DISSOLVED SOLIDS (TDS)
The unit will not address dissolved solids through biological treatment. Dissolved Solids should be managed through source control.

9.13 INITIAL SEED SLUDGE
Adequate and acceptable seed sludge is the responsibility of the Client.

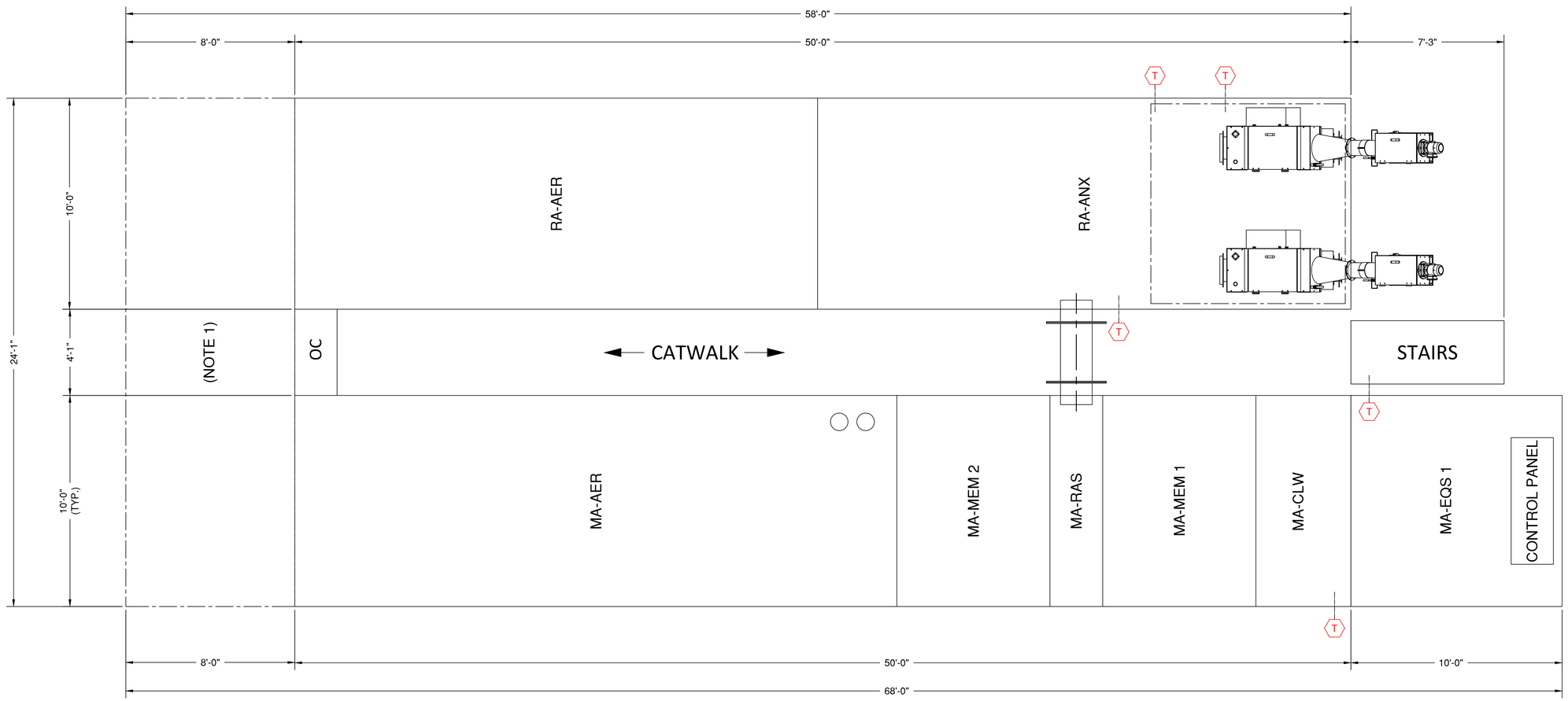
9.14 BONDING
No bonding is included in the proposal.

9.15 DISINFECTION
Disinfection is not included in the base pricing unless specifically stated or offered as an option.

10.ATTACHMENTS

10.1 MEMPAC-M2 GENERAL ARRANGEMENT DRAWING

10.2 TERMS AND CONDITIONS



PLAN VIEW
MEMPAC-M2 MLE
3/16"=1'-0"

ISSUED FOR REVIEW
2023-03-14

3/16" = 1'-0"

GENERAL NOTES:

1. RESERVED SLAB SPACE REQUIRED FOR EQUIPMENT MOUNTING.

REFERENCE DRAWINGS	REVISIONS								
	A	ISSUED FOR REVIEW	JS	SEA	AJM				
				2023-03-14					

SCALE: AS NOTED
DATE: 2022-11-14
DRAWN BY: JS
JOB #: CLXX-XXX

P.O. BOX 1647
ARROYO GRANDE, CA
PHONE: 888.483.8469
FAX: 888.483.6134
info@cloacina.com

CLOACINA

MEMPAC-M2-(MLE)
WASTEWATER TREATMENT PLANT

GENERAL ARRANGEMENT PLAN

REV NO. A

SHEET: M-001
01 OF 01 SHEETS

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CLOACINA STANDARD
TERMS AND CONDITIONS

The following standard terms and conditions ("Terms and Conditions") apply to the procurement, manufacture and sale of equipment between Cloacina, LLC ("Cloacina") and the Client identified on the coversheet of this Contract ("Client"), with regard to the specified project identified on the coversheet ("Project"). These Terms and Conditions shall bind the Client, its architect, engineer, contractor, contract operator and any and all agents of Client ("Client Parties") that may represent Client and/or perform work for Client related to this Contract. Client is responsible for acts, claims and for notifying all Client Parties of their obligations under this Contract and that they are bound by all Terms and Conditions set forth herein. The Client is responsible for complying with all conditions contained in the Terms and Conditions, including compliance by all Client Parties. All references to this Contract shall include these Terms and Conditions, any purchase orders, cover sheets, addendums, exhibits, change orders and/or other documents signed by both Parties, whether issued by Cloacina or Client, all of which shall be deemed to incorporate these Terms and Conditions (collectively, the "Contract Documents").

1. ADDENDA AND DOCUMENT PRECEDENCE

1.1. ADDENDA

The following addenda are attached and incorporated into the Contract:

- ADDENDUM ONE: EQUIPMENT WARRANTY
- ADDENDUM TWO: PROCESS GUARANTEE
- ADDENDUM THREE: FIELD SERVICE RATES
- ADDENDUM FOUR: REQUEST FOR PRE-LIEN INFORMATION

1.2. PRECEDENCE

In the event of any inconsistencies in the Contract Documents, the following order of precedence in the interpretation hereof or resolution of such conflict hereunder shall prevail:

- Amendments, addenda or other modifications to this Contract (including Change Orders) duly signed and issued after the signing of this Contract, with those of a later date having precedence over those of an earlier date
- This Contract
- Engineering, drawings and specifications in respect of which, precedence shall be given to drawings of a larger scale over those of smaller, figured dimensions on the drawings shall control over scaled dimensions and noted materials shall control over undimensioned graphic indications
- The Client Application

2. CONFIDENTIALITY

2.1. CONTRACT AND CONTRACT TERMS ARE CONFIDENTIAL

The Contract Documents contain Confidential and Proprietary Information owned by Cloacina that includes, without limitation, pricing, illustrations, drawings, specifications, fees, processes, and technical data. This Contract is for evaluation and use by the Client and Client agrees not to reveal or share its contents, except with those Client Parties working on or administering the Project, all of whom shall be bound to its terms. Copies of this Contract may not be made in whole or in part, except as required to inform Client Parties of their obligations or with the prior written consent of Cloacina. Improper use or disclosure of the Contract Documents, regardless of the acceptance or termination thereafter of this Contract and regardless of whether it was intentional or unintentional, shall be deemed a breach of this Agreement. The Client Parties' covenant to refrain from disclosing or reproducing information contained in this Contract shall survive the completion of any work and/or services outlined in this Contract and any earlier termination of this Contract. If Client has previously executed a Cloacina Confidentiality and Non-Disclosure

Agreement ("NDA"), the more restrictive terms between this paragraph and those in the NDA will control. For municipal and/or government projects, all proposals and terms and conditions shall be treated as CONFIDENTIAL, regardless of whether they are marked as such, subject to disclosures required by law, including rights under public records acts. If a public records act request is made that would include this Contract, Cloacina shall be notified immediately on request and the parties shall cooperate in objecting to the request or otherwise redacting all Cloacina Confidential and Proprietary Information before releasing.

2.2. LICENSE TO USE THE CONFIDENTIAL INFORMATION

Once Cloacina has been paid in full by Client and Client has satisfied all obligations of the Contract, Cloacina grants Client a limited, non-exclusive, royalty free and revocable license to use the Confidential and Proprietary Information described above and further detailed in the Cloacina Confidentiality and Non-Disclosure Agreement related to the equipment provided to Client to the extent reasonably necessary for the operation, maintenance and/or repair of the equipment and/or any subsystem or component thereof. All Confidential and Proprietary Information provided by Cloacina to Client in accordance with this Contract remains the sole property of Cloacina and Cloacina retains and reserves all rights associated therewith.

3. FINANCIAL

3.1. CLIENT APPLICATION

Cloacina requires all Clients to complete a Client Application. Cloacina reserves the right, in its sole discretion, to require payment in advance for any services or equipment or to otherwise require that Client provide a payment/performance bond or other form of financial security for Cloacina to proceed with the evaluation and design of equipment for Client's Project.

3.2. FINANCED PROJECTS

Cloacina requires all Clients to disclose if the Project is funded by a third party loan and provide contact information for their lender on the Client Application and/or through other written means. If the project is funded by a loan, Prior to Submittal Approval and Procurement Release, Client shall provide Cloacina with written proof of final loan approval from their lender. Cloacina reserves the right to contact Client's lender to satisfy themselves as to the viability of that loan at any point in the Project.

Cloacina shall not commence the procurement and/or fabrication stages of the Project until Client provides Cloacina with written proof of one of the following: final loan approval, sufficient cash on hand to complete the project without loan approval and/or a bond that meets requirements specified by Cloacina. If Client has not provided proof of the foregoing with Submittal Approval and Procurement Release, and/or if Cloacina is notified by Client or their lender of a delay in and/or denial of lender funding, Cloacina will take one or a combination of the following actions:

- The Project will be immediately paused and removed from the Cloacina production schedule until such time as written proof is provided
- Cloacina will renegotiate the terms of this Contract including but not limited to: the Project schedule, delivery dates, payment milestones, pricing escalations and bonding requirements
- Cloacina will terminate this Contract

Client shall be responsible for all price escalations and costs associated with Project delays as a result of any delay in and/or the inability to provide the required financing documentation.

3.3. CHANGES IN CLIENT'S STATUS

If, during the term of this Contract, the financial condition of the Client declines from that disclosed in the Client Application, including due to a change in ownership, structure or control, then Client shall inform Cloacina and Cloacina shall have the right to request additional security or financial assurances resulting from the change in condition or control. If the Client does not provide such assurance, Cloacina shall have the right on written notice to

Client to delay or stop transit of the equipment, defer or decline to make delivery of the equipment and/or terminate this Contract.

3.4. PRICING

3.4.1. LIMITATIONS

Unless specifically and expressly included in this Contract, the pricing provided is limited to the services, goods, quantities, materials and models specified. Cloacina reserves the right to modify pricing for additional requests, without obligation to complete the additional requests.

3.4.2. PRICING VALIDITY

Pricing is valid for 30 calendar days from the date listed on the coversheet of this Contract. Unless executed within the 30-day period with such pricing, Cloacina reserves the right to update pricing, in its discretion.

3.4.3. RIGHT TO WITHDRAW BEFORE EXECUTION

Cloacina reserves the right to revoke, cancel or withdraw this Contract or any pricing or other terms at any time prior to Client's execution and Cloacina's receipt of Client's Design Specification payment.

3.4.4. BONDS

No payment, performance or bond(s) of any other kind are included in the pricing.

3.4.4.1. BONDS BY CLOACINA

If the Project or other conditions require that Cloacina post a completion bond, such bond shall be at sole cost of Client and invoiced as an additional expense. Cloacina reserves the right to review terms of any performance bond required and to accept or reject such terms in its sole discretion.

3.4.4.2. BONDS BY CLIENT

Unless Client has paid in advance, Cloacina reserves the right to require Client to secure a payment bond with Cloacina as the payee in the amount of the Contract price and/or to cover any change order, such bond extending through Client's performance of its payment obligations. All payment bonds shall be at Client's sole expense. Failure of Client to timely secure the required bond(s) may result in delays in and/or stoppage of all work and production on the Project until a bond is secured, or Client provides other security acceptable to Cloacina, in its sole discretion. Delays due to Client's inability to bond or provide security acceptable to Cloacina may result in increased costs and Client will be responsible for paying all items related to bonding/security delays including, without limitation, increased materials or processing costs, storage fees, placement of the system in or out of production, demobilizing costs, and/or increased project management costs.

3.4.5. CURRENCY

All prices quoted are in United States Dollars (USD).

3.4.6. TAXES

3.4.6.1. TAXES ARE NOT INCLUDED

Pricing under the Contract and all amendments and changes orders does not include taxes of any kind, unless specifically stated otherwise. Any applicable sales tax, value added tax, local, state/provincial, federal, import or international taxes, duties, customs and tariffs will be billed to Client and payment is the sole responsibility of Client.

3.4.6.2. TAX EXEMPTION

If Client claims a tax or other exemption or direct payment permit, Client shall provide Cloacina with a valid exemption certificate or permit and defend, hold harmless and indemnify Cloacina harmless from any taxes, costs and penalties assessed related to the Contract. Compliance with taxing authority exemptions is the Client's sole responsibility.

3.4.7. INTERNATIONAL EXPORTS

Pricing does not include preparation or shipping of the equipment for international export and/or any fees, impounds, taxes or tariffs associated with exportation. As a manufacturer, Cloacina is required to comply with applicable export laws and regulations relating to the sale, exportation, assignment, disposal and usage of the equipment, including any US Department of Treasury export license requirements. Any intended use of the equipment purchased under this Contract outside the continental United State must be disclosed to Cloacina to ensure compliance with applicable laws. Client is strictly prohibited from directly or indirectly using, exporting, selling, transferring, assigning or otherwise disposing of equipment for uses in countries that are on the OFAC embargoed country list or which will result in non-compliance with applicable export laws and regulations. Client shall defend, indemnify and hold Cloacina harmless from non-compliance with this clause and any and all costs (including attorneys' fees and litigation related costs) liabilities, penalties, sanctions and fines related to non-compliance with applicable export laws and regulations.

3.5. INSURANCE

3.5.1. CLOACINA'S INSURANCE

Pricing is based on Cloacina's general liability insurance coverage(s), including Workers' Compensation, and coverage for product liability. Client is responsible for all loss and property damage FOB Cloacina factory as subsequentially specified in the Contract. Cloacina does not procure course of construction or builder's risk insurance, which would be the responsibility of Client if required in association with the Project. Requested or additional endorsement, policies or riders shall be at sole cost of Client.

3.5.2. CLIENT'S INSURANCE

Client, at its sole expense, shall keep the equipment insured against property damage at its replacement value, Client shall at all times maintain appropriate operating insurance including workers' compensation (in the amounts required by law), automobile liability insurance and public liability insurance (including product and broad form contractual liability and, if applicable, pollution liability coverage) covering all operations and use of the equipment for not less than $2,000,000 combined coverage for bodily injury and property damage. The Client shall name Cloacina as an additional insured/loss payee, with primary coverage for casualties. All policies shall contain, and Client agrees to, a waiver of the right to contribution by Cloacina, and a blanket contractual provision or endorsement waiving the right of subrogation. This insurance shall cover the period from the date the equipment leaves the Cloacina factory which delivery shall transfer title. Proof of such insurance shall be provided no later than five days prior to the agreed upon shipping date and failure of Client to provide proof of insurance shall result in the shipping date being cancelled and/or postponed until such proof of insurance is provided. The Client must notify Cloacina at least 10 days in advance if Client's insurance will be changed or cancelled. The Client shall not change its coverage and/or the Insured Value except with Cloacina's prior written consent and hereby irrevocably appoints Cloacina as Client's attorney-in-fact to receive payment of and to endorse all checks, drafts and other documents and to take any other actions necessary to pursue insurance claims and recover payments if Client fails to do so. Client shall promptly notify Cloacina of any occurrence that may become the basis of a claim and shall provide Cloacina with all requested relevant data. Delivery of the equipment to Client without receipt of said policies and/or certificates shall not be a waiver by Cloacina of Client's obligation to provide the insurance coverage required.

3.6. PAYMENT MILESTONES

3.6.1. OVERVIEW

The following Payment Milestones shall apply to the Project:

PAYMENT MILESTONE	CUMULATIVE % OF THE TOTAL CONTRACT PRICE	WHEN THIS PAYMENT IS INVOICED	WHEN THIS PAYMENT IS DUE

Prepaid Expenses: All Contract expenses prepaid by Cloacina	N/A	Invoiced at Contract execution	Due at Contract Execution
Engineering and Design Payment*	5%	Invoiced at Contract execution	Due at Contract Execution
Submittal Approval and Procurement Release Payment*	35%	Invoiced after Cloacina receives submittal approval and procurement release from Client	Due Net 30 from invoice date
Monthly Production Payments*	95%	These payments are invoiced one month in advance	Due the first of the month in advance
Final Payment**	100%	Invoiced at Beneficial Occupancy and/or Use	Due Net 30 from invoice date

*All executed Change Orders will be added to the Total Contract Price and invoiced at the next Payment Milestone above. Clients will be required to catch up all Change Order billing for payment milestones that have already occurred at the next Payment Milestone for the Project.

** Client must pay the remaining 5% of the Total Contract Price plus all outstanding amounts due to Cloacina with the Final Payment

3.6.2. CONTRACT EXPENSES PREPAID BY CLOACINA

If Cloacina has to prepay any items to comply with or as a result of this Contract, including but not limited to: bonds, additional insurance policies, carriers, endorsements and/or coverages and/or any other prepaid expense, Client shall submit payment for those prepaid items in full to Cloacina at the same time the Engineering and Design Payment is due and made.

3.6.3. ENGINEERING AND DESIGN PAYMENT

The Engineering and Design Payment of 5% of the Total Contract Price, including optional components and upgrades, is due on execution of this Contract. Engineering, design, project management and any other work shall not proceed until the later of (a) full execution of this Agreement and (b) receipt of the Engineering and Design payment and (c) receipt of all prepaid expenses as specified above.

3.6.3.1. CHANGES AFTER PREPARATION OF THE ENGINEERING AND DESIGN SPECIFICATIONS

If any Project details and/or Project Design Specifications change after completion of the engineering and design phase that requires Cloacina to redesign and/or reengineer any part of the Project or otherwise modify, change or add to the equipment, all associated costs with the redesign, reengineering and/or new equipment required to make these changes will be set forth in a Change Order, payable as invoiced.

3.6.3.2. PRICE ESCALATIONS

If Client does not give Cloacina a release to proceed with materials and equipment procurement after Cloacina' s completion of the Project Design Specifications, Client will be responsible for all increased costs between the time the Project Design Specifications are completed, and the date Client issues that release. If there are Project or Client related delays that prevent Cloacina from completing the Project Design Specifications, the Parties agree that 60 days shall be deemed the agreed reasonable time frame in which Cloacina would have completed the Project Design Specifications for the purposes of comparing material and labor escalation cost increases in this paragraph.

3.6.4. PAYMENT AND PROJECT SCHEDULE

During the submittals phase of the Project, Client will be given a Payment and Project Schedule that will include the following:

- Estimated Project Milestone dates
- Payment due dates and amounts for all remaining payments on the Project as specified in the Contract, assuming no Change Orders
- An estimated Project Schedule

3.6.5. SUBMITTALS APPROVAL AND PROCUREMENT RELEASE PAYMENT

The Submittals Approval and Procurement Release payment of 35% of the Total Contract Price is due when Cloacina receives submittals approval and/or notice to proceed with equipment and materials procurement from Client. Cloacina shall not order any materials or equipment until it has received all of the following:

- Written Submittals Approval and Procurement Release
- Written approval of the Project and Payment Schedule
- Submittals Approval and Procurement Release payment in full

3.6.6. PRODUCTION PAYMENTS

- The **Production Payments** totaling 60% of the Total Contract Price will be divided between the months that the Project is scheduled to be in production as shown on the Project and Payment Schedule and Client shall be invoiced one month in advance.
- The **Production Payments** shall be due on the first of each month and shall commence the month after the formal submittals approval and release for procurement is received by Cloacina.
- The equipment will not be packed and/or shipped until all payments due at this point in the Contract have been received in full by Cloacina.

3.6.7. FINAL PAYMENT

The Final Payment of 5% of the Total Contract Price plus all other outstanding amounts due to Cloacina shall be paid within 30 days of completion of Cloacina's services, which shall be on the date the equipment is delivered and installed for Client's use and/or the date of Beneficial Occupancy and/or Use, whichever occurs first.

3.7. RETENTION

If retention is applicable on the Project, Client shall not retain more than 5% of the total Contract Price, without regard to Change Orders, unless a change order exceeds 2% of the total Contract Price. Retention shall be paid within 30 days of completion of Cloacina's services, which shall be on the date the equipment is delivered and installed for Client's use and/or the date of Beneficial Occupancy and/or Use, whichever occurs first.

3.8. PAYMENT REGARDLESS OF POSSESSION OR USE

Client shall be liable for the full amount due to Cloacina as outlined in this Contract regardless of whether or not Client ever takes possession of the equipment and/or ever uses the equipment.

3.9. PAYMENT REGARDLESS OF PAYMENT BY OWNER OR END USER

Client is liable for the amount due to Cloacina, and performance of its obligations as outlined in this Contract and the payment and/or performance of the owner of the equipment, end user and/or any other Third Party shall in no way condition, diminish, delay, cancel and/or invalidate Client's obligations hereunder.

3.10. CHANGE ORDERS

The Parties agree that the pricing given, as may be modified, is based on the Project and Client specifications and requests related thereto. The pricing is intended to reflect the services and equipment Cloacina has agreed to provide; however, the Client or Cloacina may issue a Change Order based on changed circumstances, Project conditions, delays or other modifications ("Change Order") as follows:

3.10.1. CLIENT CHANGES

If the Client desires or requests a change, they will submit a "Change Order Request" in writing to Cloacina. Cloacina will promptly review the Change Order Request and notify Client in writing, after receipt the options for implementing the proposed Change Order Request and the impact on pricing, payment schedule and the Project Schedule, including the delivery date. After consideration of the options and impacts, Client may, but will not be obligated to issue the desired Change Order subject to the conditions required by Cloacina which shall be included in the Change Order.

3.10.2. CLOACINA CHANGES

If Cloacina issues a Change Order in the Project, including operating conditions discovered after the Contract execution in the Project or to address damage to the equipment or any component, it will set forth the impact of the changed conditions on the Project Pricing and Schedule. After consideration of the options and impacts, Client may, but will not be obligated to, approve the Change Order. If the Client does not approve the Change Order, Cloacina shall have no obligation to complete or address the concerns raised in such Change Order and any such unaddressed changes shall be at Client's sole risk and responsibility.

3.10.3. CHANGES IN COST ASSOCIATED WITH OVERHEAD AND PROFIT

Any change to the Contract pricing shall include current costs, plus markup and profit.

3.10.4. CHANGE ORDER DUE TO FORCE MAJEURE EVENT

If, and to the extent that a Force Majeure event causes a delay in delivery per the Project Schedule, upon submission of a proper Change Order and subject to the other provisions of this Change Order section of this Contract, the Project Schedule will be extended by Change Order by the number of calendar days of actual delay to the changed path of the Work at the time of the Force Majeure event. To the extent an event of Force Majeure affects Cloacina's costs, the provisions of the Cloacina Changes clause of this section will apply.

3.10.5. CHANGE ORDER DUE TO SUSPENSION OF WORK BY CLIENT

If Client elects or desires to suspend the Project, the terms of the Project Pause and Hibernation section of this Contract shall control.

3.10.6. CHANGE ORDER DUE TO ACTIONS OF CLIENT

If Cloacina suffers increased costs and/or a delay in the progress of the Work and to the extent such increased costs and/or delay is due to a Client-caused delay, including delay or failure of Client to perform its obligations under this Contract, on submission of a Change Order Notice, Cloacina shall be entitled to a Change Order extending the Project Schedule as required and, if necessary, increasing the Contract price pursuant to the Cloacina Changes clause of this section.

3.10.7. CHANGE ORDER DUE TO CHANGES IN APPLICABLE LAW

The Parties acknowledge that Cloacina must adhere to all applicable laws related to equipment. If Cloacina incurs increased direct costs in the manufacture, specifications and delivery of the equipment due to a change in regulatory requirements (including requirements that impact Client's intended use), Cloacina may issue a Change Order with the changes required due to applicable law. The Parties shall discuss alternatives and options and finalize the required changes, which shall be binding on Client and at its expense.

3.10.8. CONTRACT AMENDMENTS AND CHANGE ORDERS

If any Contract Amendment and Change Order is issued related to this Contract, Client must bring all billing current per the payment milestones specified in the Contract or Change Order.

3.11. NO SETOFFS

This Contract shall be completely independent of all other contracts and agreements between the Parties and all payments due to Cloacina hereunder shall be paid when due and shall not be setoff and/or applied against any other money due or claimed to be due from Cloacina on account of any other transaction and/or claim.

3.12. NO BACK CHARGES

In no event shall any Client Party do or cause any work to be done, purchase any service(s) or materials and/or incur any expense in the name of and/or on any account of Cloacina, nor shall Cloacina be responsible for any such work or expense unless Client has provided the Cloacina Project Manager full details of the work, services, materials and/or expenses and Cloacina has approved the same in writing.

3.13. RETURNS

Cloacina will not accept any materials and/or equipment returned by Client without the prior written consent of Cloacina. A restocking fee and/or return processing fee will apply and shall be billed to Client. If Cloacina authorizes the return of any equipment, Client shall continue to have risk of loss and damage and title to all equipment being returned until it arrives at the Cloacina factory or another location designated by Cloacina, with Client continuing to be the insuring party until received at the Cloacina factory or another location designated by Cloacina.

3.14. ADDITIONAL SERVICES AND FEES

Client may contract with Cloacina to provide additional services not included in this Contract and agrees to pay Cloacina for those services as shall be set forth in a Contract Amendment or Change Order

3.15. PURCHASE ORDERS

If Client issues a purchase order as a supplement to the Contract Documents, each purchase order must contain all of the following or it will be rejected by Cloacina. All questions related to purchase orders should be directed to the applicable Cloacina Sales Representative.

Client's Information:	• Entity's legal name • Contact name • Mailing address • Email • Phone
Project Information:	• Project name • Physical address of the project • Requested delivery date • Description of the equipment to be purchased by Client (wording to be identical to this Contract) • Scope of services to be performed by Cloacina (wording to be identical to this Contract) • Any special packing and shipping needs including partial shipments and shipment dates. Additional costs will be incurred for deviations from Cloacina's standard packing and/or shipping procedures • Special and/or unusual delivery details
Billing Information:	• Contact name • Billing address • Email • Phone • Billing terms identical to those contained in this Contract • Purchase price identical to the total price shown in this Contract

3.15.1. REQUIRED LANGUAGE

The following language must appear in all purchase orders: "Cloacina's Standard Terms and Conditions as outlined in the Contract are attached and incorporated into this purchase order." Should Client's purchase order contain terms and conditions that conflict with Cloacina's Terms and Conditions, Cloacina's Terms and Conditions shall

prevail. If the purchase order contains terms and conditions and/or requests for equipment or services in conflict with this Contract or not included in this Contract, Contract pricing will be increased by Cloacina based on the requested changes and the administrative and legal processing costs related thereto, but with no obligation of Cloacina to accommodate. In no event shall a purchase order be binding on Cloacina if Client terms and conditions are added, whether or not they conflict with the Contract Documents, unless Cloacina agrees in writing to such terms.

3.16. PAYMENT METHODS AND ADDRESS

Cloacina accepts the following payment methods only: cash, check, cashier's check, money order, wire transfer, Visa, Mastercard and American Express (A 3% fee on the charged total shall apply to all credit card transactions).
All payments due under this Contract shall be made payable to Cloacina, LLC and mailed to the following address:

Cloacina, LLC
ATTN: Accounts Receivable
2385 Precision Drive
Arroyo Grande, CA 93420

Accounts Receivable Contact Information
Email: accounting@cloacina.com
Office: 888.483.8469
Fax: 805.597.7171

3.17. INVOICES

Invoices will be generated monthly in accordance with this Contract and the current Schedule of Fees. Invoices are due and payable within 30 days of the invoice date. Cloacina reserves the right to require payment by electronic funds transfer ("EFT"), through a designated financial institution for receipt of EFT payments no later than 30 days following Cloacina's election.

3.18. RETURNED PAYMENTS

If Client's check or electronic payment is returned for insufficient funds or any other reason, Client shall be responsible for all costs, bank fees and other expenses incurred by Cloacina. Cloacina reserves the right to require Client to make all future payments by cash or cashier's check, or wire, at its sole discretion.

3.19. PRICE ESCALATIONS

If price escalations are allowed and/or occur under this Contract, all of the following types of escalations shall apply.

3.19.1. CLOACINA PRICE ESCALATIONS

Material prices are volatile in nature, especially those associated with steel and stainless steel. Cloacina does not cover pricing escalations from the date on the coversheet of this Contract to when the purchase order is issued and raw materials are released for purchasing. As such, Cloacina will use the following major cost indexes for the purposes of determining delta increases and/or decreases from the date on the cover of this Contract to Contract execution and/or purchase order issuance. The following consumer indexes shall be the determining indexes:
Stainless Steel: https://www.atimetals.com/specialtyrolledproducts/Pages/stainless-steels-surcharge-report.aspx

3.19.2. SUB-VENDOR PRICE ESCALATIONS

If sub-vendors pass along materials, service and/or equipment price escalations, Cloacina will provide proof of these escalations to Client and Client shall be responsible for paying these escalations in full.

3.19.3. LABOR ESCALATIONS

Labor escalations will apply if Cloacina has increased their labor rates since the original Contract was executed.

3.19.4. OVERHEAD ESCALATIONS

Overhead escalations will apply if Cloacina has increased its overhead rates since the original Contract was executed.

3.20. CLIENT DEFAULT

3.20.1. LATE PAYMENTS

If Client is late on any payment(s) to Cloacina under this Contract, the following steps shall be taken:

- **30 days late:** Client is considered in default of this Contract, is noticed by the Accounting Department and late fees and interest begin to accrue
- **45 days late:** A Notice of Default shall be issued by the Legal Department that gives Client 15 days to cure all defaults of the Contract
- **60 days late:** Client's account is sent out for collection and/or legal action subject to Cloacina's rights and remedies as set forth in this Contract.

3.20.2. EVENTS OF DEFAULT

Each of the following constitutes a Client Event of Default: (a) Client fails to make any payment to Cloacina when due within five calendar days of Cloacina's notice of such payment default; (b) any representation or warranty made to Cloacina is incorrect or misleading in connection with this Contract; (c) Client fails to observe or perform any non-payment obligation or specification specified in this Contract and the failure continues for 30 days after written notice to Client, which notice shall provide facts sufficient for Client to address the default; (d) Negligent, dishonest, illegal and/or other acts or omissions of Client and any Client Party; (e) Client requests to Pause or Hibernate the Project but fails to comply with the requirements set forth in this Contract; (f) Client ceases to do business (other than by assumption of another public agency), becomes insolvent, makes an assignment for the benefit of creditors or files any petition or action under any bankruptcy, reorganization, insolvency or any other law or laws for the relief of, or relating to, debtors; and (g) filing of an involuntary petition under any bankruptcy statute against Client, or appointment of a receiver, trustee, custodian or similar official to take possession of the properties of Client, unless the petition or appointment ceases to be in effect within 30 days after filing or appointment.

3.20.3. CLOACINA RIGHTS AND REMEDIES

Cloacina's rights and remedies in the event of a Client Event of Default include all those available under applicable law or in equity, and expressly include, but are not limited, to any one or more of the following:

3.20.3.1. Modifying the credit terms of this Contract at its sole discretion.

3.20.3.2. Halting work on the Project in any phase and removing it from the Cloacina design, engineering, production, installation and/or commissioning schedule.

3.20.3.3. Stopping or delaying transit of the equipment and/or deferring or declining to make delivery of the equipment.

3.20.3.4. Charging the Client demobilizing, handling and storage fees as described in this Contract.

3.20.3.5. Charging Client for items including but not limited to, increased materials costs, placement of the system in or out of production and increased Project management costs.

3.20.3.6. Reselling the equipment to another client.

3.20.3.7. Placing the equipment into Cloacina's rental fleet. Should Cloacina place equipment built for Client into their rental fleet, Cloacina will reimburse Client for the actual labor (burden rate) and materials for the built portion of the project only. Mark-up and overhead will not be reimbursed, nor the project-specific design and project management labor. In the event that Client settles the outstanding balance but any of the preceding actions have already occurred, all costs to perform the above tasks will be billed in full to Client.

3.20.3.8. Requiring payment of the Contract value of the work completed and in progress in full. Acceptance by Cloacina of less than full payment shall not constitute a waiver of any of its rights hereunder.

3.20.3.9. Terminating this Contract after written notice to Client without any further obligation to Client whatsoever.

3.20.3.10. The right to charge late fees. Client acknowledges that late payment will cause Cloacina to incur costs not contemplated by this Contract, the exact amount of which will be extremely difficult to ascertain. Such costs include, but are not limited to, processing, legal and accounting charges and late fees which may be imposed upon Cloacina by any lender. Accordingly, if any payment or other amount due or charged under this Contract is not received by Cloacina within five calendar days of the due date, Client shall immediately pay to Cloacina a one-time late charge equal to 5% of each such overdue amount. Client acknowledges such late charge represents a fair and reasonable estimate of the costs Cloacina will incur by reason of such late payment. Acceptance of such late charge by Cloacina shall in no event constitute a waiver of Client's default or breach with respect to such overdue amount nor prevent the exercise of any of the rights and remedies granted hereunder. In addition to the late fee payment, any payment not made when due and other payment obligations incurred as a result of Client's default will accrue interest at the lower of 1.5% per month or the highest legal rate allowed by law from its due date until paid.

3.20.3.11. The right to charge collection and/or attorneys' fees. Client will pay Cloacina its costs and expenses, including collection fees, paralegal fees, attorney fees and court costs incurred by Cloacina in enforcing this Contract and/or all costs and expenses incurred by Cloacina in realizing upon or protecting any equipment and in enforcing and collecting any obligations or any guarantee thereof, including, without limitation, if Client retains counsel for advice, suit, insolvency proceedings or any of the above purposes, the reasonable counsel's fees and expenses incurred by Cloacina. This obligation includes the payment of such costs and expenses whether Cloacina starts a lawsuit or other proceeding or not and if Cloacina starts a lawsuit or other proceeding, whether such lawsuit or proceeding is dismissed.

3.20.3.12. The right to declare any or all Client's payment obligations immediately due and payable without notice or demand to Client and in such event, Client must pay immediately to Cloacina on demand all amounts then due and payable by Client to Cloacina under this Contract, including undiscounted present value of Client's obligations and all associated attorneys' fees and expenses.

3.20.3.13. Giving notice of the default and claim to the surety providing the bond for benefit of Client as security for Client's obligations under this Contract.

3.20.3.14. If title has passed to Client, requiring Client to assemble any or all elements of the equipment at a location in reasonable proximity to Cloacina's location set forth in this Contract.

3.20.3.15. Making, adjusting, settling and/or receiving payment on any insurance claims with respect to the equipment.

3.20.3.16. Use of any other remedy available under the UCC, law or in equity.

3.20.3.17. The express right to repossess the equipment without first filing any action, whether for replevin or otherwise, with Client waiving all rights to raise any defenses to such repossession. In the event of repossession, Client shall be liable for all charges incurred by Cloacina, which include but are not limited to the following: paralegal fees, attorney fees, court costs, all costs to send a Cloacina Representative(s) to the site to disconnect the equipment, dewatering, cleaning, disinfecting, loading, shipping, transportation, unloading and/or storage fees. In the event of repossession, Cloacina shall not be liable for any damage to Client's equipment, facility and/or property. Cloacina will inspect the equipment prior to removal, and if not in a suitable condition to either resell or rent the equipment to another Party, Cloacina shall provide Client with a list of deficiencies for which Client shall pay to Cloacina, on demand, all costs and expenses incurred by

Cloacina to bring the equipment into satisfactory condition at Cloacina's sole discretion within 30 days of invoice. The obligations under this paragraph shall survive termination of this Contract.

3.20.3.18. If a Client Event of Default has occurred and is continuing, all parts, accessories and equipment affixed to the equipment shall become the property of Cloacina, at its election, or Cloacina may charge Client the cost to remove unapproved accessories.

3.20.3.19. If title has not passed to Client and Client is in default of their financial obligations under this Contract for 90 calendar days or longer from the original date payment was due or fails to pick up, arrange shipping for or take possession of the equipment 90 calendar days from notice of the ready to ship date, the equipment shall be considered abandoned on day 91 with no further notice to Client. Abandoned equipment becomes the sole property of Cloacina and Cloacina is not obligated to reimburse Client for any fees paid under this Contract. Cloacina may use, sell, rent or dispose of the abandoned equipment at its sole discretion.

3.20.3.20. IF TITLE HAS PASSED TO CLIENT AND CLIENT IS THEREAFTER IN DEFAULT OF THIS CONTRACT OBLIGATIONS, CLIENT UNDERSTANDS THAT THE ABOVE STATED REMEDIES INCLUDE THE RIGHT OF CLOACINA TO REMOTELY DISCONNECT THE SYSTEM, REMOVING CLIENT'S ABILITY TO PROCESS WATER AND/OR WASTEWATER. CLIENT SHALL BE SOLELY RESPONSIBLE FOR ANY AND ALL RESULTING COSTS ASSOCIATED WITH BY-PASSING, HAULING OF WASTEWATER, ALTERNATIVE TREATMENT, LONG-TERM STORAGE, ENVIRONMENTAL FEES, FINES OR JUDGEMENTS LEVIED AS A RESULT OF DISCHARGING PARTIALLY TREATED EFFLUENT DUE TO A DISCONNECTED SYSTEM RESULTING FROM CLOACINA'S RIGHT TO DISCONNECT THE EQUIPMENT DURING A CLIENT EVENT OF DEFAULT.

3.20.4. WAIVER

No course of dealing and no delay or omission by Cloacina in exercising any right or remedy hereunder or with respect to any obligations shall operate as a waiver thereof or of any other right or remedy, and no single or partial exercise thereof shall preclude any other or further exercise thereof or the exercise of any other right or remedy. Cloacina may remedy any Client Event of Default hereunder or with respect to any obligations in any reasonable manner without waiving the Client Event of Default remedied and without waiving any other prior or subsequent Client Event of Default. All rights and remedies of Cloacina hereunder are cumulative and are in addition to any and all rights and remedies available to Cloacina under applicable law. Cloacina shall have no obligation to take, and Client shall have the sole responsibility for taking all steps to preserve rights to the equipment as to any third-party claiming rights through Client whether or not in Client's possession. Cloacina shall not be responsible to Client for loss or damage resulting from Cloacina's failure to enforce or collect the equipment or to collect any moneys due or to become due thereunder.

3.21. LIMITATIONS AND EXCLUSIONS OF CONTRACT

In addition to the limitations and exclusions specified in other sections of the Proposal and/or this Contract, the following are also limited under and/or excluded from this Contract:

3.21.1. AMERICAN IRON AND STEEL (AIS) REQUIREMENTS

Cloacina does not provide AIS stainless steel as a standard due to the limited sources available domestically and the fact that package membrane bioreactors have been specifically excluded from the AIS. Cloacina reserves the right to purchase and use metal imported from other countries in all projects at its sole discretion. If a project manager, engineer, or other Client Party believes the Cloacina plant is subject to AIS requirements or Client requests AIS compliant sourced materials, a justification letter for exemption based on specific exclusions allowed for in AIS will be provided by Cloacina and if that is rejected, then an additional charge for this will be added to the Project costs which shall be borne by the Client.

3.21.2. INTENDED SITE CONDITIONS

Cloacina shall not be held responsible for determining the suitability of the site or location where Client intends to use the equipment, including for any environmental, other physical site conditions, availability or location of

utilities, setback requirements, easement limitations, etc. Client is solely responsible for ensuring that the location meets all necessary requirements and complies with relevant regulations. Cloacina's or its agent's liability is strictly limited to the proper installation and functionality of the equipment itself, and any issues arising due to the site's conditions shall not be attributed to Cloacina.

3.21.3. CIVIL ENGINEERING
Site civil engineering is not included in the pricing unless specifically stated otherwise.

3.21.4. SLAB
Equipment slab design and construction is not included in the pricing unless specifically stated otherwise.

3.21.5. EQUALIZATION
The cost for any diurnal flows needing to be attenuated are not included unless specifically stated otherwise.

3.21.6. SECONDARY CONTAINMENT
Secondary containment is not included in the pricing unless specifically stated otherwise.

3.21.7. DISINFECTION
Disinfection is not included in the pricing unless specifically stated otherwise.

3.21.8. DISSOLVED SOLIDS (TDS)
The unit will not address dissolved solids through biological treatment unless specifically stated otherwise. Dissolved solids should be managed through source control.

3.21.9. SECURITY
Safety and security items such as fencing, locking ladders and lighting are not included unless specifically stated otherwise.

3.21.10. PAINTING
No surface preparation and/or painting of any surfaces is included in the pricing unless specifically stated otherwise.

3.21.11. THERMAL PROTECTION
Thermal protection of hydraulic piping is not included in the pricing unless specifically stated otherwise.

4. PROJECT PAUSE AND HIBERNATION

4.1. DEFINITIONS

4.1.1. A Project Pause means a Client-requested delay on the project lasting less than six months.

4.1.2. Hibernation means a Client-requested delay on the project lasting longer than six months.

4.2. PRIOR TO PAUSE OR HIBERNATION

4.2.1. Client must provide a Project Pause or Hibernation request in writing and is subject to the approval of Cloacina.

4.2.2. All amounts due to Cloacina at the time Client requests a Project Pause or Hibernations must be current for such notice to be considered and/or reviewed by Cloacina.

4.3. DURING PAUSE OR HIBERNATION

4.3.1. If a Project Pause or Hibernation is agreed to by both Parties, the project shall be packed up and moved off the production floor. Client shall be subject to packing and moving fees, which shall be due upon receipt of invoice. A paused or hibernated project is also subject to all packing, moving and storage terms and conditions specified in this Contract.

4.3.2. All payment arrangements specified in this Contract must continue during the pause or hibernation. If the pause or hibernation occurs during the production phase of the project, Client must continue making their monthly production progress payments as agreed.

4.3.3. Client understands that no work on their project will occur during the pause or hibernation.

4.4. PRIOR TO PAUSE OR HIBERNATION PROJECT RESTART

4.4.1. Client may be required to complete a new Client Application prior to reinstating the order.

4.4.2. Should Cloacina modify their Standard Terms and Conditions during the pause or hibernation, Client will be required to execute the updated version.

4.4.3. Should any changes in the Project details, the Design Specifications, discharge permit, regulatory agency requirements, permitting requirements, government regulations and/or any other change need to be made when the Project restarts, Client shall be responsible all costs related to same including, without limitation, all design, engineering, estimating, Project management and all other costs required to restart and complete the Project.

4.4.4. At the end of the pause or hibernation, Client shall be subject to the following fees to restart the Project:

- If all materials and equipment are paid for by Client prior to the pause or hibernation, no materials escalations shall apply unless additional materials and equipment must be procured after the Project is restarted**.**
- If Client did not pay for all materials and equipment specified in the Contract prior to the pause or hibernation, price escalations shall occur on the remaining items to be purchased and will be detailed in the Project Restart Agreement
- Labor escalations will apply if Cloacina has increased their labor rates since the original Contract was executed.
- Overhead escalations will apply if Cloacina has increases their overhead rates since the original Contract was executed.
- All costs associated with moving the Project back onto the production floor, unpacking and cleaning it in preparation for manufacturing to resume shall be billed to Client.

4.4.5. Prior to any work recommencing on the Project, Client shall be given and must approve an amended Project Restart Agreement including the following:

- The Project restart deposit, if required.
- Any bonds that are required by Client to restart the Project.
- Estimated Project milestone dates and updated Project Schedule.
- Payment due dates and amounts for all remaining payments on the Project as specified in the Contract.
- The date the Cloacina Warranty and Process Guarantee shall commence.

4.5. EFFECT OF PAUSE OR HIBERNATION ON WARRANTIES AND PROCESS GUARANTEE

4.5.1. WARRANTIES MAY EXPIRE DURING HIBERNATION

Client is aware that as a result of pausing or hibernating its Project, some or all of the warranties on the parts and equipment already procured/fabricated for Client may expire before the pause or hibernation ends.

4.5.2. NON-CLOACINA EQUIPMENT MANUFACTURERS' WARRANTIES

Cloacina will pass through any individual equipment manufacturers' warranties to Client that are still valid after the Project restarts. Cloacina shall not be responsible for repairing and/or replacing parts and/or pieces of equipment that have expired manufacturers' warranties.

4.5.3. UPDATED WARRANTY AND PROCESS GUARANTEES

The Project Restart Agreement will include updated Cloacina Equipment Warranty and Process Guarantee Terms and Conditions if any changes have been made since execution of the original Contract.

4.5.4. EXTENDED WARRANTIES AVAILABLE

Cloacina advises all Clients who choose to pause or hibernate their projects to purchase an extended equipment warranty. Extended warranties must be purchased no later than 30 calendar days prior to the equipment leaving the Cloacina factory. Client should contact Cloacina for pricing and details.

5. MULTI-TRAIN AND/OR PHASED PROJECTS

5.1. MULTI-TRAIN PROJECTS

5.1.1. DEFINITION

A project with one phase, Contract and Cloacina project number, but two or more trains.

5.1.2. Cloacina's production schedule and/or the size of the project may necessitate trains being manufactured, shipped, installed and/or commissioned separately. This shall be at Cloacina's sole discretion.

5.1.3. If the trains ship to the jobsite at the same and/or different times but are all beneficially occupied by Client within 30 days or less of each other, the trains shall all have the same Equipment Warranty, Membrane Warranty and Process Guarantee start and end dates in accordance with the Cloacina Equipment and Membrane Warranty and Process Guarantee Terms and Conditions.

5.1.4. If the trains ship to the jobsite at the same and/or different times but are beneficially occupied by Client 31 days or more of each other, each train shall have separate Equipment Warranty, Membrane Warranty and Process Guarantee start and end dates in accordance with the Cloacina Equipment and Membrane Warranty and Process Guarantee Terms and Conditions.

6. MULTI-PHASED PROJECTS

6.1. DEFINITION

A Cloacina project where more than one phase or stage exists.

6.2. Phase I has a unique scope of work, executed Contract, is issued a Cloacina project number and is designed, installed and commissioned all as a separate phase of the project. At some later date, a different scope of work, Contract and Cloacina project number are issued to Phase II and any subsequent phases of the project, and those phases are designed, installed and commissioned separately from both Phase I and each other.

6.3. Each phase will require Client to execute a separate Contract and Cloacina's Standard Terms and Conditions. Changes may exist between the versions of Contract, pricing and/or Standard Terms and Conditions for each phase of the project. The version of the Contract, pricing and Standard Terms and Conditions executed for each phase shall govern that phase of the project only and shall not be cross applied to previous or subsequent phases of the project.

6.4. If Client's Phase I Contract also includes pricing for Phase II and/or any other subsequent phases, and Client does not execute a Phase II or subsequent phase Contract prior to the pricing expiration date, material, labor and/or overhead escalations will apply.

6.5. Each phase of the project shall have a separate Equipment Warranty, Membrane Warranty and Process Guarantee start and end date in accordance with the Cloacina Equipment and Membrane Warranty and Process Guarantee Terms and Conditions.

6.6. Cloacina reserves the right to make changes to products, processes and equipment during and/or between phases at its sole discretion. Client understands that each phase may not be identical in terms of appearance, materials, processes and/or equipment.

6.7. If Phase II or subsequent phases change the Design Criteria specified in Phase I and/or the Contract Documents, additional charges will apply and will be outlined in the Phase II or subsequent phase proposal.

7. USED AND/OR AS IS PLANTS AND EQUIPMENT

7.1. DEFINITIONS

7.1.1. USED PLANTS AND EQUIPMENT

7.1.1.1. Used plants and equipment are defined as those that have been previously installed and/or used by Cloacina and/or another client.

7.1.2. AS-IS PLANTS AND EQUIPMENT

7.1.2.1. As-is plants and equipment are those that may or may not have been previously installed and/or used but are being sold in the condition they are in as of the date of Contract execution.

7.2. INSPECTIONS AND DUE DILIGENCE PERIOD

7.2.1. The Client shall have a Due Diligence Period to conduct all investigative tests and/or research on the used and/or as-is plants and equipment. The Due Diligence Period shall end on the date of Contract execution.

7.2.2. During the Due Diligence Period, Client shall satisfy themselves as to all of the following related to the used and/or as-is plant and equipment they are considering purchasing:

7.2.2.1. Conduct a thorough in-person visual inspection of the plant and equipment and make sure their condition is satisfactory.

7.2.2.2. Research all federal, state, local, regulatory agency and all other applicable laws, requirements, regulations and permits to ensure that the plant and equipment complies.

7.2.2.3. Research all requirements for the specific application the Client intends to use the plant and equipment in and/or for to ensure that the plant and equipment complies.

7.2.3. Costs for all research, tests, inspections, travel and all other expenses related to the Due Diligence Period shall be the sole responsibility of Client.

7.2.4. Client's execution of the Contract shall constitute the end of their Due Diligence Period and

acknowledgement that they have conducted all research, tests and inspections necessary for them to satisfy themselves as to the condition and suitability of the used and/or as-is plant and equipment for their application.

REPAIRS AND/OR UPGRADES

7.2.5. No repairs and/or upgrades are included in the pricing. If Client wants repairs and/or upgrades to be made by Cloacina, Cloacina can provide an estimate to perform those services at Client's sole expense. (None are included in the pricing)

7.3. WARRANTY AND PROCESS GUARANTEE

7.3.1. 7.4.1 Used and/or as-is plants and equipment do not include warranties and/or process guarantees of any kind, including express and/or implied. Depending on the age and/or condition of the plant and equipment, Client may be able to purchase an extended warranty and/or extended process guarantee from Cloacina.

7.3.2. Cloacina reserves the right to deny offering an extended warranty and/or process guarantee on used and/or as-is equipment.

7.3.3. Cloacina warranties and process guarantees do not transfer from the original owner to a subsequent owner(s) even if the original Cloacina Equipment and Membrane Warranty and Process Guarantee are still in effect at the time this Contract is executed.

7.3.4. If any maintenance and/or upgrades must be performed on the plants and equipment in order for Cloacina to be able to offer an extended warranty and/or process guarantee it shall be at the sole expense of Client.

8. TERMINATION

8.1. TERMINATION BY CLOACINA

Cloacina may suspend or terminate this Contract and no shall assume no liability for any delay in, failure and/or unwillingness to perform any and/or all obligations under this Contract for an uncured Client Event of Default as defined in this Contract. Should Cloacina elect to terminate the Contract, Cloacina may, by written notice to Client, without prejudice to any other rights or remedies that Cloacina may have, terminate its further performance of this Contract. Payments due on termination will be invoiced and Client shall pay such invoice within 30 calendar days of such termination.

8.2. TERMINATION BY CLIENT

No order may be cancelled by Client unless agreed to in writing by Cloacina. If Cloacina does not agree to the cancellation or termination, such termination shall be deemed an Event of Default, entitling Cloacina to exercise all or any of its rights and remedies as set forth in this Contract. Cloacina may condition an agreed cancellation on Client's payment of an agreed cancellation fee, which shall include all costs and expenses incurred by Cloacina prior to receipt of the request for cancellation including, but not limited to, estimating, engineering (Process, mechanical, civil, electrical and/or controls engineering), marketing, drawing and modeling costs, copies, lost profits, project management, all commitments to its suppliers, subcontractors and others, all labor and overhead expended by Cloacina, a reasonable charge for profit and restocking fee. Cloacina reserves the right, at its sole discretion, to reassign equipment initially assigned to Client's Project to another Client if Client requests termination or cancellation of the Contract.

8.3. FORCE MAJEURE EVENTS

A Force Majeure Event is any act or occurrence beyond a Party's reasonable control, including, but not limited to, fires, floods, strikes (except any strikes involving a Party's personnel), accidents, extreme weather conditions including, for example, hurricanes, tornados, earthquakes, unusually high amounts of precipitation, unusual extremes of temperature or wind, extended periods of adverse weather, acts of war, aggression or terrorism (foreign or domestic), equipment failure (other than due to inadequate maintenance thereof). The following shall not constitute Force Majeure Events: weather conditions normal for the region in which the work is performed or the equipment is located and failure to pay any sums in accordance with this Contract. Whenever the provisions of this paragraph are believed to apply, the Party relying thereon shall give prompt written notice to the other Party of the circumstances, the basis for applicability of this paragraph and the time required to cure such breach or delay. The Parties shall use reasonably best efforts to agree on appropriate mitigating actions under the circumstances through Change Orders as provided in this Contract. Notwithstanding the foregoing, if a Force Majeure Event exceeds six months in duration, Cloacina shall have the right to terminate this Contract without liability upon written notice to Client and shall be entitled to payment for all work performed prior to the date of termination.

9. OWNERSHIP OF INTELLECTUAL WORK PRODUCTS

9.1. DEFINITION OF INTELLECTUAL WORK PRODUCT

All drawings, plans, renderings, models, specifications, submittals, manuals and other documents and/or electronic data, including all such documents furnished by Cloacina to Client under this Contract ("Intellectual Work Product") are deemed to be instruments of service and Cloacina shall always retain the ownership and property interests therein, including but not limited to any intellectual property rights, copyrights and/or patents.

9.2. CLIENT'S USE OF THE INTELLECTUAL WORK PRODUCT AFTER PROJECT COMPLETION

Upon project completion, payment in full to Cloacina for all work performed under the Contract, and Client's completion of all obligations under this Contract, Cloacina shall grant Owner a limited license to use the Intellectual Work Product in connection with Client's occupancy of the Project, conditioned on Client's express understanding that its alteration of the Intellectual Work Product without the involvement of Cloacina is at Client's sole risk and without liability or legal exposure to Cloacina or anyone working by or through Cloacina, including any subcontractors, and only on Owner's obligation to provide that indemnification.

9.3. CLIENT'S USE OF THE INTELLECTUAL WORK PRODUCT AFTER TERMINATION

Should Client terminate this Contract for convenience and/or decide not to proceed with the Project after any Engineering and Design Contract work has been performed, upon payment in full to Cloacina for all work performed under the Contract and Client's completion of all obligations under this Contract, Cloacina shall grant Owner a limited license to use the Work Product to complete the Project and subsequently occupy the Project, conditioned on all of the following:

9.3.1. Use of the Intellectual Work Product is at Client's sole risk and without liability or legal exposure to Cloacina or anyone working by or through Cloacina, including any subcontractors, and only on Owner's obligation to provide that indemnification.

9.3.2. Client agrees to pay Cloacina the additional sum of 25% of the total current billing as compensation for the right to use the Intellectual Work Product to complete the Project if Client resumes the Project through its employees, agents and/or third parties.

9.3.3. Client's use of the Intellectual Work Product During and/or After Default

9.3.3.1. In the event that Client is in default of this Contract and/or Cloacina terminates this Contract due to Client default and/or breach of this Contract, Cloacina shall not allow Client to use and/or shall not grant Client a limited license to use the Intellectual Work Product at its sole discretion. If this occurs, Cloacina will notify Client in writing to cease using the Intellectual Work Product and Client shall immediately comply. Client shall also comply with all written requests to return part and/or all of the Intellectual Work Product to Cloacina.

9.4. INCOMPLETE INTELLECTUAL WORK PRODUCT

Client recognizes that in the event of an early termination of the Contract, Cloacina will not have the opportunity to finish or to finalize its Intellectual Work Product. Therefore, if Client uses the Intellectual Work Product, in whole or in part, or if Client is required to indemnify Cloacina based on the use or alteration of the Intellectual Work Product under any of the circumstances identified in this section, Client shall defend, indemnify and hold harmless Cloacina from and against any and all claims, damages, liabilities, losses and expenses, including attorneys' fees, arising out of or resulting from the use or alteration of the incomplete Intellectual Work Product, to the fullest extent permitted by applicable law.

10. PROJECT SCHEDULE

10.1. PROJECT SCHEDULE GIVEN DURING SUBMITTALS PHASE

A Project Schedule and Payment Schedule will be given to the Client during the submittals phase that will outline estimated project milestones and payments due. Project timeframes are counted in calendar days not business days. Weeks are counted as seven calendar days.

10.2. PROJECT TIMEFRAMES ARE ESTIMATES ONLY

Due to the volatility in Cloacina's fabrication schedule, Client's construction schedule, vendor delays, materials availability and logistics issues, Client acknowledges that the dates contained in the Project Schedule are estimates only and are highly likely to change and flux as the Project progresses. While Cloacina shall use reasonable best efforts to meet the dates specified in the Project Schedule, dates provided shall serve as a guide to Client and are not guaranteed.

10.3. SUBMITTALS PHASE

If more than one round of changes to the submittals is requested by Client, Cloacina shall have 14 days to make the requested changes and Client shall have seven days to approve those changes for each additional round. All remaining phases shall be pushed out commensurate with the number of additional rounds of changes requested by Client.

10.4. ENGINEERING AND DESIGN PHASE

10.4.1. ACCURATE INFORMATION

Cloacina must obtain complete and accurate information regarding the Project from Client to perform under this Contract. Client understands that this Contract, the included pricing, the model selected and the equipment manufactured all rely on the information provided to Cloacina by Client as of the date on the coversheet of this Contract, including but not limited to: Client's financial information and standing, information and requirements, permits, violation history, site and operating conditions, Environmental Health and Safety (EHS) conditions and current, future and desired influent and effluent characteristics. Any changes in, omissions, errors or discrepancies provided by a Client Party, whether intentional or not, and/or any other change and/or discrepancy in the basis and information upon which this Contract is created, will lead to changes to this Contract including but not limited to: pricing increases, production delays, additional design and engineering fees, voided warranties, different model and equipment selection and performance, quoted specifications, effluent quality and/or other changes in terms and conditions, all of which shall be the sole responsibility of Client. If Cloacina determines that the information provided by the Client is incomplete or inaccurate, whether intentional or unintentional, Client agrees to defend, indemnify, hold harmless and reimburse Cloacina for any losses, liabilities, damages and/or expenses (including attorneys' fees and costs) which Cloacina incurs because of incomplete or inaccurate information and Cloacina reserves the right to cancel this Contract.

10.4.2. SPECIAL PROJECT CONSIDERATIONS

Client acknowledges that it is responsible for informing Cloacina of any special Project considerations prior to execution of this Contract. Examples include, without limitation, any specific treatment needs, ancillary equipment brands that they want used, whether the equipment will be subject to extreme heat or cold, any unusual operating parameters that have to be met and/or site, footprint and installation characteristics and challenges. Should Client notify Cloacina of any special considerations after execution of this Contract, Cloacina shall not be obligated to accommodate the changes unless Client executes a Change Order that addresses impacts including, without limitation, pricing increases, production delays, additional design and engineering fees, different model and equipment selection and/or other changes in terms and conditions, all of which shall be the sole responsibility of Client. By executing this Contract, Client certifies that all information contained in the Design Specifications is complete and accurate and that the Cloacina product(s) being supplied are suitable for their application.

10.4.3. NO OBLIGATION TO VERIFY

Client understands that Cloacina will accept all information provided by Client at *face value and has no obligation to and will not double check or verify the information provided by Client.* Client warrants the accuracy and completeness of all information provided to Cloacina and agrees that Cloacina can rely on that information in its performance under this Contract. If any of the information provided by Client changes at any phase of the Project, Client must notify Cloacina immediately in writing of the changes.

10.4.4. NO RELIANCE ON CLOACINA STATEMENTS AND/OR REPRESENTATIONS

Client acknowledges that it has selected the equipment specified in this Contract based on its own judgement and disclaims reliance upon any statements, representations or warranties by Cloacina, its representatives, agents and employees. The determination of the equipment's suitability and adaptability to the specific needs of Client is solely Client's choice and responsibility.

10.4.5. APPROVAL OF DRAWINGS AND PROCESS MODELS

Client understands that it is their responsibility to thoroughly review all drawings and/or process models supplied by Cloacina. If the drawings and/or process models are sent to Client for approval after this Contract is executed, the drawings and/or process models must be returned marked "Approved" or "Changes Required" within a period of 14 calendar days after receipt of the drawings, unless otherwise stated. If Client's written approval and/or changed requested are not received by Cloacina within 14 days and no extension of approval time is received by Cloacina, Cloacina shall deem the items approved and will be entitled to invoice the Client on such approval date.

10.5. SUBMITTALS PHASE

10.5.1. APPROVAL OF DRAWINGS, SUBMITTALS AND SPECIFICATIONS

Client shall thoroughly review all attachments, designs, drawings, specifications, equipment selections and other information supplied by Cloacina in the Equipment Submittal Package and either approve, comment on the suitability of the materials and equipment for its Project and/or request changes in writing. Client acceptance of the Equipment Submittal Package also constitutes acceptance of all equipment in the configuration(s) described therein. When Cloacina receives Client's approval of the Equipment Submittal Package, all attachments, notations and comments that have been approved by Client will be inserted into Cloacina's manufacturing documents.

10.5.2. APPROVAL TIMEFRAME

If submittals are sent to Client for approval after this Contract is executed, submittals must be returned and marked "Approved" or "Changes Requested" by Client within 14 calendar days after receipt of the Equipment Submittal Package unless otherwise stated. If Client's written approval and/or comments are not received by Cloacina within 14 days and no extension of approval time is received by Cloacina, Cloacina shall deem the Equipment Submittal Package approved and will be entitled to invoice the Client on such approval date.

10.5.3. PRICE ESCALATIONS

If Cloacina does not receive final approval of submittals by Client within 30 calendar days after Cloacina's submission of the Equipment Submittal Package for any reason, and Cloacina elects to continue to work with Client on the Project, Cloacina reserves the right to amend all pricing, the Project Schedule and delivery date.

10.5.4. CLIENT CHANGES AFTER APPROVED SUBMITTALS

If Client requests any specification, Project and/or equipment change(s) after approving the Equipment Submittal Package, Cloacina reserves the right to amend the price, Project Schedule and delivery date accordingly.

10.5.5. MODIFICATIONS AND SELECTION OF MATERIALS AND EQUIPMENT

Cloacina reserves the right to modify the design, specifications and components of its products, provided that such modification does not adversely affect the performance specifications requested by Client.

10.6. COMPLETION AND DELIVERY DATES

Completion and/or delivery dates are ***estimates only*** and not guaranteed. Cloacina may be able to accommodate a specific completion and/or delivery date, but any such accommodation must be in writing.

10.7. EXPEDITED PROJECT SCHEDULES AND DELIVERY

Expedited Project completion and/or shipping may be available for an additional cost to Client, if Cloacina is notified prior to the Contract execution. Expedited delivery is dependent on Cloacina's fabrication schedule. Inquiries about the costs of expediting a project and/or shipping should be directed to the appropriate Cloacina Sales Representative or Project Manager.

10.8. LIABILITY AND DAMAGES

Under no circumstances shall Cloacina be liable to Client for any liquidated damages, loss, whether direct, indirect, incidental or consequential in nature, including without limitation loss of profits arising out of or relating to any failure of the goods to be completed and/or delivered by the estimated delivery date.

11. TRANSFER OF RISK OF LOSS, LIABILITY, TITLE AND OWNERSHIP

11.1. THIRD PARTY SHIPPING AGENT

Risk of loss of and liability for the equipment passes from Cloacina to Client upon Cloacina setting the equipment on the trailer of the Client-selected shipping Agent. Cloacina is not liable for any damage to the equipment or caused by the equipment from that time forward.

11.2. CLOACINA AS THE SHIPPING AGENT

Should Cloacina act as the shipping agent, risk of loss of and liability for the equipment or damage caused by the equipment shall pass from Cloacina to Client upon commencement of third-party rigging, removal or lifting of the equipment from Cloacina's trailer by the crane or forklift operator at the jobsite. Cloacina is not liable for any damage to the equipment or caused by the equipment from that time forward.

11.3. CLOACINA AS THE SHIPPING AND INSTALLING AGENT

Should Cloacina act as the shipping and installing agent, risk of loss of and liability for the equipment or damage caused by the equipment shall pass from Cloacina to Client when the equipment is unloaded from the truck and/or trailer and set on the ground at the jobsite. Cloacina is not liable for any damage to the equipment or caused by the equipment from that time forward.

11.4. DAMAGE TO EQUIPMENT

Should damage to the equipment occur prior to Cloacina transferring title to Client, Client must notify Cloacina in writing of such damage immediately. No repairs to the equipment shall occur without prior written consent of Cloacina. Client shall be responsible for all repairs to the equipment and shall cause those repairs to be made promptly after damage occurs in accordance with Cloacina's instructions. Damage to the equipment will void the Equipment Warranty and Process Guarantee. Regardless of whether the equipment is minimally or substantially damaged or damaged beyond repair, Client is still obligated to continue its financial obligations under this Contract as scheduled. Payments to Cloacina are not conditioned upon claims against and/or payment of any insurance policy and/or company. Should Client fail to make repairs and/or payments, Cloacina may make repairs to the equipment and charge Client and/or use the insurance proceeds as well as fulfill any delinquent payment and/or other obligations of Client under this Contract.

11.5. TRANSFER OF TITLE AND OWNERSHIP

Notwithstanding the method of transport or the specified allocation of risk and loss set forth above, Cloacina shall retain title and ownership of the equipment until all funds due to Cloacina under the Contract have been paid to Cloacina in full. If title is passed to Client, Cloacina reserves the right to file and perfect a security interest in any equipment through appropriate agency filings. Upon receipt of all amounts due to Cloacina under the Contract

Documents, Cloacina shall pass clear and good title to the equipment to Client. Client may request a Bill of Sale at such time if desired.

11.6. ENCUMBRANCES

Client shall not encumber nor permit others to encumber the equipment with any liens and/or security instruments until all amounts owed to Cloacina under the Contract Documents have been paid in full and title to the equipment has passed to Client as provided in this Contract.

12. PERMITS, LICENSES AND GOVERNMENT FEES

12.1. PERMITS, LICENSES AND GOVERNMENT FEES

Pricing does not include building and other permits, licenses and/or government fees of any kind that may be required to construct, install and/or operate the equipment, unless otherwise explicitly stated in this Contract. Client is responsible for determining what local, state and/or federal building and any other permits and/or licenses are required for their project, communicating that information to Cloacina, applying for and obtaining those permits and/or licenses at their sole expense and complying with all permitting and licensing requirements. Cloacina will not procure and/or pay for any building and other permits, fees and/or licenses on behalf of Client.

12.2. STANDARDS COMPLIANCE FEES

If an inspector and/or government or regulatory agency official requests changes due to an agency's interpretation of local, county, state, federal, internal or international standards or laws, codes or regulations which are different than how Cloacina builds as a standard and as engineered per Client's specifications. Cloacina reserves the right to consult with a trade specific engineer or expert regarding the request. The direction received from that engineer or expert will determine the course of action, if required. Client will be responsible for any costs to comply with all such requests, including all required changes.

12.3. COMPLIANCE WITH LAWS, REQUIREMENTS AND REGULATIONS

Cloacina is not responsible for compliance with any city, local, state, federal and/or international law or regulatory and/or governing agency requirement and/or regulation not specifically stated in this Contract. Should Client require the equipment to comply with any specific law, requirement and/or regulation, Client must convey that to Cloacina in writing and a Change Order shall be initiated, which allocates all costs to make the equipment compliant to the Client.

12.4. CHANGES BY OTHERS AFTER CONTRACT EXECUTION

Should changes in laws, regulations, tariffs, taxes or any government and/or regulatory agency stipulations affecting the project occur after the execution of this Contract but prior to closeout, all costs to comply with the same will be borne by Client.

13. SHIPPING

13.1. PACKING

Pricing includes Cloacina's standard packing and preparation for shipping. Standard packing does not include provisions for inclement weather or international export. Should Client require weather-resistant packing, any other special packing, shipping or transit services or international export, Client must convey those requirements to Cloacina in writing in advance and all associated costs will be billed to Client as an additional shipping preparation charge. Shipping and packing prices are subject to change without notice.

13.2. LOADING

Equipment craning and/or forklift loading onto the trailer of the shipping agent at the Cloacina factory is included in the pricing. Cloacina will only lift and set the equipment on the trailer. Unless otherwise agreed, no assistance will be provided by Cloacina with strapping, securing and/or tarping the load. Any damage as a result of improper strapping, securing and/or tarping will be the responsibility of the shipping agent and Client shall direct all related inquiries and claims directly to the shipping agent.

13.3. SHIPPING

Costs for shipping, unloading, setting and crane costs are not included in the pricing unless otherwise specifically stated in this Contract. Unless otherwise specifically stated, all shipments shall be Freight On Board (FOB) Cloacina's factory located at:

2385 Precision Drive
Arroyo Grande, CA 93420

13.3.1. CLOACINA AS THE SHIPPING AGENT ONLY

If Cloacina is the shipping agent, Cloacina will unstrap and/or un-tarp the load upon arrival but is not responsible for unloading nor providing a crane or forklift or other assistance in removal of the equipment from the trailer. Cloacina is not liable for any damage sustained during rigging, forklift positioning, removal and/or lifting. Damage done to the equipment during rigging, positioning, removal and/or lifting will void Cloacina's Equipment Warranty and/or Process Guarantee and Client will be responsible for making all repairs according to written instructions provided to Client by Cloacina.

13.3.2. CLIENT INSPECTION OF EQUIPMENT

Client must inspect all Cloacina-provided equipment and components on arrival at the designated delivery point and notify Cloacina in writing of any nonconformity of the equipment with this Contract within 72 hours of delivery. Failure to inspect the equipment and/or give such notice to Cloacina within the required timeframe shall constitute a waiver of Client's right to inspect and/or reject the equipment for nonconformity and shall be considered an irrevocable acceptance of the equipment by Client.

13.3.3. DAMAGE DURING SHIPPING AND/OR UNLOADING

Any damage to Cloacina-supplied equipment or components during shipping, rigging, positioning, removal and/or lifting must be declared to Cloacina and the shipping agent in writing prior to unloading. To ensure that damage is discovered and at the earliest opportunity, Client will provide Cloacina in writing of the receipt of the equipment and the intent to unload it. Unloading equipment that may have been or was actually damaged during shipping without prior written permission from Cloacina will void the Equipment Warranty and Process Guarantee.

13.3.4. PROJECT DELAYS DUE TO DAMAGE DURING SHIPPING AND/OR UNLOADING

If any equipment supplied by Cloacina-is believed to be damaged and/or actually damaged during shipping and/or unloading and project delays occur while Client and shipping agent are waiting for Cloacina to provide authorization to unload, determine what damage has occurred, dispatch a Representative, if necessary and/or determine what course of action the Client needs to take to unload the equipment, the shipping agent and/or Client shall be liable for all related project delays, additional shipping and/or unloading costs. Failure to follow Cloacina's instructions will void the Equipment Warranty and Process Guarantee.

13.3.5. DELIVERY INFORMATION

Client shall be responsible for all additional costs resulting from nonexistent, vague, incomplete and/or inaccurate delivery information, equipment placement instructions and/or special or unique delivery details such as locked gates, dirt roads, impassable roads, and/or steep grades. Additional shipping costs that will apply include, but are not limited to, offroad trucks/trailers, transferring loads, storage, insurance, protection, re-inspection and redelivery expenses.

14. STORAGE

14.1. CLIENT CANNOT TAKE POSSESSION

If Cloacina completes production of the equipment prior to Client or the jobsite being ready and Client cannot or chooses not to receive the equipment, Client shall be responsible for providing evidence of insurance required by this Contract and arrange the shipment of the equipment to a storage location of its choosing within the shipping Project

Schedule provided by Cloacina. Failure of Client to move the equipment in the scheduled timeframe will result in Cloacina automatically moving the equipment to Cloacina's storage area with no further notification to Client. Cloacina shall have no obligation to maintain or safeguard the equipment when stored, which shall be at Client's risk.

14.2. MOVING AND STORAGE FEES

The minimum charge for moving a tank into Cloacina's storage area is $3,000.00 for single tank systems and multiple tank systems will be billed at a minimum rate of $3,000.00 per tank and piece of ancillary equipment. Actual costs to move the tank(s) are subject to change without notice and will be billed to Client. Storage fees will be billed to Client at $2000/month per tank and $2000/month per piece of ancillary equipment. Storage fees are subject to change without notice and will be billed to Client on a monthly basis for the month in advance. All costs associated with Cloacina's storage procedures including, but not limited to, retesting, calibration, balancing, alignment, oil changes and membrane preservation, all of which shall be performed at the discretion of Cloacina, will be billed in full to Client. For purposes of the Payment Schedule, payments that are due on delivery shall be payable when delivered to storage as though the equipment had been delivered to the jobsite.

14.3. DELINQUENCIES

Should Client become delinquent in its tank moving and/or monthly storage fees, all fees must be paid in full prior to Cloacina releasing the equipment for shipping to another location. Should Client become 90 calendar days or more delinquent in their tank moving and/or monthly storage fees, the equipment shall be considered and Event of Default with the equipment abandoned by Client and the abandonment and repossession provisions outlined in this Contract shall apply.

14.4. NOTICE TO MOVE EQUIPMENT

Cloacina reserves the right to require Clients, with 30 calendar days' notice, to make other storage arrangements or take possession of their equipment should the Cloacina storage area be full and/or for any other reason. Should Client not move their equipment out of Cloacina's storage area after 90 calendar days after notification, the equipment shall be considered and Event of Default with the equipment abandoned by Client and the abandonment and repossession provisions outlined in this Contract shall apply.

15. INSTALLATION

15.1. SITE PREPARATION IS NOT INCLUDED IN PRICING

Site preparation work is not included in the pricing unless explicitly stated in this Contract. Client is responsible for making all improvements necessary to the site required for the installation of the Cloacina plant and equipment.

15.2. INSTALLATION IS NOT INCLUDED IN PRICING

Installation is the sole responsibility of Client and costs to install the equipment are not included in the pricing unless explicitly stated in this Contract.

15.3. INSTALLER REQUIREMENTS AND OPTIONS

Cloacina requires all plants and equipment to either be factory installed or installed by a Cloacina Factory Authorized Installation Contractor (FAIC).

15.4. FACTORY INSTALLATION

Cloacina can provide installation of all Cloacina-supplied plants and equipment for an additional charge to Client (unless installation services are already explicitly included in the pricing in this Contract). A separate installation contract between Client and Cloacina shall be negotiated and executed.

15.5. FACTORY AUTHORIZED INSTALLATION CONTRACTOR INSTALLATION

15.5.1. An FAIC is an installation contractor that has received both training and written approval from Cloacina to install Cloacina plants and equipment.

15.5.2. Should factory installation not be available where the equipment is being installed, Cloacina can provide Client with FAIC contact information.

15.5.3. Client shall negotiate installation services and pricing directly with the FAIC and a separate installation contract between Client and the FAIC shall be negotiated and executed.

15.6. INSTALLATION BY NON-AUTHORIZED INSTALLERS

15.6.1. A Non-Authorized Installer is an installation contractor, engineer, member of the Client's staff and/or other third party that has not received both training and written approval from Cloacina to install Cloacina plants and equipment.

15.6.2. If Client has some and/or all of the Cloacina equipment installed by a Non-Authorized Installer, Client solely assumes and also indemnifies Cloacina for all liability related to that installation including but not limited to: installation errors and all resulting costs and delays, the inability to commission the equipment and/or properly operate the equipment and all associated costs and delays, all fines and violations and/or all other project delays, costs and consequences associated with an improper and/or unauthorized installation.

15.6.3. If Client has some and/or all of the Cloacina equipment installed by a Non-Authorized Installer, Cloacina reserves the right to send a Cloacina Representative to inspect the installation and equipment prior to the issuance of a Cloacina Equipment and Membrane Warranty and/or Process Guarantee. This inspection and all travel costs associated therewith shall be at the sole cost of Client. Client shall also be solely responsible for all costs associated with all repairs, replacements and/or or the reinstallation of any and/or all equipment as directed by Cloacina in writing to correct improper installation. Cloacina reserves the right not to issue a Cloacina Equipment and Membrane Warranty and/or Process Guarantee on all plants and equipment installed by Non-Authorized Installers at their sole discretion.

15.7. INSTALLATION REQUIREMENTS

15.7.1. Cloacina requires all Cloacina-supplied equipment to be installed in strict accordance with Cloacina's installation requirements, industry standards, directions from the Cloacina Representative and all local, state and federal building codes (whichever is more stringent). If Client and/or the installing party receive directions from any third party that conflict with Cloacina's installation instructions, Client must immediately cease installation and notify Cloacina in writing so that a resolution to the conflicting installation instructions can be achieved.

15.7.2. Should the FAIC, Client and/or any other third party install Cloacina equipment contrary to Cloacina's installation requirements, the Equipment Warranty, Membrane Warranty and the Process Guarantee will be void.

15.8. GENERAL INSTALLATION TERMS AND CONDITIONS

15.8.1. Cloacina assumes no liability for any installation not performed by Cloacina, regardless of who installs the equipment and whether or not they were referred by Cloacina and/or are a FAIC.

15.8.2. Cloacina reserves the right in its sole discretion to have a Representative present during the installation of all equipment to direct Client or Client Parties in the installation of the equipment.

16. SEED SLUDGE AND SEEDING

16.1. Seed sludge, hauling and seeding are not included in the pricing unless otherwise specified.

16.2. The quality of seed sludge used and proper seeding of that sludge plays a critical role in the speed and overall success of plant commissioning and biological health of the plant.

16.3. Client must provide seed sludge equivalent to the total volume under aeration at the specified MLSS concentration at their expense.

16.4. The intended seed sludge must be sampled for MLSS and MLVSS concentrations while the sludge is being aerated and the sample results must be sent to Cloacina for approval at least two weeks prior to the seeding taking place. Cloacina reserves the right to reject the intended seed sludge based on the sample results and may require Client to find another approved source.

16.5. Seeding the plant must be done in the presence of a Cloacina Representative.

16.6. If any of the required volume of the seed sludge dies during transport or seeding, Client shall immediately obtain the commensurate amount of replacement seed sludge. It is critical that the seed sludge is oxygenated periodically and long hauls may require the trucker to pull over and induce a vacuum to promote mixing and oxygenation.

16.7. All seed sludge must pass through the entire Cloacina headworks process to ensure proper screening and removal of inorganics and solids prior to downstream equipment. All costs to place the sludge into the headworks shall be at Client's expense.

16.8. If Client does not follow all seed sludge and seeding instructions and specifications, one or a combination of the following will occur:

16.8.1. Biological upset to the plant will occur which will add extra time and money to the Project commissioning process

16.8.2. The plant will not perform as designed, meet throughput requirements and/or other discharge or regulatory agency requirements

16.8.3. Client may have to remove all of the original seed sludge, dispose of it, clean the entire plant and reseed it, all of which shall be done at Client's sole expense

16.8.4. Damage to and/or fouling of the membranes and other ancillary equipment may occur. If this occurs, Cloacina shall not be liable for extra chemical cleanings and/or repair or replacement of the damaged membranes and/or equipment. All labor and replacement equipment and parts are not covered under the Cloacina warranty and shall be billed in full to Client.

16.8.5. The start date for the Cloacina Process Guarantee will be delayed until all of the required and approved seed sludge has been properly seeded and the biota is stabilized.

16.9. Cloacina shall not be liable for any costs and/or delays in plant commissioning and/or the overall Project schedule due to the use of unauthorized seed sludge and/or improper seeding.

17. COMMISSIONING

17.1. INCLUDED IN PRICING

Plant commissioning is included in the pricing. Additional 8-hour days of commissioning services are available for $1,800.00 per day plus all travel costs and per diem. No credit and/or reimbursement shall be given to Client for any partial days and/or unused days. Should Client have outstanding balances due to Cloacina, Cloacina reserves the right to refuse to schedule commissioning of the equipment until all payments due have been received in full by Cloacina.

17.2. COMMISSIONING REQUIREMENTS

All equipment must be commissioned in strict accordance with Cloacina's written commissioning requirements, directions from Cloacina's Representative and in accordance with all local, state and federal building codes (whichever is more stringent) to maintain the validity of Cloacina's Equipment Warranty and Process Guarantee. **A Cloacina Representative must perform commissioning, not a Client Party**. Should commissioning occur outside the presence of an authorized Cloacina Representative and without the prior written consent of Cloacina, Cloacina's Equipment Warranty and Process Guarantee will be void. All Client Parties shall allow Cloacina sufficient time to properly commission the equipment. Should sufficient time not be allowed before Client elects to operate it, the Equipment

Warranty will be void and Client assumes liability for damage to the equipment, inability to meet effluent requirements, regulatory agency fines and violations and all other consequences as a result of inadequate and/or improper commissioning.

17.3. CLIENT PARTY OVERSIGHT

If Client hires an engineer, contractor or other entity or person to provide commissioning oversight, that engineer, or contractor, such agents shall be deemed Client Parties for purposes of this Contract. Such hired Client Party will function in a supervisory capacity only. Cloacina's Representative is not responsible for following commissioning instructions from any Client Party that are contrary to Cloacina's standard commissioning procedures or standard operating procedures (SOPs).

17.4. ELECTRICIAN REQUIREMENTS

Notwithstanding the foregoing, Client is required to always have a licensed electrician on-site during the entire commissioning process, the cost of which will be borne directly by Client. Should Client's electrician not be present at any time, the Cloacina Representative reserves the right to stop commissioning the equipment until a properly qualified electrician is on-site and remains on site for the entire commissioning process. Client is solely liable for all costs, and Project delays due to the Client or its electrician's failure to comply with this paragraph.

17.5. COMMISSIONING SCHEDULING

To schedule a commissioning date, Client must notify Cloacina in writing, with the accompanying Pre-Commissioning Checklist provided by Cloacina attached to the request, at least 30 days prior to the desired commissioning date. Should Client need to cancel and/or reschedule a commissioning date once a date has been scheduled, Client must notify Cloacina in writing and Client will be responsible for any costs Cloacina incurs to cancel and/or reschedule including, without limitation, travel costs (air/car/hotel) due to the cancellation.

17.6. DELAYS

Should the Cloacina Representative arrive at Client's designated Project site for commissioning and the site, the required Client Parties, or other conditions, excluding Force Majeure Events, prevent commissioning, Cloacina will count the day as day one of the included commissioning days regardless of whether Cloacina directs its Representative to remain on-site or return to the Cloacina factory and regardless of how long the Representative was on-site. Cloacina will count every day until the Cloacina Representative arrives back at the factory as a day of commissioning, including days spent traveling.

18. POST-COMMISSIONING

18.1. ACCESS TO SCADA, THE CONTROLS SYSTEM AND/OR CLIENT PORTAL

Without obligation to do so, Cloacina reserves the right to log into, access, view and make changes to the Client's SCADA, its control system and/or the Cloacina or third party-provided Client portal at any time, for any reason without prior notice to or permission of Client for the life of the equipment to:

- observe operations and maintenance conditions;
- make routine and/or emergency operational changes;
- obtain performance data that may be used for case studies and/or to improve future product.

Nothing contained herein shall require Cloacina to report any findings or other information to Client obtained through such access.

19. GENERAL TERMS AND CONDITIONS

19.1. ENTIRE CONTRACT

The Contract Documents represent the complete and final agreement between the Parties and supersedes all prior negotiations, representations and/or agreements, either written or oral, between the Parties. Any additional and/or different Terms and Conditions contained in Client's purchase orders or other communication with Cloacina, both

written and verbal, shall not be effective or binding upon Cloacina unless specifically agreed to in writing by Cloacina. Cloacina's failure to object to specific additional or different terms and conditions contained in any purchase order or other communication from Client shall not be construed as a waiver of the any terms in the Contract Documents nor Cloacina's acceptance of Client's additional or different terms and conditions. Neither Cloacina's commencement of performance under this Contract nor delivery shall be deemed or construed as acceptance of Client's additional or different terms and conditions.

19.2. NO THIRD-PARTY BENEFICIARIES

Except as expressly provided in this Contract:

19.2.1. Nothing in the Contract Documents nor any action taken hereunder shall be construed to create any duty, liability or standard of care to any Person that is not a Party;

19.2.2. No person that is not a Party shall have any rights or interest, direct or indirect, in the Contract Documents or the services to be provided hereunder; and

19.2.3. The Contract Documents are intended solely for the benefit of the Parties, and the Parties expressly disclaim any intent to create any rights in any third party as a third-party beneficiary to the Contract Documents or the services to be provided hereunder.

19.3. MODIFICATIONS AND AMENDMENTS

This Contract can only be modified and/or amended in writing with both Parties' signatures indicating their acceptance.

19.4. LIABILITY LIMITATIONS

Under no circumstances shall Cloacina's aggregate liability for all claims and/or disputes arising under this Contract and/or that of its principals, officers, affiliates, employees, agents, and/or vendors exceed this total Contract amount, the amount actually paid by Client to Cloacina and/or $1,000,000, whichever is less. Under no circumstances shall Cloacina and/or its principals, officers, affiliates, employees, agents and/or vendors have liability to any Client Party for loss of profit, anticipated savings, revenue, income, business, production, opportunities, reputation and/or any indirect, consequential, incidental punitive or exemplary damages.

19.5. INDEMNIFICATION

To the fullest extent permitted by law, Client agrees to indemnify, defend and hold harmless Cloacina principals, officers, affiliates, employees, agents, and/or vendors from and against any and all liability claims, loss, damage or costs (Including but not limited to attorney's fees, loss of profit, business interruption or other special or consequential damages, damages relating to property damage, bodily injury or damages relating to wrongful death) arising out of or relating to the installation, operation, maintenance, use or possession of any Cloacina-provided equipment. This indemnity provision also applies to any claims asserted against Cloacina based upon strict or product liability causes of action. Client shall not be obligated to indemnify Cloacina for that part of any loss, damage or liability caused solely by the intentional misconduct or sole negligence of Cloacina. In furtherance of, but not in limitation to the indemnity provisions in this document, Client expressly and specifically agrees that the foregoing obligation to indemnify shall not be in any way affected or diminished by any statutory or constitutional limitation of liability or immunity Client enjoys from suits by its own employees. The duty to indemnify will continue in full force indefinitely from the date of execution of this document and is not diminished by completion, cancelation or early termination of the Contract.

19.6. MEDIA RELEASE

Client gives Cloacina permission to use Client's Project information including, without limitation, Project name, Client name, location, design criteria, photographs, videos, drawings, images, renderings and other information deemed necessary by Cloacina for the purposes of marketing/promotional materials that may be printed, broadcast or used in digital formats online. Cloacina reserves the right to hire or employ photographers, drone operators, artists and/or other individuals for the purpose of documenting project progress and the final installed product. Cloacina shall, upon

request, share any photographs or images of the Project with Client for its exclusive use. Photographs, images, likenesses and project information shall be used at the sole discretion of Cloacina and Client is not entitled to editorial control or compensation. Client shall comply with all reasonable requests to facilitate the above requirements and provide access during normal business hours.

19.7. SURVIVABILITY

Upon completion and/or termination of this Contract, the rights, obligations and liabilities of the Parties which shall have arisen or been incurred under this Contract prior to its termination and those designed to survive completion and/or termination shall survive and remain in full force and effect.

19.8. SEVERABILITY

If any term, covenant, condition, provision, including within a paragraph, sentence or clause, of these Terms and Conditions is determined to be invalid, void or not enforceable by any dispute resolution tribunal, such provisions shall be deemed deleted only to the extent of the invalidity and all remaining provisions shall remain in full force and effect and shall in no way be affected, impaired or invalidated.

19.9. EMPLOYEE SOLICITATION

To the maximum extent allowed by law, during the term of this Contract and for a period of three years after its termination, the Parties each agree not to, directly or indirectly, solicit, hire, recruit, or induce the employees of one party to work for the other for any reason. This includes, but is not limited to, managerial, supervisory, technical and non-technical personnel. The Parties acknowledge that this non-solicitation provision is reasonable and necessary to protect the legitimate business and trade secrets of both Parties. On breach of this provision, the injured party shall be entitled to seek injunctive relief and any other appropriate legal remedies available under applicable law to prevent disclosure of confidential information. This provision shall not apply to an employee's incident response to general solicitations of employment not directed specifically towards employees of the other party.

19.10. CHOICE OF LAW AND VENUE

THIS CONTRACT AND ALL CONTRACT DOCUMENTS WILL BE DEEMED TO BE MADE IN THE STATE OF CALIFORNIA, REGARDLESS OF THE METHOD AND LOCATION EXECUTED, INCLUDING IF SIGNED REMOTELY FROM A PLACE OUTSIDE CALIFORNIA. Both Parties consent to the service of process in any legal suit, action or proceeding upon the receipt through United States mail of copies of such process to such Party by certified mail to the addresses indicated herein or at such other addresses of which the other Parties will have received written notice. This Contract shall be interpreted and governed by and construed under the laws of the State of California, without giving effect to the conflict-of-laws principles thereof. Both Parties consent to the service of process in any legal action or proceeding on the receipt through United States mail of copies of such process to such Party by certified mail to the addresses indicated herein or at such other addresses of which the other Parties will have received written notice.

19.11. ARBITRATION AS DISPUTE RESOLUTION

Any controversy, claim or dispute arising out of or related to this Contract, the Contract Documents, any alleged default, or any matters between the Parties related to the equipment and whether the dispute involves the Client or any Client Party, regardless of when or where it occurs, will be settled by arbitration in San Luis Obispo County, California, under the auspices of the Judicial Arbitration and Mediation Service ("JAMS"). The arbitration will be conducted by a single arbitrator under JAMS Streamlined Arbitration Rules who shall have the full authority to order equitable relief and grant injunctive or declaratory relief, including on an expedited basis. The decision and award of the arbitrator shall be final and binding and any award may be entered in any court with jurisdiction, notwithstanding the venue for dispute resolution for this Contract. The prevailing Party in any such arbitration shall be entitled to an award of reasonable attorneys' fees and costs, including all costs of arbitration, in addition to any other relief granted. Unless the selected arbitrator finds that in-person testimony or proceedings are required, on request of either Party, the arbitrator may determine that arbitration can be held via remote video proceedings. Client agrees that all Contracts and agreements with all Client Parties shall include arbitration on these terms as the sole dispute resolution,

and Client agrees to defend, indemnify and hold harmless against any failure of Client to include the provisions of arbitration as sole dispute resolution process in any contracts between Client and any Client Party.
IN ASSOCIATION WITH ARBITRATION, TO THE EXTENT ALLOWED BY CALIFORNIA LAW, CLIENT AND CLOACINA (a) KNOWINGLY, VOLUNTARILY, INTENTIONALLY AND IRREVOCABLY WAIVES EVERY RIGHT THEY MAY HAVE TO A TRIAL BY JURY WITH RESPECT TO, AND EACH RIGHT TO ASSERT ANY CLAIM FOR DAMAGES (INCLUDING, BUT NOT LIMITED TO, PUNITIVE OR CONSEQUENTIAL DAMAGES) IN ADDITION TO ACTUAL DAMAGES IN, ANY ACTION OR OTHER LEGAL PROCEEDING, OF ANY NATURE RELATING TO (i) THIS CONTRACT (ii) ANY TRANSACTION CONTEMPLATED IN CONNECTION THEREWITH (iii) ANY NEGOTIATION, ADMINISTRATION, PERFORMANCE OR ENFORCEMENT OF THIS CONTRACT.

19.12. INTERPRETATION
Titles to the paragraphs/sections are solely for the convenience of the Parties and are not an aid in the interpretation. Words of any gender used in this Contract and/or any change orders, amendments, manuals, forms and all other documents shall be held and construed to include any other gender. When the context of this Contract requires, the singular includes the plural and vice versa.

19.13. BINDING EFFECT
The terms, provisions, covenants and conditions contained in this Contract shall apply to, inure to the benefit of and be binding upon the Parties hereto and upon their respective heirs, legal representatives, successors and permitted assigns, except as otherwise expressly provided.

19.14. TIME
Time is of the essence in this Contract.

19.15. IDENTIFICATION PLATES
Cloacina reserves the right to affix identifying labels and/or plates to all tanks and/or equipment. Client shall not remove, deface and/or obliterate any such label or plate.

19.16. ASSIGNABILITY
Client shall not assign or transfer this Contract or any interest in it or monies payable under it without the prior written consent of Cloacina. Any assignment made without Cloacina's consent shall be void.

19.17. RELATIONSHIP OF PARTIES
The relationship between Cloacina and Client is one of independent contractors and not of partnership, joint venture, employer/employee and/or agent of fiduciary. Neither Party's employees shall be deemed agents of or employees of the other Party.

19.18. NOTICES
All notices and other communications required or permitted under this Contract shall be in writing and shall be delivered in person (In which case notice is deemed given when received by the addressee) or sent by overnight air courier service (In which case notice shall be deemed given when received by addressee or on the second day after the date of delivery to the courier, whichever is earlier) or by registered or certified mail, return receipt requested, postage prepaid and properly addressed (In which case notice shall be deemed given when received by addressee or on the fifth day after the date of mailing, whichever is earlier) to the address set forth below, or other such addresses as one Party may hereafter provide notice of to the other.

19.19. LIMITATIONS OF CLAIMS
Any claim or cause of action arising out of or related to the specific nature of the claims or disputes, e.g., contractual obligations, tortious acts, intellectual property rights, etc., brought by the Client shall be brought within one year from the date on which such claim or cause of action accrued. This limitation period shall begin to run from the date when the claimant first knew or reasonably should have known of the existence of the claim or cause of action. By agreeing to this paragraph, Client hereby expressly waive any right or entitlement to commence any legal proceeding or claim

outside the specified one-year limitation period. No event, circumstance, or agreement shall toll or suspend the running of the limitation period, except where explicitly required by applicable law.

19.20. EXECUTION

This Contract and all Contract Documents may be executed in one or more counterparts, each of which shall be deemed an original, but all of which together shall constitute one and the same instrument. Contract Documents may be executed by digital signature, including scanned PDF, facsimile or other electronic signature software or applications. Each Party represents that its electronic signature shall be binding, as if it was an original, and agrees it will not challenge the validity based on this method of execution. Contract Documents shall be deemed binding on execution as provided herein.

19.21. AUTHORITY

Client represents and warrants to Cloacina that (a) Client has the power to make, deliver and perform under this Contract, (b) the person executing and delivering this Contract is authorized to do so on behalf of Client, and (c) this Contract constitutes a valid obligation of Client and is legally binding and enforceable upon Client.

The Parties have caused this Contract to be executed as of the date listed below.

ADDENDUM ONE: CLOACINA EQUIPMENT AND MEMBRANE WARRANTY

1. OVERVIEW

The following warranties are included with your Cloacina Plant:

- 12 month Equipment Warranty
- 24 month Membrane Warranty

2. WARRANTY PERIOD

2.1. BENEFICIAL USE DEFINED

Beneficial Use is defined as the date on which the equipment procured and/or manufactured for Client is turned on and can produce any benefit to Client, including as a permitting, regulatory, funding or other condition of approval, such date considered the date of Beneficial Use regardless of whether the equipment or/or appurtenances are fully on-line.

2.2. WARRANTY PERIODS

Cloacina warrants its materials and workmanship for the number of months listed below, depending on which of the following occurs first:

- 12 months from the date of equipment commissioning (If the date of equipment commissioning is greater than 180 days from the date of shipment from the Cloacina factory, then the date of shipment will be used) or
- 12 months from the first date of beneficial use of the equipment or
- 15 months from the date of equipment shipment to storage, the jobsite or another location or
- 15 months from the date that Client is notified that production of their equipment is complete

3. WHAT IS WARRANTED

During the warranty period, Cloacina warrants the following:

3.1. TANKAGE

All stainless-steel tanks, skids and appurtenant equipment are warranted against major corrosion, weld breakage and/or leaks for one year from the warranty start date.

3.2. PUMPING EQUIPMENT

All pumps and/or pressurized pumping equipment are warranted to be free from material and workmanship defects for one year from the warranty start date.

3.3. HUMAN MACHINE INTERFACE (HMI) AND ELECTRICAL COMPONENTS

The HMI and runtime software is warranted to be free from material and workmanship defects for one year from the warranty start date.

3.4. ELECTRICAL EQUIPMENT

Electrical equipment including motors, panels, panel components and fans are warranted to be free from material and workmanship defects for one year from the warranty start date.

3.5. BLOWER PACKAGES

Blower packages are warranted to be free from material and workmanship defects for one year from the warranty start date with the following caveats:

- Service records for all service performed must be completed, include all required service items and emailed to Cloacina at the time of each service. Forms to document service will be supplied by Cloacina during commissioning.

- Oil, grease, filters and belts must be purchased from the original equipment manufacturer during the warranty period.

3.6. AUTOMATED VALVES

Automated valves are warranted to be free from material and workmanship defects for one year from the warranty start date.

3.7. DIFFUSERS

Diffusers are warranted to be free from material and workmanship defects for one year from the warranty start date.

3.8. SENSORY EQUIPMENT

All Cloacina-provided sensory equipment is warranted to be free from material and workmanship defects for one year from the warranty start date with the following caveats:

- The sensory equipment must be installed in the intended medium it was originally designed for and used only for the intended purposes for which it was designed.
- Only sensory equipment installed and verified by the Cloacina Representative at commissioning is warranted.

3.9. MEMBRANES

Membranes are warranted to be free from material and workmanship defects for two years from the warranty start date with the following caveats:

- Client must strictly adhere to all membrane manufacturer recommendations, the Cloacina Operations and Maintenance Manual (OMM), Cloacina's Standard Terms and Conditions and all other recommendations and instructions related to the membranes in order for the membrane warranty to be valid.
- The membranes are warranted to flux at a rate specified in Table A below and maintain a Transmembrane Pressure (TMP) lower than the maximum on average. In the event that the average TMP exceeds the maximum operating range from Table A and it is deemed to be due to manufacturer defects and not biological or operational issues, Cloacina will replace the membrane modules still under warranty. Cloacina and the membrane manufacturer will make the final determination as to whether repairs are required due to mechanical or biological problems.
- The membranes must be operated within the Design Specifications stated in this Contract, in accordance with Table B below, Cloacina's OMM and the membrane manufacturer's OMM.
- The membranes are warranted to meet the design flow rates and effluent turbidity levels in the Design Specifications only.

3.9.1. TABLE A: MEMBRANE OPERATING CHARACTERISTICS

Flows	Typical TMP: (PSIG)	Maximum TMP: (PSIG)
Average	-1.5-3.5	-10.0-8.0
Max	-3.5-5	-10.0-8.0
Peak Hour	-5-7	-10.0-8.0

3.9.2. TABLE B: MIXED LIQUOR CHARACTERISTICS

CHARACTERISTICS OF MIXED LIQUOR SUSPENDED SOLIDS (MLSS) ENTERING THE MEMBRANE TANK	UNITS	ACCEPTABLE OPERATING RANGE
MLSS concentration	mg/L	3,000 - 10,000, average not to exceed 10,000 with maximum not to exceed 12,000 at membrane interface
Temperature	°C	5-40 C
pH		6.0-8.0
Soluble BOD5	mg/L	≤ 5.0
Soluble COD	mg/L	≤ 50
Dissolved Oxygen (DO)	mg/L	> 1.5
Soluble alkalinity	mg/L	50-300
NH3-N	mg/L	Recommended ≤3.0 and shall not exceed 5
Colloidal TOC (Measured as difference between filtered mixed liquor TOC and permeate TOC)	mg/L	Recommended ≤10 and shall not exceed 15
Differential COD (Measures as colloidal COD)	mg/L	Recommended 25-40 and shall not exceed 60
Time to Filter (TTF)	sec.	Recommended ≤90 and shall not exceed 200
Material greater than 2 mm	mg/L	≤1.0
Fats, Oil and Grease (FOG)	mg/L	≤100 mg/L (Emulsified Oil) ≤10 mg/L (Non-Biodegradable Oil) 0 mg/L (Free Oil)
Total hardness as CaCO3		Not scaling

4. THE CLAIMS PROCESS

4.1. Client is required to communicate all defects in materials, workmanship, and warranty related issues by submitting a ticket through the Client portal. Instructions will be given to Client during commissioning and training on how to use the portal. Warranty-related concerns expressed verbally, in letters, texts and/or emails will not be accepted or addressed.

4.2. Client must notify Cloacina of the defect in material or workmanship within three calendar days of discovery of the defect or non-conformance and provide proof supporting the claim as requested by Cloacina (This may include but is not limited to: date the defect was first discovered, all relevant operations, lab and/or maintenance data and records, photographs, videos, a written description of the defect or nonconformance, a Cloacina Representative talking with applicable Client employees and/or Third Parties and/or a video call(s) with a Cloacina Representative). Should Client delay notifying Cloacina of any defect found longer than three calendar days, the Equipment Warranty on the defective and/or non-conforming piece(s) of equipment shall be void and Client shall be liable for additional damage to the piece(s) of equipment, other pieces of equipment and the system as a whole due to the escalation of or damage from an unreported and/or unresolved issue and the Equipment Warranty on the other affected equipment will also be void. The cost of repair or replacement resulting from damages caused from continuing to operate a piece of equipment past the initial date of discovery will be billed to Client.

4.3. Cloacina will provide guidance to Client on interim operation of the equipment while the warranty claim is being evaluated, which may include not operating the system until the issue can be resolved. Client agrees to implement reasonable operational modifications as requested by Cloacina. Should Client fail to comply with Cloacina's instructions for interim operation and/or shutdown of the equipment, Client assumes sole risk and liability for all damage to the equipment, biological upset, regulatory agency violations and/or fines and all other costs associated with not following Cloacina's instructions.

4.4. Cloacina may, at their sole discretion, send a representative or agent ("Representative") to examine any and all parts and equipment for which a warranty claim is submitted.

4.5. Cloacina reviews and verifies the claim information provided by Client, Cloacina's Representative and/or Third Parties and determines, at its sole discretion, if the claim is covered under the Cloacina Equipment Warranty.

4.6. Client is notified in writing if the claim is covered under the Equipment Warranty and any corrective action that will be taken by Cloacina. Cloacina reserves the right to provide a replacement part or piece of equipment or repair or remanufacture the existing failed part and/or piece of equipment at their sole discretion.

4.7. In instances in which the cause of the part and/or equipment failure is unclear, Client will be required to issue a purchase order for an investigation deposit of an amount decided upon by Cloacina to cover the cost to send the Cloacina Representative to further investigate. Should the cause of failure be determined to be material or workmanship covered by the Cloacina Equipment Warranty, the investigation deposit will be refunded in full to Client. Should the cause of failure be related to something other than material or workmanship or is not covered by the Cloacina Equipment Warranty, Cloacina will retain the investigation deposit and Client will be responsible for any fees incurred by Cloacina to investigate and/or remedy the issue above the deposit collected.

4.8. If Cloacina determines that failure of the part and/or piece of equipment in the claim is due to a cause not related to material or workmanship and there is disagreement between Cloacina and Client, binding arbitration using an independent materials expert selected by Cloacina to determine the cause of failure will be the method used to resolve the dispute. This arbitration shall occur in San Luis Obispo, CA.

4.9. If Client's claim is covered under the Equipment Warranty, Cloacina will order the part(s) and/or equipment eligible for replacement at Cloacina's expense.

4.10. Cloacina will pay to have all parts covered under the Equipment Warranty shipped to Client.

4.11. Client shall arrange the equipment for installation of the replacement part(s) and/or piece of equipment which may include but is not limited to: tank draining, electrical service disconnection, plumbing changes and bypassing, all of which shall be at Client's expense.

4.12. If a Client Party removes the defective part(s) and/or equipment and installs the replacement part(s) and/or equipment at Client's expense.

4.13. Client packages and ships defective part(s) back to the original manufacturer or Cloacina, if required, at Client's expense.

4.14. Replacement parts are only covered under this Warranty for the remaining time that the original part and/or piece of equipment was under warranty. The supply of replacement parts and equipment does not restart and/or prolong the warranty period for the original part and/or piece of equipment or the replacement parts and/or equipment.

5. WHAT IS NOT COVERED

Cloacina shall have no warranty obligations with respect to any parts and/or pieces of equipment where one or more of the following has occurred and/or is currently occurring:

5.1. DEFECTS AND/OR NONCONFORMITIES REPORTED MORE THAN THREE CALENDAR DAYS AFTER DISCOVERY

If Client does not report the defective and/or non-conforming part or piece of equipment to Cloacina within three calendar days of discovery, Cloacina shall not be liable for and shall have no obligation for that claim.

5.2. UPGRADES TO REPLACEMENT PARTS AND/OR EQUIPMENT

Should it be necessary for Cloacina to replace a part and/or piece of equipment, it will be replaced with a part and/or piece of equipment that is similar in price, construction quality and features as the original. Should Client wish to

upgrade the part and/or piece of equipment being replaced, Cloacina shall not be liable for the additional costs to upgrade but shall credit Client for the cost to replace the part and/or piece of equipment with something similar to the original.

5.3. PRINTED, LOST AND UPDATED MANUALS

All equipment Operations and Maintenance Manuals (each, an "OMM") are provided to Client electronically. Should Client require printed copies of any and/or all manuals, they will be charged $1.00 per printed page. Should Client lose the electronic copy(ies) provided, additional copies can be provided by Cloacina for an additional charge to Client. Should Client require their OMM to be updated at a future time, Cloacina can provide that service for an additional charge to Client.

5.4. UNAUTHORIZED REPAIRS

Any part and/or piece of equipment that has been repaired by Client or any agent of Client other than Cloacina and/or without Cloacina's prior written approval is excluded from this Warranty.

5.5. EQUIPMENT PROVIDED BY OTHERS

Cloacina's Equipment Warranty only applies to equipment supplied by Cloacina. Parts and equipment supplied by Client and/or Third Parties are not covered by this warranty and Cloacina shall have no obligation to repair and/or replace them. Should a Cloacina-supplied part and/or equipment failure or damage be due to a failure and/or non-conformance of a part and/or piece of equipment supplied by others, Cloacina shall not be liable for the repair and/or replacement of the Cloacina-supplied part and/or piece of equipment or the third party part and/or piece of equipment and all claims for such shall be directed to the original supplier/manufacturer of the failed part and/or piece of equipment. This Warranty also excludes compatibility of third-party supplied parts and/or equipment not approved by Cloacina in writing prior to installation in connection with equipment supplied by Cloacina. Client shall contact the applicable Cloacina Project Manager to ensure that all additional ancillary equipment desired is compatible with the Cloacina-provided equipment and treatment process prior to the purchase and installation of any third-party supplied equipment.

5.6. DAMAGE DURING SHIPPING

Cloacina's Equipment Warranty expressly excludes any liability for damage to parts and/or pieces of equipment caused during shipping.

5.7. CONSUMABLES

Cloacina does not warrant, repair and/or replace consumables, which include but are not limited to the following:

- Air filters
- Fuses
- Lamps
- Probes and sensors
- Filters and cartridges
- Oils, lubricants, greases and fluids
- Brushes, scrapers and squeegees
- Impellers, lobes, gears, and volute normal wear
- Mechanical seal wear and failure
- Belts
- Bearings
- Gaskets, o-rings and lip seals
- pH probe salt bridges
- Auger and auger wear strips
- Medias
- Bulbs

- Electrodes
- Diffuser socks and clamps

5.8. NORMAL WEAR AND TEAR

This Warranty does not cover normal wear and tear of parts and equipment. Examples of normal wear and tear include but are not limited to:

- Impeller degradation
- UV damage to painted surfaces
- Stainless steel discoloration
- Abrasion of rotating parts
- Piping and valve seating surface degradation
- Motor winding degradation
- Gasket degradation
- Normal corrosion

5.9. MODIFICATIONS AND TAMPERING

This warranty excludes all parts and/or pieces of equipment that have been altered, modified or tampered with by Client and/or Third Parties, intentionally or unintentionally, in any way without the prior written permission of Cloacina.

5.10. MISUSE OR DAMAGE

The Cloacina Equipment Warranty excludes all parts and/or pieces of equipment that have been subject to intentional or unintentional misuse, abuse, misapplication, neglect, disassembly, accident and/or damage by Client and/or Third Parties.

5.11. USE CONTRARY TO INSTRUCTIONS

Cloacina is only responsible for the physical characteristics of the equipment, not for the circumstances of its use. Client is solely responsible for how the equipment is used by all Client Parties and how that use affects the equipment and this Warranty. This Warranty excludes all parts and/or pieces of equipment that have been used in a manner contrary to Cloacina's instructions for installation, commissioning, operation, repair and/or maintenance and/or those contained Cloacina's OMM and/or the original manufacturers' OMMs. Client shall comply and require its employees, Agents and/or Third Parties to comply with all installation, commissioning, use, operations, maintenance, mechanical and/or any other instructions by Cloacina related to the equipment. Should Client and/or their employees, Agents and/or Third Parties choose not to follow those instructions precisely, Client assumes all risk of and liability for damage to the equipment, additional costs due to increased membrane cleanings, biological upset, spills and/or overflows, foaming, increased consumables usage and/or regulatory agency violations, fines and penalties.

5.12. ABNORMAL CONDITIONS

This warranty excludes all parts and/or pieces of equipment that have been damaged due to abnormal conditions, decomposition, corrosion or erosion of the equipment due to biological or chemical attack, vibration, temperature, moisture and/or dirt, failure to properly prime and/or operation without flow, with reduced flows or flows exceeding the Design Specifications.

5.13. FORCE MAJEURE

The Cloacina Equipment Warranty excludes parts and/or pieces of equipment damaged by Force Majeure Events.

5.14. IMPROPER ELECTRICAL CONDITIONS

This Warranty excludes parts and/or equipment that have been damaged due to defective or improper power supplies, electrical connections or protection, a lack of adequate grounding and/or bonding, the lack of seal-offs for any conduit and conductors and/or tampering with factory-installed seal-offs.

5.15. EQUIPMENT EXCLUSIONS

5.15.1. HUMAN MACHINE INTERFACE (HMI)

Should one or a combination of the following occur, the HMI warranty shall immediately be void:

- Any program, application and/or software not specifically approved in writing by Cloacina has been installed or loaded on the HMI.
- The HMI program has been altered in any way.
- The HMI has been affected by lightning strikes and/or input power issues.
- Weather conditions are different from those contained in the Design Specifications. Inclement or unusual weather conditions that cause overheating or freezing of the panel and/or controls computer are excluded from this warranty.
- Water damage has occurred.
- The HMI screen is damaged by scratches, punctures and/or blunt force damage from using anything other than a human finger or approved stylus.

5.15.2. MEMBRANE AND DIFFUSER EXCLUSIONS

Should one or more of the following occur, the membrane and diffuser warranties shall immediately be void:

- There are deposits on or underneath the membrane due to the process and/or inadequate maintenance.
- Deposits are found underneath the membrane due to air filtration rates being less than recommended.
- Damage caused by excessive velocity not disclosed during the design phase, including mixers.
- Damage due to improper installation or lack of pipe cleaning prior to diffuser installation.
- Damage due to abrasion by excessive solids or matting of solids on the membranes.
- Damage caused by Client not strictly adhering to all membrane and diffuser manufacturer and Cloacina recommendations.

5.15.3. SENSORY EQUIPMENT EXCLUSIONS

Should one or more of the following occur, the sensory equipment warranty shall immediately be void:

- Damage caused by exposure to pH values above 12 or below 4
- Damage caused by fats, oils or grease content over 100 mg/l
- Damage caused by lack of calibration or maintenance
- Damage caused by not utilizing the Cloacina slide rail system as installed
- Damage caused by high pressure probe wash systems (>20PSI).
- Damage caused by improper wiring or sending improper voltage to the equipment
- Sensory equipment that was not installed and verified by the Cloacina Representative at commissioning

6. CLIENT RESPONSIBILITIES

The following are responsibilities of Client in order for the Equipment Warranty to remain valid:

6.1. DESIGN SPECIFICATIONS

Client must operate the equipment in strict accordance with the Design Specifications contained in this Contract and all OMMs. Deviation from the Design Specifications will adversely affect equipment, membranes and process biology. Any deviation from the Design Specifications and/or operation of the equipment outside of the Design Specifications must have prior written approval by Cloacina.

6.2. INFLUENT, FLOW AND/OR LOADING VARIABILITY

If the influent, flow and/or loading ever deviates from the Design Specifications in this Contract or the source of influent changes, the ability for the equipment to produce treated effluent at the quality and/or quantity stated in this

Contract will not be possible and damage will occur to the equipment. Should Client notice any deviation and/or variability in the influent, flow and/or loading characteristics or make any changes to the influent, flow and/or loading rates and/or characteristics, they must notify Cloacina immediately of such deviation, variability and/or changes in writing and follow all instructions given by Cloacina. Should Client choose not to follow Cloacina's instructions and/or continue to operate the system after noticing deviations and/or variabilities in or making changes to the influent, flow and/or loading characteristics, Client assumes all risk of and liability for damage to the equipment, additional costs due to increased membrane cleanings, biological upset, spills and/or overflows, foaming, increased consumables usage and/or regulatory agency violations, fines, penalties and one or a combination of the following consequences:

6.2.1. LOADING CONSEQUENCES

In the event that loading deviates from the total pounds of contaminants stated in the Design Specifications, Client is likely to experience one or more of the following conditions that Client shall bear sole liability for:

- Excessive sloughing of the biofilm in the primary treatment unit that leads to excessive TSS generation in the secondary treatment system that can cause additional sludge press runtimes and additional polymer usage.
- A rise in F/M in the primary and secondary systems that leads to EPS secretion in the biology that can cause higher Transmembrane Pressure (TMP) in the membrane train(s) and increased chemical use for Clean-In-Place (CIP).
- In extreme cases (For example, the introduction of lees into the system) the above occurs as well as soluble BOD/COD bleeds through the membranes that can cause a rise in NTUs as a function of lesser tannin reduction.
- Inefficient biological nutrient removal due to stoichiometric ratios being imbalanced.
- Foaming in aerated basins.

6.2.2. FLOW CONSEQUENCES

If flows and/or loadings deviate from the Design Specifications, Client is likely to experience one or more of the following conditions that Client shall bear sole liability for:

- Additional kwh/gallon costs will increase.
- Additional chemicals may be required to compensate for imbalanced ratios.
- Additional operational setpoint changes and/or time spent monitoring and adjusting may be necessary.
- Increased maintenance due to running equipment at higher duty cycles may be necessary.

6.2.3. EXTREME CONSEQUENCES

In extreme cases of deviation from the Design Specifications, especially prolonged periods of higher flows and/or loading above the Design Specifications, Client is likely to experience one or more of the following conditions that Client shall bear sole liability for:

- Off-hauling
- Bypassing
- Inability to maintain target effluent parameters
- Increased odors
- Plant expansion

6.3. EQUIPMENT DE-RATING

In the event that one of the following conditions exist, there will be a commensurate de-rating of all affected downstream equipment:

6.3.1. INFLUENT SCREENING

If the influent Total Suspended Solids (TSS) deviates from the Design Specifications, then a commensurate de-rating of the screen's stated flows will occur. In the event that the influent is ground, chopped, macerated, cut or

materially changed beyond that of raw influent, then a de-rating of the screen will occur, and Client will be responsible for putting in a finer screen to increase the removal rate due to finer material having a propensity to pass through at a higher rate. Otherwise, an increased burden associated with more frequent membrane cleaning will be required, in addition to implications surrounding seals, build-up on pumps, increased wasting and basin cleaning.

6.3.2. INFLUENT CHARACTERISTICS

If the strength of influent and/or other influent characteristics deviates from the Design Specifications, a re-rating of the plant may be necessary for the purposes of determining total loading of the plant. Composite samples shall be used as the basis for re-rating.

6.3.3. PROCESS SETPOINTS

- Re-rating of flows as a function of the loading
- Chemical addition for alkalinity and/or load balancing/supplementation for proper Biological Nutrient Removal (BNR)
- Programming changes
- Expansion of the plant to meet build-out goals
- Re-screening
- More frequent cleaning of the membranes and sensory equipment

6.4. CHEMICAL, HAZARDOUS MATERIAL AND ANTI-BIOLOGICAL AGENT USE

Use of corrosive compounds, chemicals, hazardous materials and/or anti-biological materials in or around the equipment is strictly prohibited and requires prior written approval by Cloacina. Any introduction and/or use of corrosive compounds, chemicals, hazardous materials and/or anti-biological agents, whether intentionally or unintentionally, that is not approved by Cloacina will cause damage and/or failure of the equipment and other biological, operational and financial consequences, all of which shall be the sole responsibility of Client.

6.5. OPERATIONS AND MAINTENANCE MANUAL

Client must strictly adhere to all operations and maintenance procedures set forth in Cloacina's OMM, the equipment manufacturers' OMMs and/or provided with the equipment at commissioning.

6.6. INTERNET

Client must provide and maintain a reliable high-speed Internet connection (Minimum speeds (download/upload) 10/1 mbps) to the Cloacina-supplied SCADA and controls computer. It is Client's responsibility to provide the necessary network security clearances for Cloacina to access the system remotely using GoToMyPC or other Third-Party remote desktop software. In addition, Client and/or their Agent shall maintain Port 25 for SCADA's use for alarm text/email notice of alarm conditions.

6.7. MAINTENANCE

Client shall perform all equipment repairs and maintenance in accordance with the SCADA system maintenance module, Cloacina's OMM, and/or the respective equipment manufacturers' recommendations, whichever is the most stringent. Service records must be kept which fully document all service rendered. Forms to document service will be supplied by Cloacina. Service records must be completely filled out and sent to Cloacina at the time of each service via email or uploaded to the Client portal.

6.8. SAMPLING

Client must strictly adhere to all sampling schedules provided during commissioning from the Cloacina Representative and all other requests by Cloacina for samples at any other time during the warranty period. Failure to comply with sampling schedules and requests shall void the Equipment Warranty and Process Guarantee.

6.9. OIL, GREASE, FILTERS AND BELTS

Oil, grease, filters and belts must be purchased from the original equipment manufacturer. Failure to use the proper oil, grease, filters and belts voids the Warranty on all pieces of equipment that non-approved items are used on.

6.10. USE OF THE CLOACINA PORTAL

Client is required to communicate all requested data through the portal. Failure to use the portal and/or fully fill out the data at the requested intervals will void the Cloacina Warranty.

6.11. SPARE PARTS

6.11.1. CLIENT SHOULD STOCK SPARE PARTS

Cloacina highly recommends that Client stocks spare parts and equipment and can assist with spare parts recommendations and pricing. The Client should not assume that Cloacina will always have spare parts and/or equipment in stock and available for immediate shipment. Client should maintain their own spare parts inventory to minimize equipment downtime due to part and/or equipment failure. Cloacina is not liable for how long it takes to order, repair, make and/or ship replacement parts and/or equipment nor any costs associated with equipment downtime due to failure of Client to stock spare parts and/or equipment.

6.11.2. PART CREDIT

Should Client elect not to stock spare parts and a part on a piece of equipment fails, Client may not be able to find the replacement part in a timely manner. Cloacina may not have the individual part Client needs in stock but may have the larger piece of equipment available for purchase by Client. In the event Client decides to purchase the new piece of equipment from Cloacina rather than wait for the individual replacement part to arrive, Cloacina will credit Client the cost of the failed part if it is covered under this Warranty.

6.12. EQUIPMENT STORAGE

All materials and equipment, once delivered to the jobsite, must be stored in a protected area and tarped or otherwise protected during times of inclement weather. In severe weather, climate control may be necessary to protect the equipment. Failure to store the equipment properly or protect it from inclement weather will void the Equipment Warranty.

6.13. QUALIFIED PERSONNEL

Client shall only allow qualified, trained and licensed individuals to install, use, operate, maintain and repair the equipment. Client shall comply with all local, state, federal and regulatory agency requirements for training and licensing of all individuals installing, using, operating, maintaining and repairing the equipment. Should Client allow unqualified, untrained and/or unlicensed individuals to install, operate, maintain and/or repair the equipment, Client does so at their sole risk and expense and shall be responsible for any damage to the equipment, biological upset, regulatory agency fines and/or violations and all other consequences.

6.14. SAFETY

Client shall cause its employees, Agents and/or all Third Parties to install, commission, use, operate, repair and maintain the equipment in a safe manner utilizing all safety features and devices of the equipment at all times. Compliance with Cloacina's written safety instructions and all local, state, federal and other applicable safety laws and regulations is the sole responsibility of Client. Client shall not remove or permit removal or modification of any safety feature, device, warning sign and/or label located on or incorporated into the equipment for any reason.

7. GENERAL PROVISIONS

7.1. FINANCIAL OBLIGATIONS

If Client fails to comply with any provision, obligation and/or requirement of this Contract and/or Warranty and/or has not paid Cloacina any amounts due under this Contract and/or any change order or other mutually agreed upon document relating to this Contract, Client shall be considered in default of this Contract. The Equipment Warranty is

conditional upon Client not being in default of this Contract and being current on all amounts due in order to be able to exercise any rights under this Warranty.

7.2. CHANGES

Changes to this Warranty must be issued in writing by Cloacina, signed by both parties and will be included as an addendum(s) to this document.

7.3. EFFECT ON PROCESS GUARANTEE

Should Client's actions or that of any Client Party cause any portion of the Equipment Warranty to become void this will also cause the Process Guarantee to become void.

7.4. CHANGE OF OWNERSHIP

The Equipment Warranty is extended to the original Client/end-user only and is not transferrable to new owners and/or other parties unless approved by Cloacina in writing.

7.5. LIABILITY LIMITATIONS

Client's exclusive remedy and Cloacina's aggregate liability under this Equipment Warranty is limited to Cloacina repairing or replacing the part, piece of equipment and/or workmanship that is defective or nonconforming and shall, in all cases, be limited to the amount actually paid by Client under this Contract.

7.6. NO OTHER WARRANTIES

This Warranty is exclusive and in lieu of any and all other express or implied warranties, guarantees, conditions or terms of whatever nature relating to the equipment provided hereunder, including without limitation any warranties of merchantability and fitness for a particular purpose, which are hereby expressly disclaimed and excluded. No additional warranty, either expressed or implied, is applicable or to be construed as binding. No verbal or written information or advice given by any employee, agent and/or representative of Cloacina shall create a new warranty or in any way increase the scope of this Equipment Warranty.

ADDENDUM TWO: PROCESS GUARANTEE

1. PROCESS GUARANTEE PERIOD

1.1. PROCESS GUARANTEE PERIOD

Cloacina's wastewater treatment plants are guaranteed to meet the Design Specifications stated in this Contract for the number of months listed below, depending on which of the following occurs first:

- 12 months from the date of equipment commissioning (If the date of equipment commissioning is greater than 180 days from the date of shipment from the Cloacina factory, then the date of shipment will be used) or
- 12 months from the first date of beneficial use of the equipment or
- 15 months from the date of equipment shipment to storage, the jobsite or another location or
- 15 months from the date that Client is notified that production of their equipment is complete

1.2. EXTENDED PROCESS GUARANTEES

Cloacina does not offer Extended Process Guarantees.

2. CLIENT RESPONSIBILITIES

2.1. ADHERENCE TO CONTRACT DOCUMENTS

Client must adhere to the Terms and Conditions of this Contract and the Cloacina Equipment Warranty in order for the Process Guarantee to be valid and remain in effect. Should Client violate, deviate from and/or default on its obligations under the Terms and Conditions and/or Equipment Warranty, the Process Guarantee shall also become void from the date of violation, deviation and/or default.

2.2. REPORTS

Client must provide operational and lab reports as required in the Warranty Compliance Sampling Schedule and/or any other written documentation provided to Client. These samples and their results are to be provided to Cloacina monthly during the first 12 months of operation for the Process Guarantee to remain valid. Emailed reports or raw files uploaded to the Client portal/server are acceptable.

2.3. OPERATIONS

Client must operate the treatment system in accordance with the Design Specifications contained in this Contract, Cloacina's OMM and other equipment manufacturers' recommendations, whichever is the most stringent in order for the Process Guarantee to be valid. Should Client wish to by-pass any equipment and/or modify any operating parameter or piece of equipment, Cloacina's written approval must be obtained prior to any by-passing and/or modification or the Process Guarantee shall be void.

2.4. REPAIRS AND MAINTENANCE

Client shall perform all equipment repairs and maintenance in accordance with the SCADA system maintenance module, Cloacina's OMM and the original equipment manufacturers' recommendations, whichever is the most stringent or the Process Guarantee shall be void.

2.5. LAB WORK

Client shall perform all process control lab work required by Cloacina and enter all data into SCADA history, the Client portal or if those are unavailable, email them to the Cloacina Project Manager. Client must also include lab results in the weekly and monthly reports. Cloacina will provide the required sampling constituents and reporting schedule as part of the OMM.

2.6. NON-IDENTIFIED CONSTITUENTS

If a constituent or combination of constituents not explicitly identified as being managed in the influent compounds in the Design Specifications is introduced into the treatment system and causes consequences of any kind, Client shall

be solely responsible for mitigating these constituent(s) such that they are within acceptable range(s) for the Process Guarantee to be valid. Examples of such unintended constituent side effects may be but are not limited to:

- Precipitation
- Mineralization
- Deposition
- Scaling
- Fouling

2.7. PRETREATMENT PROGRAM

For domestic systems, Client must implement a pretreatment program and submit it to Cloacina for approval prior to plant commissioning. In the absence of a Client-provided pretreatment program, Client must implement the Cloacina standard pretreatment program to ensure compliance with influent criteria.

2.8. EQUIPMENT DATA AND RECORDS

Client shall continuously maintain and preserve all operations, laboratory, maintenance and other data associated with the equipment and shall present any and all equipment data to Cloacina within seven calendar days of any request. Failure to maintain, preserve and/or provide equipment data to Cloacina as requested will void the Equipment Warranty and Process Guarantee.

2.9. TIME TO CURE

Client shall allow Cloacina a minimum of 60 days to implement and remedy all operational issues that are the responsibility of Cloacina as stated in this Contract. Cloacina shall not be held to 60 days should the operational issue be due to any act, omission and/or error of Client and/or any other Third Party.

2.10. FAILURE TO COMPLY

Should Client fail to comply with any of the above provisions, the Process Guarantee will be void from the date of Client's non-compliance. From that date forward, Cloacina will not be responsible for any of the following: system upsets, effluent violations, Client's inability to reuse effluent, fines or other costs, including lost revenue or ancillary costs that may be incurred, including costs to repair or cure any damage to the system because of noncompliance, hauling costs, additional operations and maintenance costs and/or increased power consumption and costs. Should the Process Guarantee become void this may also cause some or all of the Equipment Warranty to become void.

2.11. SPILLS AND SERIES OF SPILLS

2.11.1. DEFINITIONS

- **SPILL:** A spill is defined as any unintentional release or discharge of 1000 gallons or more of untreated or partially treated wastewater from a Cloacina plant into the environment.
- **SERIES OF SPILLS:** A series of spills is defined as two or more spills that occur within a close time frame of each other and/or are caused by the same and/or related problems.

2.11.2. CRITERIA FOR A SPILL AND/OR SERIES OF SPILLS TO BE COVERED BY CLOACINA:

Cloacina will remedy a spill and/or series of spills as defined above caused by equipment malfunctions if ***none of the following have occurred:***

- An act of God, unforeseeable and/or uncontrollable event
- Tampering with the Cloacina intended functionality of the equipment
- A discontinuation of electrical and/or internet service
- The Cloacina Equipment Warranty and/or Cloacina Membrane Warranty have expired and/or become void

- The plant has not been operated and/or maintained in accordance with the Design Specifications, Contract Documents, Cloacina Equipment and Membrane Warranties and/or all Operations and Maintenance Manuals included with the plant
- The plant has been operated and/or maintained by unlicensed, untrained and/or unqualified personnel
- Client has installed grinder pumps
- The influent Total Suspend Solids (TSS) has exceeded the Design Specifications
- Influent flows have exceeded the Design Specifications
- Client failed to install and/or connect the plant to an emergency overflow
- Client failed to interlock the lift station

2.11.3. CLOACINA'S REMEDY FOR A COVERED SPILL AND/OR SERIES OF SPILLS:

Cloacina's only remedy for a covered spill and/or series of spills shall be strictly limited to the following:

- Decontamination and disinfection: Cloacina shall pay 100% of actual expenses, not to exceed the limitation of liability as specified below
- Damage to Cloacina equipment as a result of the spill: Cloacina shall pay 100% of actual expenses, not to exceed the limitation of liability as specified below

2.11.4. LIMITATION OF CLOACINA'S LIABILITY:

Cloacina's total liability shall not exceed $10,000 for a spill and/or series of spills.

2.11.5. REMEDY EXCLUSIONS:

Under no circumstances shall Cloacina be liable for one or more of the following related to any spill and/or series of spills:

- Damage to other manufacturers' equipment and/or the facility
- Damage to neighboring properties and/or the environment
- Regulatory agency reporting, meetings and/or inspections
- Fines, violations and other remediation required by governing and/or regulatory agencies
- Legal action and/or damages
- Consequential and/or punitive damages
- Spills and/or series of spills that occur off-site, including off-site discharge locations

ADDENDUM THREE: FIELD SERVICE RATES

1. A purchase order is required from Client prior to the dispatching of a Cloacina Representative.

2. For technical assistance or services that are not covered under this Contract or the Cloacina Equipment Warranty, the following rates shall apply:

LABOR	
PRINCIPAL	$270/HOUR
TECHNICAL SERVICES SUPPORT REQUEST LABOR	$225/HOUR
FIELD LABOR	$185/HOUR
IN-HOUSE LABOR	$175/HOUR
ASSISTANT DESIGNER/TECHNICIAN	$90/HOUR
DESIGNER/TECHNICIAN I-IV	$90 -$105/HOUR
SENIOR DESIGNER I-III	$138 - $148/HOUR
ASSOCIATE ENGINEER I-II	$95 - $125/HOUR
ENGINEER	$175/HOUR
SENIOR ENGINEER	$200/HOUR
OFFICE ASSISTANT	$60/HOUR
PROJECT ASSISTANT I-III	$75 - $85/HOUR
LEGAL ASSISTANT	$140
DIRECTOR OF LEGAL AFFAIRS	$250
LITIGATION ASSISTANCE FEES	Fees for expert witness preparation, testimony, court appearances, or depositions will be billed at the rate of $300 an hour. As authorized in advance by the Client, overtime on a project will be billed at 1.5 times the employee's typical hourly rate.
OVERTIME RATES	TIME AND A HALF: 1.5 TIMES THE ABOVE RATES DOUBLE TIME: 22% OVER THE 1½ RATE
PER DIEM	ACTUAL COST OF ROOM & BOARD + $115/DAY FOR EACH EMPLOYEE
MILEAGE AND EQUIPMENT	
LIGHT TRUCK MILEAGE	$2.20/MILE
GANG TRUCK MILEAGE	$3.30/MILE
CONFINED SPACE EQUIPMENT	$380/DAY

3. DIRECT EXPENSES

Reimbursement of direct expenses incurred in connection with the project scope of work will be invoiced to Client including a handling charge of 20%. Direct expenses include, but are not limited to the following:

- Sub-consultants and sub-contractors
- City, county, state, national and/or regulatory agency fees
- Materials
- Equipment rental

- Copies
- Replacement parts

4. CONSUMABLES

Consumables will be billed at $30.00 per day for each electrician, fabricator, plumber and welder. Consumables include, but are not limited to, the following:

- Welding gas and wire
- Grinding or cutting wheels
- Personal Protective Equipment (PPE)
- Wire nuts, crimp connectors or labels
- PVC glue and thread sealant

5. FEE REVISIONS

Cloacina reserves the right to revise the Schedule of Fees and all other fees described in this Addendum at any time, including the addition of various trades, as necessary and without notice to and/or prior permission of Client.

ADDENDUM FOUR: REQUEST FOR PRE-LIEN INFORMATION

Concerning the giving of a Preliminary Notice, the following information is required as part of our Contract. The giving of such a notice does not constitute a lien, nor is it a reflection on the integrity of any contractor or subcontractor.

JOB INFORMATION

Official Job Name:

Job Physical Address:

County: **City:** **State:** **Zip:**

Job Phone: **Job Email:**

Assessor's Parcel Number:

OWNER'S INFORMATION

Owner's Name:

Mailing Address:

City: **State:** **Zip:**

Phone: **Email:**

CONTACTOR'S INFORMATION

Company Name:

Contact Name:

Address:

City: **State:** **Zip:**

Phone: **Email:**

Contractor's License Number: **License State:**

PROJECT LENDER'S INFORMATION

Company Name:

Contact Name:

Mailing Address:

State: **City:** **Zip:**

Phone: **Email:**

By signing below, Client certifies that the above information is true and complete to the best of their knowledge.

Client Signature **Date**