Staff Report

Meeting Date:	July 6, 2021
From	Mike Walker, Public Works Director
SUBJECT:	Approve Guaranteed Maximum Price Proposal #1 for Existing Wastewater Treatment Plant Improvements Project

BACKGROUND:
On December 21, 2020, the Council adopted findings approving the use of a modified Construction Manager / General Contractor (CM/GC) procurement method for the wastewater treatment plant improvement project. This procurement method provides several advantages for the City, not the least of which is substantial time savings. The CM/GC method allows the City's contractor, Slayden Construction, to develop a guaranteed maximum price (GMP) for each work package, which must be approved by the City.

Upon Completion of the 100% design for GMP Package #1, Slayden developed a price proposal for the work in this package. GMP #1 consists primarily of improvements to the existing aeration basins, various electrical upgrades and rehabilitation of the clarifiers. It is the first and largest GMP package (of three total) and will complete the projects most critical to increasing plant capacity and improving plant performance. The engineer's estimate (developed upon completion of 90% design) for these improvements was $1,973,333. Slayden's GMP proposal is $4,542,468.

The difference between the price and the estimate is attributed to rapidly escalating construction costs resulting from pent-up demand during the pandemic. Steel and aluminum tariffs established in 2018 remain in effect and requirements to use iron and steel from domestic suppliers limits the number of bidders. The tight time frame for completing work on at least one clarifier and one aeration basin prior to November 1 increases the contractor's risk and therefore the price. If the Council decides to approve the price for this package it is important to award the contract on July 7th in order to keep the project on schedule.

The attached Technical Memorandum from Leeway Engineering describes in greater detail the external factors that are influencing the project cost. Brittany Park with Leeway will review the Tech Memo with the Council during the meeting.

Since the CM/GC delivery method is a team approach we have asked representatives from Slayden, West-Yost and our Owner's Rep, Leeway Engineering to provide a brief presentation on the construction cost environment and the team's efforts to reduce scope and cost.

BUDGETARY IMPACT:
The GMP for Package 1 exceeds the budget by $2,492,468. As outlined in the tech memo, there are options to shift some project components out to later years to mitigate this added expense during this biennium. The project team will also be working on updating the project's funding plan and budget given the cost escalations but also with the news of the direct funding from the Oregon state legislature.

RECOMMENDATION:
Authorize the City Manager to sign an agreement for GMP package #1 with Slayden Construction in the amount of $4,542,468.

SUGGESTED MOTION:
I move to authorize the City Manager to sign an agreement for GMP Package #1 with Slayden Construction in the amount of $4,542,468.

LIST OF ATTACHMENTS/EXHIBITS:
1. Budget and cost evaluation memo from Leeway Engineering.
2. GMP#1 proposal - (Final) from Slayden Construction

Project Budget Summary

Prepared for:	Jordan Wheeler, City Manger Mike Walker, Public Works Director City of Sandy, OR
Project:	Existing WWTP Condition Improvements Project
Author:	Brittany Park, PE Leeway Engineering Solutions LLC (Leeway)
Reviewer:	Rob Lee, PE, PMP Leeway Engineering Solutions LLC
Date:	June 29, 2021
Subject:	Project Budget Evaluation

Contents

Introduction

The City of Sandy, Oregon (City) is upgrading the existing Wastewater Treatment Plant (WWTP) processing facilities to provide greater ease of operability, worker safety, and environmental permit compliance. This project is part of a greater effort in Sandy to improve the wastewater system.

This Technical Memorandum provides an overview of the project budget exceedances, analysis of the exceedances, impacts to the wider wastewater program, and provides recommendations on how to proceed.

Overview of Existing WWTP Project Budget

Background Information

The project scope was originally defined in the planning phase by the Wastewater System Facilities Plan completed in October 2019. Next, a preliminary design report completed by Murraysmith dated July 2020 further defined the scope. During the design phase of the project, a pre-design evaluation was completed by West Yost (WY) in March 2021 that refined the scope. The final project includes various rehabilitation projects throughout the plant, split into three separate work packages, Guaranteed Maximum Price Package (GMP) #1, #2, and #3. The work packages, as defined in *Figure 1* below, were scheduled in order of criticality to plant compliance. GMP-1 is the core of the improvements at the WWTP and accounts for the largest amount of work at the facility. A map of the WWTP displaying the location of construction improvements by work package is found in Attachment A.

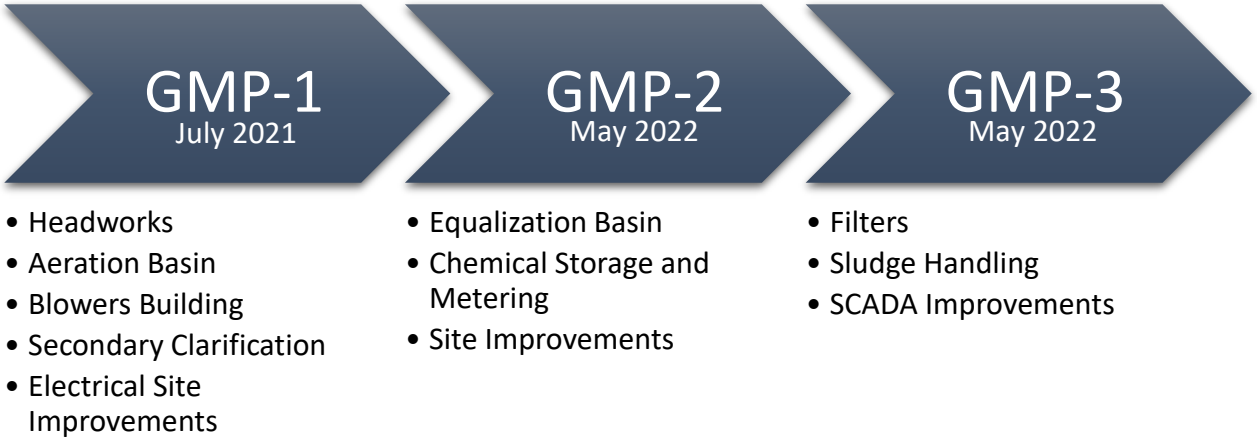
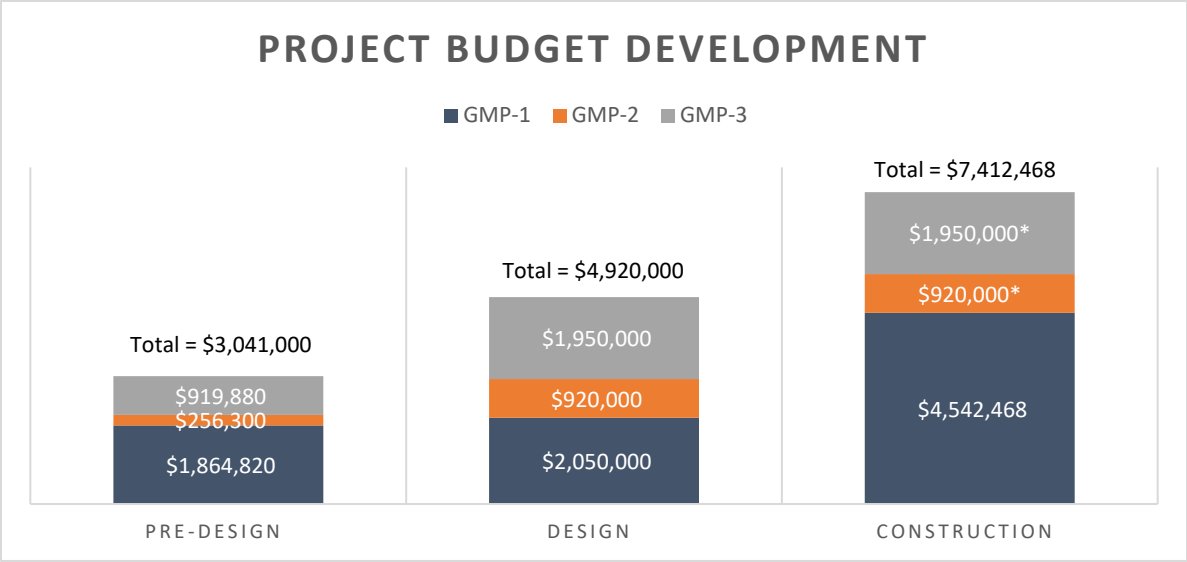


Figure 1 - Project construction flow chart showing improvements included by work package and construction start dates.

The preliminary design report and pre-design evaluation cost estimates were utilized to establish the project budget. The original cost estimate in the MurraySmith pre-design report was based on July, 2020 values. After West Yost's pre-design evaluation, the City approved additional budget to include additional scope recommended by the Department of Environmental Quality (DEQ) and Veolia to help improve plant capacity; this revised budget was based on early 2021 construction values. The final construction budget in the City's rate model was set at $4,900,000 for the entire project. The City is working with a Construction Manager/ General Contractor (CM/GC), Slayden Constructors Inc. (Slayden) to complete the construction of the project. GMP-1 proposal from the CM/GC came back at an unexpected $4,542,468, exceeding the project budget for GMP-1 by $2,492,468. *Figure 2* below shows the development of the budget over time and different phases of the project.



*This is a Cost Estimate, construction proposals have not been received yet.

Figure 2 - The WWTP Condition Improvements budget development throughout project phases.

Analysis of Budget exceedances

The project team has completed a thorough review of the GMP-1 proposal as well as several follow-up negotiations and value engineering meetings. A challenge is that 73% of the construction costs in the GMP are hard bids (subcontractors submitting bids to Slayden). This left only 27% percent of the costs that can be negotiated directly with Slayden, which include contractor labor, materials, equipment, and temporary facilities. *Table 1* below displays some of the larger discrepancies between the engineering cost estimate and the construction proposal.

Table 1 - A comparison of design cost estimate and construction proposal costs.

Process Area	*Design Estimate*	*GMP-1*	*Difference*
Area 100 - Headworks	$ 260,000	$ 76,059	$ (183,941)
Area 200- Aeration Basin + Blowers	$ 1,410,000	$ 1,130,704	$ (279,296)
Area 210 - Secondary Clarification and Sludge Pumping	$ 130,000	$ 323,344	$ 193,344
Area 220 - RAS/WAS Pump Station	$ 80,000	-	$ (80,000)
Area 910 - Site Improvements	$ 170,000	$ 1,485,565	$ 1,315,565
General Conditions/ Project Wide Cost of Work Items	$ -	$ 1,067,346	$ 1,067,346
CM/GC Contingency + Markups	$ -	$ 459,450	$ 459,450
	$ 2,050,000	**$ 4,542,468**	**$ 2,492,468**

After several follow up discussions with both West Yost and Slayden, Leeway determined that the following are the key reasons why the construction proposal exceeded the cost estimate:

- Construction climate and unexpected increase in pricing
- The Project's aggressive schedule and schedule risk
- Lack of subcontractor interest
- Design evolution

Construction climate and unexpected increase in pricing

A pandemic, natural disasters, and surges in demand over the past year have caused inflation of labor and material costs along with shortages of supplies and shipping capabilities across the country. The project budget has been directly impacted by these market issues.

According to the Engineering News-Record, the construction cost index (CCI) based on Seattle rates, shown in *Table 2*, has jumped from 1% or less of inflation between January and June 2020 to an average of 6.9% inflation per month since January 2021. Inflation is happening so rapidly that many quotes are only good for a few days. For example, quotes for gear procurement were acquired during the design phase cost estimate, but bids just a few months later collectively increased by 250%. The requirement from federal funding to use American Iron and Steel (AIS) and inflation of steel prices alone added an additional ~$222,000 in unexpected raw materials costs to the project. The story was repeated for other materials such as concrete and copper conduit.

Table 2 – the Settle monthly Construction Cost Index over the past 1.5 years.

YEAR	MONTH	CCI	%CHG	YEAR	MONTH	CCI	%CHG
2021	June	13165.01	+8.4	**2020**	Sept	12771.70	+5.6
2021	May	12994.43	+7.0	**2020**	Aug	12430.98	+2.8
2021	April	12945.18	+6.6	**2020**	July	12140.48	+1.2
2021	March	12865.08	+7.3	**2020**	June	12141.83	+0.9
2021	Feb	12826.05	+5.9	**2020**	May	12145.67	+1.0
2021	Jan	12845.38	+6.0	**2020**	April	12141.53	+1.0
2020	Dec	12840.41	+6.0	**2020**	March	11991.29	0.0
2020	Nov	12796.59	5.8%	**2020**	Feb	12117.14	+0.8
2020	Oct	12776.24	+5.6	**2020**	Jan	12122.45	+0.9

Note. The data is from "*City Cost Index-Seattle*." (2021, June). Construction Economics. https://www.enr.com/economics

Labor costs from sub-contractors also have increased with inflation. The Electrical subcontractor, with a labor increase of 15% from the original quoted work, is an example of the burden of increased labor costs on this project.

Project aggressive schedule and lack of subcontract interest

Contractors are increasingly busy due to the high demand for construction services in the current economy. Many contractors are booked out far in advance. We received feedback anecdotally that this project has a tight and demanding schedule, which may have made this project less appealing or more expensive due to pricing in schedule risk. Also, the short schedule duration and supply shortages/ long lead times made it challenging to acquire materials in time for the work.

There were 28 scopes competitively bid that made up GMP-1. These bids were posted publicly in the Oregon Daily Journal of Commerce (DJC), and bids were directly solicited to a total of 156 subcontractors. Only a total of 45 bids were received back. The lack of competition caused an increase in project costs.

Lastly, due to the compressed schedule for GMP-1, overtime will be needed to complete construction on time. Overtime was built into the labor bids and was not included in the original engineer cost estimate.

Design Evolution

The original design cost estimate was created at the 30% design phase. Naturally, the design evolved from 30% to 100%. Slight changes impacted the project costs. Some were positive, such as the reduction of four slide gates that saved $52,000. Some were negative impacts, such as the addition of $145,937 in temporary bypassing and temporary power equipment needs.

Actions taken to control costs

The project team completed a value engineering review that cut $128,916 from the original GMP-1 proposal.

The project team also understands the need to complete GMP-2 and GMP-3 within budget. The below actions are currently being implemented to ensure cost estimates are correct for upcoming work packages:

- Slayden is currently working on a cost estimate on GMP-2
- The team has reviewed the project scope for items that can be cut or pushed out to further projects, in the event that, the next two work package are bided above the budget. Note that the most critical project scope components are all in GMP-1 and so any scope cuts will come from GMP-2 and GMP-3.
- GMP-2 and GMP-3 construction schedules have been moved to the summer 2022 construction season. This will allow more time for subcontractors to plan work into their schedule and we expect that the extra time will increases subcontractor interest in the project.

Wastewater Program Budget

Table 3 contains the budget for the Sandy Wastewater Program by fiscal year. The impact of the Sandy Existing WWTP Condition Improvements budget exceedances to ratepayers can be mitigated.

Table 3 - The City of Sandy Wastewater Program budget by fiscal year.

PLANNED EXPENSES BY FISCAL YEAR	SUM OF BUDGET	SUM OF 19-20	SUM OF 20-21	SUM OF 21-22	SUM OF 22-23	SUM OF 23-24	SUM OF 24-25	SUM OF 25-26
CS BASIN 2 AND 8	$7,476,187	$8,525	$2,505,632	$4,962,030	$0	$0	$0	$0
WWTP IMPROVEMENTS	$5,948,821	$24,697	$1,338,766	$4,585,358	$0	$0	$0	$0
WASTEWATER SYSTEM FACILITIES PLAN	$437,889	$0	$0	$0	$0	$0	$0	$0
EASTSIDE SATELLITE TREATMENT FACILITY	$26,400,000	$0	$496,165	$2,549,989	$1,015,385	$2,030,769	$13,538,462	$6,769,231
FORCE MAIN TO SANDY OUTFALL	$1,000,000	$0	$0	$0	$0	$0	$1,000,000	$0
SANDY RIVER OUTFALL	$13,800,000	$0	$0	$1,311,538	$811,538	$1,061,538	$7,076,923	$3,538,462
ROSLYN LAKE WETLANDS AND FORCE MAIN	$9,000,000	$0	$0	$0	$0	$0	$0	$9,000,000
CS BASIN 6	$3,105,000	$0	$0	$2,070,000	$1,035,000	$0	$0	$0
GRAND TOTAL	**$67,167,897**	**$33,222**	**$4,340,563**	**$15,478,915**	**$2,861,923**	**$3,092,308**	**$21,615,385**	**$19,307,692**

In discussions with City staff, one attractive option is to move other upcoming fiscal year expenditures farther into the future. The Collections System (CS) work for Basin 6 is equivalent to the budget needed to complete work on the WWTP GMP-1. The Basin 6 rehabilitation is not mandated by the DEQ Mutual Agreement and Order (MAO) and can be moved with no impact to compliance with DEQ and will provide the funds needed in this fiscal year. The work could still be conducted in the summer of 2022 but paid for by FY22/23 funds.

Additionally, an Amendment to Oregon House Bill 5006 dated June 25, 2021, was passed and provides Sandy with an additional 14.7 million in funding toward the wastewater program budget. This funding will more than cover the budget exceedances without placing any additional pressure on ratepayers.

Recommendations

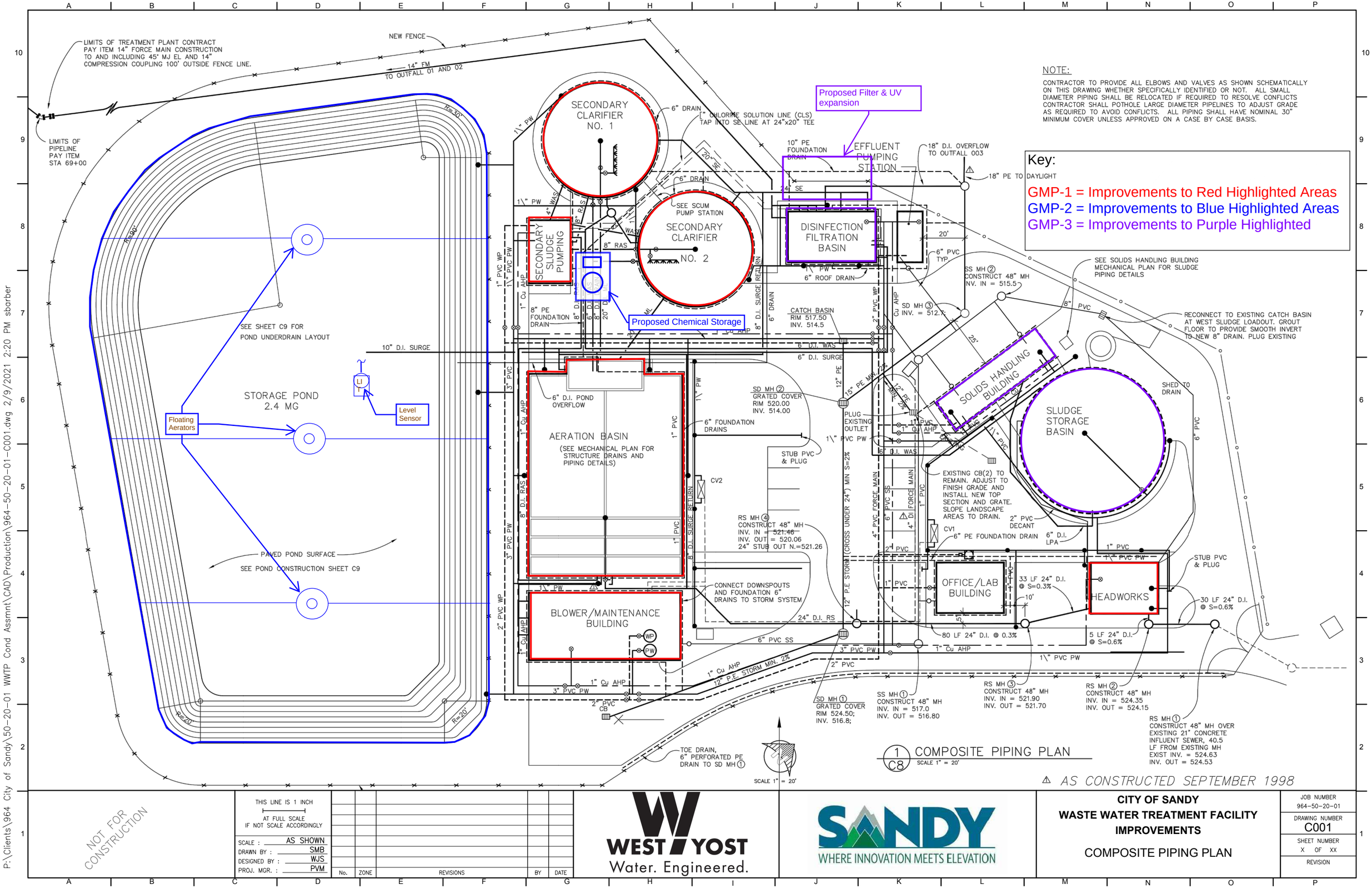
Leeway recommends proceeding with the presentation of GMP-1 at cost of $4,542,468 for Council approval on July 6. This portion of the project is critical to the future compliance of the existing WWTP and compliance with the City's National Pollutant Discharge Elimination System (NPDES) permit.

We further recommend moving Collection System Basin 6 rehabilitation out one fiscal year to mitigate impacts to the ratepayers.

References

City Cost Index-Seattle. (2021, June). Construction Economics. https://www.enr.com/economics

Attachment A – Map of Sandy Existing WWTP



NOTE:

CONTRACTOR TO PROVIDE ALL ELBOWS AND VALVES AS SHOWN SCHEMATICALLY ON THIS DRAWING WHETHER SPECIFICALLY IDENTIFIED OR NOT. ALL SMALL DIAMETER PIPING SHALL BE RELOCATED IF REQUIRED TO RESOLVE CONFLICTS CONTRACTOR SHALL POTHOLE LARGE DIAMETER PIPELINES TO ADJUST GRADE AS REQUIRED TO AVOID CONFLICTS. ALL PIPING SHALL HAVE NOMINAL 30" MINIMUM COVER UNLESS APPROVED ON A CASE BY CASE BASIS.

Key:

GMP-1 = Improvements to Red Highlighted Areas

GMP-2 = Improvements to Blue Highlighted Areas

GMP-3 = Improvements to Purple Highlighted

⚠ AS CONSTRUCTED SEPTEMBER 1998

NOT FOR CONSTRUCTION

THIS LINE IS 1 INCH AT FULL SCALE IF NOT SCALE ACCORDINGLY

SCALE : AS SHOWN
DRAWN BY : SMB
DESIGNED BY : WJS
PROJ. MGR. : PVM

No.	ZONE	REVISIONS	BY	DATE

WEST YOST Water. Engineered.

SANDY WHERE INNOVATION MEETS ELEVATION

CITY OF SANDY
WASTE WATER TREATMENT FACILITY IMPROVEMENTS

COMPOSITE PIPING PLAN

JOB NUMBER	964-50-20-01
DRAWING NUMBER	C001
SHEET NUMBER	X OF XX
REVISION	

P:\Clients\964 City of Sandy\50-20-01 WWTP Cond Assmnt\CAD\Production\964-50-20-01-C001.dwg 2/9/2021 2:20 PM sbarber

City of Sandy Oregon

Sandy WWTP Condition Assessment Improvements

GMP - 1

June 29th, 2021

Slayden
part of MWHC

City of Sandy Oregon

Sandy WWTP Condition Assessment Improvements

100% Design GMP 1

Table of Contents

June 29th, 2021

Slayden
part of MWHC

Section 1: Sandy WWTP Condition Assessment Improvements GMP – 1

Description of Work

This proposal is for the construction services of the Sandy WWTP Condition Assessment Improvements Guaranteed Maximum Price #1 (GMP – 1). The work for GMP - 1 is in accordance with West Yost's drawings and technical specifications dated May 2021 and as modified by Addenda 1, 2, 3, & design clarification log items 1-43.

Due to the time constraints on this project various items within GMP – 1 recognized to be part of the critical work path have been procured through previous contract amendment, Early Work Agreements 1, 2, & 3. The EWAs contained the procurement of the gates, valves, actuators, fine bubble diffusers, secondary clarifier rehabilitation subcontractor, and the MCC's & VFD's. These pieces, along with the other items identified as highly crucial to the treatment process in the initial condition assessment, make up the work within GMP - 1. The major items identified as part of GMP – 1 consist of the following:

- Headworks Grit Removal Equipment Replacement (owner supplied)
- Secondary Clarifier Rehabilitation
- Aeration Basin Upgrades
- Aeration Basin Blower Building MCC and VFD Upgrades
- RAS/WAS Building MCC, RAS Pump Motor, selective RAS piping, & RAS/WAS Building HVAC Upgrades
- MCC-A Arc Flash Breaker Upgrades
- Switchboard-1 (MSB-1) Arc Flash Breaker Upgrades

Reference Section 10, Supplemental Documents, for the drawings, specifications, and design review log binding the construction work for GMP – 1.

Sandy WWTP Condition Assessments Improvements
City of Sandy, Oregon
GMP-1

Last Revision:
6/29/2021

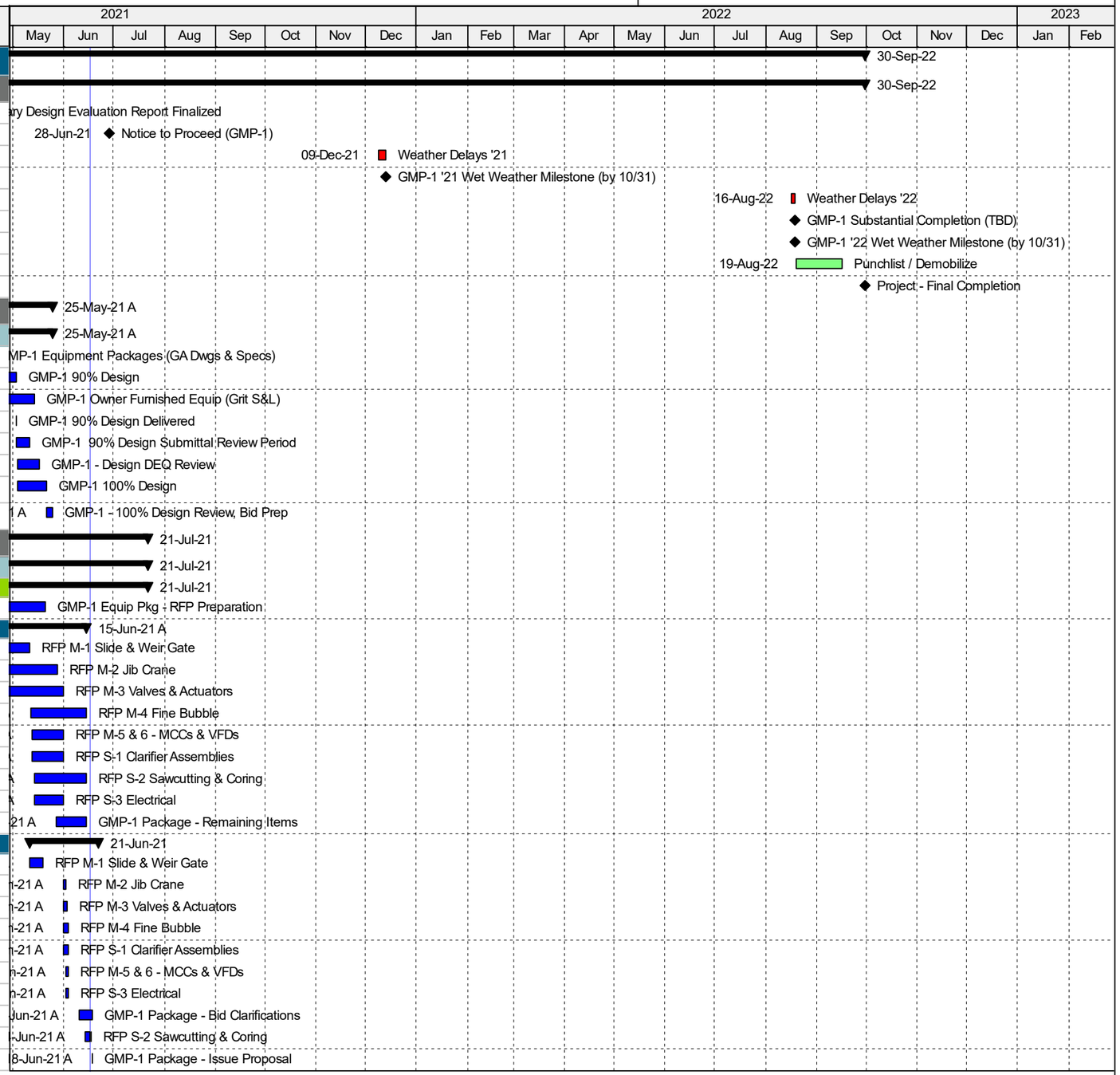
Created By: Slayden Constructors, Inc.
Based on: West Yost Design Package 1 (GMP-1) 100% Submittal Set - May 2021

	COST OF WORK		
Area	**Description**	**Value**	**Notes**
	Direct Costs less Allowances	$2,846,153	
	Allowances	$15,000	
	Subtotal - Cost of Work	**$2,861,153**	
	CONTINGENCIES		
	CM/GC Contingency	$200,281	7.0%
	Subtotal - Contingencies	**$200,281**	
	SUBTOTAL w/ CONTINGENCIES	**$3,061,434**	
	MARKUPS		
	CM/GC Fee	$198,993	6.50%
	Bonds and Insurance	$47,276	1.45%
	OR CATax	$12,900	0.39%
	Subtotal - Markups	**$259,169**	
	TOTAL CONSTRUCTION COST	**$3,320,603**	

	OTHER CONTRACTS		
	Pre-Construction Contract	$39,457	
	EWA 1 - Slide Gate Procurement	$94,269	
	EWA 2 - Valve & Diffuser Procurement	$254,622	Accepted VE - Excludes Jib Crane
	EWA 3 - Clarifier, & Electrical Gear Procurement	$833,517	
	Subtotal - Other Contracts	**$1,221,865**	
	TOTAL CM/GC CONTRACT VALUE	**$4,542,468**	

Sandy WWTP System Upgrade
Sandy, Oregon

Activity ID	Activity Name	Original Duration	Start	Finish	emainin Duration	Total Float
Sandy WWTP - 100% Schedule 2021-06-17		385	23-Mar-21 A	30-Sep-22	325	0
MILESTONES		385	23-Mar-21 A	30-Sep-22	318	0
M1100	Preliminary Design Evaluation Report Finalized	0	23-Mar-21 A		0	
M1300	Notice to Proceed (GMP-1)	0	28-Jun-21		0	-8
M5000	Weather Delays '21	3	09-Dec-21	13-Dec-21	3	-29
M1200	GMP-1 '21 Wet Weather Milestone (by 10/31)	0		13-Dec-21*	0	-29
M5010	Weather Delays '22	3	16-Aug-22	18-Aug-22	3	0
M1210	GMP-1 Substantial Completion (TBD)	0		18-Aug-22*	0	0
M1220	GMP-1 '22 Wet Weather Milestone (by 10/31)	0		18-Aug-22*	0	0
M7000	Punchlist / Demobilize	20	19-Aug-22	16-Sep-22	20	10
M9000	Project - Final Completion	0		30-Sep-22*	0	0
DESIGN		72	23-Mar-21 A	25-May-21	0	
GMP-1 Design		72	23-Mar-21 A	25-May-21	0	
A1810	GMP-1 Equipment Packages (GA Dwgs & Specs	10	23-Mar-21 A	15-Apr-21 A	0	
A1820	GMP-1 90% Design	1	23-Mar-21 A	03-May-21	0	
A1970	GMP-1 Owner Furnished Equip (Grit S&L)	5	14-Apr-21 A	14-May-21	0	
A1830	GMP-1 90% Design Delivered	1	03-May-21	03-May-21	0	
A1840	GMP-1 90% Design Submittal Review Period	10	03-May-21	11-May-21	0	
A3380	GMP-1 - Design DEQ Review	30	04-May-21	17-May-21	0	
A2030	GMP-1 100% Design	5	04-May-21	21-May-21	0	
A1850	GMP-1 - 100% Design Review, Bid Prep	2	21-May-21	25-May-21	0	
PROCUREMENT		76	16-Apr-21 A	21-Jul-21	24	301
GMP-1		76	16-Apr-21 A	21-Jul-21	24	301
EQUIPMENT		76	16-Apr-21 A	21-Jul-21	24	301
A1790	GMP-1 Equip Pkg - RFP Preparation	5	16-Apr-21 A	21-May-21	0	
RFPs (GMP-1) Create, DEQ Review, Issue, Quote		61	21-Apr-21 A	15-Jun-21 A	0	
RFP-11	RFP M-1 Slide & Weir Gate	20	21-Apr-21 A	11-May-21	0	
RFP-11	RFP M-2 Jib Crane	20	28-Apr-21 A	28-May-21	0	
RFP-11	RFP M-3 Valves & Actuators	20	28-Apr-21 A	01-Jun-21 A	0	
RFP-11	RFP M-4 Fine Bubble	20	12-May-21	15-Jun-21 A	0	
RFP-11	RFP M-5 & 6 - MCCs & VFDs	20	13-May-21	01-Jun-21 A	0	
RFP-11	RFP S-1 Clarifier Assemblies	20	13-May-21	01-Jun-21 A	0	
RFP-11	RFP S-2 Sawcutting & Coring	20	14-May-21	15-Jun-21 A	0	
RFP-11	RFP S-3 Electrical	22	14-May-21	01-Jun-21 A	0	
RFP-11	GMP-1 Package - Remaining Items	17	27-May-21	15-Jun-21 A	0	
GMP-1 Contracts (GMP, Negotiate, Execute Amendments)		30	11-May-21	21-Jun-21	3	190
CON11	RFP M-1 Slide & Weir Gate	10	11-May-21	19-May-21	0	
CON11	RFP M-2 Jib Crane	10	01-Jun-21 A	02-Jun-21 A	0	
CON11	RFP M-3 Valves & Actuators	10	01-Jun-21 A	03-Jun-21 A	0	
CON11	RFP M-4 Fine Bubble	10	01-Jun-21 A	04-Jun-21 A	0	
CON11	RFP S-1 Clarifier Assemblies	10	01-Jun-21 A	04-Jun-21 A	0	
CON11	RFP M-5 & 6 - MCCs & VFDs	10	02-Jun-21 A	04-Jun-21 A	0	
CON11	RFP S-3 Electrical	10	02-Jun-21 A	04-Jun-21 A	0	
CON12	GMP-1 Package - Bid Clarifications	3	10-Jun-21 A	18-Jun-21 A	0	
CON11	RFP S-2 Sawcutting & Coring	10	14-Jun-21 A	17-Jun-21	0	37
CON11	GMP-1 Package - Issue Proposal	3	18-Jun-21 A	18-Jun-21 A	0	



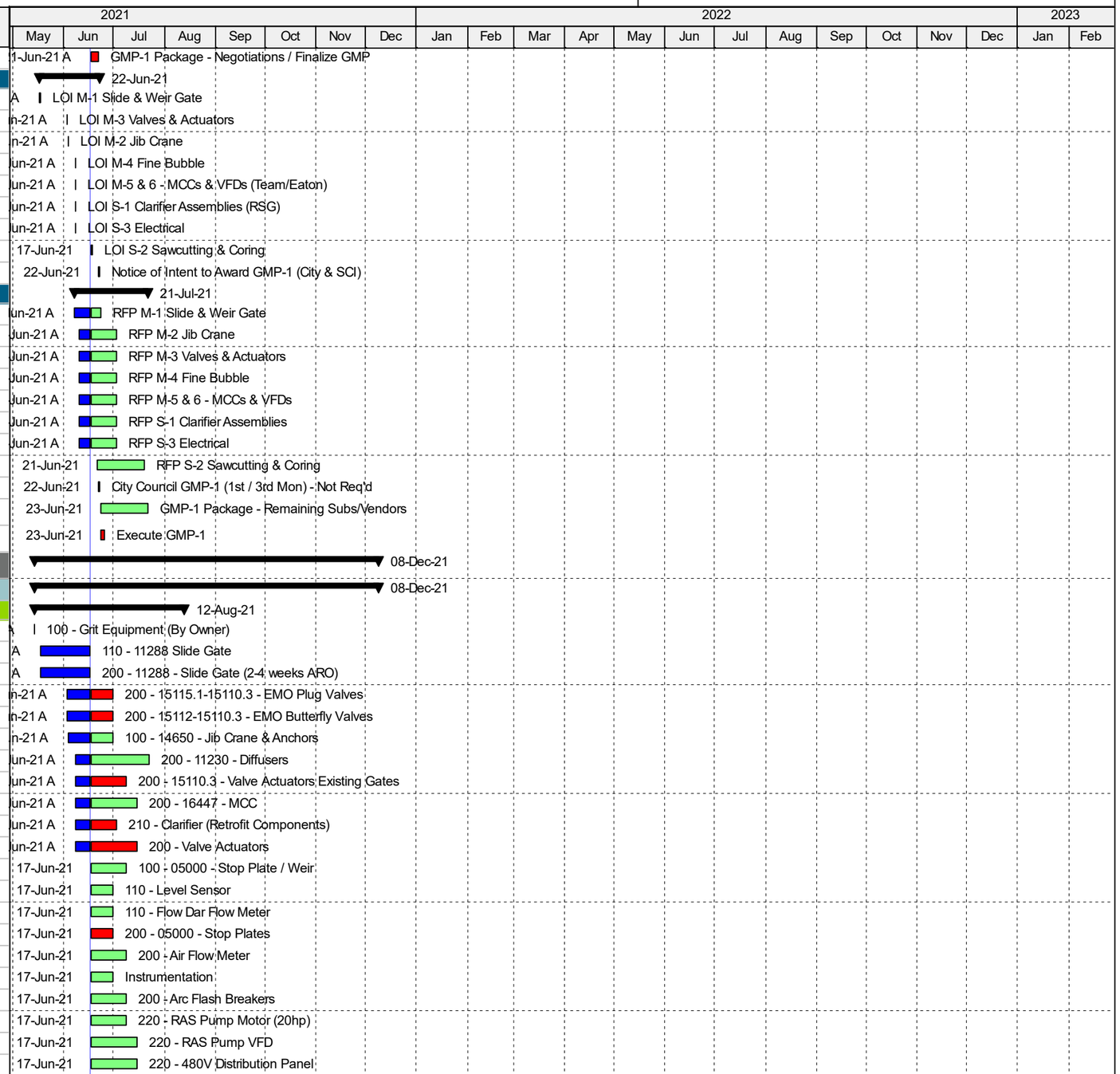
Remaining Level of Effort
Actual Work
Remaining Work
Critical Remaining Work
Milestone
Summary

Slayden Constructors, Inc. part of MWH
Project Name: Sandy WWTP System Upgrade - GMP Schedule

Data Date: 17-Jun-21
Schedule Development Level: GMP Construction Baseline
Revision Number: 00
Revision Date: 05/14/2020
Printed: 18-Jun-21

Sandy WWTP System Upgrade
Sandy, Oregon

Activity ID	Activity Name	Original Duration	Start	Finish	Remaining Duration	Total Float
CON12	GMP-1 Package - Negotiations / Finalize GMP	3	21-Jun-21 A	21-Jun-21	3	-40
GMP-1 Issue Letters of Intent		40	17-May-21	22-Jun-21	4	189
LOI1110	LOI M-1 Slide & Weir Gate	2	17-May-21	18-May-21	0	
LOI1130	LOI M-3 Valves & Actuators	2	03-Jun-21 A	03-Jun-21 A	0	
LOI1120	LOI M-2 Jib Crane	2	04-Jun-21 A	04-Jun-21 A	0	
LOI1140	LOI M-4 Fine Bubble	2	08-Jun-21 A	08-Jun-21 A	0	
LOI1150	LOI M-5 & 6 - MCCs & VFDs (Team/Eaton)	2	08-Jun-21 A	08-Jun-21 A	0	
LOI1160	LOI S-1 Clarifier Assemblies (RSG)	2	08-Jun-21 A	08-Jun-21 A	0	
LOI1180	LOI S-3 Electrical	2	08-Jun-21 A	08-Jun-21 A	0	
LOI1170	LOI S-2 Sawcutting & Coring	2	17-Jun-21	18-Jun-21	2	37
LOI1190	Notice of Intent to Award GMP-1 (City & SCI)	1	22-Jun-21	22-Jun-21	1	-40
GMP-1 Execute Agreements		32	07-Jun-21 A	21-Jul-21	24	301
EXE-11	RFP M-1 Slide & Weir Gate	20	07-Jun-21 A	23-Jun-21	5	320
EXE-11	RFP M-2 Jib Crane	20	10-Jun-21 A	02-Jul-21	12	43
EXE-11	RFP M-3 Valves & Actuators	20	10-Jun-21 A	02-Jul-21	12	313
EXE-11	RFP M-4 Fine Bubble	20	10-Jun-21 A	02-Jul-21	12	313
EXE-11	RFP M-5 & 6 - MCCs & VFDs	20	10-Jun-21 A	02-Jul-21	12	313
EXE-11	RFP S-1 Clarifier Assemblies	20	10-Jun-21 A	02-Jul-21	12	313
EXE-11	RFP S-3 Electrical	20	10-Jun-21 A	02-Jul-21	12	243
EXE-11	RFP S-2 Sawcutting & Coring	20	21-Jun-21	19-Jul-21	20	37
EXE-12	City Council GMP-1 (1st / 3rd Mon) - Not Req'd	1	22-Jun-21	22-Jun-21	1	-8
EXE-11	GMP-1 Package - Remaining Subs/Vendors	20	23-Jun-21	21-Jul-21	20	301
EXE-12	Execute GMP-1	3	23-Jun-21	25-Jun-21	3	-8
SUBMITTALS		139	14-May-21	08-Dec-21	121	204
GMP-1 Submittals (100, 200, 210)		139	14-May-21	08-Dec-21	121	204
Contractor Prep & Engineering		58	14-May-21	12-Aug-21	40	285
A2170	100 - Grit Equipment (By Owner)	20	14-May-21	14-May-21	0	
A2400	110 - 11288 Slide Gate	30	18-May-21	17-Jun-21 A	0	
A4050	200 - 11288 - Slide Gate (2-4 weeks ARO)	15	18-May-21	17-Jun-21 A	0	
A3750	200 - 15115.1-15110.3 - EMO Plug Valves	10	03-Jun-21 A	30-Jun-21	10	-40
A3800	200 - 15112-15110.3 - EMO Butterfly Valves	10	03-Jun-21 A	30-Jun-21	10	-25
A2220	100 - 14650 - Jib Crane & Anchors	20	04-Jun-21 A	30-Jun-21	10	43
A3700	200 - 11230 - Diffusers	30	08-Jun-21 A	22-Jul-21	25	193
A3850	200 - 15110.3 - Valve Actuators Existing Gates	15	08-Jun-21 A	08-Jul-21	15	-42
A4150	200 - 16447 - MCC	30	08-Jun-21 A	15-Jul-21	20	188
A4250	210 - Clarifier (Retrofit Components)	15	08-Jun-21 A	02-Jul-21	12	-29
A4540	200 - Valve Actuators	20	08-Jun-21 A	15-Jul-21	20	-27
A2350	100 - 05000 - Stop Plate / Weir	15	17-Jun-21	08-Jul-21	15	34
A2450	110 - Level Sensor	10	17-Jun-21	30-Jun-21	10	315
A2500	110 - Flow Dar Flow Meter	10	17-Jun-21	30-Jun-21	10	315
A3650	200 - 05000 - Stop Plates	10	17-Jun-21	30-Jun-21	10	-17
A3950	200 - Air Flow Meter	15	17-Jun-21	08-Jul-21	15	266
A4000	Instrumentation	10	17-Jun-21	30-Jun-21	10	14
A4200	200 - Arc Flash Breakers	15	17-Jun-21	08-Jul-21	15	257
A4550	220 - RAS Pump Motor (20hp)	15	17-Jun-21	08-Jul-21	15	220
A4600	220 - RAS Pump VFD	20	17-Jun-21	15-Jul-21	20	215
A4800	220 - 480V Distribution Panel	20	17-Jun-21	15-Jul-21	20	254



Remaining Level of Effort
Actual Work
Remaining Work
Critical Remaining Work
Milestone
Summary

Data Date: 17-Jun-21
Schedule Development Level: GMP Construction Baseline
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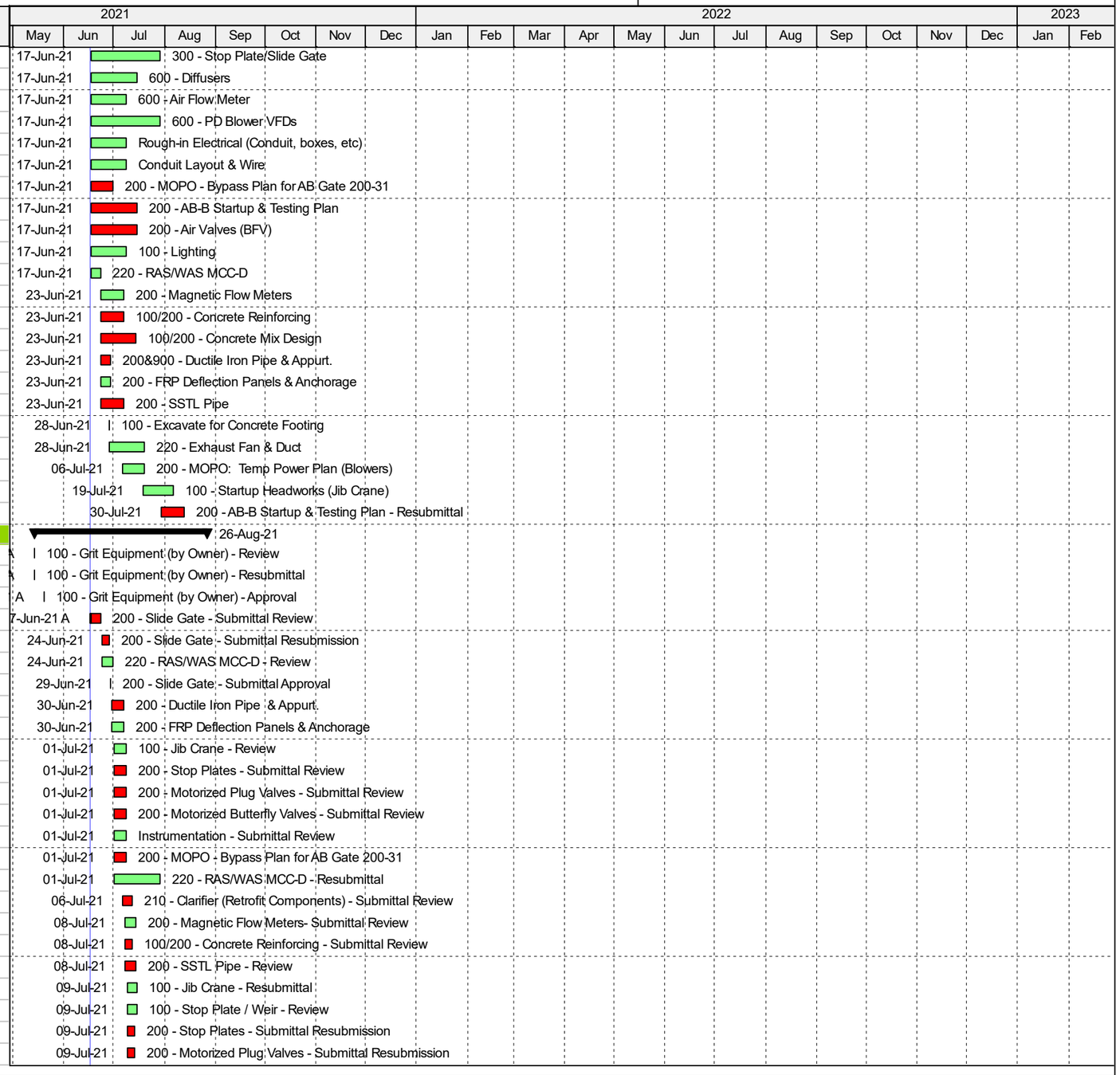
Sandy WWTP System Upgrade
Sandy, Oregon

Activity ID	Activity Name	Original Duration	Start	Finish	Remaining Duration	Total Float
A4950	300 - Stop Plate/Slide Gate	30	17-Jun-21	29-Jul-21	30	204
A5000	600 - Diffusers	20	17-Jun-21	15-Jul-21	20	244
A5100	600 - Air Flow Meter	15	17-Jun-21	08-Jul-21	15	289
A5250	600 - PD Blower VFDs	30	17-Jun-21	29-Jul-21	30	179
A2950	Rough-in Electrical (Conduit, boxes, etc)	15	17-Jun-21	08-Jul-21	15	20
A2960	Conduit Layout & Wire	15	17-Jun-21	08-Jul-21	15	3
A6560	200 - MOPO - Bypass Plan for AB Gate 200-31	10	17-Jun-21	30-Jun-21	10	-24
A6630	200 - AB-B Startup & Testing Plan	20	17-Jun-21	15-Jul-21	20	-15
A3160	200 - Air Valves (BFV)	20	17-Jun-21	15-Jul-21	20	-52
A2510	100 - Lighting	15	17-Jun-21	08-Jul-21	15	263
A4100	220 - RAS/WAS MCC-D	5	17-Jun-21	23-Jun-21	5	181
A3900	200 - Magnetic Flow Meters	10	23-Jun-21	07-Jul-21	10	28
A2890	100/200 - Concrete Reinforcing	10	23-Jun-21	07-Jul-21	10	-12
A5310	100/200 - Concrete Mix Design	15	23-Jun-21	14-Jul-21	15	-24
A3010	200&900 - Ductile Iron Pipe & Appurt.	5	23-Jun-21	29-Jun-21	5	-30
A6710	200 - FRP Deflection Panels & Anchorage	5	23-Jun-21	29-Jun-21	5	12
A3150	200 - SSTL Pipe	10	23-Jun-21	07-Jul-21	10	-40
A2850	100 - Excavate for Concrete Footing	1	28-Jun-21	28-Jun-21	1	65
A4650	220 - Exhaust Fan & Duct	15	28-Jun-21	19-Jul-21	15	229
A6750	200 - MOPO: Temp Power Plan (Blowers)	10	06-Jul-21	19-Jul-21	10	243
A6540	100 - Startup Headworks (Jib Crane)	15	19-Jul-21	06-Aug-21	15	274
A3000	200 - AB-B Startup & Testing Plan - Resubmittal	10	30-Jul-21	12-Aug-21	10	-15
Design Engineer Review		68	14-May-21 A	26-Aug-21	50	270
A2180	100 - Grit Equipment (by Owner) - Review	5	14-May-21 A	14-May-21	0	
A2190	100 - Grit Equipment (by Owner) - Resubmittal	5	14-May-21 A	14-May-21	0	
A2200	100 - Grit Equipment (by Owner) - Approval	1	20-May-21 A	20-May-21	0	
A4060	200 - Slide Gate - Submittal Review	5	17-Jun-21 A	23-Jun-21	5	-67
A4070	200 - Slide Gate - Submittal Resubmission	3	24-Jun-21	28-Jun-21	3	-67
A5380	220 - RAS/WAS MCC-D - Review	5	24-Jun-21	30-Jun-21	5	181
A4080	200 - Slide Gate - Submittal Approval	1	29-Jun-21	29-Jun-21	1	-67
A3090	200 - Ductile Iron Pipe & Appurt.	5	30-Jun-21	07-Jul-21	5	-30
A6720	200 - FRP Deflection Panels & Anchorage	5	30-Jun-21	07-Jul-21	5	12
A2230	100 - Jib Crane - Review	5	01-Jul-21	08-Jul-21	5	43
A3660	200 - Stop Plates - Submittal Review	5	01-Jul-21	08-Jul-21	5	-17
A3760	200 - Motorized Plug Valves - Submittal Review	5	01-Jul-21	08-Jul-21	5	-40
A3810	200 - Motorized Butterfly Valves - Submittal Revie	5	01-Jul-21	08-Jul-21	5	-25
A4010	Instrumentation - Submittal Review	5	01-Jul-21	08-Jul-21	5	14
A2990	200 - MOPO - Bypass Plan for AB Gate 200-31	5	01-Jul-21	08-Jul-21	5	-24
A4110	220 - RAS/WAS MCC-D - Resubmittal	20	01-Jul-21	29-Jul-21	20	181
A4260	210 - Clarifier (Retrofit Components) - Submittal F	5	06-Jul-21	12-Jul-21	5	-29
A3910	200 - Magnetic Flow Meters- Submittal Review	5	08-Jul-21	14-Jul-21	5	28
A5370	100/200 - Concrete Reinforcing - Submittal Revie	3	08-Jul-21	12-Jul-21	3	-12
A2260	200 - SSTL Pipe - Review	5	08-Jul-21	14-Jul-21	5	-40
A2240	100 - Jib Crane - Resubmittal	5	09-Jul-21	15-Jul-21	5	43
A2360	100 - Stop Plate / Weir - Review	5	09-Jul-21	15-Jul-21	5	34
A3670	200 - Stop Plates - Submittal Resubmission	3	09-Jul-21	13-Jul-21	3	-17
A3770	200 - Motorized Plug Valves - Submittal Resubmi	3	09-Jul-21	13-Jul-21	3	-40



Remaining Level of Effort
Actual Work
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Milestone
Summary

Slayden Constructors, Inc. part of MWH
Project Name: Sandy WWTP System Upgrade - GMP Schedule

Data Date: 17-Jun-21
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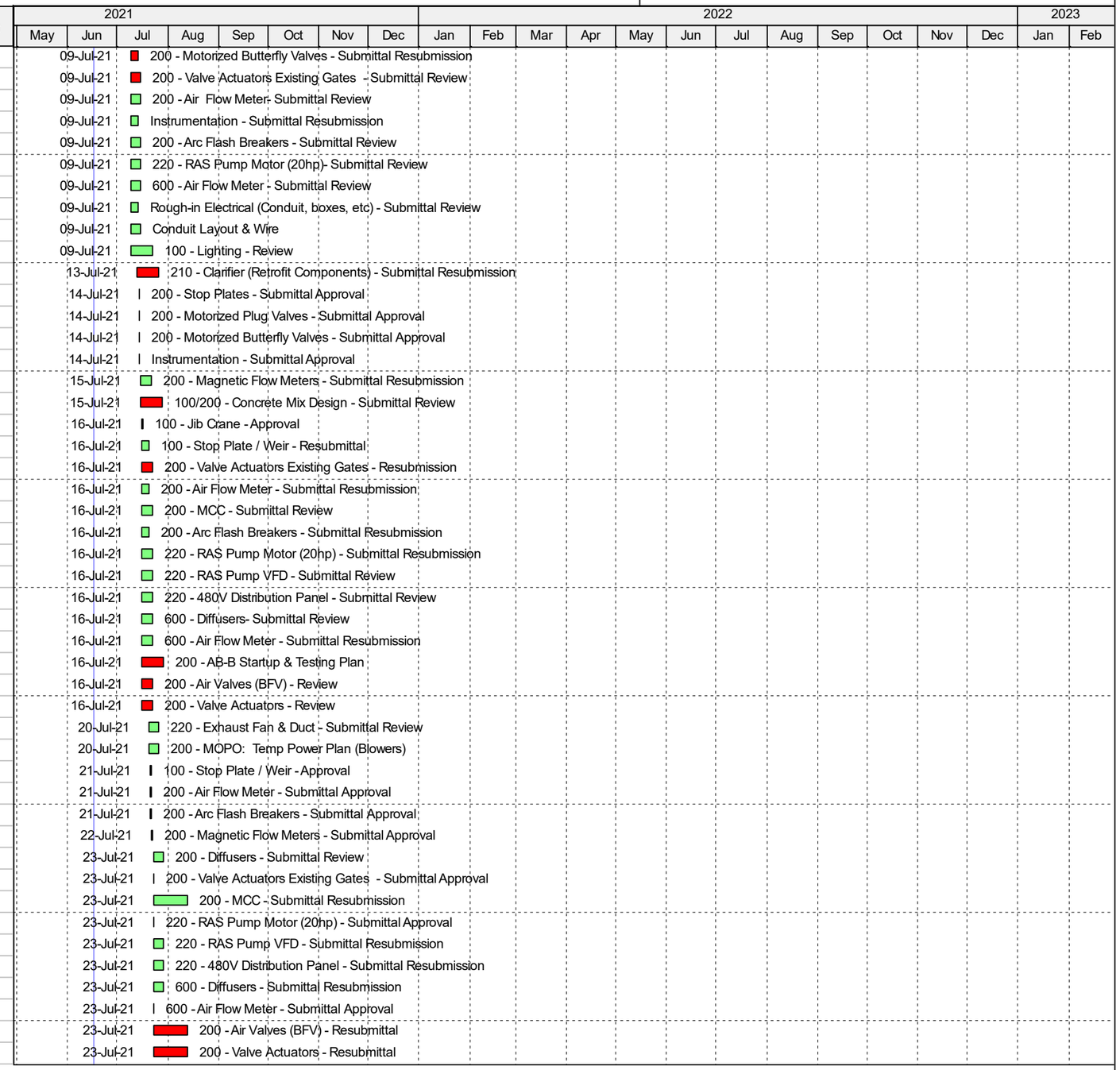
Sandy WWTP System Upgrade
Sandy, Oregon

Activity ID	Activity Name	Original Duration	Start	Finish	Remaining Duration	Total Float
A3820	200 - Motorized Butterfly Valves - Submittal Resu	3	09-Jul-21	13-Jul-21	3	-25
A3860	200 - Valve Actuators Existing Gates - Submittal	5	09-Jul-21	15-Jul-21	5	-42
A3960	200 - Air Flow Meter- Submittal Review	5	09-Jul-21	15-Jul-21	5	266
A4020	Instrumentation - Submittal Resubmission	3	09-Jul-21	13-Jul-21	3	14
A4210	200 - Arc Flash Breakers - Submittal Review	5	09-Jul-21	15-Jul-21	5	257
A4560	220 - RAS Pump Motor (20hp)- Submittal Review	5	09-Jul-21	15-Jul-21	5	220
A5110	600 - Air Flow Meter - Submittal Review	5	09-Jul-21	15-Jul-21	5	289
A2270	Rough-in Electrical (Conduit, boxes, etc) - Submit	3	09-Jul-21	13-Jul-21	3	20
A2280	Conduit Layout & Wire	5	09-Jul-21	15-Jul-21	5	3
A4320	100 - Lighting - Review	10	09-Jul-21	22-Jul-21	10	263
A4270	210 - Clarifier (Retrofit Components) - Submittal F	10	13-Jul-21	26-Jul-21	10	-29
A3680	200 - Stop Plates - Submittal Approval	1	14-Jul-21	14-Jul-21	1	-17
A3780	200 - Motorized Plug Valves - Submittal Approval	1	14-Jul-21	14-Jul-21	1	-40
A3830	200 - Motorized Butterfly Valves - Submittal Appr	1	14-Jul-21	14-Jul-21	1	-25
A4030	Instrumentation - Submittal Approval	1	14-Jul-21	14-Jul-21	1	14
A3920	200 - Magnetic Flow Meters - Submittal Resubmi	5	15-Jul-21	21-Jul-21	5	28
A6480	100/200 - Concrete Mix Design - Submittal Revie	10	15-Jul-21	28-Jul-21	10	-24
A2250	100 - Jib Crane - Approval	1	16-Jul-21	16-Jul-21	1	43
A2370	100 - Stop Plate / Weir - Resubmittal	3	16-Jul-21	20-Jul-21	3	34
A3870	200 - Valve Actuators Existing Gates - Resubmis	5	16-Jul-21	22-Jul-21	5	-42
A3970	200 - Air Flow Meter - Submittal Resubmission	3	16-Jul-21	20-Jul-21	3	266
A4160	200 - MCC - Submittal Review	5	16-Jul-21	22-Jul-21	5	188
A4220	200 - Arc Flash Breakers - Submittal Resubmissic	3	16-Jul-21	20-Jul-21	3	257
A4570	220 - RAS Pump Motor (20hp) - Submittal Resub	5	16-Jul-21	22-Jul-21	5	220
A4610	220 - RAS Pump VFD - Submittal Review	5	16-Jul-21	22-Jul-21	5	215
A4810	220 - 480V Distribution Panel - Submittal Review	5	16-Jul-21	22-Jul-21	5	254
A5010	600 - Diffusers- Submittal Review	5	16-Jul-21	22-Jul-21	5	244
A5120	600 - Air Flow Meter - Submittal Resubmission	5	16-Jul-21	22-Jul-21	5	289
A6640	200 - AB-B Startup & Testing Plan	10	16-Jul-21	29-Jul-21	10	-15
A4390	200 - Air Valves (BFV) - Review	5	16-Jul-21	22-Jul-21	5	-52
A4590	200 - Valve Actuators - Review	5	16-Jul-21	22-Jul-21	5	-27
A4660	220 - Exhaust Fan & Duct - Submittal Review	5	20-Jul-21	26-Jul-21	5	229
A6760	200 - MOPO: Temp Power Plan (Blowers)	5	20-Jul-21	26-Jul-21	5	243
A2380	100 - Stop Plate / Weir - Approval	1	21-Jul-21	21-Jul-21	1	34
A3980	200 - Air Flow Meter - Submittal Approval	1	21-Jul-21	21-Jul-21	1	266
A4230	200 - Arc Flash Breakers - Submittal Approval	1	21-Jul-21	21-Jul-21	1	257
A3930	200 - Magnetic Flow Meters - Submittal Approval	1	22-Jul-21	22-Jul-21	1	28
A3710	200 - Diffusers - Submittal Review	5	23-Jul-21	29-Jul-21	5	193
A3880	200 - Valve Actuators Existing Gates - Submittal	1	23-Jul-21	23-Jul-21	1	-42
A4170	200 - MCC - Submittal Resubmission	15	23-Jul-21	12-Aug-21	15	188
A4580	220 - RAS Pump Motor (20hp) - Submittal Appro	1	23-Jul-21	23-Jul-21	1	220
A4620	220 - RAS Pump VFD - Submittal Resubmission	5	23-Jul-21	29-Jul-21	5	215
A4820	220 - 480V Distribution Panel - Submittal Resubn	5	23-Jul-21	29-Jul-21	5	254
A5020	600 - Diffusers - Submittal Resubmission	5	23-Jul-21	29-Jul-21	5	244
A5130	600 - Air Flow Meter - Submittal Approval	1	23-Jul-21	23-Jul-21	1	289
A4440	200 - Air Valves (BFV) - Resubmittal	15	23-Jul-21	12-Aug-21	15	-52
A4640	200 - Valve Actuators - Resubmittal	15	23-Jul-21	12-Aug-21	15	-27



Remaining Level of Effort
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Critical Remaining Work
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Slayden Constructors, Inc. part of MWH

Project Name: Sandy WWTP System Upgrade - GMP Schedule

Data Date: 17-Jun-21
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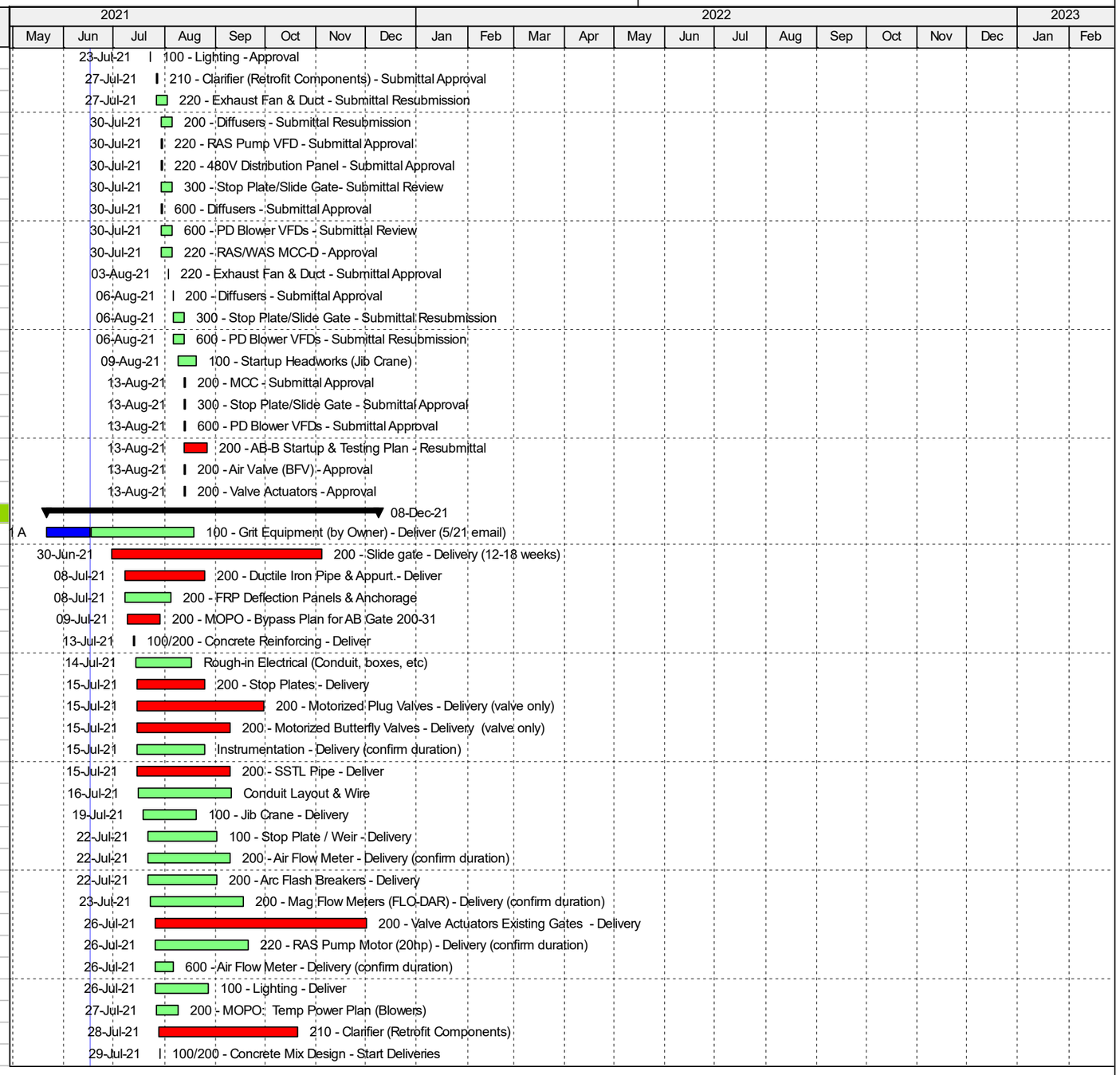
Sandy WWTP System Upgrade
Sandy, Oregon

Activity ID	Activity Name	Original Duration	Start	Finish	Remaining Duration	Total Float
A4330	100 - Lighting - Approval	1	23-Jul-21	23-Jul-21	1	263
A4280	210 - Clarifier (Retrofit Components) - Submittal A	1	27-Jul-21	27-Jul-21	1	-29
A4670	220 - Exhaust Fan & Duct - Submittal Resubmiss	5	27-Jul-21	02-Aug-21	5	229
A3720	200 - Diffusers - Submittal Resubmission	5	30-Jul-21	05-Aug-21	5	193
A4630	220 - RAS Pump VFD - Submittal Approval	1	30-Jul-21	30-Jul-21	1	215
A4830	220 - 480V Distribution Panel - Submittal Approva	1	30-Jul-21	30-Jul-21	1	254
A4960	300 - Stop Plate/Slide Gate- Submittal Review	5	30-Jul-21	05-Aug-21	5	204
A5030	600 - Diffusers - Submittal Approval	1	30-Jul-21	30-Jul-21	1	244
A5260	600 - PD Blower VFDs - Submittal Review	5	30-Jul-21	05-Aug-21	5	179
A4120	220 - RAS/WAS MCC-D - Approval	5	30-Jul-21	05-Aug-21	5	181
A4680	220 - Exhaust Fan & Duct - Submittal Approval	1	03-Aug-21	03-Aug-21	1	229
A3730	200 - Diffusers - Submittal Approval	1	06-Aug-21	06-Aug-21	1	193
A4970	300 - Stop Plate/Slide Gate - Submittal Resubmi	5	06-Aug-21	12-Aug-21	5	204
A5270	600 - PD Blower VFDs - Submittal Resubmission	5	06-Aug-21	12-Aug-21	5	179
A2980	100 - Startup Headworks (Jib Crane)	10	09-Aug-21	20-Aug-21	10	274
A4180	200 - MCC - Submittal Approval	1	13-Aug-21	13-Aug-21	1	188
A4980	300 - Stop Plate/Slide Gate - Submittal Approval	1	13-Aug-21	13-Aug-21	1	204
A5280	600 - PD Blower VFDs - Submittal Approval	1	13-Aug-21	13-Aug-21	1	179
A6660	200 - AB-B Startup & Testing Plan - Resubmittal	10	13-Aug-21	26-Aug-21	10	-15
A4490	200 - Air Valve (BFV) - Approval	1	13-Aug-21	13-Aug-21	1	-52
A4690	200 - Valve Actuators - Approval	1	13-Aug-21	13-Aug-21	1	-27
Fabrication & Delivery		139	21-May-21	08-Dec-21	121	204
D2210	100 - Grit Equipment (by Owner) - Deliver (5/21 e	44	21-May-21	18-Aug-21	44	35
D4090	200 - Slide gate - Delivery (12-18 weeks)	90	30-Jun-21	04-Nov-21	90	-67
D6680	200 - Ductile Iron Pipe & Appurt.- Deliver	35	08-Jul-21	25-Aug-21	35	-30
D6730	200 - FRP Deflection Panels & Anchorage	20	08-Jul-21	04-Aug-21	20	12
D6570	200 - MOPO - Bypass Plan for AB Gate 200-31	15	09-Jul-21	29-Jul-21	15	-24
D6470	100/200 - Concrete Reinforcing - Deliver	1	13-Jul-21	13-Jul-21	1	-12
D6520	Rough-in Electrical (Conduit, boxes, etc)	25	14-Jul-21	17-Aug-21	25	20
D3690	200 - Stop Plates - Delivery	30	15-Jul-21	25-Aug-21	30	-17
D3790	200 - Motorized Plug Valves - Delivery (valve only	55	15-Jul-21	30-Sep-21	55	-40
D3840	200 - Motorized Butterfly Valves - Delivery (valve	40	15-Jul-21	09-Sep-21	40	-25
D4040	Instrumentation - Delivery (confirm duration)	30	15-Jul-21	25-Aug-21	30	14
D6540	200 - SSTL Pipe - Deliver	40	15-Jul-21	09-Sep-21	40	-40
D6530	Conduit Layout & Wire	40	16-Jul-21	10-Sep-21	40	3
D2260	100 - Jib Crane - Delivery	25	19-Jul-21	20-Aug-21	25	43
D2390	100 - Stop Plate / Weir - Delivery	30	22-Jul-21	01-Sep-21	30	34
D3990	200 - Air Flow Meter - Delivery (confirm duration)	35	22-Jul-21	09-Sep-21	35	266
D4240	200 - Arc Flash Breakers - Delivery	30	22-Jul-21	01-Sep-21	30	257
D3940	200 - Mag Flow Meters (FLO-DAR) - Delivery (cor	40	23-Jul-21	17-Sep-21	40	28
D3890	200 - Valve Actuators Existing Gates - Delivery	90	26-Jul-21	01-Dec-21	90	-42
D4590	220 - RAS Pump Motor (20hp) - Delivery (confirm	40	26-Jul-21	20-Sep-21	40	220
D5140	600 - Air Flow Meter - Delivery (confirm duration)	10	26-Jul-21	06-Aug-21	10	289
D6690	100 - Lighting - Deliver	25	26-Jul-21	27-Aug-21	25	263
D6770	200 - MOPO: Temp Power Plan (Blowers)	10	27-Jul-21	09-Aug-21	10	243
D4290	210 - Clarifier (Retrofit Components)	60	28-Jul-21	20-Oct-21	60	-29
D6490	100/200 - Concrete Mix Design - Start Deliveries	1	29-Jul-21	29-Jul-21	1	-24



Remaining Level of Effort
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Slayden Constructors, Inc. part of MWH
Project Name: Sandy WWTP System Upgrade - GMP Schedule

Data Date: 17-Jun-21
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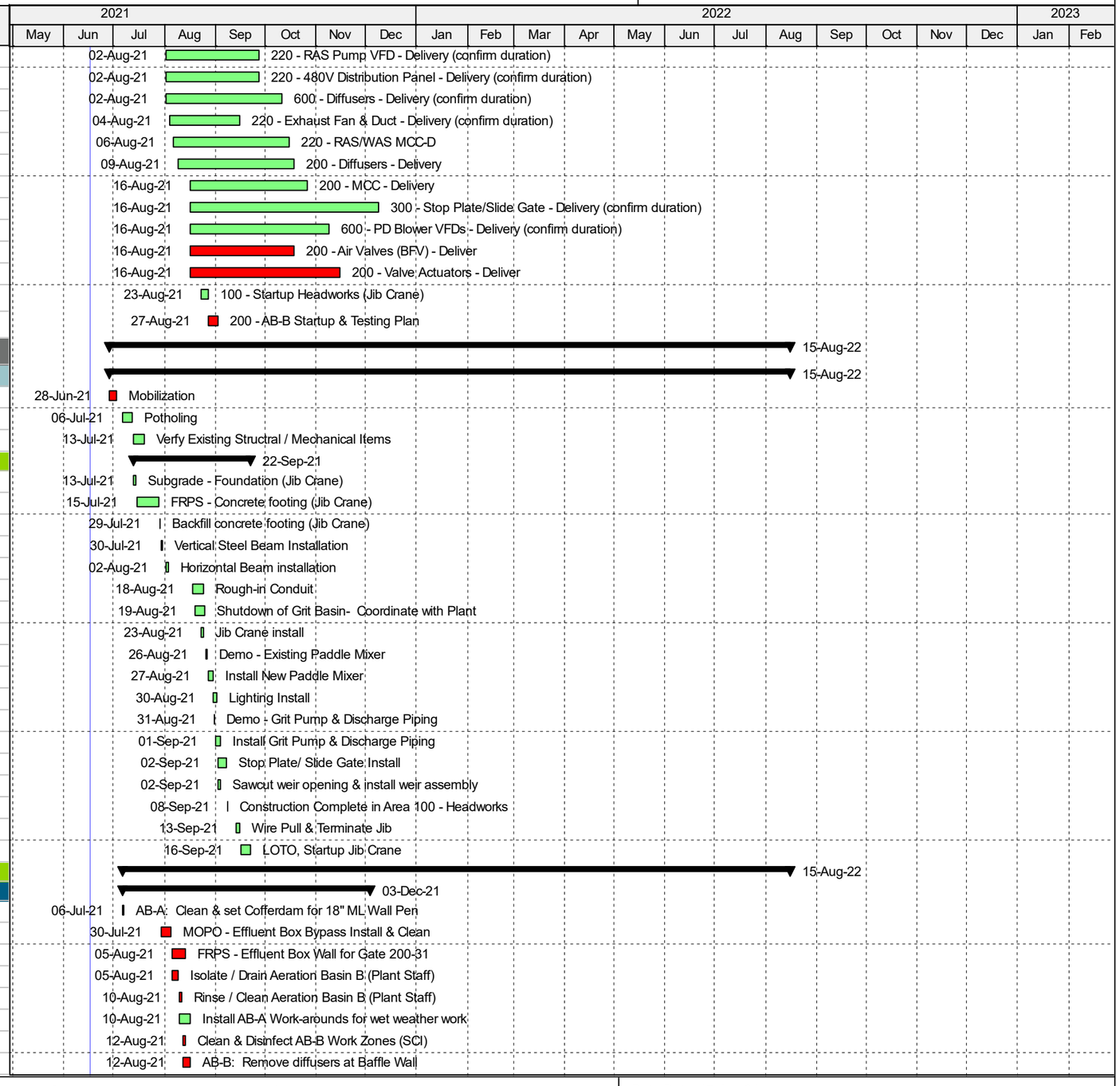
Sandy WWTP System Upgrade
Sandy, Oregon

Activity ID	Activity Name	Original Duration	Start	Finish	Remaining Duration	Total Float
D4640	220 - RAS Pump VFD - Delivery (confirm duration	40	02-Aug-21	27-Sep-21	40	215
D4840	220 - 480V Distribution Panel - Delivery (confirm (	40	02-Aug-21	27-Sep-21	40	254
D5040	600 - Diffusers - Delivery (confirm duration)	50	02-Aug-21	11-Oct-21	50	244
D4690	220 - Exhaust Fan & Duct - Delivery (confirm dura	30	04-Aug-21	15-Sep-21	30	229
D4800	220 - RAS/WAS MCC-D	50	06-Aug-21	15-Oct-21	50	181
D3740	200 - Diffusers - Delivery	50	09-Aug-21	18-Oct-21	50	193
D4190	200 - MCC - Delivery	51	16-Aug-21	26-Oct-21	51	188
D4990	300 - Stop Plate/Slide Gate - Delivery (confirm du	80	16-Aug-21	08-Dec-21	80	204
D5290	600 - PD Blower VFDs - Delivery (confirm duratior	60	16-Aug-21	08-Nov-21	60	179
D3800	200 - Air Valves (BFV) - Deliver	45	16-Aug-21	18-Oct-21	45	-52
D6580	200 - Valve Actuators - Deliver	65	16-Aug-21	15-Nov-21	65	-27
D6550	100 - Startup Headworks (Jib Crane)	5	23-Aug-21	27-Aug-21	5	274
D6650	200 - AB-B Startup & Testing Plan	5	27-Aug-21	02-Sep-21	5	-15
CONSTRUCTION		285	28-Jun-21	15-Aug-22	285	33
GMP-1 (ABs, Blower, 2nd Clarifier)		285	28-Jun-21	15-Aug-22	285	33
A6120	Mobilization	5	28-Jun-21	02-Jul-21	5	-8
A6450	Potholing	5	06-Jul-21	12-Jul-21	5	12
A6460	Verfy Existing Structral / Mechanical Items	5	13-Jul-21	19-Jul-21	5	12
Area 100 - Headworks (Jib Crane & Grit Replacement)		51	13-Jul-21	22-Sep-21	51	257
A2880	Subgrade - Foundation (Jib Crane)	2	13-Jul-21	14-Jul-21	2	56
A2900	FRPS - Concrete footing (Jib Crane)	10	15-Jul-21	28-Jul-21	10	56
A2910	Backfill concrete footing (Jib Crane)	1	29-Jul-21	29-Jul-21	1	56
A2920	Vertical Steel Beam Installation	1	30-Jul-21	30-Jul-21	1	56
A2930	Horizontal Beam installation	2	02-Aug-21	03-Aug-21	2	56
A6500	Rough-in Conduit	5	18-Aug-21	24-Aug-21	5	269
A3020	Shutdown of Grit Basin- Coordinate with Plant	5	19-Aug-21	25-Aug-21	5	35
A2940	Jib Crane install	2	23-Aug-21	24-Aug-21	2	43
A3030	Demo - Existing Paddle Mixer	1	26-Aug-21	26-Aug-21	1	35
A3040	Install New Paddle Mixer	2	27-Aug-21	30-Aug-21	2	35
A3130	Lighting Install	3	30-Aug-21	01-Sep-21	3	263
A3050	Demo - Grit Pump & Discharge Piping	1	31-Aug-21	31-Aug-21	1	35
A3060	Install Grit Pump & Discharge Piping	3	01-Sep-21	03-Sep-21	3	35
A3070	Stop Plate/ Slide Gate Install	3	02-Sep-21	07-Sep-21	3	34
A6670	Sawcut weir opening & install weir assembly	2	02-Sep-21	03-Sep-21	2	35
A3080	Construction Complete in Area 100 - Headworks	1	08-Sep-21	08-Sep-21	1	34
A6510	Wire Pull & Terminate Jib	3	13-Sep-21	15-Sep-21	3	257
A2970	LOTO, Startup Jib Crane	5	16-Sep-21	22-Sep-21	5	257
Area 200 - Aeration Basin Upgrades		280	06-Jul-21	15-Aug-22	280	33
Through 10-31-2021 Season		106	06-Jul-21	03-Dec-21	106	207
A7020	AB-A: Clean & set Cofferdam for 18" ML Wall Pe	2	06-Jul-21	07-Jul-21	2	-8
A6130	MOPO - Effluent Box Bypass Install & Clean	4	30-Jul-21	04-Aug-21	4	-24
A6140	FRPS - Effluent Box Wall for Gate 200-31	7	05-Aug-21	13-Aug-21	7	-9
A6160	Isolate / Drain Aeration Basin B (Plant Staff)	3	05-Aug-21	09-Aug-21	3	-24
A6170	Rinse / Clean Aeration Basin B (Plant Staff)	2	10-Aug-21	11-Aug-21	2	-24
A6940	Install AB-A Work-arounds for wet weather work	5	10-Aug-21	16-Aug-21	5	8
A6600	Clean & Disinfect AB-B Work Zones (SCI)	2	12-Aug-21	13-Aug-21	2	-23
A7040	AB-B: Remove diffusers at Baffle Wall	3	12-Aug-21	16-Aug-21	3	-24



Remaining Level of Effort
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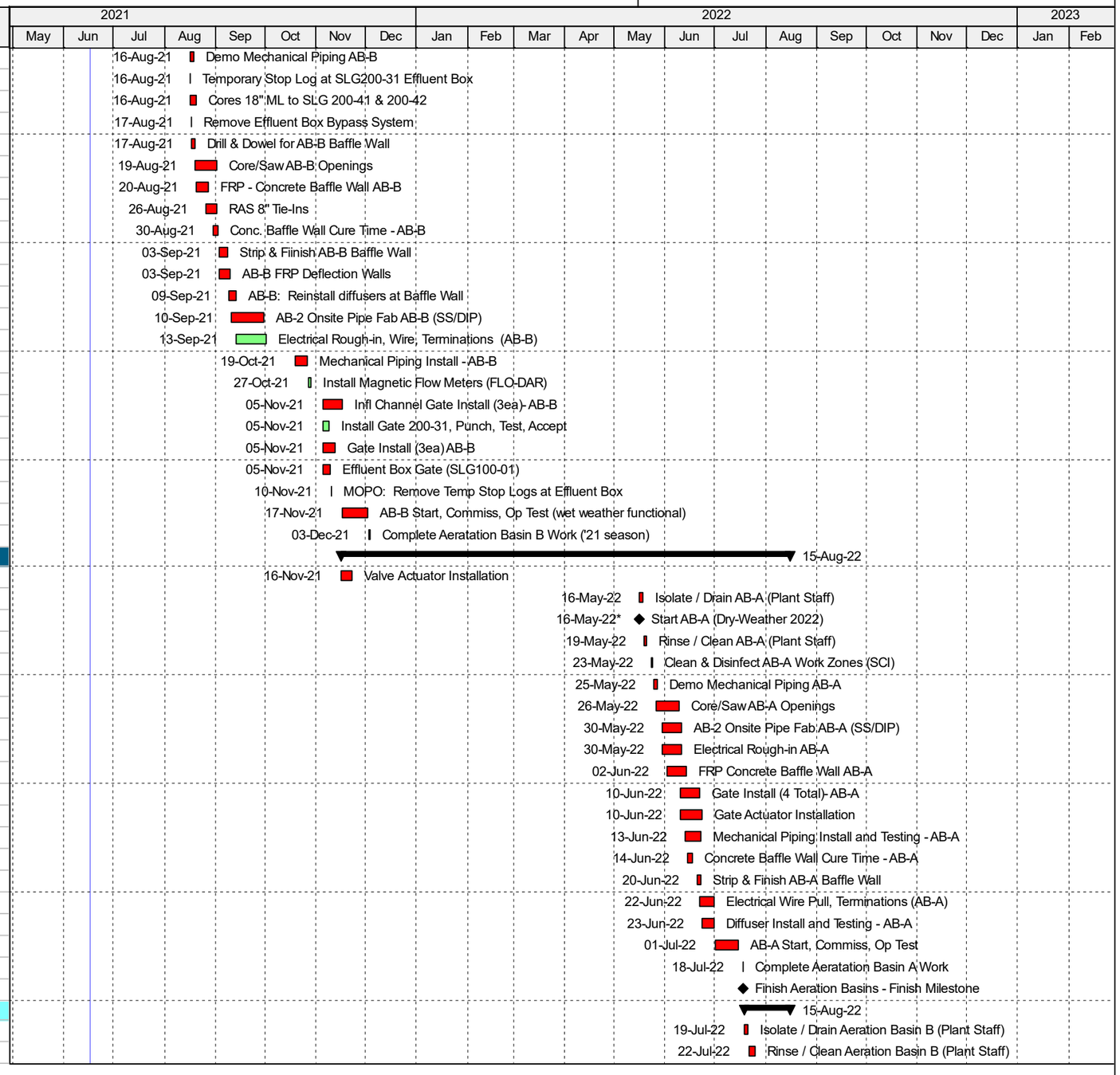
Sandy WWTP System Upgrade
Sandy, Oregon

Activity ID	Activity Name	Original Duration	Start	Finish	Remaining Duration	Total Float
A6180	Demo Mechanical Piping AB-B	3	16-Aug-21	18-Aug-21	3	-20
A7010	Temporary Stop Log at SLG200-31 Effluent Box	1	16-Aug-21	16-Aug-21	1	-9
A7030	Cores 18" ML to SLG 200-41 & 200-42	5	16-Aug-21	20-Aug-21	5	-12
A6150	Remove Effluent Box Bypass System	1	17-Aug-21	17-Aug-21	1	-9
A6610	Drill & Dowel for AB-B Baffle Wall	3	17-Aug-21	19-Aug-21	3	-24
A6190	Core/Saw AB-B Openings	10	19-Aug-21	01-Sep-21	10	-20
A6200	FRP - Concrete Baffle Wall AB-B	6	20-Aug-21	27-Aug-21	6	-24
A6360	RAS 8" Tie-Ins	5	26-Aug-21	01-Sep-21	5	-20
A6210	Conc. Baffle Wall Cure Time - AB-B	4	30-Aug-21	02-Sep-21	4	-24
A6620	Strip & Fiinish AB-B Baffle Wall	3	03-Sep-21	08-Sep-21	3	-24
A6700	AB-B FRP Deflection Walls	4	03-Sep-21	09-Sep-21	4	-9
A7050	AB-B: Reinstall diffusers at Baffle Wall	3	09-Sep-21	13-Sep-21	3	-21
A6530	AB-2 Onsite Pipe Fab AB-B (SS/DIP)	15	10-Sep-21	30-Sep-21	15	-40
A6400	Electrical Rough-in, Wire, Terminations (AB-B)	15	13-Sep-21	01-Oct-21	15	3
A6230	Mechanical Piping Install - AB-B	6	19-Oct-21	26-Oct-21	6	-52
A6390	Install Magnetic Flow Meters (FLO-DAR)	2	27-Oct-21	28-Oct-21	2	1
A6220	Infl Channel Gate Install (3ea)- AB-B	8	05-Nov-21	16-Nov-21	8	-67
A6580	Install Gate 200-31, Punch, Test, Accept	2	05-Nov-21	08-Nov-21	2	224
A6930	Gate Install (3ea) AB-B	6	05-Nov-21	12-Nov-21	6	-65
A7080	Effluent Box Gate (SLG100-01)	3	05-Nov-21	09-Nov-21	3	-63
A7090	MOPO: Remove Temp Stop Logs at Effluent Bo	1	10-Nov-21	10-Nov-21	1	-63
A6590	AB-B Start, Commiss, Op Test (wet weather funct	10	17-Nov-21	02-Dec-21	10	-67
A6340	Complete Aeratation Basin B Work ('21 season)	1	03-Dec-21	03-Dec-21	1	-67
After 10-31-2021 Season		186	16-Nov-21	15-Aug-22	186	0
A7000	Valve Actuator Installation	5	16-Nov-21	22-Nov-21	5	-27
A6250	Isolate / Drain AB-A (Plant Staff)	3	16-May-22	18-May-22	3	-177
A7100	Start AB-A (Dry-Weather 2022)	0	16-May-22*		0	-177
A6260	Rinse / Clean AB-A (Plant Staff)	2	19-May-22	20-May-22	2	-177
A6690	Clean & Disinfect AB-A Work Zones (SCI)	2	23-May-22	24-May-22	2	-177
A6270	Demo Mechanical Piping AB-A	3	25-May-22	27-May-22	3	-177
A6280	Core/Saw AB-A Openings	10	26-May-22	09-Jun-22	10	-177
A6960	AB-2 Onsite Pipe Fab AB-A (SS/DIP)	10	30-May-22	10-Jun-22	10	-169
A6980	Electrical Rough-in AB-A	10	30-May-22	10-Jun-22	10	-163
A6290	FRP Concrete Baffle Wall AB-A	8	02-Jun-22	13-Jun-22	8	-177
A6320	Gate Install (4 Total)- AB-A	8	10-Jun-22	21-Jun-22	8	-177
A6380	Gate Actuator Installation	10	10-Jun-22	23-Jun-22	10	-172
A6300	Mechanical Piping Install and Testing - AB-A	8	13-Jun-22	22-Jun-22	8	-169
A6310	Concrete Baffle Wall Cure Time - AB-A	4	14-Jun-22	17-Jun-22	4	-177
A6740	Strip & Finish AB-A Baffle Wall	3	20-Jun-22	22-Jun-22	3	-177
A6990	Electrical Wire Pull, Terminations (AB-A)	7	22-Jun-22	30-Jun-22	7	-177
A6330	Diffuser Install and Testing - AB-A	6	23-Jun-22	30-Jun-22	6	-177
A6970	AB-A Start, Commiss, Op Test	10	01-Jul-22	15-Jul-22	10	-177
A6350	Complete Aeratation Basin A Work	1	18-Jul-22	18-Jul-22*	1	-177
A6370	Finish Aeration Basins - Finish Milestone	0		18-Jul-22*	0	-177
AB-B Diffusers & Actuators		20	19-Jul-22	15-Aug-22	20	0
A71	Isolate / Drain Aeration Basin B (Plant Staff)	3	19-Jul-22	21-Jul-22	3	0
A71	Rinse / Clean Aeration Basin B (Plant Staff)	2	22-Jul-22	25-Jul-22	2	0



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Sandy WWTP System Upgrade
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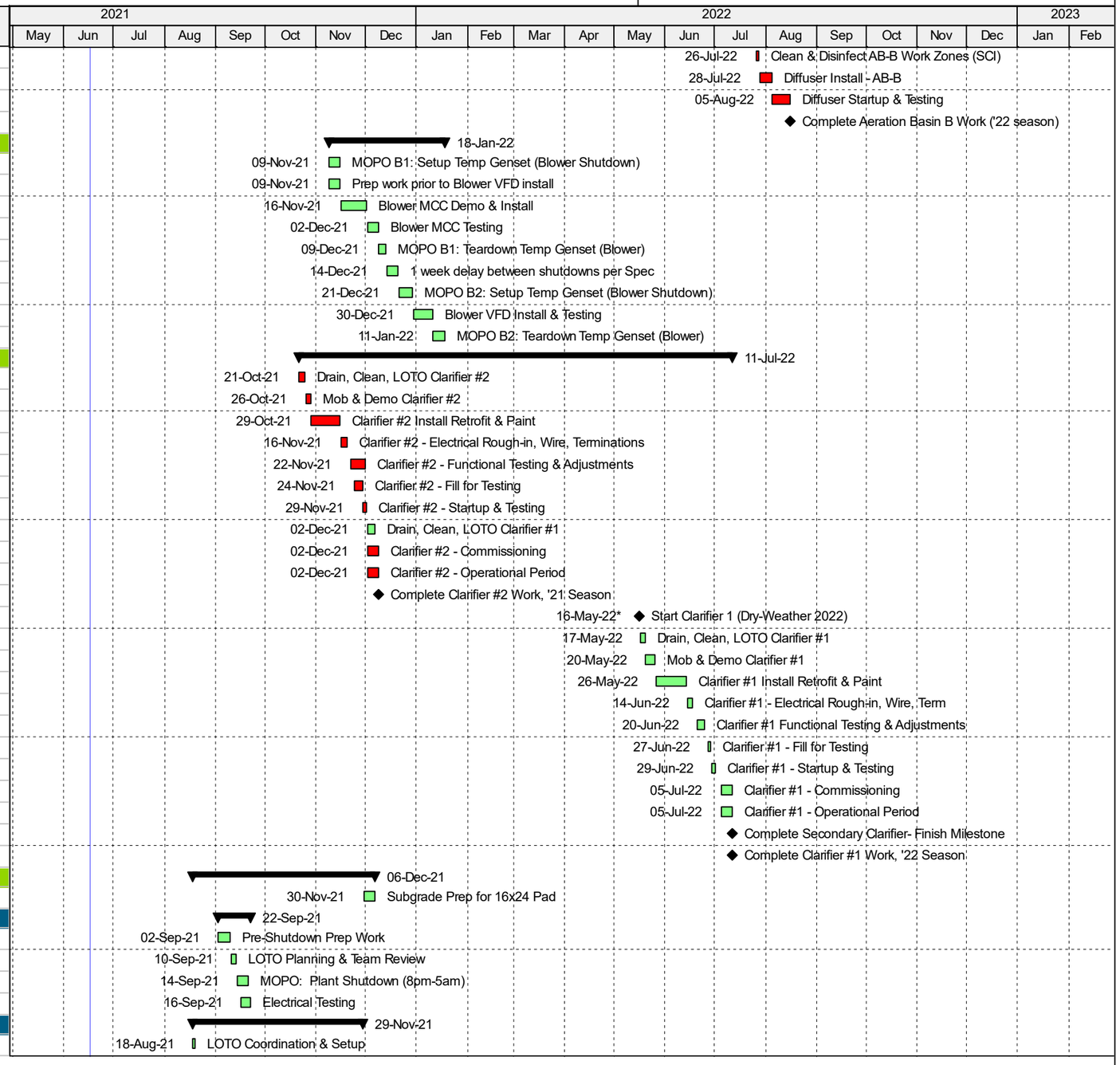
A71	Clean & Disinfect AB-B Work Zones (SCI)	2	26-Jul-22	27-Jul-22	2	0
A62	Diffuser Install - AB-B	6	28-Jul-22	04-Aug-22	6	0
A71	Diffuser Startup & Testing	7	05-Aug-22	15-Aug-22	7	0
A71	Complete Aeration Basin B Work ('22 season)	0		15-Aug-22	0	0
Area 205 - Blower Bldg MCC / VFD Upgrades		45	09-Nov-21	18-Jan-22	45	179
A6470	MOPO B1: Setup Temp Genset (Blower Shutdov	5	09-Nov-21	15-Nov-21	5	179
A6890	Prep work prior to Blower VFD install	5	09-Nov-21	15-Nov-21	5	179
A6490	Blower MCC Demo & Install	10	16-Nov-21	01-Dec-21	10	179
A6550	Blower MCC Testing	5	02-Dec-21	08-Dec-21	5	179
A6570	MOPO B1: Teardown Temp Genset (Blower)	3	09-Dec-21	13-Dec-21	3	179
A6910	1 week delay between shutdowns per Spec	5	14-Dec-21	20-Dec-21	5	179
A6900	MOPO B2: Setup Temp Genset (Blower Shutdov	5	21-Dec-21	29-Dec-21	5	179
A6520	Blower VFD Install & Testing	7	30-Dec-21	10-Jan-22	7	179
A6920	MOPO B2: Teardown Temp Genset (Blower)	5	11-Jan-22	18-Jan-22	5	179
Area 210 - Secondary Clarifier Rehab		179	21-Oct-21	11-Jul-22	179	58
A6650	Drain, Clean, LOTO Clarifier #2	3	21-Oct-21	25-Oct-21	3	-29
A6680	Mob & Demo Clarifier #2	3	26-Oct-21	28-Oct-21	3	-29
A6410	Clarifier #2 Install Retrofit & Paint	12	29-Oct-21	15-Nov-21	12	-29
A6730	Clarifier #2 - Electrical Rough-in, Wire, Terminatio	4	16-Nov-21	19-Nov-21	4	-29
A6420	Clarifier #2 - Functional Testing & Adjustments	5	22-Nov-21	30-Nov-21	5	-29
A6830	Clarifier #2 - Fill for Testing	2	24-Nov-21	29-Nov-21	2	-29
A6430	Clarifier #2 - Startup & Testing	3	29-Nov-21	01-Dec-21	3	-29
A6770	Drain, Clean, LOTO Clarifier #1	3	02-Dec-21	06-Dec-21	3	142
A6850	Clarifier #2 - Commissioning	5	02-Dec-21	08-Dec-21	5	-29
A6860	Clarifier #2 - Operational Period	5	02-Dec-21	08-Dec-21	5	-29
A7070	Complete Clarifier #2 Work, '21 Season	0		08-Dec-21	0	-29
A7060	Start Clarifier 1 (Dry-Weather 2022)	0	16-May-22*		0	29
A6950	Drain, Clean, LOTO Clarifier #1	3	17-May-22	19-May-22	3	29
A6780	Mob & Demo Clarifier #1	3	20-May-22	25-May-22	3	29
A6790	Clarifier #1 Install Retrofit & Paint	12	26-May-22	13-Jun-22	12	28
A6810	Clarifier #1 - Electrical Rough-in, Wire, Term	4	14-Jun-22	17-Jun-22	4	28
A6800	Clarifier #1 Functional Testing & Adjustments	5	20-Jun-22	24-Jun-22	5	28
A6840	Clarifier #1 - Fill for Testing	2	27-Jun-22	28-Jun-22	2	28
A6820	Clarifier #1 - Startup & Testing	3	29-Jun-22	01-Jul-22	3	28
A6870	Clarifier #1 - Commissioning	5	05-Jul-22	11-Jul-22	5	28
A6880	Clarifier #1 - Operational Period	5	05-Jul-22	11-Jul-22	5	28
A6440	Complete Secondary Clarifier- Finish Milestone	0		11-Jul-22	0	28
A7160	Complete Clarifier #1 Work, '22 Season	0		11-Jul-22	0	58
Area 220 - Secondary PS (RAS/WAS)		76	18-Aug-21	06-Dec-21	76	206
A3100	Subgrade Prep for 16x24 Pad	5	30-Nov-21	06-Dec-21	5	176
MSB Arc Flash Breakers, RAS/WAS Breaker & Feed		14	02-Sep-21	22-Sep-21	14	257
A3740	Pre-Shutdown Prep Work	5	02-Sep-21	09-Sep-21	5	257
A3840	LOTO Planning & Team Review	2	10-Sep-21	13-Sep-21	2	257
A3690	MOPO: Plant Shutdown (8pm-5am)	5	14-Sep-21	20-Sep-21	5	257
A3790	Electrical Testing	5	16-Sep-21	22-Sep-21	5	257
RAS/WAS Pump Station		71	18-Aug-21	29-Nov-21	71	211
A4090	LOTO Coordination & Setup	2	18-Aug-21	19-Aug-21	2	221



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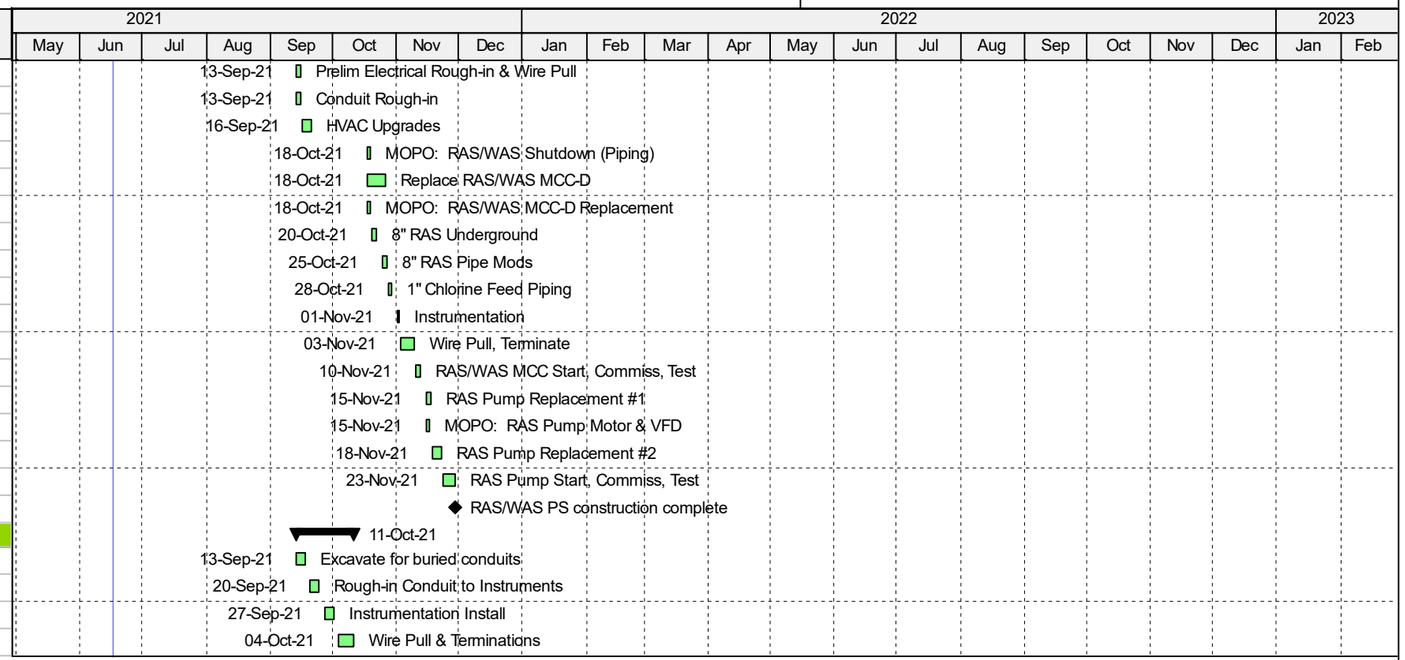
A3940	Prelim Electrical Rough-in & Wire Pull	3	13-Sep-21	15-Sep-21	3	203
A4400	Conduit Rough-in	3	13-Sep-21	15-Sep-21	3	215
A4340	HVAC Upgrades	3	16-Sep-21	20-Sep-21	3	229
A3890	MOPO: RAS/WAS Shutdown (Piping)	2	18-Oct-21	19-Oct-21	2	181
A3990	Replace RAS/WAS MCC-D	7	18-Oct-21	26-Oct-21	7	181
A4420	MOPO: RAS/WAS MCC-D Replacement	2	18-Oct-21	19-Oct-21	2	181
A3110	8" RAS Underground	3	20-Oct-21	22-Oct-21	3	181
A3120	8" RAS Pipe Mods	3	25-Oct-21	27-Oct-21	3	181
A4300	1" Chlorine Feed Piping	2	28-Oct-21	29-Oct-21	2	181
A4380	Instrumentation	2	01-Nov-21	02-Nov-21	2	181
A4410	Wire Pull, Terminate	5	03-Nov-21	09-Nov-21	5	181
A4040	RAS/WAS MCC Start, Commiss, Test	3	10-Nov-21	12-Nov-21	3	181
A4140	RAS Pump Replacement #1	3	15-Nov-21	17-Nov-21	3	181
A4310	MOPO: RAS Pump Motor & VFD	2	15-Nov-21	16-Nov-21	2	218
A4190	RAS Pump Replacement #2	3	18-Nov-21	22-Nov-21	3	181
A4290	RAS Pump Start, Commiss, Test	3	23-Nov-21	29-Nov-21	3	181
A4240	RAS/WAS PS construction complete	0		29-Nov-21	0	181
Area 600 - EQ Storage Basin		21	13-Sep-21	11-Oct-21	21	244
A4430	Excavate for buried conduits	5	13-Sep-21	17-Sep-21	5	244
A4350	Rough-in Conduit to Instruments	5	20-Sep-21	24-Sep-21	5	244
A4360	Instrumentation Install	5	27-Sep-21	01-Oct-21	5	244
A4370	Wire Pull & Terminations	6	04-Oct-21	11-Oct-21	6	244



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