Sweet Home WWTP Improvements Project 60% Update

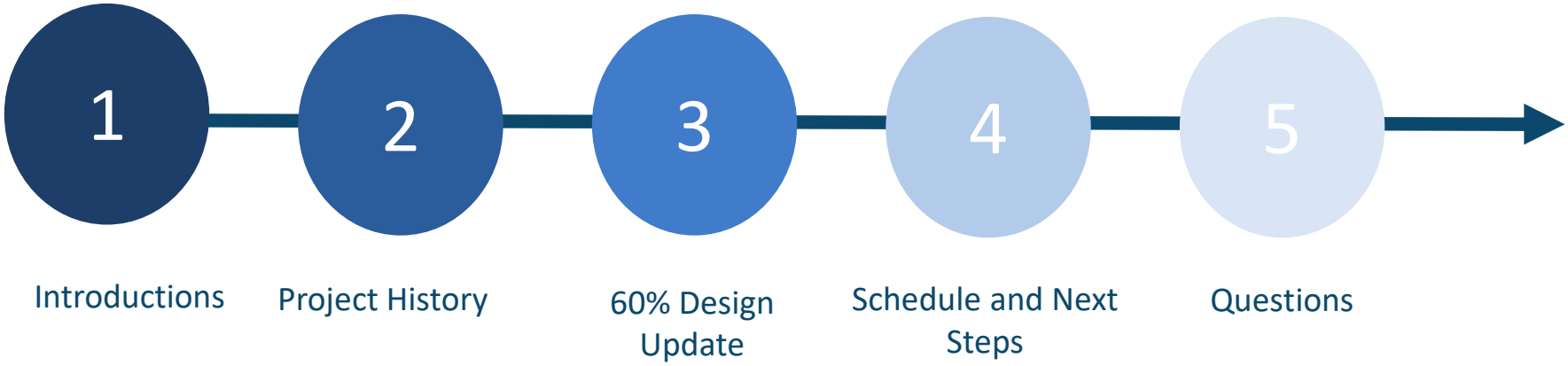
August 2020

Project Foundation

"…make decisions that do the most good, for the most people, for the longest period of time"

Source: 2017-18 City Council Goals

Agenda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Introductions

Team Introductions

Greg Springman
Public Works Director

Steven Haney
Utility Manager

Tom Perry, PE
Principal-in-Charge

Austin Rambin, PE
Project Manager

Miaomiao Zhang, PE
Design Manager

Trish Rice
Engineering Technician

CITY

Patrick Davis, EIT
Staff Engineer

Jessica Cawley, PE
Staff Engineer

Justin Moman, PE
Staff Engineer

MURRAYSMITH

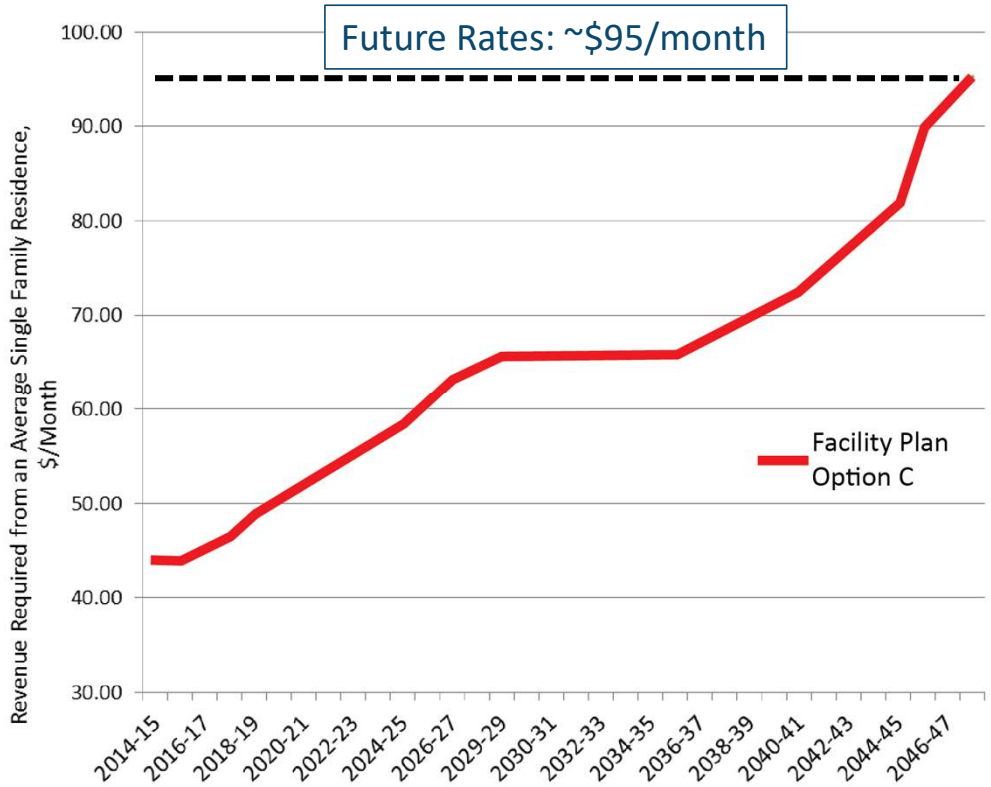
Project History

Original Facilities Plan Review

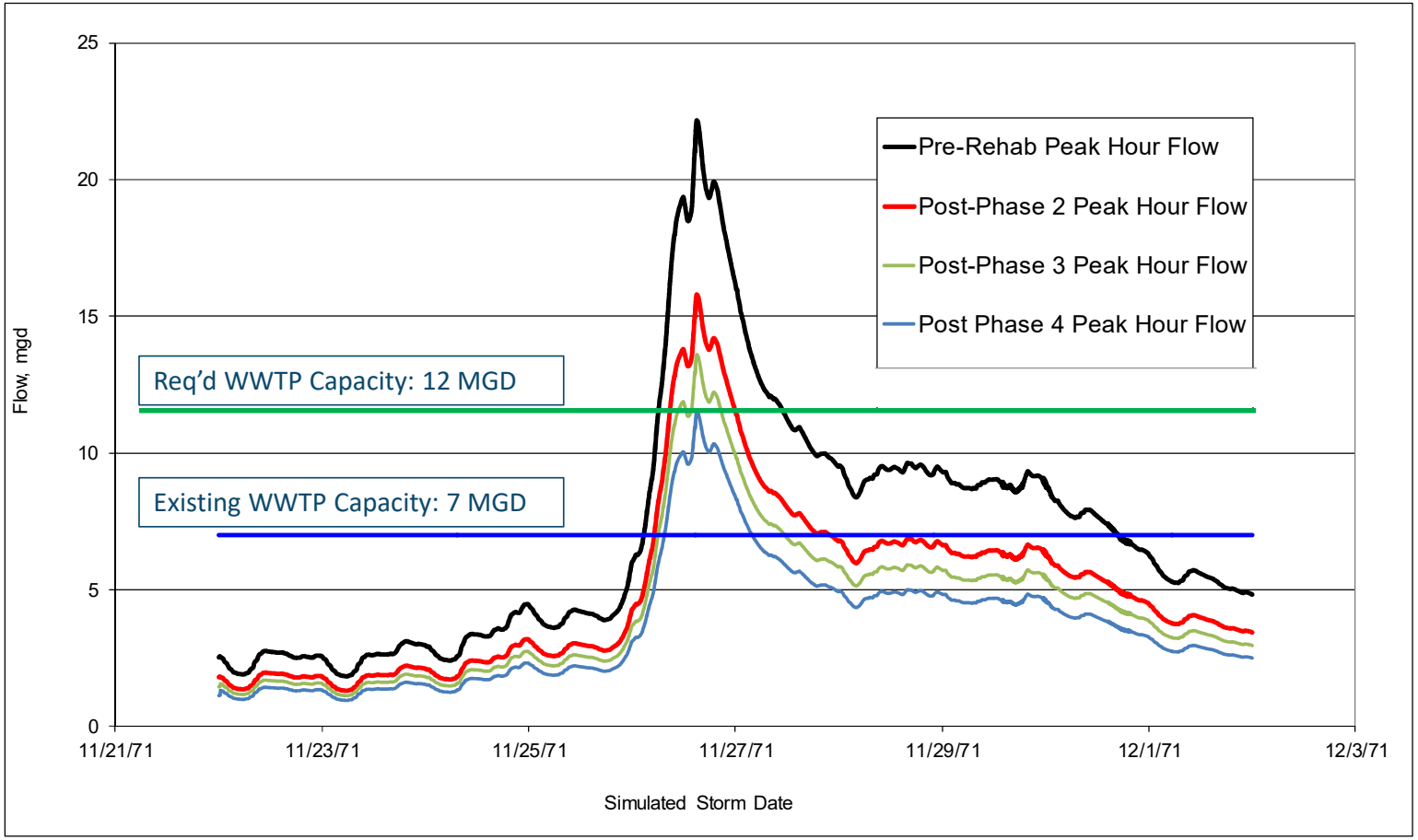
City of Sweet Home
Wastewater Facilities Plan

Original Recommended Plan:
- **$42 Million over 30 years**
- **Separate Peak Flow Process**
- **Limited Rehabilitation**

Brown AND Caldwell
100% Environmental | Employee Owned | Offices Nationwide | BrownandCaldwell.com



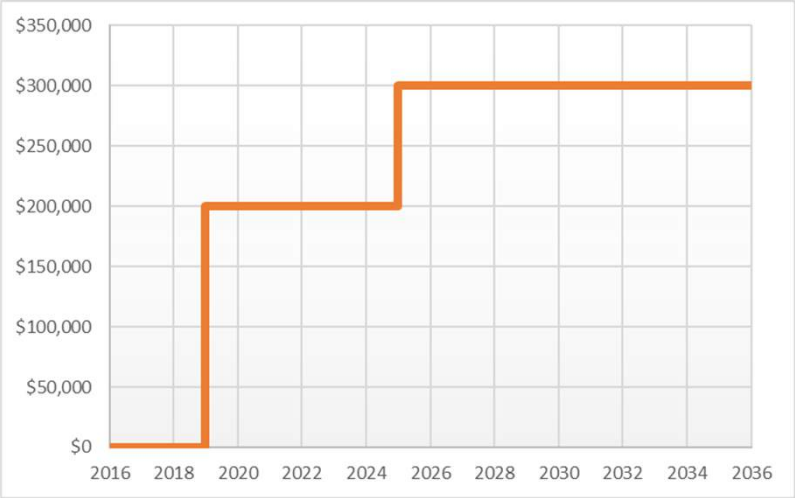
Continued Collection System Focus

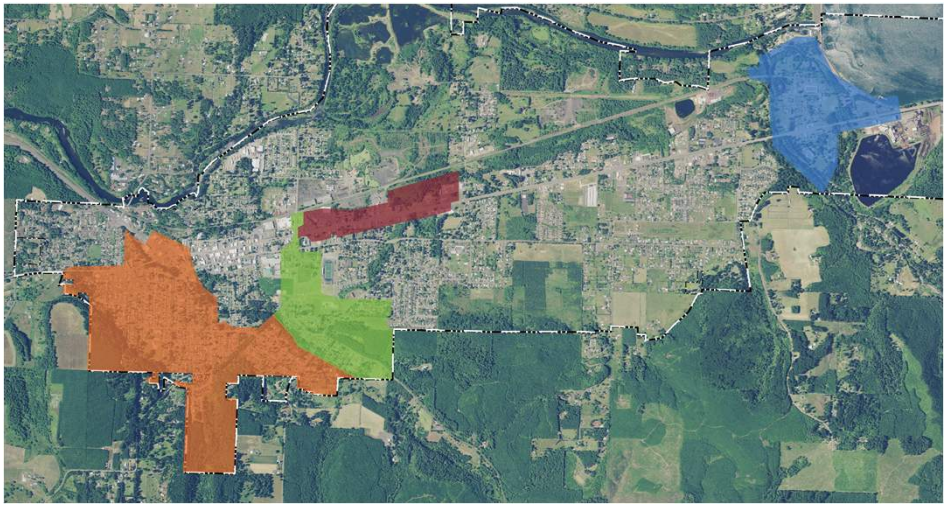


Peak hour flows do not account for future population growth or expansion of the City's service area

Continued Collection System Focus

- Allow for future growth
- Address aging collection system
- Maintain WWTP Flow < 12 MGD





$3 - 6M of targeted collection system rehabilitation:

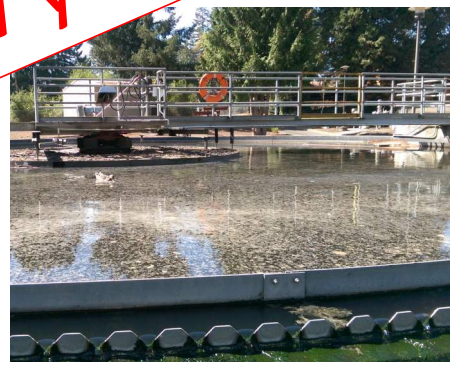
- Remove ~2 MGD of RDII over next 20 years
- To be completed in-house by City staff
- City working on manhole sealing now

Existing WWTP Review

Existing WWTP Challenges

- Secondary only, complete mix process
- No Headworks (rags everywhere)
- Early 1990's upgrade added tertiary sand filters
- Undersized CCB
- Inadequate Aerated Sludge Storage Basin
- Dewatering Facility with significant code violations
- Limited SCADA/automation

Multiple DEQ fines for permit violations in past few years



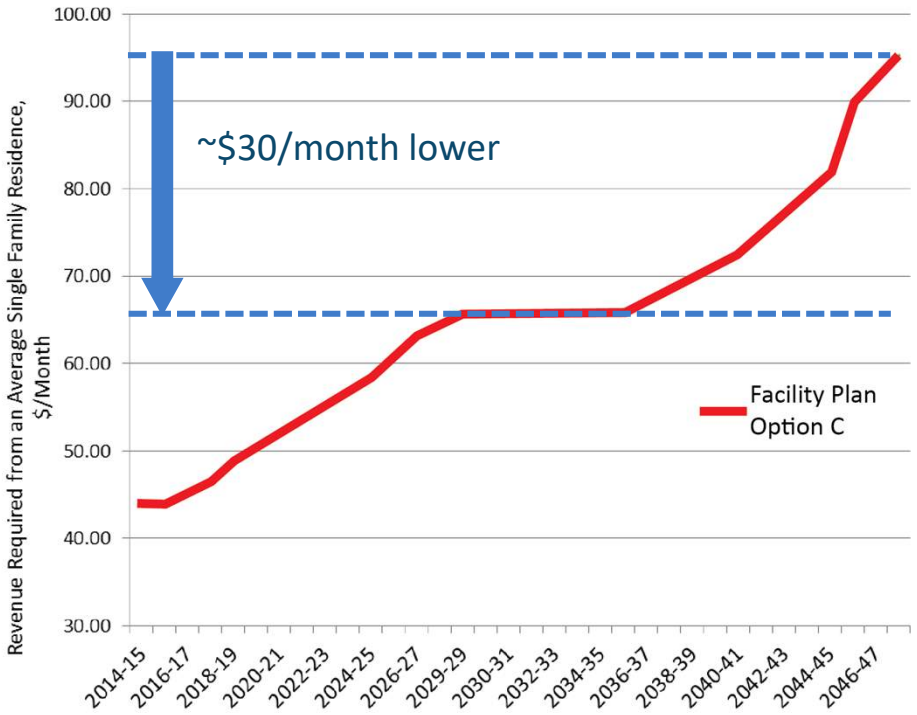
“3R” Asset Management Approach

- **R**ehabilitate existing structures
- **R**euse existing assets
- **R**e-purpose existing processes/areas




Rehabilitation @ Half the Cost of New Construction – if done timely!

Targeted Avg. Monthly Wastewater Rate



60% Design Update

Sweet Home WWTP

Project Status Update

- Key Milestones
  - 60% Review Period – now
  - 90% Design Development – this fall
  - 100% Design Development and Regulatory Review – early 2021
  - Bidding – Summer 2021
  - Construction – Summer 2021 to Fall 2023
- Funding
  - Required VE Study – RFP soon
  - USDA & DEQ – application process now
  - USDA PER/ER review to follow complete application submission
- Permitting
  - Anti-degradation Evaluation for Mass Load Increase
  - Working to get NPDES Permit Renewal expedited with DEQ

WWTP 60% Site Plan

60% Design – "3R" Elements

"3R" Elements:

- Influent Pump Station
- Aeration Basin Expansion
- Secondary Clarifiers
- Chlorine Contact Chamber
- Aerobic Digester
- South Electrical Room

Site Flyover

Forthcoming

Administration Building

Administration Building

Partial Front Elevation

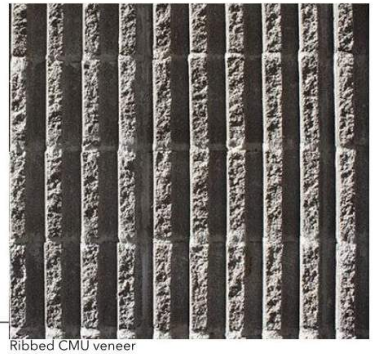
1/4" = 1'-0"

T&G or shiplap cedar siding - natural finish

Standing seam metal roofing

Metal windows

Metal wall panel - shiplap



Ribbed CMU veneer

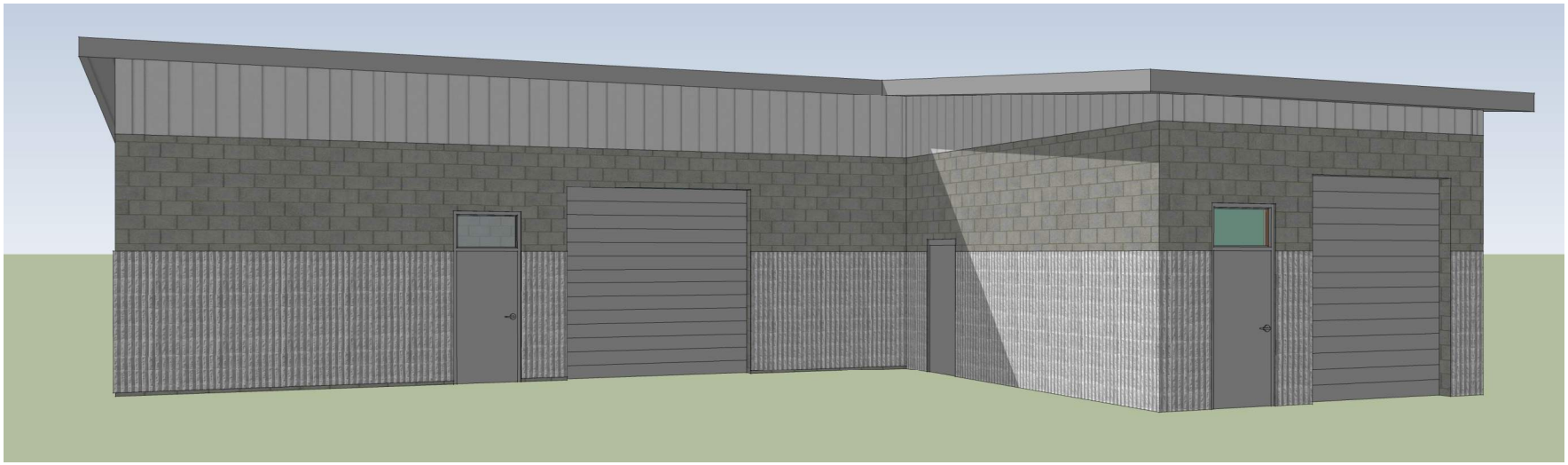
Maintenance Building

- Service bay for vehicle storage and maintenance
- Shop for in-house equipment maintenance
- Storage space for spare parts and records

Headworks, Dewatering & Cake Storage

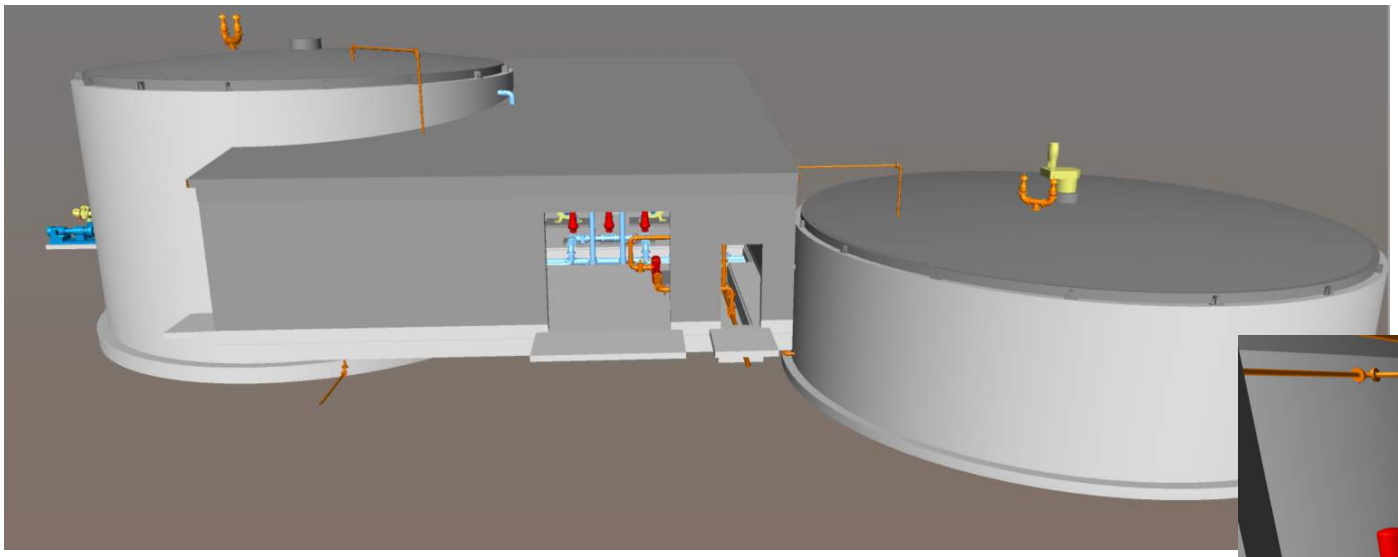
- Three processes combined
- Protects downstream mechanical equipment
- Reduces volume of biosolids
- Storage for biosolids prior to disposal

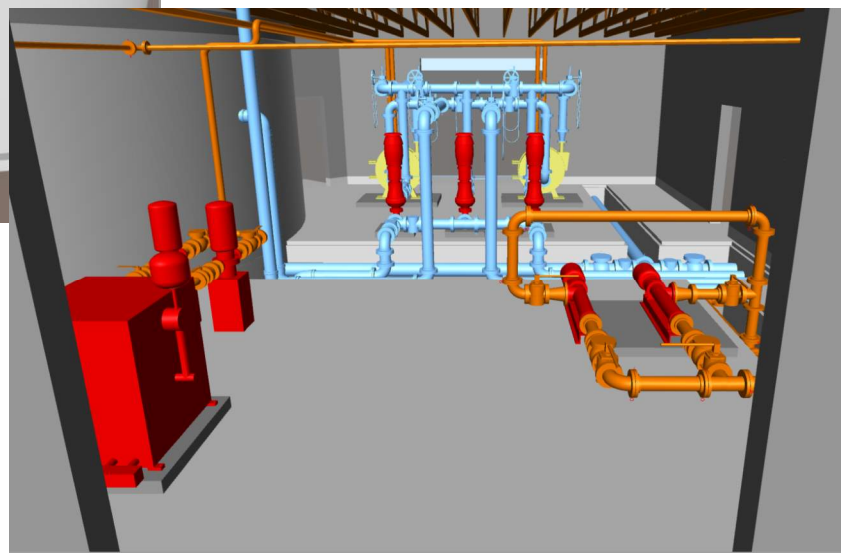
Process Building



- Primary Sludge Pump Station, Blower Room, & North Electrical Room
- Removes solids from liquid stream
- Houses equipment critical for biological treatment process
- Stores electrical equipment at ideal environmental conditions

Digester Complex





- Solids stream treatment
- Primary & Secondary Digesters
- Building in center for equipment

Cost Update

	20% Schematic Design[1]	60% Design Development[2]
Influent Pump Station	$2,100,000	$1,600,000
Headworks Screening and Grit Removal	$2,900,000	$3,200,000
Primary Clarifier	$1,700,000	$2,100,000
Aeration Basin Modifications	$3,500,000	$4,900,000
Secondary Clarifiers	$2,400,000	$2,200,000
Tertiary Filter	$1,850,000	$1,400,000
UV Disinfection	$1,300,000	$1,500,000
Solids Thickening	$900,000	$700,000
Solids Digestion	$3,100,000	$3,400,000
Dewatering and Biosolids Storage	$1,300,000	Included in Headworks
Civil Site Improvements	$1,500,000	$2,200,000
New Administration/Lab Building	$1,250,000	$1,800,000
New Maintenance Building	-	$1,000,000
Offsite Class A Biosolids Composting Facility	$1,600,000	$1,600,000
Electrical and Instrumentation	$2,800,000	$2,500,000
Total OPPC	**$28.2 M**	**$30.1 M**

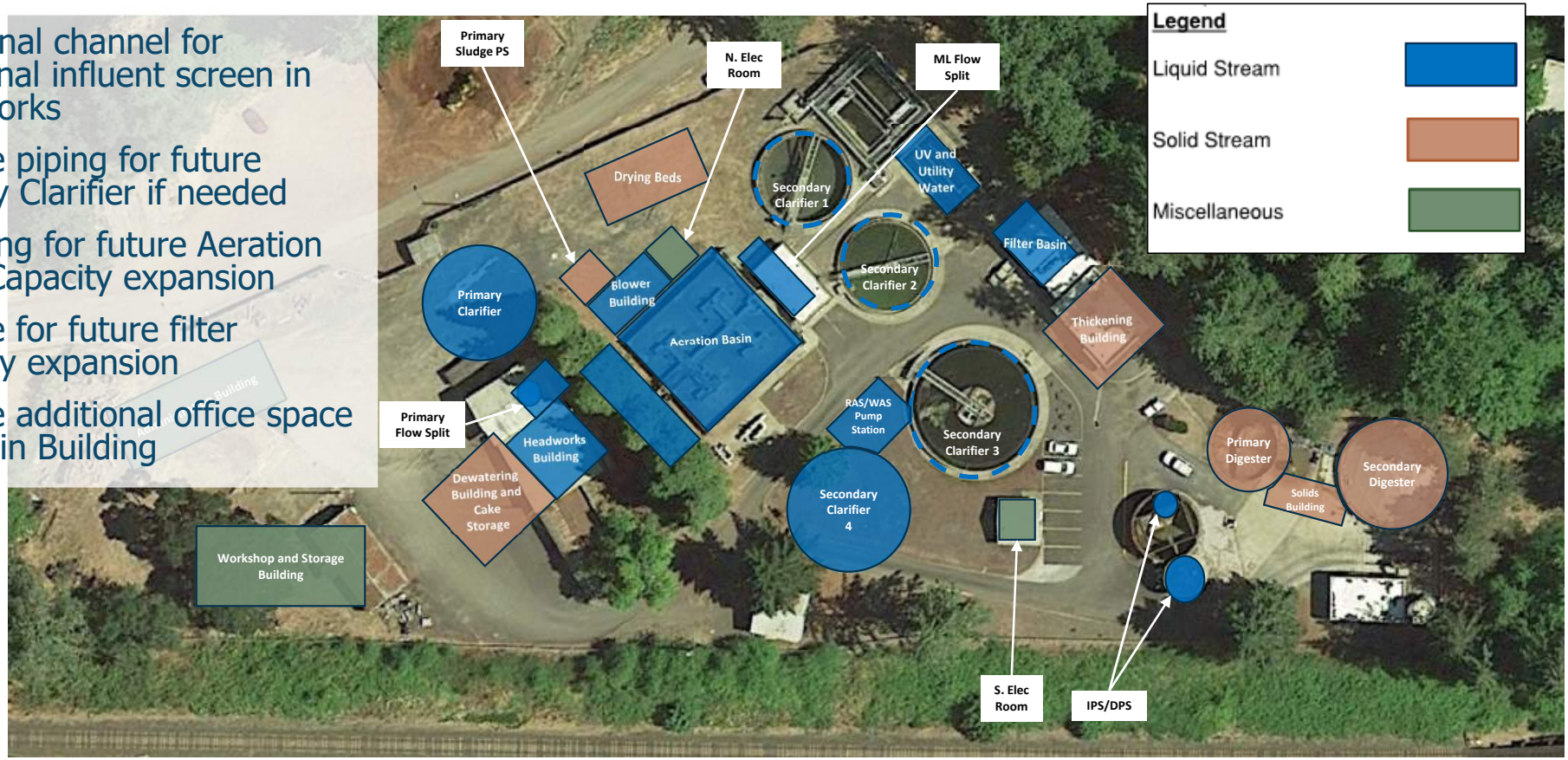
(1) Costs include markups for General Conditions (8%), Mobilization (8%), Contractor O&P (12%), Contingency (30%), and Engineering, Legal, and Contract Administration (25%)
(2) Costs include markups for General Conditions (8%), Mobilization (8%), Contractor O&P (12%), Contingency (20%), and negotiated Engineering, Legal, and Contract Administration fees

From Schematic Design to Now

- Primary Clarifier Cover – Keeping Odors at Bay = Good Neighbor
- Advanced Process Control Valves – More Efficient, Better Treatment
- Thickening Building – Changing Materials and a Focused Approach
- Drying Beds – Operator Flexibility and Breathing Room
- Administration Building – Futureproofing Through Expanded Scope
- Maintenance Building – Value Added with Improved Functionality
- Subsurface Conditions – A Clearer Picture Beneath Our Feet

Providing for future WWTP expansion beyond 20 year planning horizon

- Additional channel for additional influent screen in Headworks
- Provide piping for future Primary Clarifier if needed
- Providing for future Aeration Basin Capacity expansion
- Provide for future filter capacity expansion
- Provide additional office space in Admin Building



Long Term O&M Considerations

"…make decisions that do the most good, for the most people, for the longest period of time" *(2017-18 City Council Goals)*

- "3R" Approach brings aging facility back to life for 40-50 years
- Full plant automation reduces staffing requirements and cost
- Upgrades provide for cost-effective expansion in future to address unforeseen challenges (e.g. NPDES Permit, Industrial Growth, etc.)
- High quality compost eliminates $130k/year in landfill costs and provides a valuable end product for use by the City and residents

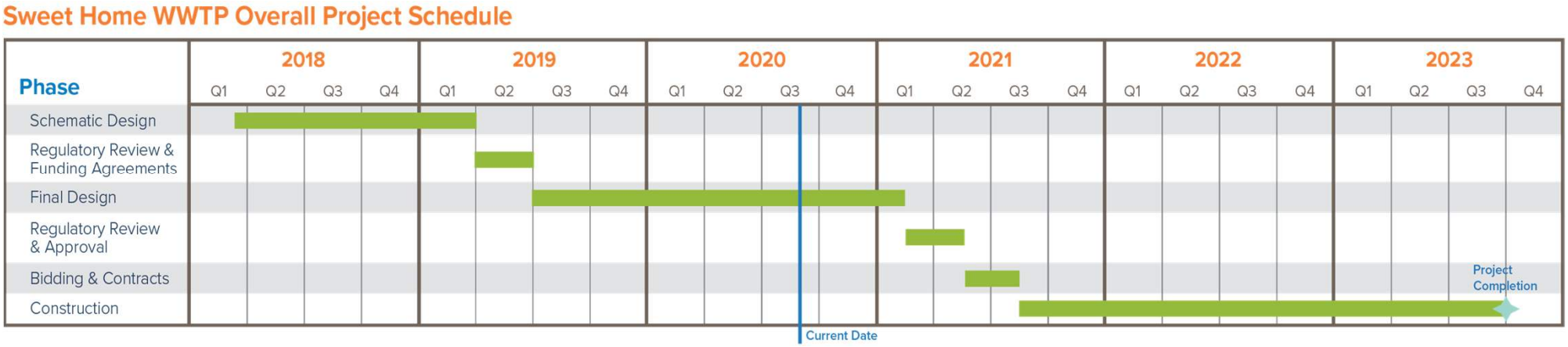
Project Funding Update

- **City Funds.** With WW rate increase, the City is building considerable reserves to support the project.
  - Currently projecting ~$7M in local funds contribution
- **Earmark Funding.** City is currently utilizing a $2M earmark from the Oregon State Legislature. Another $7M earmark was approved with Senate Bill 5723 a few weeks ago.
- **USDA Grant Discussions.** Discussions with USDA indicate a grant of up to 25% of the unfunded balance may be available.
- **ETO Incentives.** Currently working with the Energy Trust of Oregon to identify energy efficiency incentives for the project. $330k incentives for Primary Treatment and Aeration Basin blowers in final stages of approval.
- **Loans.** Discussing interim loan funding using DEQ's State Revolving Fund.

Schedule and Next Steps

Sweet Home WWTP

Overall Project Schedule



Next Steps

- VE Study
- Proceed with 90% Design Development
- Continue coordination with Oregon DEQ on NPDES Permit
  - Anti-degradation Evaluation for Mass Load Increase
  - NPDES Permit Renewal
- Continue work on project funding (USDA, DEQ, Business Oregon)

Questions?