Alternatives Analysis Technical Memorandum

Paradise Sewer Project

January 15, 2026

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Table of Contents

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1. Introduction

The Town of Paradise (Town) is implementing the Paradise Sewer Project (Project) to construct a wastewater infrastructure system. In January 2025, the Project transitioned from a regionalization project where wastewater was to be sent to the Chico Wastewater Treatment Plant to a local wastewater treatment facility (WWTF). The Town also established an Ad Hoc Committee to increase project momentum while keeping the public apprised of project progress to find a fundable, permittable, scalable wastewater collection and treatment solution.

HDR, as the Town's Owner's Advisor, analyzed various options for the collection, treatment, and discharge components of a sewer system. Public engagement was a significant input in the analysis, which consisted of: (1) engaging the Regional Water Quality Control Board, (2) soliciting vendor proposals, (3) soliciting community input, and (4) in-person and virtual tours of wastewater municipalities with collection and treatment alternatives under consideration. The alternatives were presented to the Town's Ad Hoc Committee in June 2025. HDR narrowed the collection, treatment, and discharge components to three whole project alternatives, and the Ad Hoc Committee selected one alternative to further analyze.

The purpose of this Technical Memorandum is to summarize the findings of the alternatives analysis effort. Each whole project alternative (collection, treatment, and discharge) must meet the following criteria: affordable, scalable, and permittable. These criteria are expanded upon in Appendix A. This Technical Memorandum is intended to inform policy direction and preliminary project definition. It does not constitute environmental analysis, findings, or conclusions under the California Environmental Quality Act (CEQA), which will be addressed through the Town's Subsequent Programmatic Environmental Impact Report.

2. Collection System Alternatives

Three collection system alternatives were considered for the revised project scope. These alternatives were:

1. Gravity sewer
2. Septic Tank Effluent Pumping (STEP) System
3. Hybrid Gravity/STEP

Each collection system alternative was evaluated for feasibility and conceptually ranked based on the following criteria: capital cost, operation and maintenance (O&M) cost, social and environmental impacts, implementation requirements, operational complexity, and scalability.

A hydraulic model of the Town was used to evaluate the three alternatives feasibility and determined that the STEP alternative was infeasible due to the topography of the Town. A change in elevation of over 810 feet results in a 350 psi static pressure at the bottom of the sewer service area that exceeds the STEP manufacturer's limit of 108 psi. The STEP alternative was also anticipated to have the highest O&M cost based on WWTP operator feedback from the Town's tour with municipalities that currently use STEP systems.

A gravity sewer overall has the lowest O&M cost, operational complexity, and scalability, but has the highest capital cost and highest social and environmental impacts due to an anticipated longer construction duration for deeper pipelines.

The hybrid gravity/STEP alternative consists of shallow gravity trunk pipelines and gravity service or STEP service connections depending on the specific service elevation relative to the gravity trunk pipeline. This hybrid gravity/STEP alternative can leverage the benefits of both the gravity and STEP alternatives at an estimated lower capital and O&M cost than the gravity alternative. The Ad Hoc Committee selected the hybrid gravity/STEP alternative further evaluation. For planning-level evaluation purposes, this analysis assumes that the Town will establish a formal policy framework defining ownership, operation, maintenance, and replacement responsibilities for STEP system components, consistent with practices observed in comparable agencies. Final determinations regarding private-side versus public-side responsibilities will be established through future ordinances, standards, and customer agreements.

3. Treatment Alternatives

After the in-person and virtual tours of wastewater municipalities, and meeting with community members, vendor representatives, and WWTP operators, the treatment options were narrowed down to four for further evaluation. These alternatives were:

1. Aerated lagoon
2. Fixed growth (i.e., biotrickling filter)
3. Activated sludge (i.e., AeroMod or oxidation ditch)
4. Pre-packaged, pre-designed membrane reactor (MBR)

Each option was conceptually ranked for the following criteria: capital cost, O&M cost, scalability, footprint, readiness for reuse or surface water discharge, operational complexity, and energy use. This evaluation is shown on slide 49 of Appendix A.

The aerated lagoon option was expected to have the lowest capital cost, lowest annual O&M costs, simplest operational complexity, and the lowest energy use. However, it was also expected to have the largest footprint and require the most upgrades to meet reuse or surface water discharge requirements. The MBR option was expected to have the highest capital cost, highest annual O&M costs, most complex operation, and the highest energy use. However, it was also expected to have the smallest footprint, greatest ability scale-up, and would require the least upgrades to meet water reuse or surface water discharge requirements.

Based on these rankings and feedback received from community members and WWTP operators, the Ad Hoc Committee selected the aerated lagoon and the MBR alternatives for further evaluation. Selection of the aerated lagoon treatment option reflects a deliberate Phase 1 strategy to optimize affordability, operational simplicity, and permitting feasibility. This selection does not preclude future system upgrades, conversion, or supplemental treatment processes to support expanded reuse or surface water discharge as flows increase and additional funding becomes available.

4. Discharge Alternatives

Three discharge options were considered:

1. Surface water discharge
2. Land discharge
3. Water reuse

Reuse is very important to the Town. However, it would add more capital and O&M annual costs to the Project, reducing the scale for the rest of the Project. Therefore, it was decided reuse was not a reasonable solution at this time, but to consider it again in future phases if funding becomes available.

Land discharge has the simplest operation and less stringent limits. Two land discharge options were evaluated: spray irrigation and evaporation/percolation pond. Spray irrigation would require more land to support agricultural operations than a discharge pond. Treatment and discharge ponds will be designed in coordination with the Butte County Mosquito and Vector Control District and will incorporate design and maintenance features intended to discourage mosquito breeding. Ongoing coordination during design will inform final pond geometry, circulation, access, and maintenance protocols.

Surface water requires less land than the land discharge options. However, surface water discharge has more stringent water quality limits and treatment requirements than land discharge. When those limits are not met, the Town would be charged significant fines. Surface water discharge also requires more lab testing and monitoring, leading to a higher annual O&M cost. The Regional Water Quality Control Board recommended the Project start with land discharge and evaluate changing to surface water discharge in future phases as wastewater flows increase.

Surface water discharge and an evaporation/percolation discharge pond were chosen by the Ad Hoc Committee for further evaluation.

5. Recommendation

The Ad Hoc Committee selected three whole project alternatives to further analyze. The whole project alternatives are:

1. Hybrid Gravity/STEP collection system, aerated lagoon treatment, and an evaporation/percolation land discharge pond
2. Hybrid Gravity/STEP collection system, MBR treatment, and an evaporation/percolation land discharge pond
3. Hybrid Gravity/STEP collection system, MBR treatment, and surface water discharge

HDR developed planning level capital cost estimates, in Appendices B and C, for the whole project alternatives. Alternative 1 (hybrid Gravity/STEP collection system, aerated lagoon treatment, and an evaporation/percolation land discharge pond) was the lowest-cost alternative. The Ad Hoc Committee recommended proceeding with this alternative.

A Special Town Council Meeting was held on July 24, 2025, to present the three whole project alternatives to Town Council. Appendix A includes the presentation slides for this meeting. The Ad Hoc Committee recommended Town Council approve a revised project description for Alternative 1: Hybrid Gravity/STEP collection system, aerated lagoon treatment, and an evaporation/percolation land discharge pond. The anticipated capital cost for Alternative 1 is within the Town's grant funding budget, can be expanded and scaled-up in the future, and is supported by the Regional Water Quality Control Board.

A Special Town Council Meeting was held on August 14, 2025, for the Town Council to vote on the revised project description. Appendix D includes the presentation slides for this meeting. The Town Council unanimously voted to proceed with Alternative 1 (Hybrid Gravity/STEP collection system, aerated lagoon treatment, and an evaporation/percolation land discharge pond). While Alternative 1 represents the lowest-cost and most operationally feasible alternative evaluated, full project delivery remains contingent upon future funding actions, including potential amendments to the Town's CDBG-DR Infrastructure Action Plan and approval of additional state and federal funding allocations.

Appendix A – Special Town Council Meeting Presentation Slides (July 24, 2025)

TOWN OF PARADISE
SEWER PROJECT

Special Town Council Meeting

July 24, 2025

Meeting Overview

Part 1: Introductions and Background

Part 2: Project Alternative Analysis Process

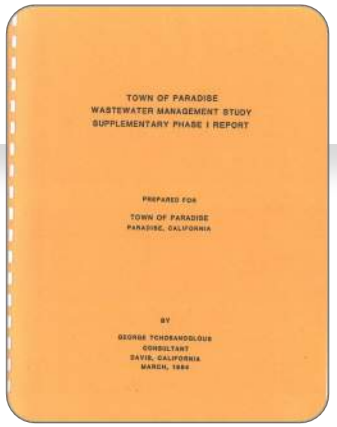
Part 3: Summary of Alternatives

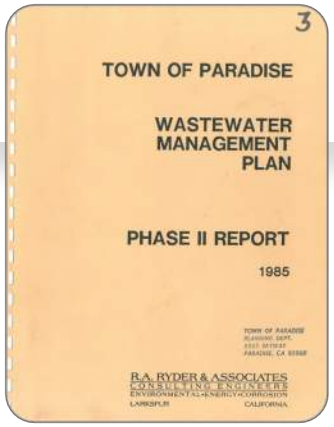
Part 4: Ad Hoc Recommendation & Next Steps

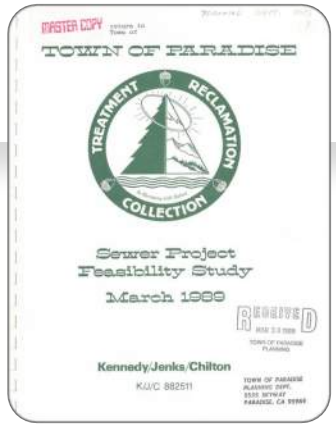
Part 5: Public Comments

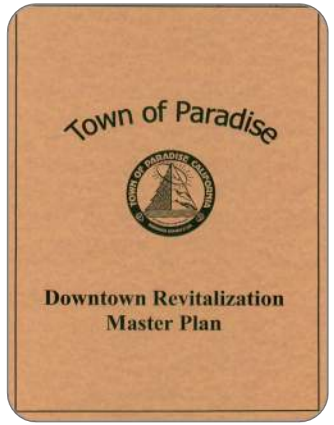
History

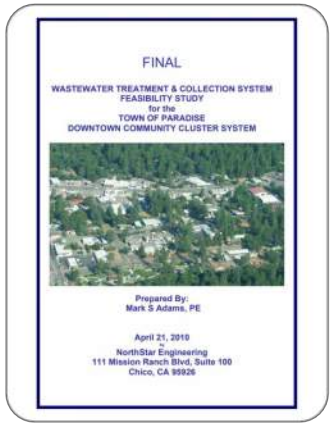
- 1969 Butte County General Plan Water and Sewer Element
- 1972 Basin Sewer Service Area Plan
- 1975 Montgomery Engineering Report
- 1983 Phase I Wastewater Management Study
- 1984 Phase I Supplemental Study
- 1985 Phase II Wastewater Management Study
- 1989 Feasibility study
- 1990 Wastewater District Formed for Commercial only
- 1993 Council action abandoned sewer project
- 1994 Downtown Master Plan
- 2011 Wastewater Treatment & Collection Feasibility Study
- 2017 Paradise Sewer Project Feasibility Study
- 2020 Paradise Sewer Project HDR Engineering Phase I
- 2022 Paradise Sewer Project Environmental Impact Report
- 2024 Collection System and Export Pipeline Basis of Design Report

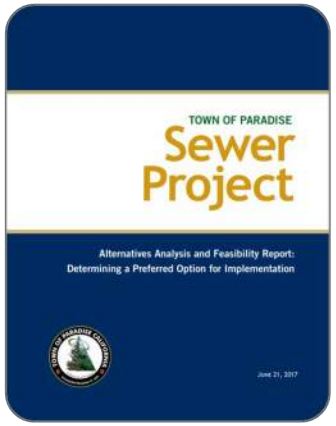












Background

2022 Programmatic Environmental Impact Report

2023 Paradise-Chico Inter-Municipal Agreement

2024 Progressive Design Build Team Hired

2025 Basis of Design Report
Cost Increases
Funding Decreases

January 2025
Special Meeting
Change to Local Treatment Project

Ad Hoc Committee Established

Public Outreach &
Local Alternatives Analysis

July 24, 2025
Present Findings
(TONIGHT)

Review Public Input

August 14, 2025
Consider Formal Action

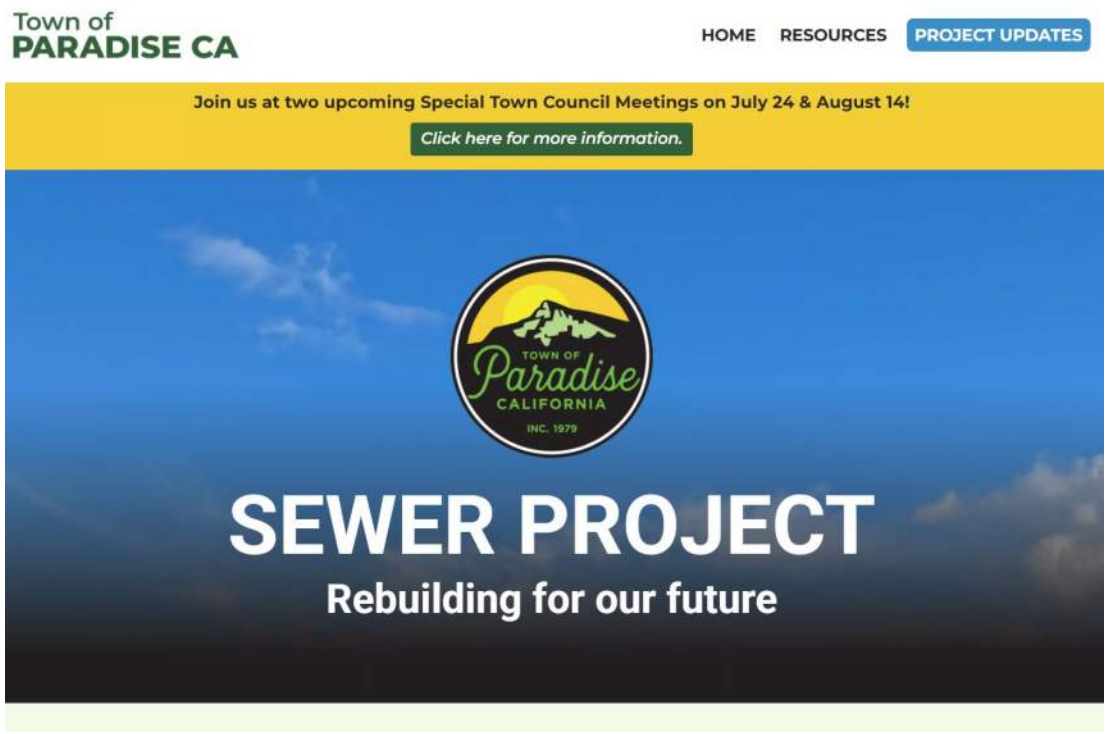
Sewer Project Ad Hoc Committee

- **Committee Purpose:** Increase project momentum while keeping the public apprised of project progress to find a fundable, permittable, scalable wastewater collection and treatment solution.

- **Members:**
  - Mayor Steve Crowder
  - Councilmember Heidi Lange
  - Town Manager Jim Goodwin
  - Town Staff: Marc Mattox, Colin Nelson, Chris Nicoletti
  - Paradise Irrigation District: Kevin Phillips, Bob Mathews, Marc Sulik
  - Technical Advisory – HDR Representatives
  - Regulatory Advisory – Regional Water Quality Control Board

Revised Project Within Budget

- Achieve goals of Ad Hoc Committee (fundable, permittable, scalable wastewater collection and treatment solution)
- Emphasis on delivering an affordable Phase 1 Project with reduced Collection System Area and sited treatment facility and dispersal method.
- Utilize funding secured and probable as quickly as possible to deliver a project – now!



Funding Overview

Secured Funding

(1)	CDBG-DR APA-2 Design	$30,000,000 (active for pre-construction)
(2)	CDBG-DR Town Allocation	$35,000,000 (secured for construction)
(3)	EPA Community Grant	$1,750,000 (pending)

Clean Water SRF Funding Opportunities

(4)	Clean Water SRF (Grant)	$28,097,669
(5)	Clean Water SRF (Grant)	$TBD Future

Additional Funding Pursuits (Future Project Phases)

(6)	USACE 219 - Initial Request	$2,000,000
(7)	USACE 219 - Remaining Butte County Allocation	$48,000,000

Secured & Probable Funding available for the whole project "Cost to Complete" Budget $84,847,669 (Sum of 1-4 minus $10M expended to date)

TOWN OF PARADISE
SEWER PROJECT

Alternative Analysis Process

Project Alternatives Analysis Activities

January
- Council decision to pursue local treatment options & reform the Sewer Project Ad Hoc Committee – 1/21
- Ad Hoc Committee first meeting – 1/30

February
- Public vendor solicitation published – 2/18
- Water Board engagement

March
- Community Input Meeting – 3/6
- Community Poll – 3/6-3/27
- PID participation in Ad Hoc Committee begins

April
- Met with community members & equipment vendors about the project

May
- Staff & Council trip to Washington DC
- Submitted Army Corps LOI

June
- Wastewater facility tours – 6/3-6/4
- Virtual meetings with additional agencies
- Project Alternatives Workshops – 6/23-6/24

July
- Ad Hoc Committee Recommendation
- ***Special Town Council Meeting – 7/24***

August
- Community feedback on recommendation
- ***Special Town Council Meeting – 8/14***
- Town Council Approval of a recommended alternative

Community, Industry, and Public Agency Input Meetings

Community Members

- Jeff Gillingham
- Cliff Jacobsen
- Bill Kellog
- Kelly Konzelman
- Dana Ripley

Equipment Vendors

- AeroMod
- BioFiltro
- Cloacina
- Fluidyne
- Green Toilet
- Innovatreat

Public Agency In-Person Facility Tours

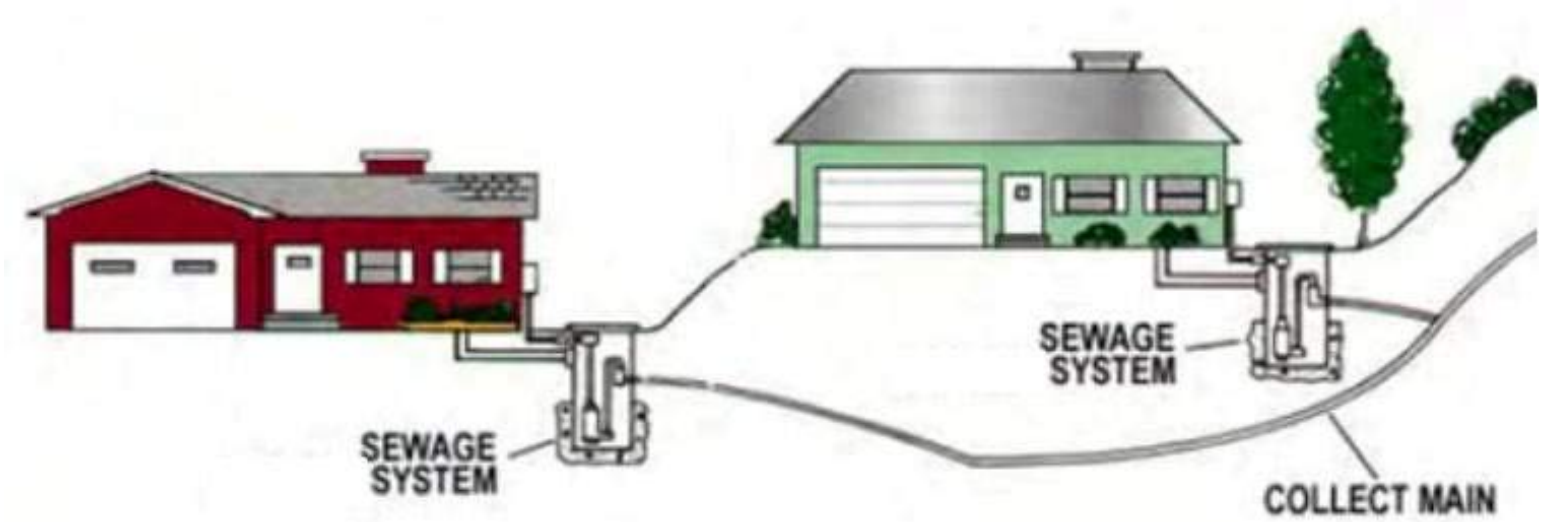
- City of Biggs WWTP
- City of Mt. Shasta WWTP
- Nevada County Lake of the Pines WWTP
- Placer County – North Auburn Sewer Maintenance District 1
- Rio Alto Water District WWTP

Virtual Facility Tours

- Amador County
- Butte College
- City of Eureka
- City of St. Helena
- Community of Robbins

Community Input – Jeff Gillingham

- **Low Pressure Force Mains**
  - Mains at ~40-50 psi
  - Pumps at each service connection
  - Does not require a leach field



(Photo courtesy of https://www.co.jefferson.wa.us/DocumentCenter/View/8260/Pressure-Sewers-Intro?bidId=)

Community Input – Cliff Jacobson

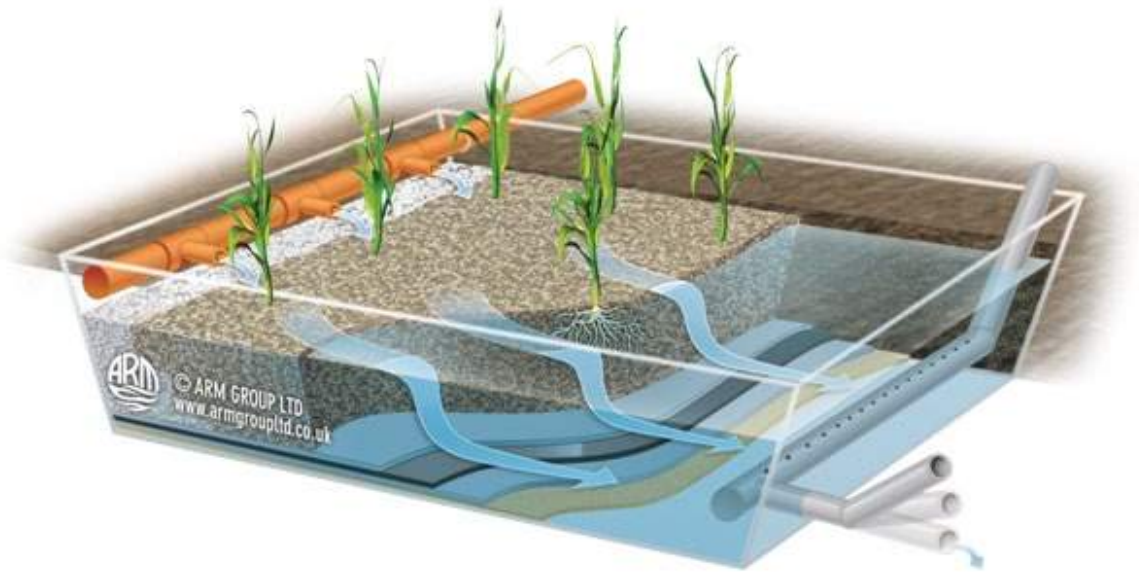
- **STEP Collection System**
  - Pump wastewater from Septic Tank into collection system
  - Solids stay in tank
  - Pressurized collection system
- **Biotrickling Filter Treatment System**
- **Reuse Discharge**
  - Irrigation or Fire Cannon
  - Recycled water back to homes

STEP collection
(Photo courtesy of Orenco Systems)

Fire cannon
(Photo courtesy of https://www.purityfire.com/other-fire-equipment/manual-fire-monitor.html)

Community Input – Bill Kellog

- **Constructed Wetlands**
  - Allows infiltration and evaporation naturally
  - Removes pollutants through biological, chemical, and physical means
  - Would take place of leach lines
  - Needs large area



Constructed Wetland Diagram

(Courtesy of https://www.globalwettech.com/about-constructed-wetlands.html)

Community Input – Kelly Konzelman

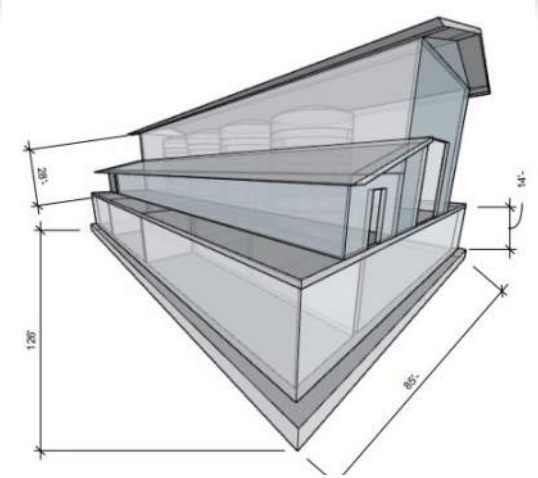
- **Jet Packaged Plants**
  - 35,000 – 50,000 gpd each
  - 14 installations around Paradise for full buildout
  - Smaller leach fields
  - Smaller footprints
  - Can be installed underground

Jet Packaged Plant Diagram

(Photos courtesy of Jet Wastewater Treatment Solutions)

Community Input – Dana Ripley

- **Orenco STEP systems**
  - Pump wastewater from Septic Tank into collection system
  - Solids stay in tank
  - Pressurized collection system
- **Attached-Growth Multi-Stage Trickling Filters**
  - Four tower system
  - Wastewater sprayed over attached-growth media
- **Purple Pipe Reuse**



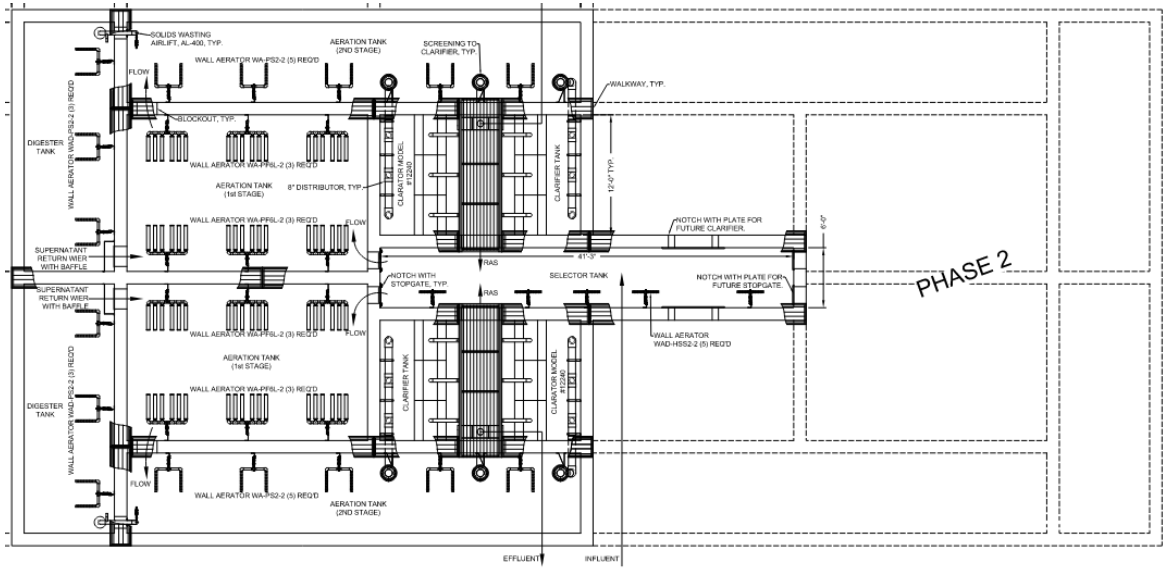
0.5 MGD Facility
(Photo courtesy of Dana Ripley)

STEP collection
(Photo courtesy of Orenco Systems)

Vendor Input – AeroMod

- **Pre-designed activated sludge plant**
  - Includes aeration, settling, recirculation, and digestion
  - Common wall construction
  - Easily expandable
  - Simple O&M

AEROMOD
Wastewater Process Solutions



Paradise Phase 1 Proposal

Quincy, CA (1.1 MGD)

(Photos courtesy of Aero-Mod)

Vendor Input – BioFiltro

- **Biodynamic Aerobic BIDA Vermifiltration System**
  - Layer of soil and worms remove nutrients
  - Layer of gravel for filtration

BIOFILTRO™
WORM-POWERED SOLUTIONS

20,000 gpd installation

BIDA Layered Diagram

(Photos courtesy of BioFiltro)

Vendor Input - Cloacina

- **Packaged Membrane Bioreactor (MBR)**
  - Wastewater is filtered through membrane
  - Pre-designed
  - Built offsite, delivered on truck
  - More reactors can be added on to increase capacity

Cloacina MEMPAC-M installation

(Photos courtesy of Cloacina)

Vendor Input – Fluidyne

- **Sequencing Batch Reactor (SBR)**
  - Aeration and settling happens in the same tank
  - Can be pre-packaged or custom designed
  - 50,000 gpd for one packaged reactor

FLUIDYNE CORPORATION

Underground installation

Two packaged SBRs

(Photos courtesy of Fluidyne)

Vendor Input – Green Toilet

- **Composting Toilets**
  - No water or electricity needed
  - Created in Finland
  - Permitting is challenging in USA, dependent on region

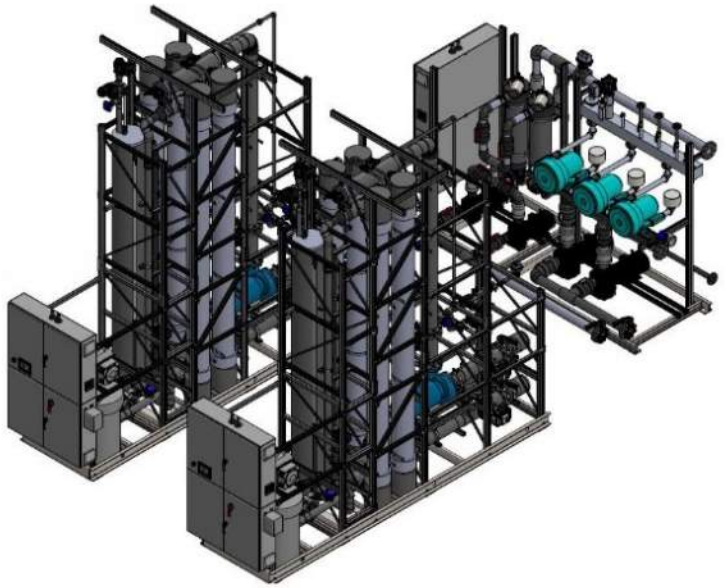
Composting toilet installation

Composting toilet

(Photos courtesy of Green Toilet)

Vendor Input - Innovatreat

- **Membrane Bioreactor (MBR) Skid**
  - Wastewater is filtered through membrane
  - Pre-designed
  - Major equipment assembled offsite
  - More skids can be added to increase capacity



Typical miniMBR 3D rendering

(Photos courtesy of Innovatreat)

Site Tour – Rio Alto

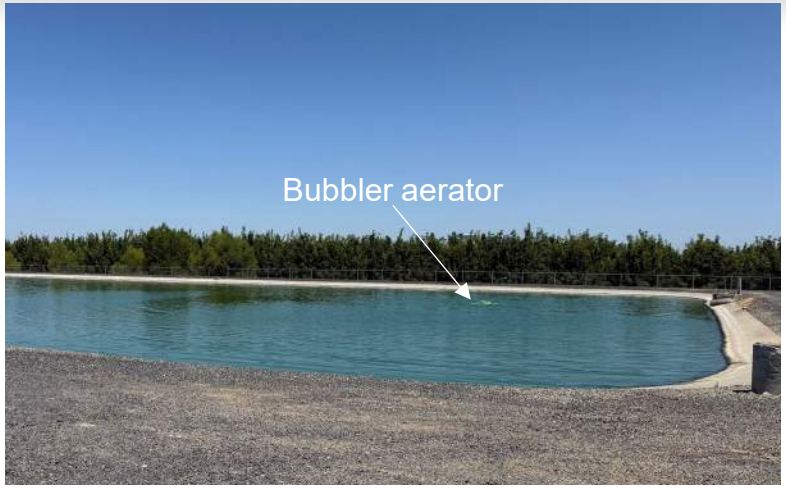
- **Facility Size:** 0.1 MGD ADWF
- **Collection System:** Gravity
- **Treatment:** Bar screens, oxidation ditch, secondary clarifier, chlorine disinfection, sludge drying beds
- **Discharge:** Evaporation/percolation ponds & wetland with public access walking trails
- **Key Takeaways:**
  - Switched from river discharge due to changing NPDES river discharge requirements
  - Title 22 regulations apply due to public access, but the requirements are easier to meet than for river discharge

Oxidation Ditch

Discharge Wetland

Site Tour – City of Biggs WWTP

- **Facility Size:** 0.38 MGD ADWF
- **Collection System:** Gravity
- **Treatment:** Aerated ponds and rock filter
- **Discharge:** Percolation/evaporation ponds with on-site alfalfa irrigation
- **Key Takeaways:**
  - Facility switched from surface discharge to land discharge due to changing NPDES permit conditions
  - Simple operation with only one operator
  - Disinfection not required for land discharge without public access



Aeration Pond

Treated Discharge Pond

Site Tour – Mt Shasta WWTP

- **Facility Size:** 0.8 MGD ADWF
- **Collection System:** Gravity
- **Treatment:** AeroMod activated sludge with nutrient removal, disc filters, and UV disinfection
- **Discharge:** Surface discharge to Sacramento river (winter only); recycled water to neighboring golf course; and land discharge to subsurface leach field
- **Key Takeaways:**
  - Recently upgraded from ponds to AeroMod due to changing surface water discharge requirements
  - New facilities require more operations staff due to complexity
  - Permit violations include mandatory fines that quickly become expensive

Aero-Mod Structure

Aero-Mod Basins

Site Tour – Nevada County Lake of the Pines WWTP

- **Facility Size:** 0.3-0.4 MGD ADWF
- **Collection System:** mostly gravity with a few STEP connections
- **Treatment:** Custom Designed MBR with UV disinfection
- **Discharge:** Surface discharge to Magnolia Creek
- **Key Takeaways:**
  - Facility was upgraded due to changing surface discharge permitting requirements
  - Process is more complex, but allows for more fine-tuned control of effluent quality

Influent, Recycle Pumps

Solids Disposal

Site Tour – North Auburn SMD1

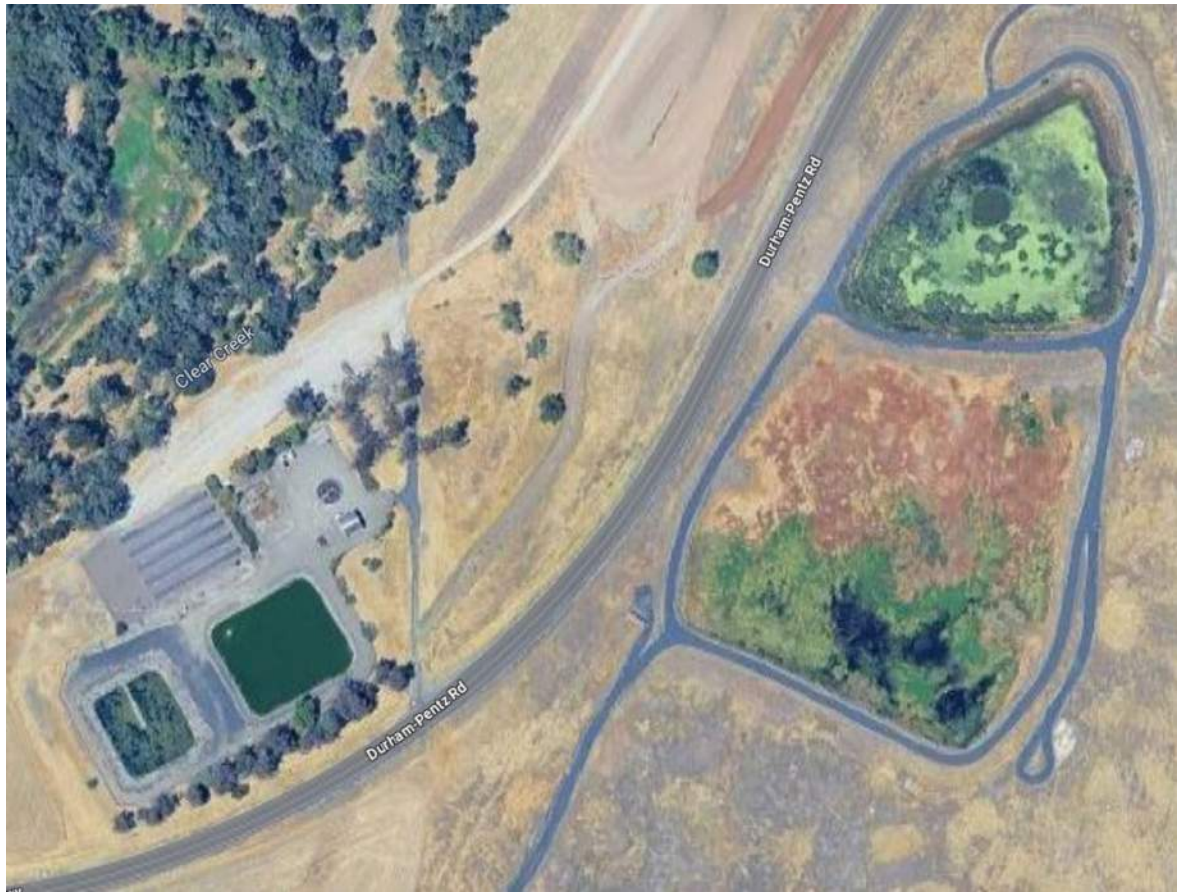
- **Facility Size:** 600 STEP connections; gravity system includes 55 lift stations
- **Collection System:** STEP and gravity sections
- **Treatment & Discharge:** Regional connection to Lincoln WWTP
- **Key Takeaways:**
  - Property owners are responsible for tanks, but County is responsible for O&M of STEP pumps
  - STEP systems require more maintenance than gravity
  - STEP users pay an additional monthly fee ($25-50) on top of base sewer rate
  - STEP septic tanks are pumped every 6-9 years
  - Redundant power supply is a major concern
  - Odor complaints at ARVs at each high point throughout system

Septic Tank & STEP pipe

STEP monitoring station

Virtual Site Tour – Butte College

- **Facility Size:** 10,000 – 20,000 gpd ADWF
- **Treatment:**
  - Activated sludge (aeration)
  - Settling clarifier
- **Discharge:** Evaporation Ponds
- Falls under Water Board's General Order



Treatment plant (left) and discharge ponds (right)

(Photos from Google Earth)

Virtual Site Tour – City of Eureka

- **Facility Size:** 5 MGD ADWF
- **Treatment:**
  - Headworks & Screens
  - Primary Clarifiers
  - Biotrickling Filters
  - Secondary Clarifiers
- **Discharge:** ocean outfall
- **Key Takeaways:**
  - Process is robust with few upsets
  - Changing NPDES requirements have been challenging to meet

Biotrickling filters (top, white circles), clarifiers, and effluent storage (right) [Solids pond and ocean outfall not shown]

(Photos from Google Earth)

Virtual Site Tour – City of St Helena

- **Facility Size:** 0.5 MGD ADWF
- **Treatment:** Transitioning from aerated lagoons to packaged MBR
- **Discharge:** river discharge in the winter, spray irrigation in summer
- **Key Takeaways:**
  - MBR is very modular in operation
  - Startup has been challenging and required more chemical addition than anticipated
  - Energy use increased 20-30%

Treatment ponds (top) and spray irrigation (bottom)

(Photos from Google Earth)

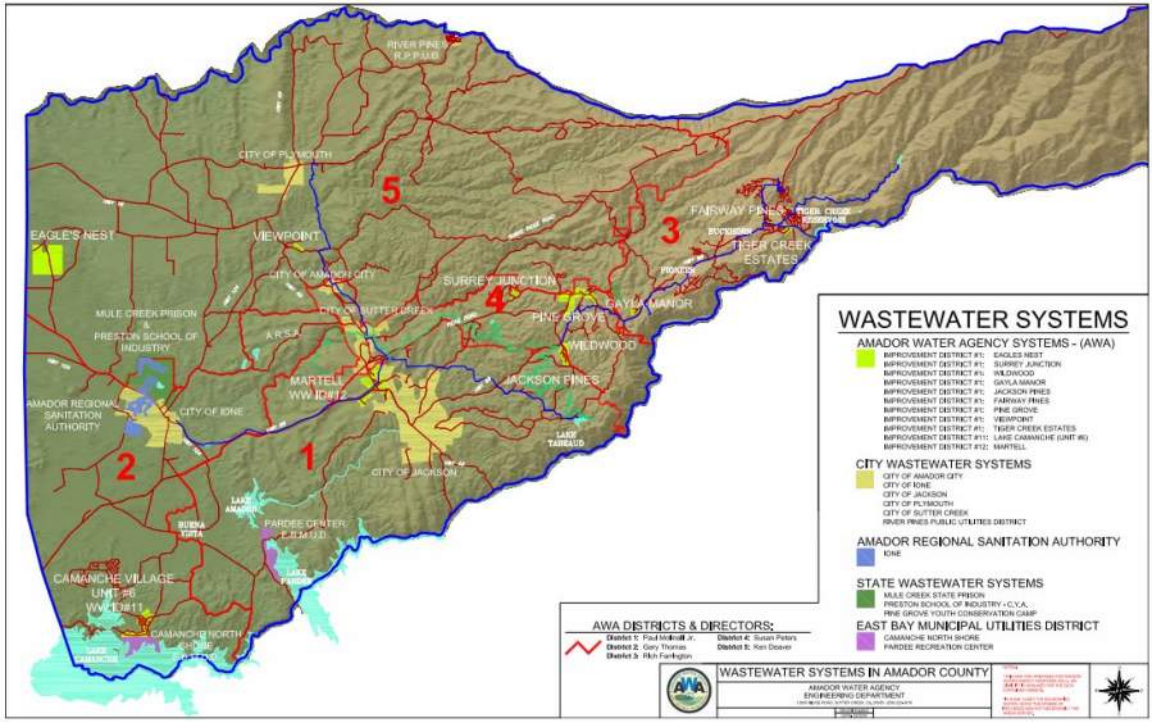
Virtual Site Tour – Community of Robbins

- **Facility Size:** Less than 100 connections
- **Collection System:** STEP only
- **Treatment:** Prefabricated Orenco activated sludge treatment
- **Discharge:** Evaporation ponds
- **Key Takeaways:**
  - STEP was implemented due to high groundwater that limited construction depth for gravity
  - County takes responsibility for O&M for septic tanks and STEP pumps
  - STEP tanks pumped every 4 years on average
  - County employs a contract operator for STEP collection and treatment system O&M

Robbins Service Area & Treatment Plant
(Photos from Google Earth)

Virtual Meeting – Amador County

- Have both STEP and gravity connections
- No longer allowing new STEP connections
- STEP users pay an additional monthly fee for O&M
- County receives 400 work orders per year for 500 STEP units



Ad Hoc Committee: Process Review Comments


Rio Alto Water District


Lake of the Pines WWTP

TOWN OF PARADISE
SEWER PROJECT

Summary of Alternatives

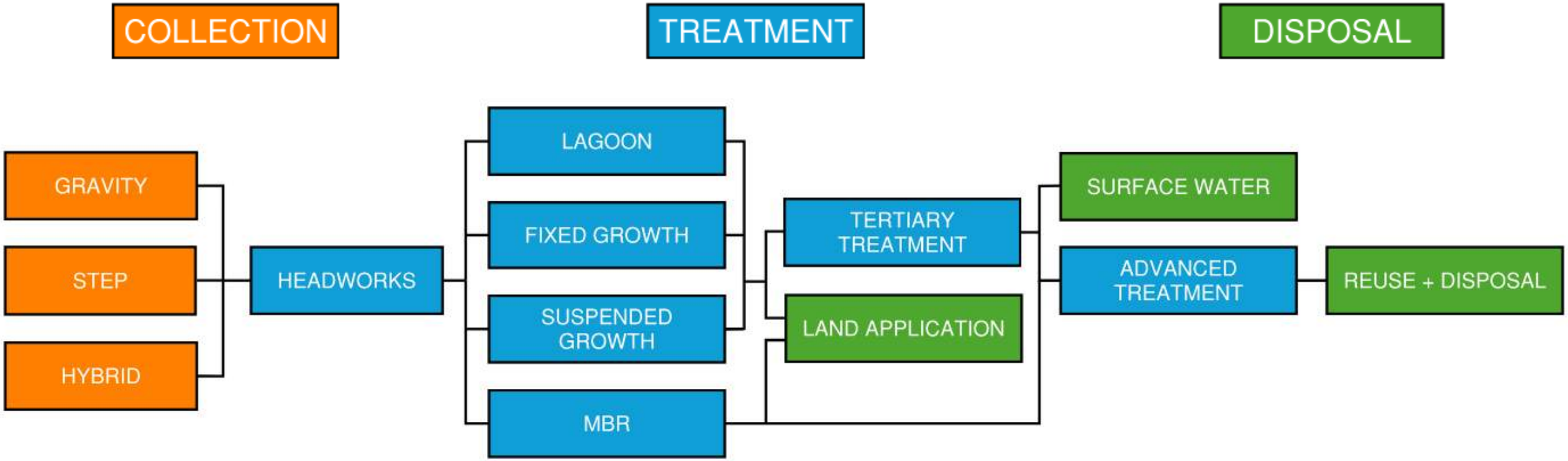
Project Components

(1) Collection

(2) Treatment

(3) Dispersal

Whole Project Alternatives

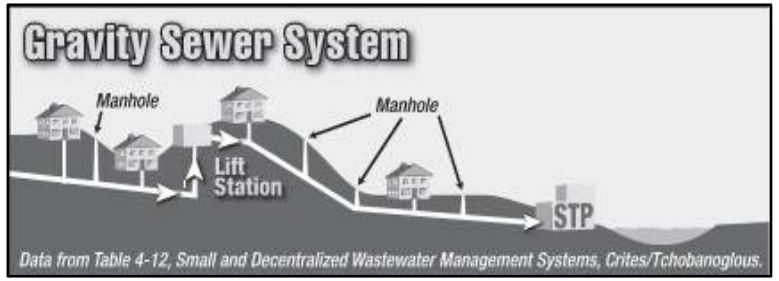


Types of Collection Systems

Original Design

Gravity Sewer

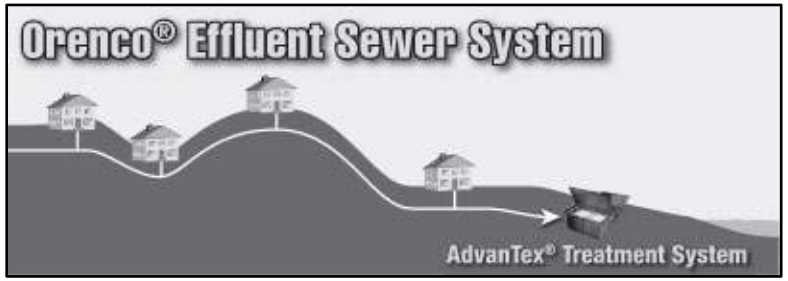
- Pipelines installed at a constant slope
- Minimum velocity required
- Manholes for change in direction
- Lift stations for change in elevation



Community Proposal

STEP Sewer

- On-site septic tanks with liquid effluent pumps at every property
- Low-pressure pipelines installed at varying elevation
- Air release valves (ARVs) at high points and blowoff valves at low points
- Isolation valves at regular intervals



Figures from Orenco Systems Effluent Sewer Design Manual, Rev 3.0, dated 07/2017

Hybrid Proposal

Hybrid Gravity/STEP Sewer

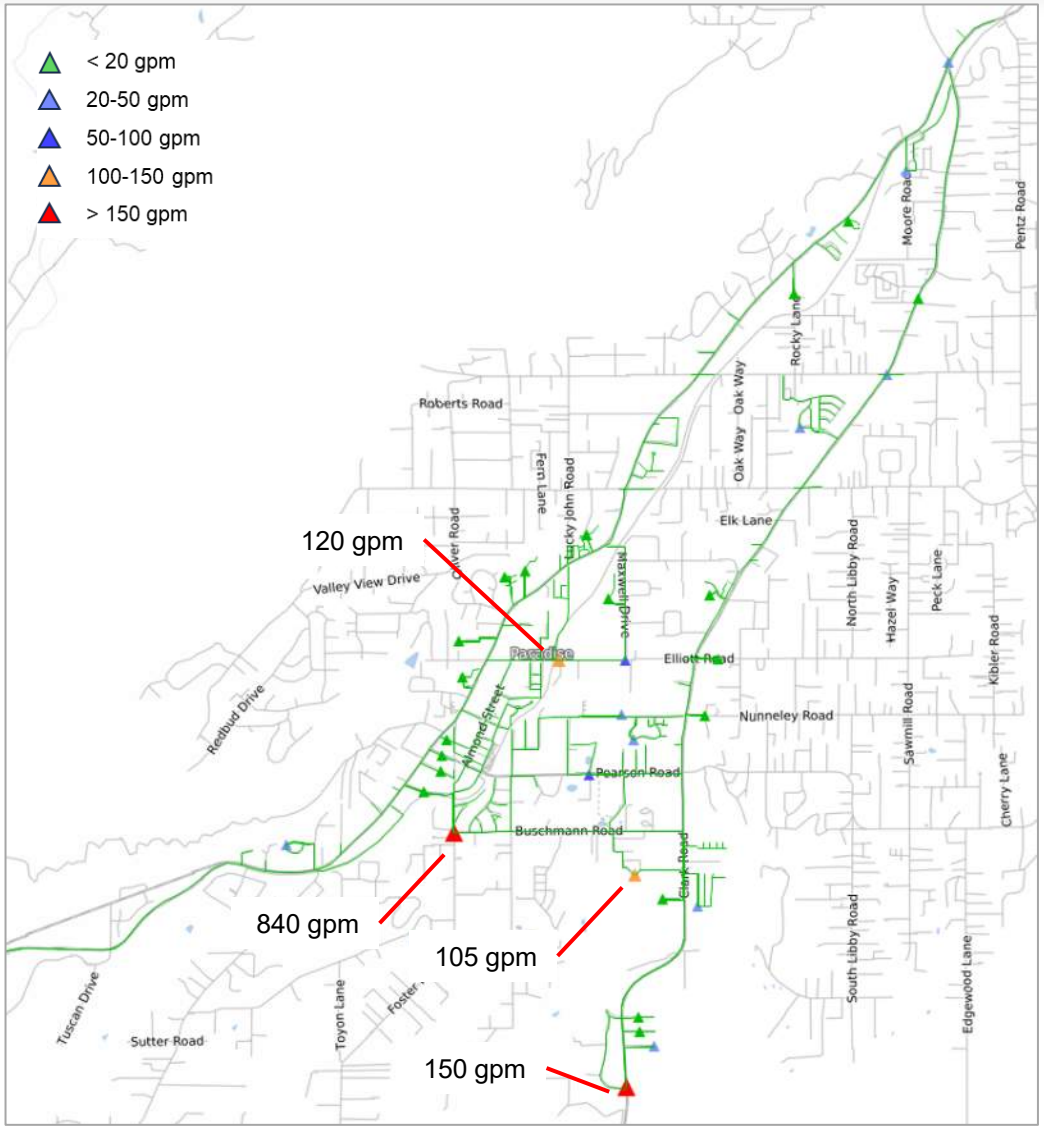
- Gravity trunk lines down primary corridors remain but with low-elevation properties connected via individual STEP systems at each property
- Shallower trunk mains than a pure gravity system

Modeled Maximum Pump Rate - Gravity

- Majority of pump stations have a maximum pumping rate of less than 100 gpm

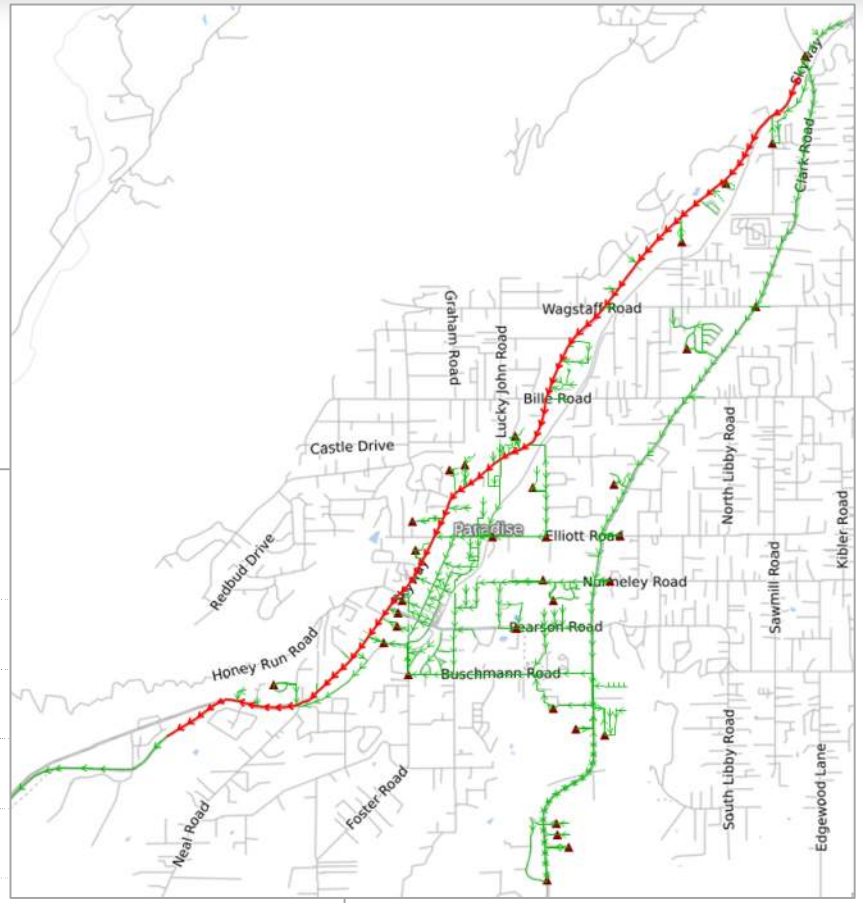
Maximum Pumped Flow	Count
Less than 20 gpm	18
20 to 50 gpm	9
50 to 100 gpm	2
100 to 150 gpm	2
Greater than 150 gpm	**2**

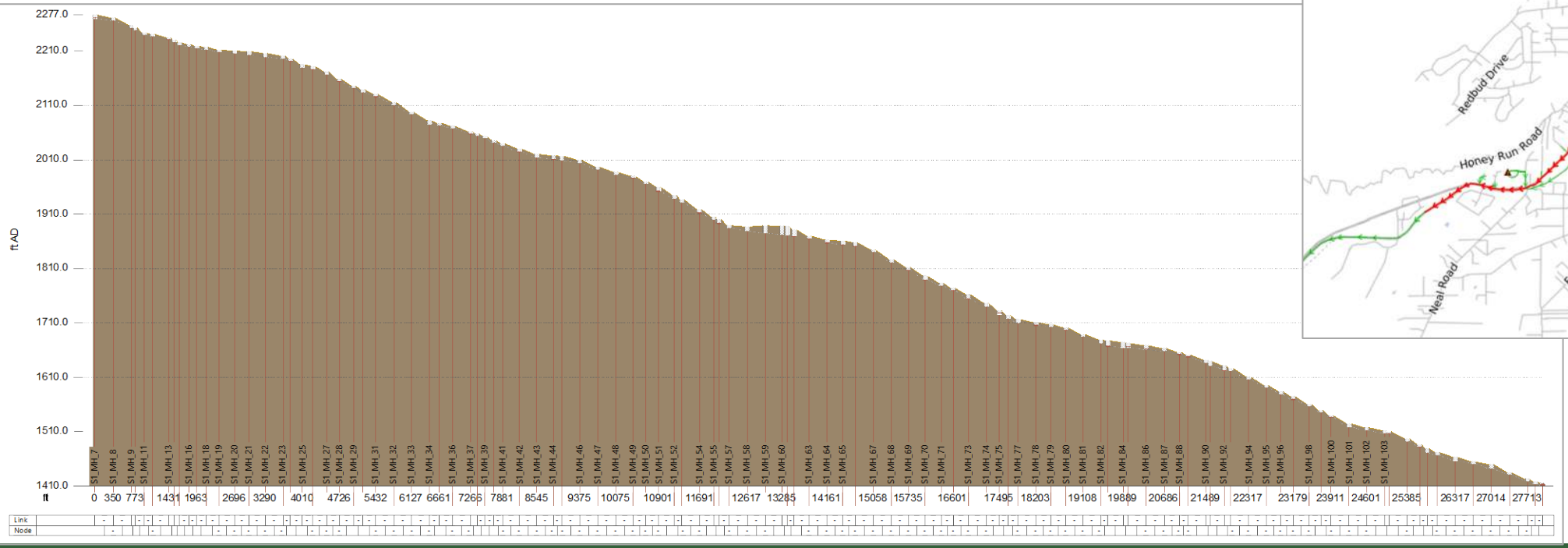
- STEP pumps are typically 5-10 gpm for single-family residences *(Orenco Design Manual)*



Elevation and System Pressure

- Elevation change of over 810 ft (2,227 ft to 1,410 ft)
- Static pressure at the WWTP of over 350 psi
  - *Orenco high-head pumps max of <u>108 psi</u>*
- **<u>Conclusion:</u>** A purely low-pressure (STEP) system is not technically feasible for full-system buildout





Collection System Implementation

- Capital Costs
  - Installation costs expected to be 30% greater for traditional gravity vs. STEP
- Constructability
  - Open-trench construction is recommended for most of Paradise for STEP or gravity system installation. Directional boring is not compatible with cobbles/rocky geology and uncertain utility locations.
  - Sewer pipelines must be installed at a lower elevation than all other utilities per CA regulations.
- Operational Considerations
  - Gravity systems must maintain minimum scour 2-3 fps to prevent solids deposition. Periodic system flushing can mitigate solids deposition for lower flows.
  - STEP systems have greater O&M demand due to more distributed pump stations (more points of failure, see examples on next slide)

STEP Agency Tours and Feedback

- **Placer County – North Auburn SMD1**
  - County has O&M responsibility for STEP pumps and septic pumping
  - STEP users pay an additional monthly fee for STEP O&M service
  - New connections – builder pays for tank/pump, designed to meet County standards
  - Power safety shutoffs – sewer loses power but water does not
  - Air relief valves (ARVs) are source of odor complaints
- **Nevada County – Lake of the Pines & Penn Valley**
  - Septic effluent-only sent to treatment plants designed for full municipal WW cause operational challenges
  - STEP works well after installation but has O&M challenges as system ages
- **Sutter County – Community of Robbins**
  - County takes responsibility for tanks and motors – costly to maintain
  - System not expected to expand due to outside factors (flood zone, treatment capacity)
- **Amador County**
  - High O&M and administrative burden – STEP users pay an additional fee
  - No longer allowing new STEP connections

Septic Effluent-Only Treatment

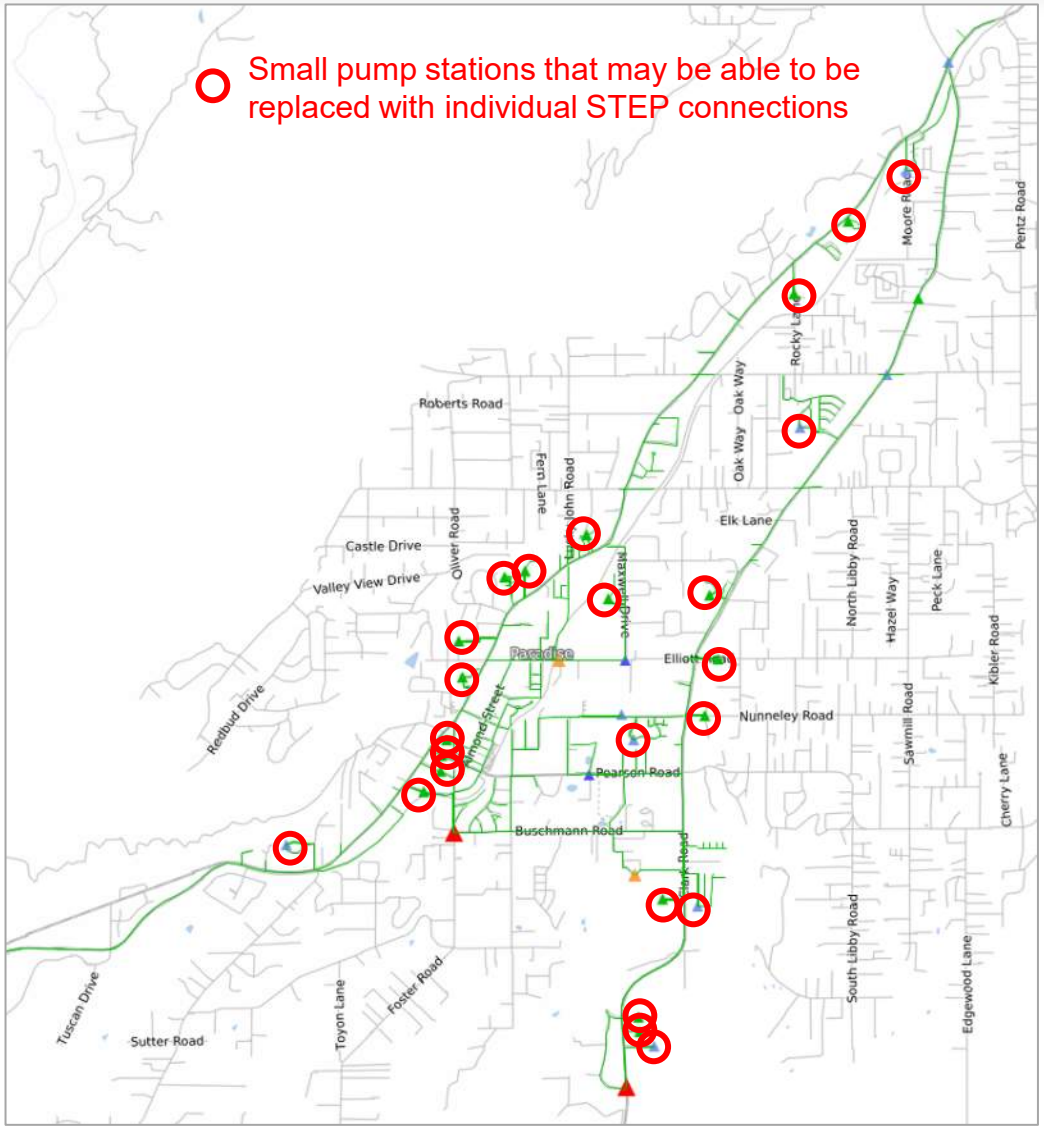
- Treatment process difference is minimal for STEP or gravity at small flows
  - Primary treatment is typically not needed for typical domestic wastewater or for septic tank effluent for small flows (see Rio Alto, City of Biggs)
  - Both STEP and gravity will require secondary and/or tertiary treatment to meet Water Board discharge requirements
  - Solids management strategy is required for all secondary treatment processes to manage biological accumulation

Constituent	Units[a]	Typical Domestic Wastewater	Septic Tank Influent	Septic Tank Effluent	Secondary Treatment Effluent	Equivalent to Secondary Treatment Effluent
Biochemical Oxygen Demand	mg/L	200-290 [b]	155-286 [c]	140-200 [d]	30-45 [e]	65 percent reduction [f]
Total Suspended Solids	mg/L	200-290 [b]	155-330 [c]	50-100 [d]	30-45 [e]	[p]
Ammonia (as N)	mg/L	6-18 [b]	4-13 [c]	--[g,o]	--[g,h]	--[g,h,i]
Total Nitrogen	mg/L	35-100 [b]	26-75 [c]	40-100 [d]	50% [m]	43-80% [k,h,i]
Nitrite and Nitrate (as N)	mg/L	<1 [b]	<1 [c]	--[g,o]	--[g,h]	--[g,h,i]
Total Phosphorus (as P)	mg/L	6-12 [b]	6-12 [c]	5-15 [d]	51% [m]	50% [k,h,i]

Source: STATE WATER RESOURCES CONTROL BOARD ORDER WQ 2014-0153-DWQ

Hybrid Gravity/STEP Sewer Concept

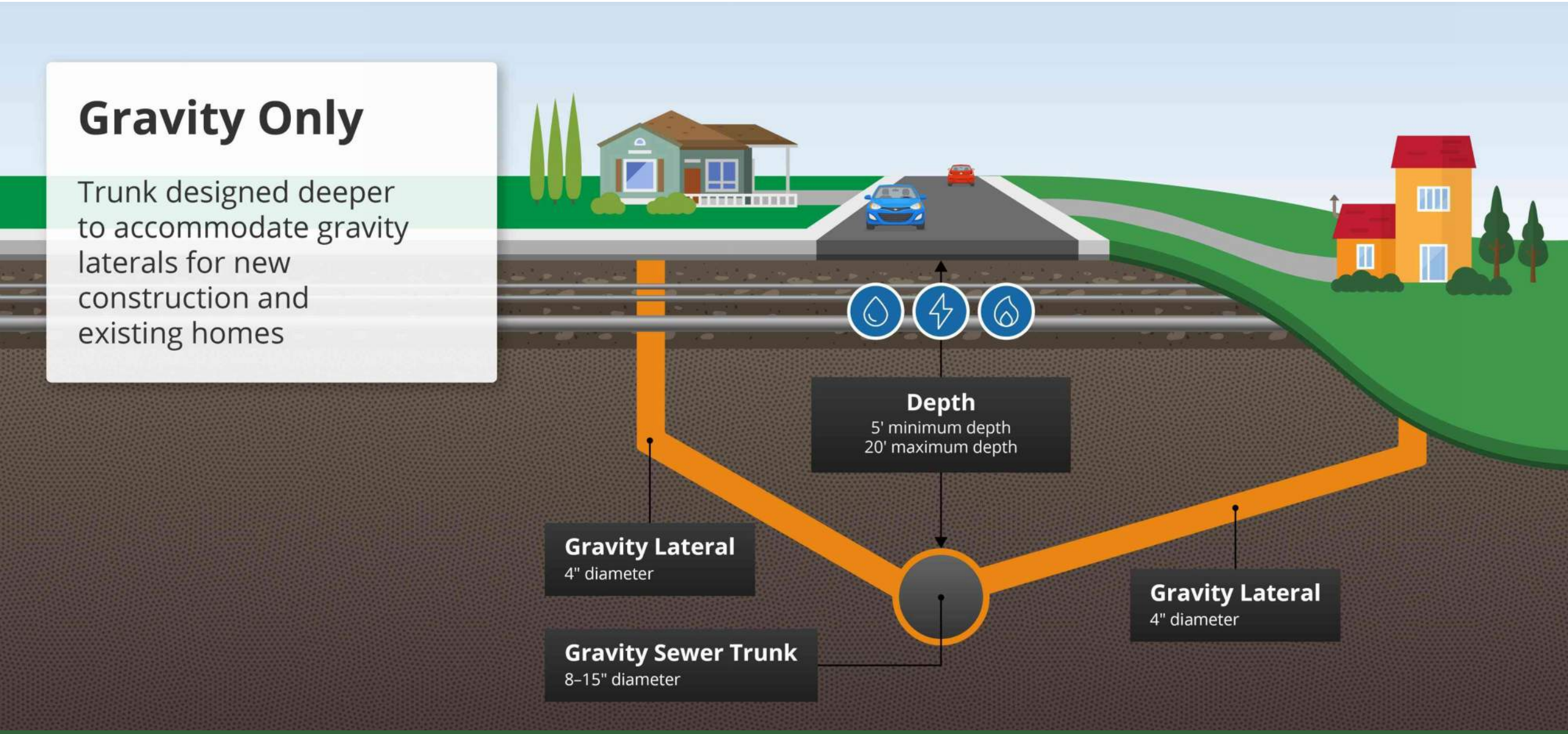
- Gravity trunk mains along Skyway, Clark, Pearson with low-elevation areas/properties connected via on-site STEP systems
  - Most compatible solution for Paradise
  - STEP system on individual properties in low elevation zones
  - Owners retrofit existing septic tanks, if in good condition
  - Replaces small grinder pump stations with regions connected via STEP
- Main trunk lines installed at shallower depth than original gravity design
- A phase 1 project prioritizing downtown may not require any central lift stations



Collection System Design Criteria for Gravity

Gravity Only

Trunk designed deeper to accommodate gravity laterals for new construction and existing homes



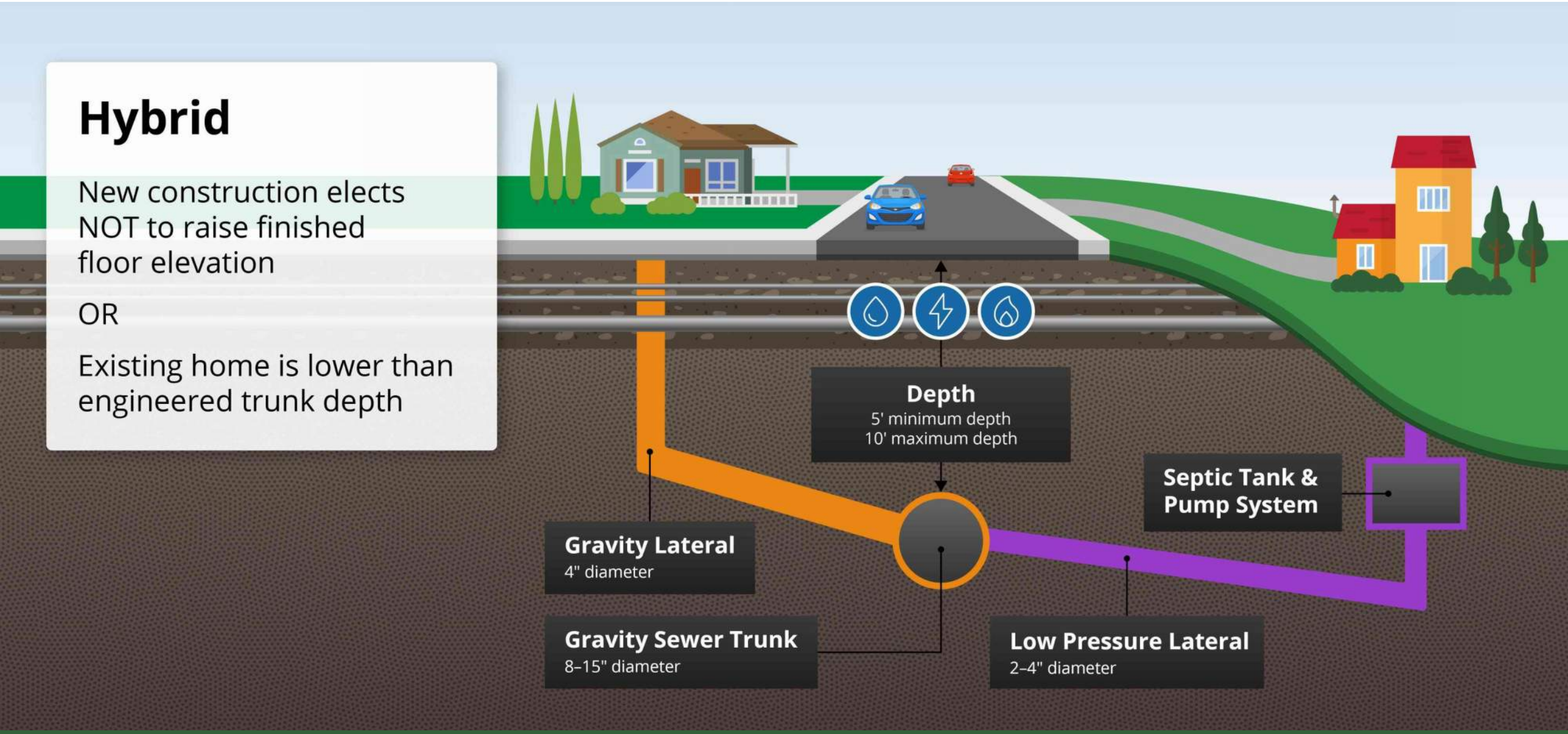
Collection System Design Criteria for Hybrid — Scenario A

Hybrid

New construction elects NOT to raise finished floor elevation

OR

Existing home is lower than engineered trunk depth



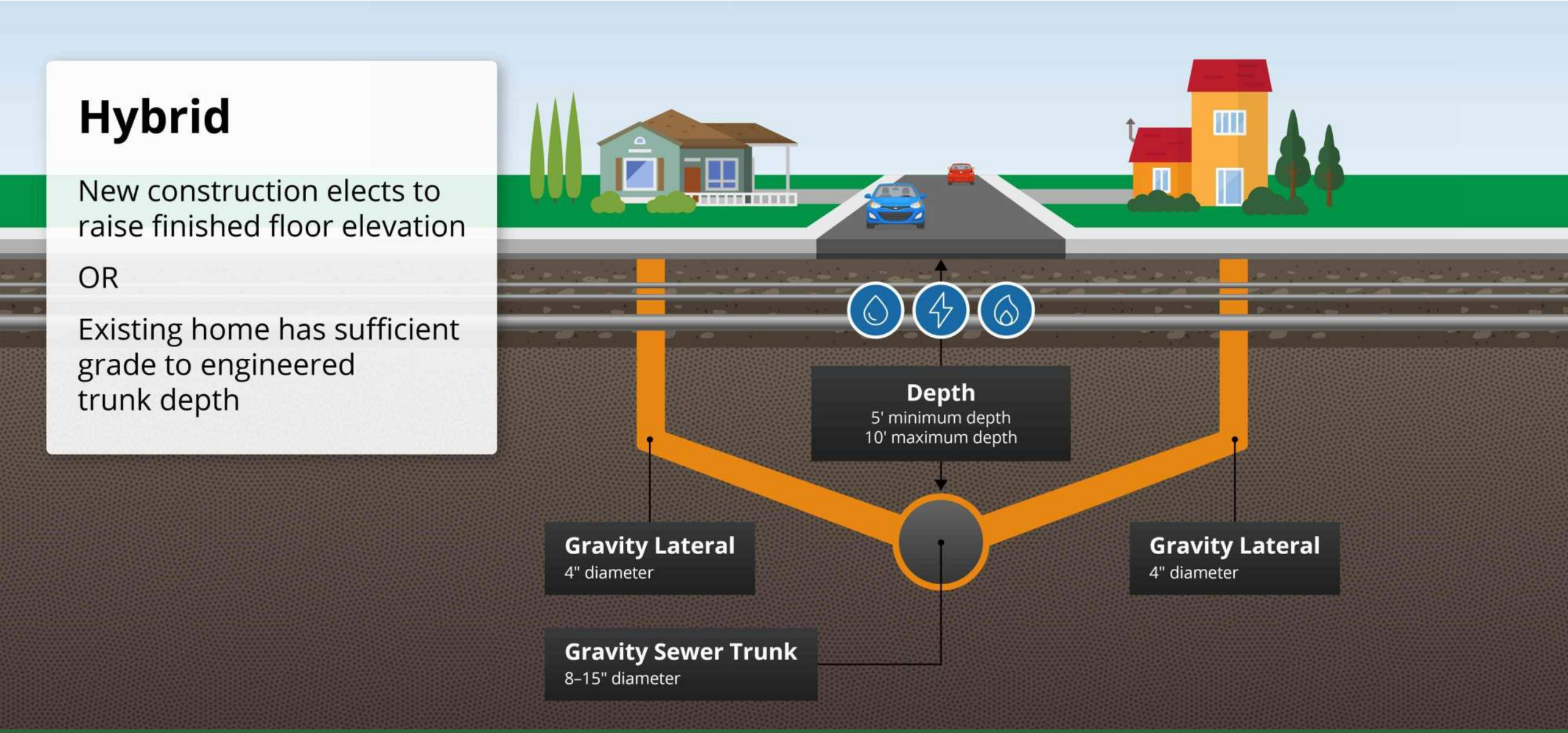
Collection System Design Criteria for Hybrid — Scenario B

Hybrid

New construction elects to raise finished floor elevation

OR

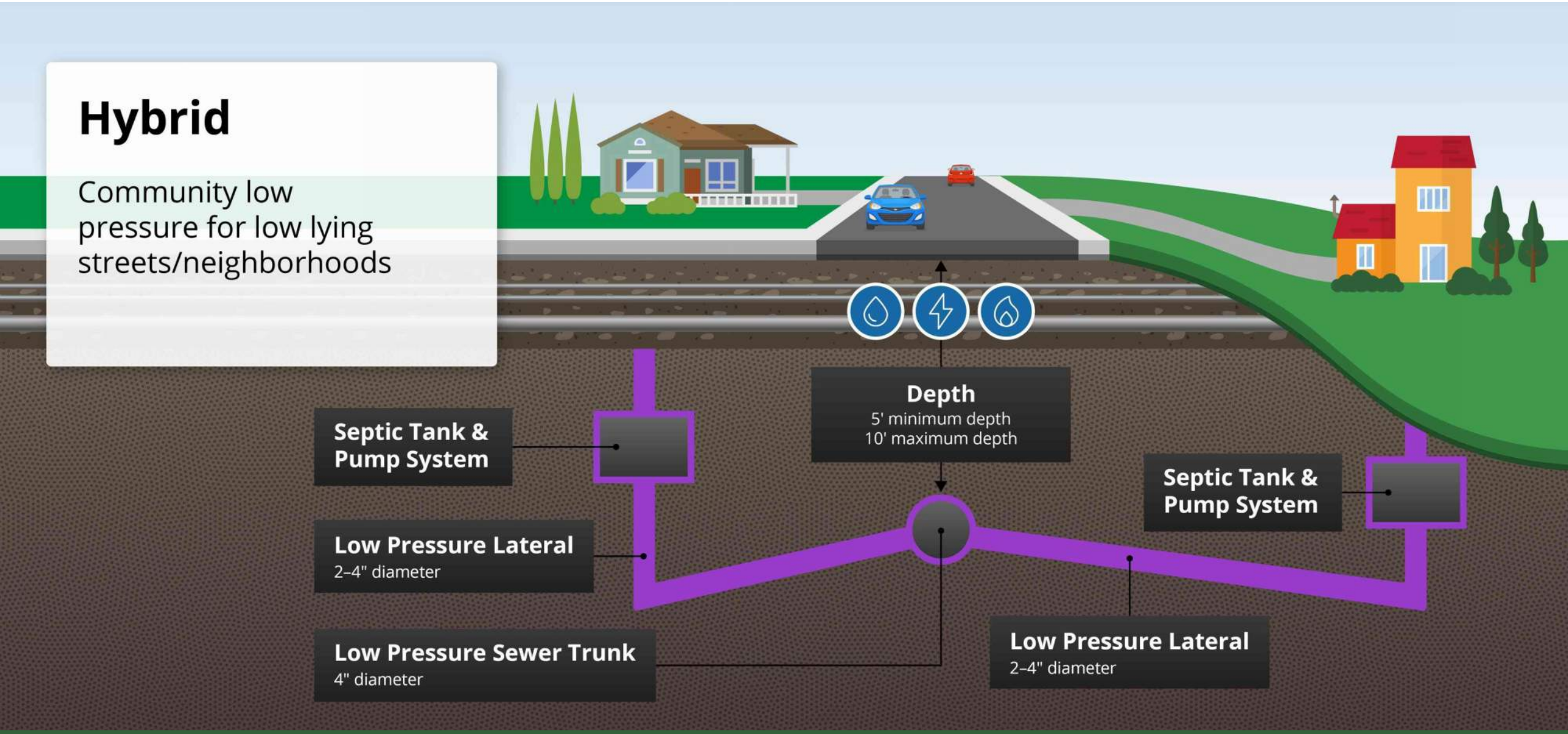
Existing home has sufficient grade to engineered trunk depth



Collection System Design Criteria for Hybrid — Scenario C

Hybrid

Community low pressure for low lying streets/neighborhoods



Collection System Recommendation

- **Hybrid Gravity/STEP Collection:**
  - Gravity trunk mains down Skyway, Clark Rd., and other hydraulic main-line corridors
  - Flexibility for low-elevation areas or properties to connect via individual on-site STEP units at each property
  - Gravity trunks set at higher elevation than previous gravity systems (set at an engineered depth just below conflicting utilities).
  - Incorporates benefits of STEP system while maintaining scalability for future system expansion and minimizing operational impacts and user rates
  - Phase 1 project to serve downtown may not require any central lift stations

Wastewater Treatment Alternatives

Aerated Lagoon/Pond


City of Biggs

Fixed Growth (Trickling Filter)


Sewerage Agency of Southern Marin

Suspended Growth (Activated Sludge)


Rio Alto Water District


Mt. Shasta

Membrane Bioreactor (MBR)


Lake of the Pines

Treatment Alternatives Summary

	Aerated Pond	Trickling Filter	Activated Sludge	MBR
Capital Cost	Lowest			Highest
O&M Cost	Lowest			Highest
Scalability	Moderate	Lowest	Moderate	Greatest
Footprint	Largest			Smallest
Readiness for Reuse or NPDES	Least			Most
Operational Complexity	Simplest			Greatest
Energy Use	Lowest			Highest

Treatment Recommendation

- **Recommended Alternative 1: Aerated Ponds**
  - Most cost effective (Capital and O&M)
  - Simple operation – less operator experience required
  - Less sensitive to smaller/inconsistent flows
  - Largest footprint
  - Expand or repurpose ponds to scale up
  - Could produce water for agricultural reuse with disinfection

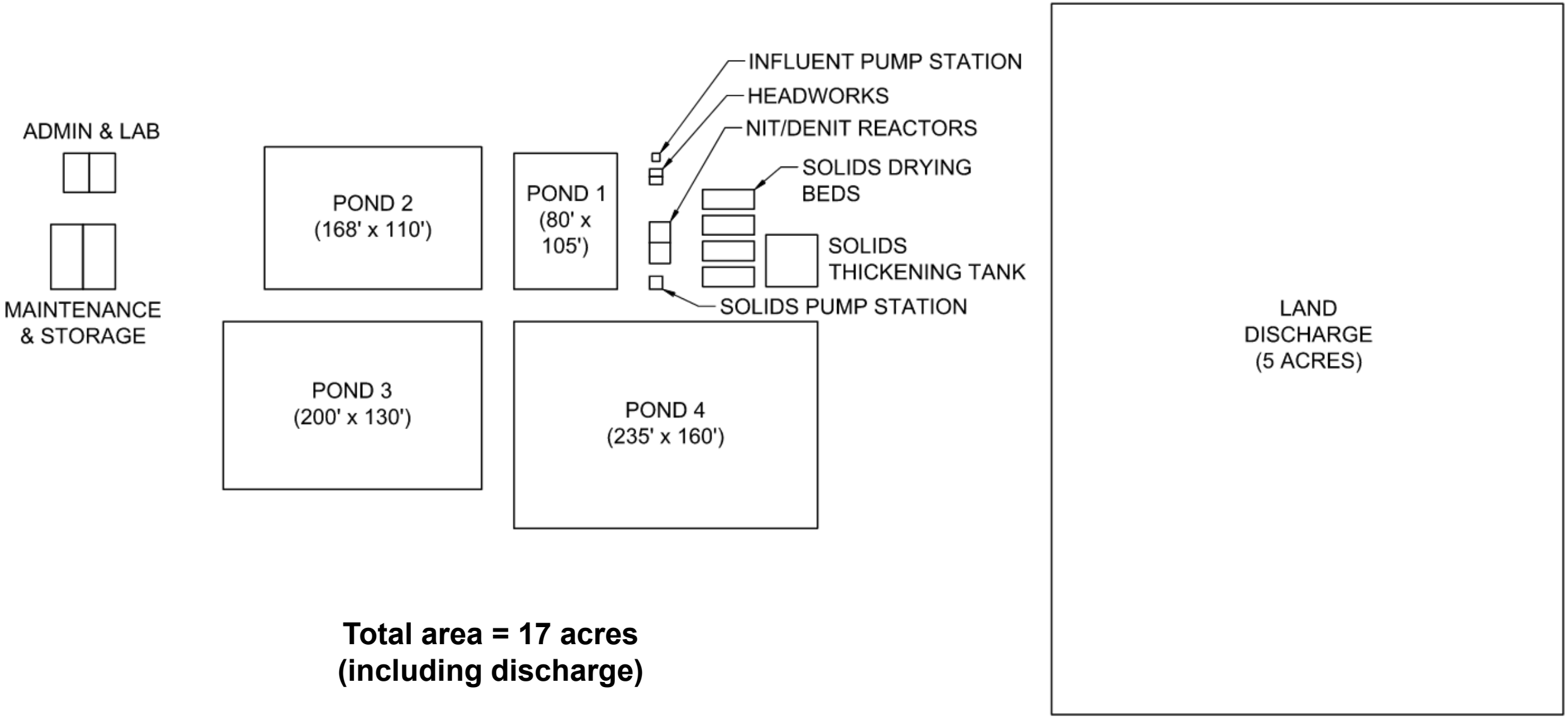

City of Biggs WWTP

- **Recommended Alternative 2: MBR**
  - Highest capital cost and O&M cost
  - Can be pre-engineered design and pre-fabricated for quick construction
  - Future-proof – high quality effluent can produce tertiary treated water for reuse or surface discharge
  - Smallest footprint, can be hidden inside structures


St. Helena WWTP

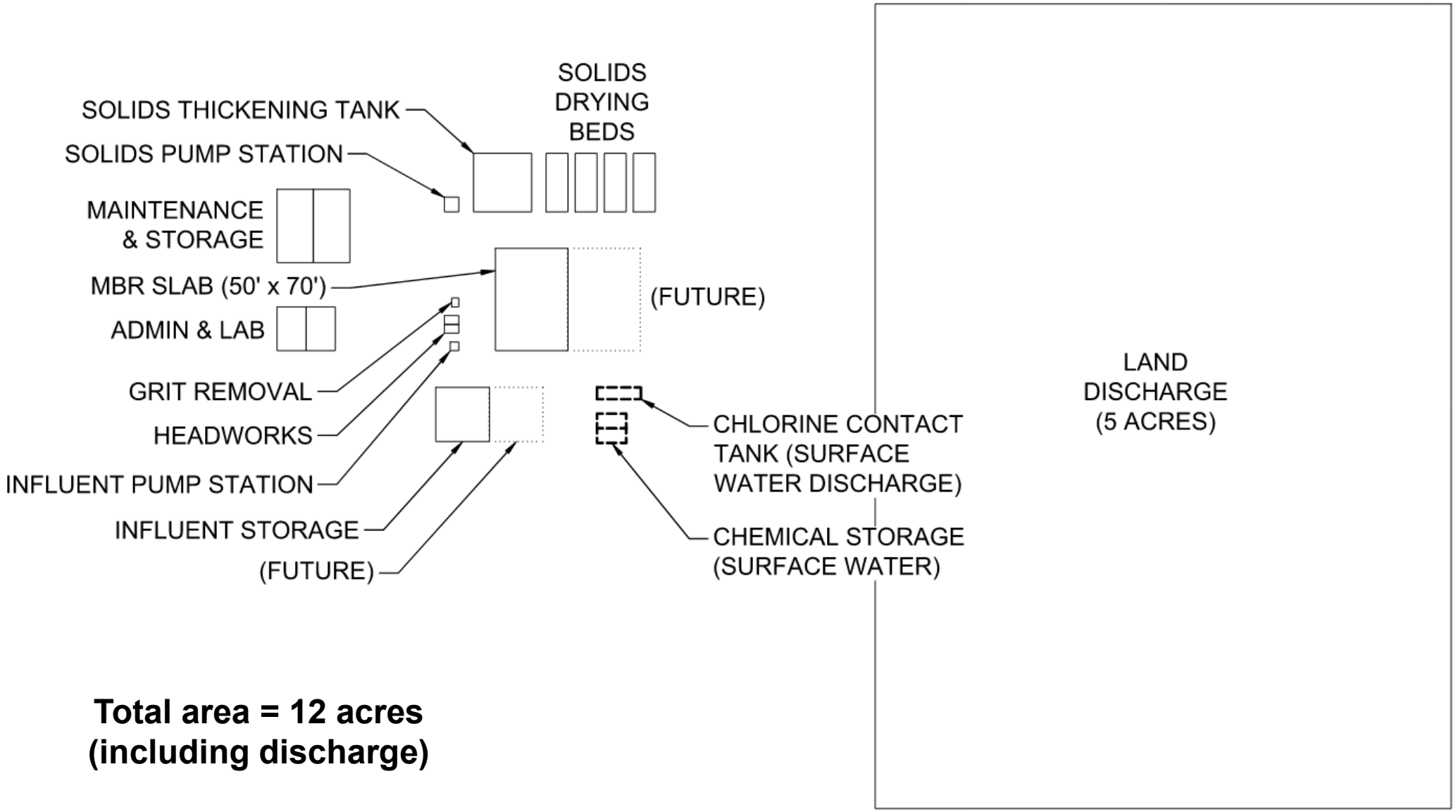
Source: Cloacina
https://www.cloacina.com/municipal-system-upgrade

Example Site Layout – Aerated Ponds



Total area = 17 acres (including discharge)

Example Site Layout – MBR



Total area = 12 acres (including discharge)

Project Examples – MBR

City of Hot Springs, Arkansas

Treatment plant is contained inside facilities modeled after local barns

Treated Effluent Discharge Alternatives

1. **Surface Discharge**
   - Discharge to creeks, rivers, or lakes
2. **Land Discharge**
   - Evaporation & percolation ponds or wetlands
   - Crop irrigation (non-food crops)
3. **Beneficial Reuse**
   - “Purple Pipe” or “Title 22” water
   - Landscape/golf course irrigation
   - Fire suppression
   - Crop irrigation


Bozeman Water Reclamation Facility


Rio Alto Water District


City of Lodi

Surface Discharge

- All receiving waters near Town are expected to require tertiary treatment
- NPDES Permitting Process
  - Requires multiple studies of treated effluent and of receiving waters
  - Permit renewal every 5 years can have changing requirements
- Mandatory Minimum Penalties (MMPs)
  - $3,000+ per penalty for exceeding limits
  - More difficult to meet limits with low or inconsistent flows
  - Metals limits can be difficult to meet even with more high-tech secondary treatment
- Permits require frequent sampling & water quality testing

CVWQCB strongly recommends avoiding surface water discharge for a Phase 1 project

Beneficial Reuse – CA Title 22

- Both STEP and gravity collection influent can produce water for reuse, reuse capabilities are dependent on treatment processes
- Agencies operating reuse systems report that it is easier to meet Title 22 requirements than surface discharge permit
- Reuse increases Phase 1 project costs
- Reuse can be implemented in a future project phase
- Specific requirements depend on end-use and potential for human contact:

Uses of Recycled Water	CA Title 22 Water Quality Standard
Food crops, parks and playgrounds, schools, residential landscaping, unrestricted golf courses, decorative fountains, structural firefighting	Disinfected tertiary
Restricted recreational impoundments	Disinfected secondary-2.2
Cemeteries, restricted access golf courses, dairy pastureland, non-edible vegetation with controlled access, landscape impoundments, non-structural firefighting, concrete mixing, dust control	Disinfected secondary-23
Orchards, vineyards, seed crops not consumed by humans, sewer flushing	Undisinfected secondary

Reuse Implementation Challenges

- Priority to identify high-volume users (typically golf course, agriculture, parks, etc.) to reduce distribution infrastructure and administrative burden
- Demand varies seasonally – requires additional discharge method or large storage reservoir
- Requires additional distribution infrastructure – pumps, piping, etc. (added capital cost and maintenance costs)
- Disinfected reuse distribution piping must maintain minimum horizontal and vertical separation from sewer pipe, per CA regulations

Recommendation: Consider reuse in future project phases as more funding becomes available and potential customers are identified

Land Discharge


Rio Alto Water District

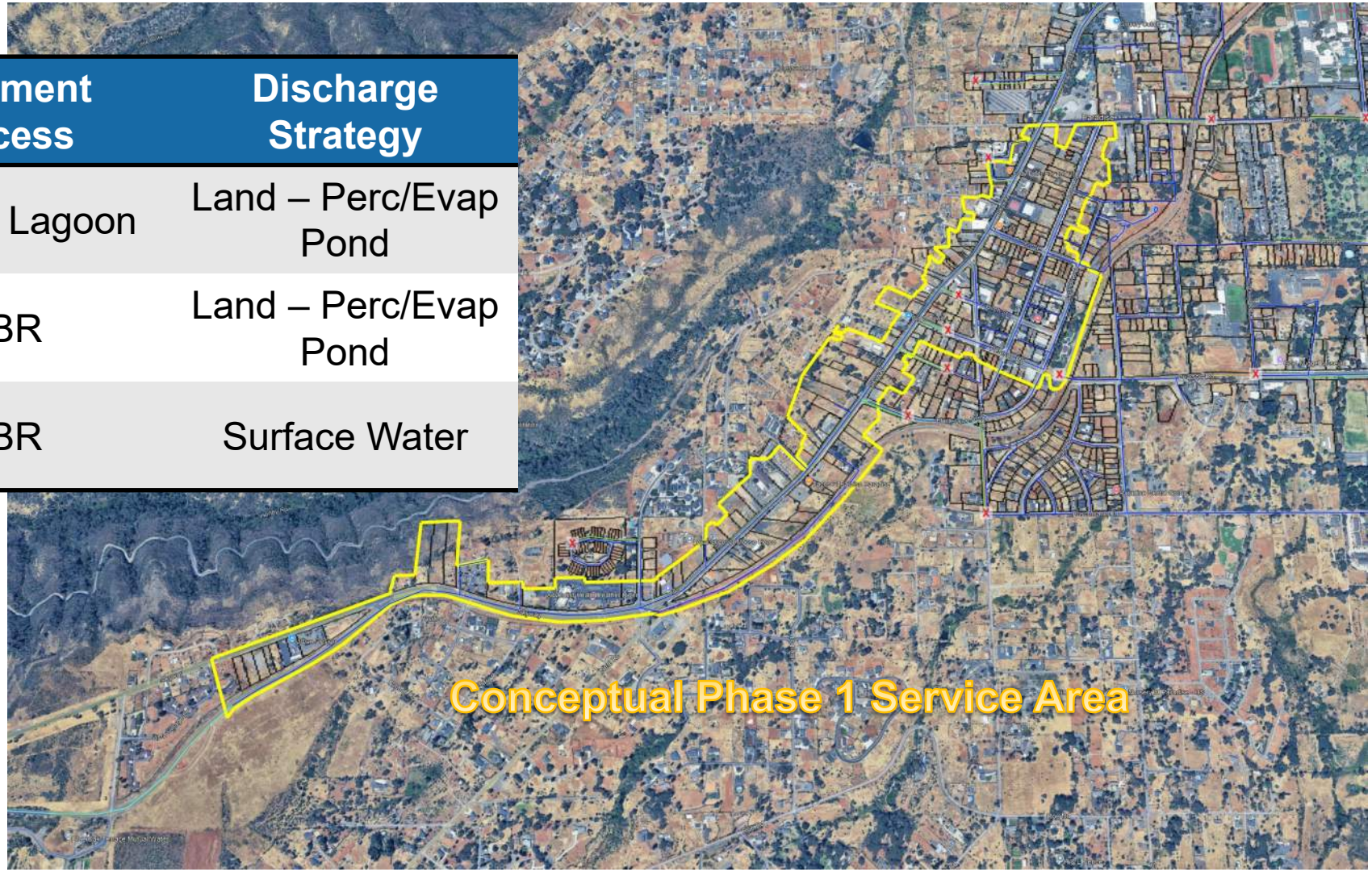

City of Biggs

- Permit renewal every 10 years
- Expect to need to meet low total nitrogen limits (<10 mg/L)
- Typical permit requirements include quarterly groundwater monitoring
- Irrigation requires greater acreage than percolation/evaporation pond discharge
- Irrigation may be seasonally limited, requiring a seasonal storage pond

Recommendation: Land discharge via percolation/evaporation ponds

Phase 1 Alternatives for Evaluation

Alt	Collection System	Treatment Process	Discharge Strategy
1	Hybrid Gravity/STEP	Aerated Lagoon	Land – Perc/Evap Pond
2	Hybrid Gravity/STEP	MBR	Land – Perc/Evap Pond
3	Hybrid Gravity/STEP	MBR	Surface Water



Collection System – Phase 1

- Collection system can be reduced to serve only Skyway from Town limits up to Elliott and downtown (Pearson/Black Olive/Elliott/Skyway block)
  - 225 total parcels
  - 83 currently occupied parcels
- Reduced Phase 1 SSA with hybrid gravity/STEP collection system has **no central lift stations**
- Treatment and disposal sized for 100,000 gpd ADWF
  - Estimated startup flow = 40,000 gpd
- Phase 1 gravity main (with 88 STEP connections) would be installed nearly at same depth as a STEP pressurized main – and more reliable!

Conceptual Phase 1 for cost estimate, values are approximate

	Current Occupancy	Full Area Buildout
Total Parcels Served	83	225
Gravity connections	62	167
STEP connections	21	88
ADWF (gpd)	40,000	100,000
PWWF (gpd)	110,000	260,000

Whole Project Capital Cost Estimate

Project Cost Components	Alternative 1 Hybrid Collection Aerated Lagoon Perc/Evap Pond	Alternative 2 Hybrid Collection MBR Perc/Evap Pond	Alternative 3 Hybrid Collection MBR Surface Water
Engineering & Preconstruction	$ 14,000,000	$ 15,000,000	$ 15,000,000
Town, OA (including Environmental) & Legal	$ 4,500,000	$ 4,500,000	$ 4,500,000
Real Estate Acquisition & Professional Services	$ 5,600,000	$ 5,500,000	$ 5,500,000
Environmental Permit / Agency Costs	$ 100,000	$ 100,000	$ 100,000
Environmental Mitigation	$ 500,000	$ 500,000	$ 500,000
Collection System Construction	$ 51,000,000	$ 51,000,000	$ 51,000,000
Wastewater Treatment & Discharge Construction	$ 19,300,000	$ 28,100,000	$ 24,600,000
Engineering Services During Construction	$ 3,100,000	$ 3,400,000	$ 3,300,000
Construction Management & Inspection	$ 8,300,000	$ 11,000,000	$ 9,900,000
Town Cost & Contingency	$ 6,600,000	$ 7,500,000	$ 7,100,000
Estimated Total Project Cost	**$ 114,000,000**	**$ 128,000,000**	**$ 122,000,000**

Notes: Costs are escalated to midpoint of construction in 2028 for system sized to 0.1 mgd buildout.
Range of estimate follows Association for the Advancement of Cost Engineering (AACE) guidelines for Class 5 cost estimate (-50% to +100%) – conceptual level estimate

Cost Estimate Disclaimers

- Cost Exclusions and Disclaimers
  - STEP pumps and lateral connections on private property are only included for currently occupied parcels. Lateral stub-outs to property line included for all parcels.
  - MBR costs do not include aesthetic improvements (enclosure in a building, burying subsurface, etc.)
  - Capital costs do not reflect the operational costs and complexities, especially related to surface discharge (see next slide)
  - Does not include startup operational costs (i.e., equipment, trucks, etc.)
  - ROW costs assume purchase of adequate property to allow for Phase 1 and future expansion(s)
  - Costs consider production rates, prevailing wage requirements, and industry standard contingency factors

Operational Costs & Considerations

MBR

- More complex operation, requires higher level of operator experience
- More energy intensive
- Receiving STEP-only influent would likely require chemical/carbon addition to achieve nitrogen removal

Surface Discharge

- Attaining NPDES permit will be a long and challenging process requiring studies on both the treated effluent and the receiving waters
- NPDES requirements frequently change (5-year permit cycle) and can require process changes to meet new limits
- Violations will incur minimum penalty fines ($3,000+ per instance)

Example Operating Costs

Agency	Treatment	Discharge	Flow (MGD)	2024-25 Sewer Operating Cost (Collection & Treatment)	2025 Monthly Rates
City of Biggs	Aerated Lagoon	Land	0.38	$475,431	Residential/Apartment Total: $81.35 Base Charge: $72.65 Sewer Improvement Fee: $8.70
Rio Alto	Oxidation ditch	Land	0.1	$792,347	Single Family Residence: $115.52
Lake of the Pines	Custom MBR	Surface	0.72	$3,292,509	$157.66/EDU
City of St. Helena	Packaged MBR	Surface & Land	0.5	$4,983,225	Residential Base Charge: $96.95 Residential Use Charge: $10.71

Committed Town Rate Subsidy

- On August 8, 2023, Paradise Town Council conceptually approved a rate subsidy plan...
  - The Rate Study would establish potential average rates near $85.66/month (target 2% of MHI).
  - The O&M Financing Assistance would establish an up-front operating reserve of $1,200,000 and commit $526,000 annually for the first ten years of the utility's operation.
  - This total commitment was estimated to be $6,460,000.
  - Source of funds being Paradise Recovery & Operations (PRO) Fund Project Reserves

Rate Subsidy will need to be reviewed in the lens of the revised project scale and project costs (part of larger rate setting requirements).

Ad Hoc Committee Recommendation

Alternative 1: Hybrid Gravity/STEP collection system, aerated lagoon treatment, and land discharge to percolation/evaporation pond(s)

- Serves Downtown where growth has lagged
- Optimizes operational costs and rate payer burden
- Serves the mission of the project to be fundable (affordable), permittable, and scalable to meet Paradise's needs today and into the future


Mt Shasta WWTP

- Funding Secured and Probable is $84.8M
- Phase 1 Estimated at $114M
- Town Council has options to consider redirecting funds to reach a constructable project now.

Project Forecast

August

- Public feedback on proposed alternative
- Special Town Council Meeting – August 14th, 6-8 pm

September

- Begin Subsequent EIR
- Begin procurement of treatment facility designer
- Resume funding application(s)

Fall 2025

- Resume collection design
- Begin wastewater treatment facility siting

2026

- Continue design of collection & treatment facilities
- Complete Subsequent EIR
- Begin Environmental permitting
- Begin ROW Acquisition

2027-2029

- Complete design
- Begin and complete construction

Why is this time different?

- We have the most experienced and capable team to deliver the project with the insight and knowledge from professionals who have built these facilities before.
- We know more now about what it takes to build a new sewer utility in Paradise than any preceding approach to this project.
- For the first time in the last 30+ years, the Paradise Sewer Project has a path to construction with funding secured, probable and available.
- Town Council has already committed to a rate subsidy as the Sewer is an investment into our recovery.
- Project recommended is the most scalable and affordable to design and construct now and operate into the future.
- Town has full support of the Regional Board for a local option.
- Further delays will reduce our ability to use critical CDBG-DR funds on the project with no replacement source in sight.

Next Steps

- **Receive Public Comments**
  - 3-Minute Limit (standard Council meeting)
- **Need more time? Don't want to present now? Couldn't Make it?**
  - To submit comments or schedule a meeting with Town staff to discuss this analysis prior to August 14th, contact Kieran Jellema at kjellema@townofparadise.com

- **Special Town Council Meeting** – August 14th, 6-8pm
  - Location: Paradise Performing Arts Center (PPAC)
    - 777 Nunneley Road, Paradise, CA 95969
  - Objective: Council to provide formal direction to commence efforts on a revised project description including resuming environmental and design efforts

TOWN OF PARADISE
SEWER PROJECT

Thank you for coming!

Appendix B – Collection System Capital Cost Estimates

Paradise Sewer Project	Collection System		Materials		Installation		
CORE COLLECTION SYSTEM	UNIT	Quantity	Unit Cost	Subtotal	Unit Cost	Subtotal	Total
15-in PVC Gravity (<10' deep)	LF	10,400	120	$ 1,248,000	680	$ 7,072,000	$ 8,320,000
8-in PVC Gravity (<10' deep)	LF	6,500	64	$ 416,000	558	$ 3,627,000	$ 4,043,000
Total Gravity Mains				$ 1,664,000		$ 10,699,000	$ 12,363,000
48-in Trunk MH (<15' Deep, every 250' gravity pipe)	EA	68	7,000	$ 476,000	24,762	$ 1,683,816	$ 2,159,816
Total Manholes				$ 476,000		$ 1,683,816	$ 2,159,816
4-in PVC Pressure (<5' deep)	LF	11,650	30	$ 349,500	428	$ 4,986,200	$ 5,335,700
Total Forcemain				$ 349,500		$ 4,986,200	$ 5,335,700
Sewer Service Lateral (public to property line)	EA	255	1,776	$ 452,890	10,910	$ 2,781,958	$ 3,234,848
Sewer Service Lateral (on private property)	EA	83	2,241	$ 185,969	13,764	$ 1,142,383	$ 1,328,353
Total Laterals				$ 638,860	24,673	$ 3,924,341	$ 4,563,200
Septic Tank and Pump	EA	21	7,500	$ 157,500	22,500	$ 472,500	$ 630,000
Total STEP System				$ 157,500	22,500	$ 472,500	$ 630,000
SUBTOTAL				**$ 3,285,860**		**$ 21,765,857**	**$ 25,051,716**
Escalation (to July 2025)	Percent	0.9%					$ 225,465
TOTAL							**$ 25,000,000**
Escalation (5%/yr for 3 yrs to 2028 mid-point construction)		5.0%					$ 3,750,000
TOTAL w/ Escalation							**$ 29,000,000**

Estimating Contingency		30%
		$ 8,700,000
Subtotal		$ 37,700,000
Construction bonds, insurance, GC & fee		35%
		$ 13,195,000
TOTALS		**$ 51,000,000**

Appendix C – Treatment & Discharge Capital Cost Estimates

Paradise Sewer Project	Aerated Lagoon & Land Discharge		Materials		Installation		
TREATMENT PLANT & DISCHARGE	UNIT	Quantity	Unit Cost	Subtotal	Unit Cost	Subtotal	Total
Pre-Engineered Building	SF	3,700	100	$ 370,000		$ -	$ 370,000
Concrete Slab	CY	552	900	$ 496,800		$ -	$ 496,800
Total Buildings (Lab, admin, storage, etc.)				$ 866,800		$ -	$ 867,000
Phase 1 Influent Pump Station	MGD	0.25	801,500	$ 201,000		$ -	$ 201,000
Total Influent Pumping Station				$ 201,000		$ -	$ 201,000
Screen Equipment	EA	1	120,000	$ 120,000		$ -	$ 120,000
Concrete Slab	CY	1.70	900	$ 1,530		$ -	$ 1,530
Concrete Wall	CY	4.96	1,500	$ 7,440		$ -	$ 7,440
Earthwork	CY	18.58	100	$ 1,858		$ -	$ 1,858
Total Headworks				$ 130,828		$ -	$ 131,000
Earthwork	CY	31,455	35	$ 1,100,925		$ -	$ 1,100,925
Clay Liner	SY	12,088	20	$ 241,760	10%	$ 24,176	$ 265,936
Aeration System	EA	1	370,000	$ 370,000	15%	$ 55,500	$ 425,500
MBBR Equipment	EA	1	1,250,000	$ 1,250,000	15%	$ 187,500	$ 1,437,500
Total Aerated Lagoon				$ 2,962,685		$ 267,176	$ 3,230,000
Onsite Water System	LS	1	30,000	$ 30,000		$ -	$ 30,000
Total Onsite Water/Pumping				$ 30,000		$ -	$ 30,000
Solids Storage/Thickening	LS	1	567,000	$ 567,000		$ -	$ 567,000
Solids Drying Beds	LS	1	300,000	$ 300,000		$ -	$ 300,000
Solids Pumping Station	MGD	0.25	1,484,000	$ 371,000		$ -	$ 371,000
Total Solids Handling				$ 1,238,000		$ -	$ 1,238,000
Effluent Pump Station	MGD	0.25	801,500	$ 201,000		$ -	$ 201,000
Discharge Piping	FT	1,000	800	$ 800,000		$ -	$ 800,000
Percolation Pond Earthwork	CY	48,400	35	$ 1,694,000		$ -	$ 1,694,000
Misc. Equipment (flow meter, sampling points, etc.)	EA	2	50,000	$ 100,000		$ -	$ 100,000
Total Land Discharge				$ 2,795,000		$ -	$ 2,795,000
SUBTOTAL				**$ 8,224,313**		**$ 267,176**	**$ 8,492,000**
Site Piping		1.0%					$ 84,920
Site Electrical		1.0%					$ 84,920
Instrumentation & Controls		2.0%					$ 169,840
Site Work		5.0%					$ 424,600
Miscellaneous Metals		1.0%					$ 84,920
Miscellaneous Concrete		1.0%					$ 84,920
SUBTOTAL w/ ADDERS							**$ 9,427,000**
Escalation (5%/yr for 3 yrs to 2028 mid-point construction)		5.0%					$ 1,414,050

Paradise Sewer Project	Aerated Lagoon & Land Discharge		Materials		Installation		
TREATMENT PLANT & DISCHARGE	UNIT	Quantity	Unit Cost	Subtotal	Unit Cost	Subtotal	Total
TOTAL w/ Escalation							**$ 11,000,000**

Estimating Contingency		30%
	$	3,300,000
Subtotal	$	14,300,000
Construction bonds, insurance, GC & fee		35%
	$	5,005,000
TOTAL	**$**	**19,300,000**

Paradise Sewer Project	MBR & Land Discharge		Materials		Installation		
TREATMENT PLANT & DISCHARGE	UNIT	Quantity	Unit Cost	Subtotal	Unit Cost	Subtotal	Total
Pre-Engineered Building	SF	3,700	100	$ 370,000		$ -	$ 370,000
Concrete Slab	CY	552	900	$ 496,800		$ -	$ 496,800
Total Buildings (Lab, admin, storage, etc.)				$ 866,800		$ -	$ 867,000
Phase 1 Influent Pump Station	MGD	0.25	801,500	$ 201,000		$ -	$ 201,000
Total Influent Pumping Station				$ 201,000		$ -	$ 201,000
Earthwork	CY	990	35	$ 34,650		$ -	$ 34,650
Concrete Liner	SF	6,664	25	$ 166,600		$ -	$ 166,600
Total Influent EQ Storage				$ 201,250		$ -	$ 202,000
Screen Equipment	EA	1	120,000	$ 120,000		$ -	$ 120,000
Concrete Slab	CY	1.70	900	$ 1,530		$ -	$ 1,530
Concrete Wall	CY	4.96	1,500	$ 7,440		$ -	$ 7,440
Earthwork	CY	18.58	100	$ 1,858		$ -	$ 1,858
Total Headworks				$ 130,828		$ -	$ 131,000
Channel	MGD	0.25	152,000	$ 38,000		$ -	$ 38,000
Fiberglass grating	SF	9.12	85	$ 1,000		$ -	$ 1,000
Total Grit Removal				$ 39,000		$ -	$ 39,000
MBR Equipment	EA	1	3,950,000	$ 3,950,000	10%	$ 395,000	$ 4,345,000
Concrete Slab	CY	130	900	$ 117,000		$ -	$ 117,000
Earthwork	CY	277	100	$ 27,700		$ -	$ 27,700
Building/Awning	SF	3,500	50	$ 175,000		$ -	$ 175,000
Total MBR Treatment				$ 4,269,700		$ 395,000	$ 4,665,000
Onsite Water System	LS	1	30,000	$ 30,000		$ -	$ 30,000
Total Onsite Water/Pumping				$ 30,000		$ -	$ 30,000
Solids Storage/Thickening	LS	1	567,000	$ 567,000		$ -	$ 567,000
Solids Drying Beds	LS	1	300,000	$ 300,000		$ -	$ 300,000
Solids Pumping Station	MGD	0.25	1,484,000	$ 371,000		$ -	$ 371,000
Total Solids Handling				$ 1,238,000		$ -	$ 1,238,000
Effluent Pump Station	MGD	0.25	801,500	$ 201,000		$ -	$ 201,000
Discharge Piping	FT	1,000	800	$ 800,000		$ -	$ 800,000
Percolation Pond Earthwork	CY	48,400	35	$ 1,694,000		$ -	$ 1,694,000
Misc. Equipment (flow meter, sampling points, etc.)	EA	2	50,000	$ 100,000		$ -	$ 100,000
Total Land Discharge				$ 2,795,000		$ -	$ 2,795,000
SUBTOTAL				**$ 9,771,578**		**$ 395,000**	**$ 10,167,000**
Site Piping		10.0%					$ 1,016,700
Site Electrical		10.0%					$ 1,016,700

Paradise Sewer Project	MBR & Land Discharge		Materials		Installation		
TREATMENT PLANT & DISCHARGE	UNIT	Quantity	Unit Cost	Subtotal	Unit Cost	Subtotal	Total
Instrumentation & Controls		8.0%					$ 813,360
Site Work		10.0%					$ 1,016,700
Miscellaneous Metals		1.0%					$ 101,670
Miscellaneous Concrete		1.0%					$ 101,670
SUBTOTAL w/ ADDERS							**$ 14,234,000**
Escalation (5%/yr for 3 yrs to 2028 mid-point construction)		5.0%					$ 2,135,100
TOTAL w/ Escalation							**$ 16,000,000**

Estimating Contingency		30%
	$	4,800,000
Subtotal	$	20,800,000
Construction bonds, insurance, GC & fee		35%
	$	7,280,000
TOTAL	**$**	**28,100,000**

Paradise Sewer Project	MBR & Surface Water Discharge		Materials		Installation		
TREATMENT PLANT & DISCHARGE	UNIT	Quantity	Unit Cost	Subtotal	Unit Cost	Subtotal	Total
Pre-Engineered Building	SF	3,700	100	$ 370,000		$ -	$ 370,000
Concrete Slab	CY	552	900	$ 496,800		$ -	$ 496,800
Total Buildings (Lab, admin, storage, etc.)				$ 866,800		$ -	$ 867,000
Phase 1 Influent Pump Station	MGD	0.25	801,500	$ 201,000		$ -	$ 201,000
Total Influent Pumping Station				$ 201,000		$ -	$ 201,000
Earthwork	CY	990	35	$ 34,650		$ -	$ 34,650
Concrete Liner	SF	6,664	25	$ 166,600		$ -	$ 166,600
Total Influent EQ Storage				$ 201,250		$ -	$ 202,000
Screen Equipment	EA	1	120,000	$ 120,000		$ -	$ 120,000
Concrete Slab	CY	1.70	900	$ 1,530		$ -	$ 1,530
Concrete Wall	CY	4.96	1,500	$ 7,440		$ -	$ 7,440
Earthwork	CY	18.58	100	$ 1,858		$ -	$ 1,858
Total Headworks				$ 130,828		$ -	$ 131,000
Channel	MGD	0.25	152,000	$ 38,000		$ -	$ 38,000
Fiberglass grating	SF	9.12	85	$ 1,000		$ -	$ 1,000
Total Grit Removal				$ 39,000		$ -	$ 39,000
MBR Equipment	EA	1	3,950,000	$ 3,950,000	10%	$ 395,000	$ 4,345,000
Concrete Slab	CY	130	900	$ 117,000		$ -	$ 117,000
Earthwork	CY	277	100	$ 27,700		$ -	$ 27,700
Building/Awning	SF	3,500	50	$ 175,000		$ -	$ 175,000
Total MBR Treatment				$ 4,269,700		$ 395,000	$ 4,665,000
Chemical Feed System (tanks, pumps, pipes, etc.)	LS	1	251,000	$ 251,000		$ -	$ 251,000
Concrete Slab	CY	9.35	900	$ 8,500		$ -	$ 8,500
Concrete Wall	CY	11.50	1,500	$ 17,300		$ -	$ 17,300
Earthwork	CY	412	100	$ 41,200		$ -	$ 41,200
Total Chlorine Disinfection				$ 318,000		$ -	$ 318,000
Dechlorination Feed System (tanks, pumps, pipes, etc.)	LS	1	206,000	$ 206,000		$ -	$ 206,000
Total Dechlorination				$ 206,000		$ -	$ 206,000
Onsite Water System	LS	1	30,000	$ 30,000		$ -	$ 30,000
Total Onsite Water/Pumping				$ 30,000		$ -	$ 30,000
Solids Storage/Thickening	LS	1	567,000	$ 567,000		$ -	$ 567,000
Solids Drying Beds	LS	1	300,000	$ 300,000		$ -	$ 300,000
Solids Pumping Station	MGD	0.25	1,484,000	$ 371,000		$ -	$ 371,000
Total Solids Handling				$ 1,238,000		$ -	$ 1,238,000
Effluent Pump Station	MGD	0.25	801,500	$ 201,000		$ -	$ 201,000

Paradise Sewer Project	MBR & Surface Water Discharge		Materials		Installation		
TREATMENT PLANT & DISCHARGE	UNIT	Quantity	Unit Cost	Subtotal	Unit Cost	Subtotal	Total
Discharge Piping	FT	425	800	$ 340,000	$	-	$ 340,000
Misc. Equipment (flow meter, sampling points, etc.)	EA	2	50,000	$ 100,000	$	-	$ 100,000
Total Surface Water Discharge				$ 641,000	$	-	$ 641,000
SUBTOTAL				**$ 8,141,578**	**$**	**395,000**	**$ 8,537,000**
Site Piping		10.0%					$ 853,700
Site Electrical		10.0%					$ 853,700
Instrumentation & Controls		8.0%					$ 682,960
Site Work		10.0%					$ 853,700
Miscellaneous Metals		1.0%					$ 85,370
Miscellaneous Concrete		1.0%					$ 85,370
SUBTOTAL w/ ADDERS							**$ 11,952,000**
Escalation (5%/yr for 3 yrs to 2028 mid-point construction)		5.0%					$ 1,792,800
TOTAL w/ Escalation							**$ 14,000,000**

Estimating Contingency		30%
	$	4,200,000
Subtotal	$	18,200,000
Construction bonds, insurance, GC & fee		35%
	$	6,370,000
TOTAL	**$**	**24,600,000**

Appendix D – Special Town Council Meeting Presentation Slides (August 14, 2025)

TOWN OF PARADISE
SEWER PROJECT

Special Town Council Meeting

August 14, 2025

Ad Hoc Committee Recommendation

Alternative 1: Hybrid Gravity/Septic Tank Effluent Pump (STEP) collection system, aerated lagoon treatment, and land discharge to percolation/evaporation pond(s)

- Serves Downtown where growth has lagged
- Optimizes operational costs and rate payer burden
- Serves project mission to be fundable (affordable), permittable, and scalable to meet Paradise's needs today and into the future

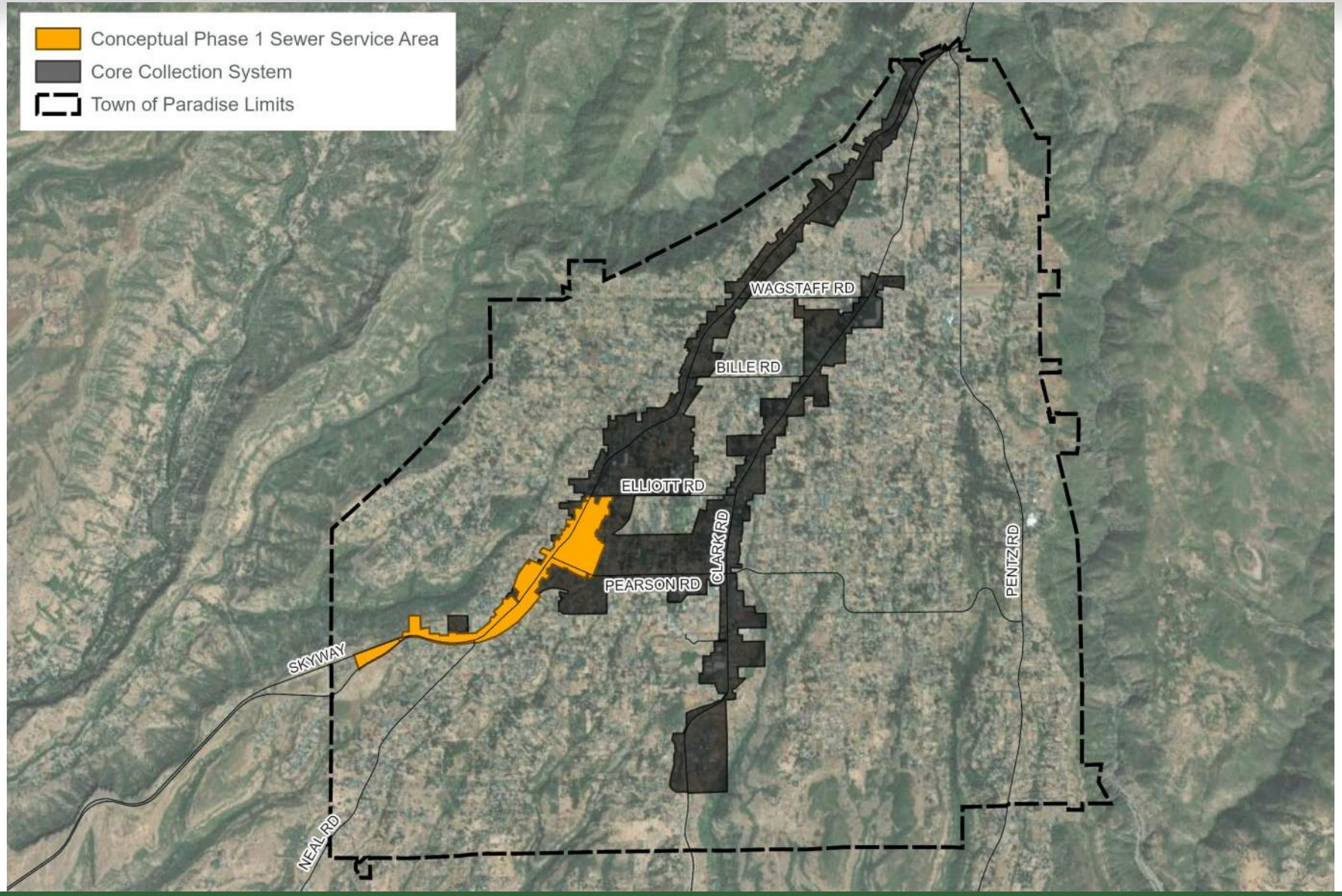
- Funding secured and probable = $84.8M
- Phase 1 estimated at $114M
- Town Council has options to consider redirecting funds to reach a constructable project now


Mt Shasta WWTP

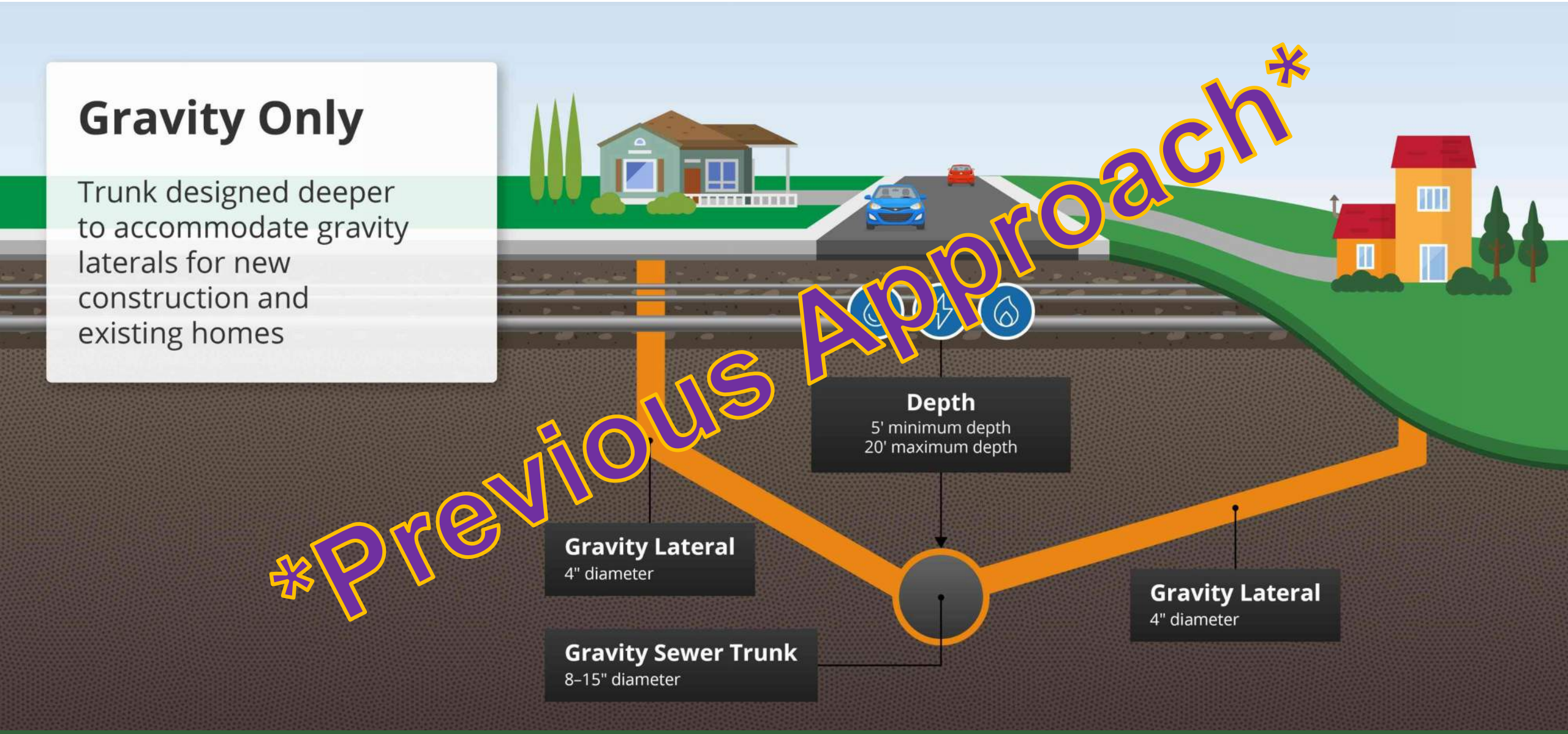
Hybrid Gravity/STEP Sewer Concept

- Gravity trunk mains along Skyway, Clark, Pearson at full buildout with low-elevation areas/properties connected via on-site STEP systems
  - Most compatible solution for Paradise
  - STEP system on individual properties in low elevation zones
  - Owners retrofit existing septic tanks, if in good condition
  - Replaces small grinder pump stations with regions connected via STEP
- Main trunk lines installed at shallower depth than original gravity design
- A phase 1 project (see figure next slide) prioritizing downtown may not require any central lift stations

Conceptual Phase 1 Service Area



Collection System Design Criteria for Gravity



Collection System Design Criteria for Hybrid — Scenario A

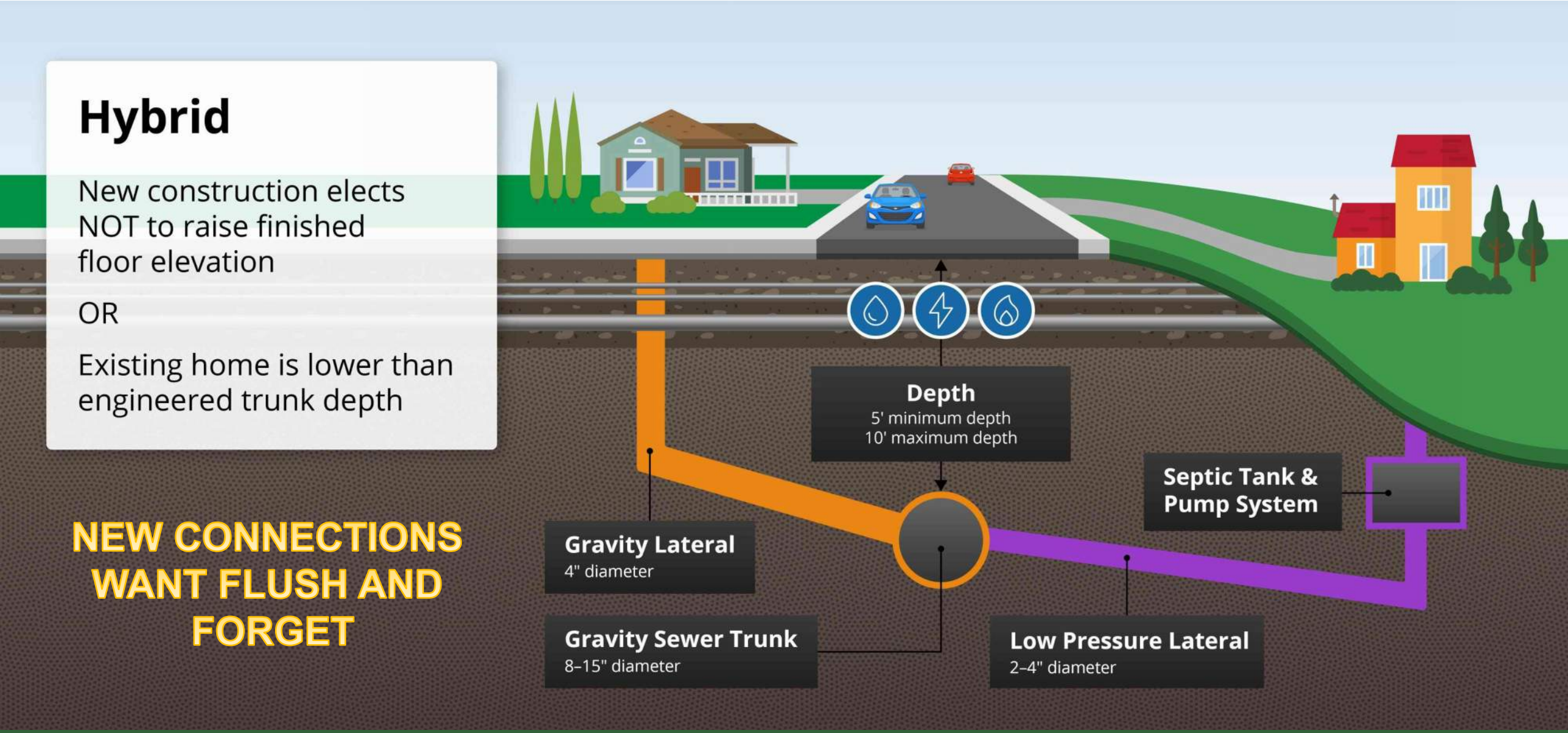
Hybrid

New construction elects NOT to raise finished floor elevation

OR

Existing home is lower than engineered trunk depth

NEW CONNECTIONS WANT FLUSH AND FORGET



Collection System Design Criteria for Hybrid — Scenario B

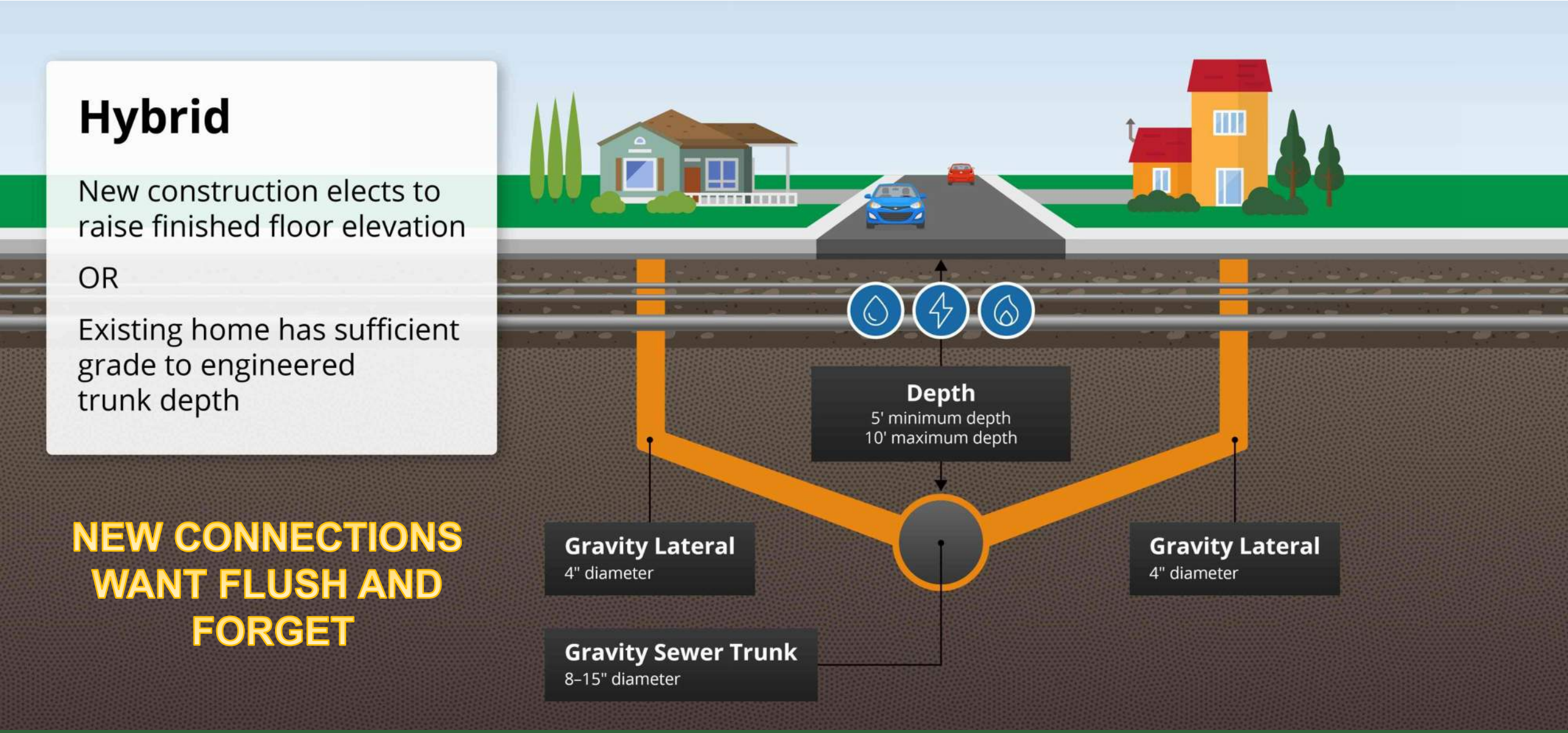
Hybrid

New construction elects to raise finished floor elevation

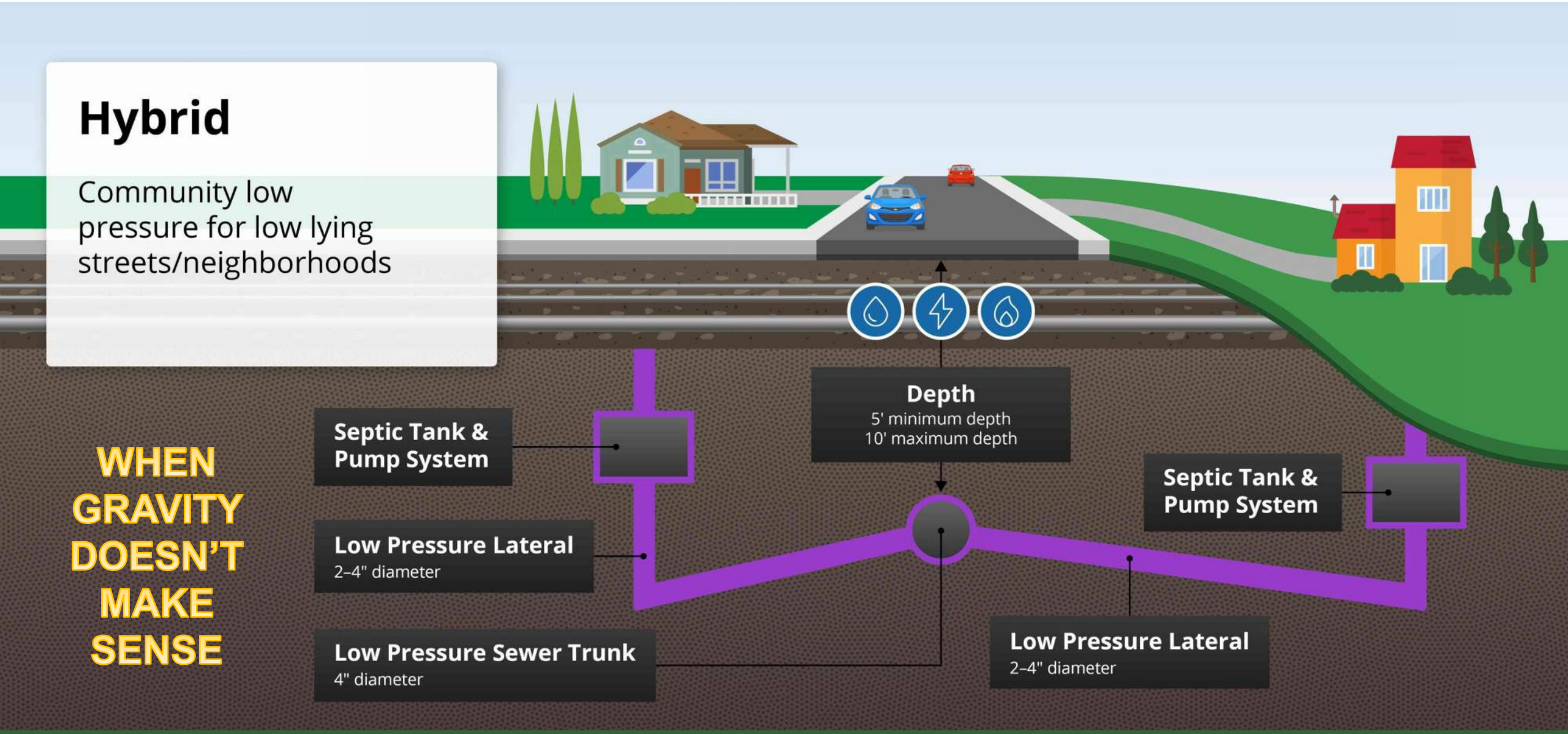
OR

Existing home has sufficient grade to engineered trunk depth

NEW CONNECTIONS WANT FLUSH AND FORGET



Collection System Design Criteria for Hybrid — Scenario C

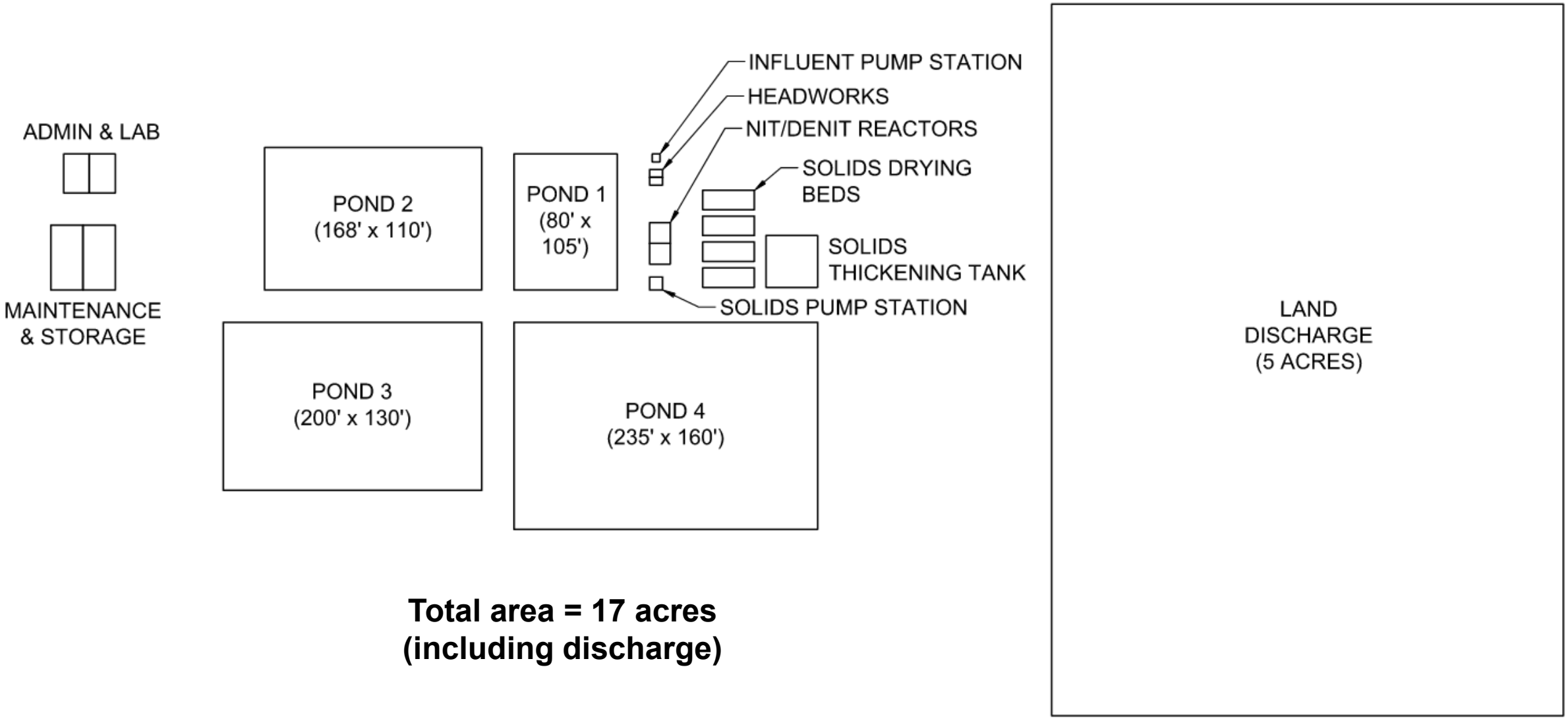


Aerated Treatment Lagoon/Ponds

- Most cost effective (Capital and O&M)
- Simple operation – less operator experience required
- Less sensitive to smaller/inconsistent flows
- Largest footprint
- Facility sizing depends more on hydraulics (amount of water inflow) than solids/carbon content, and would not change significantly between STEP and gravity collection system
- Expand or repurpose ponds to scale up
- Could produce water for agricultural reuse with disinfection


City of Biggs

Aerated Treatment Lagoon/Ponds



Total area = 17 acres (including discharge)

Land Discharge – Percolation/Evaporation Pond


Rio Alto Water District


City of Biggs

- Permit renewal every 10 years
- Expect to need to meet low total nitrogen limits (<10 mg/L)
- Typical permit requirements include quarterly groundwater monitoring
- Preliminary estimate of 5 acres needed for 0.1 MGD system

TOWN OF PARADISE
SEWER PROJECT

Public Input

Community Input – Richard Harriman

- Public interest attorney in Butte County
- Suggestion to partner with property developers for project financing (California Infrastructure & Economic Development Loans – IBank about 4% interest)
- Consider updates to the General Plan to include requirements for development financing of sewer service
- *Ad Hoc Committee Response: The Town will take the Sewer Project into consideration in updates to the General Plan. The Town plans to use state and federal grant funding for the capital costs of the Phase 1 project.*

Community Input – Blaine Stone

- Suggestions for secondary treatment in modular reactors that can be prefabricated and delivered to site
- Modular treatment system can replace treatment lagoons
- *Ad Hoc Committee Response: Modular secondary treatment systems were considered in the treatment facility alternatives analysis evaluation.*

Community Input – Tony Brandi

- Discussed potential land availability for treatment facilities on Clark Rd.
- The available site has been improved with excavation and is currently being used as a temporary dirt processing facility
- *Ad Hoc Committee Response: potential treatment plant locations will be identified in the Subsequent Programmatic EIR and available for public comment.*

Community & Regulatory Input – Melissa Schuster & Matt Ball

- Representatives from Butte County Mosquito & Vector Control District
- Ponds with rip rap siding are becoming more difficult to treat for mosquitos as larvicide products are becoming limited
- Ponds can be constructed to limit mosquito growth – other agencies have successfully designed facilities that are easy to mitigate
- Daily fines could be issued in extreme instances if mosquitos are not properly managed
- Butte County Mosquito & Vector Control District wants to partner with the Town to ensure the pond design discourages mosquito growth
- *Ad Hoc Committee Response: treatment and disposal ponds will be designed with mosquito control in mind and the Town will continue to engage with the Butte County Mosquito & Vector Control District through project design.*

Community Input – Dave Anderson

- Dave is a general engineering contractor and has experience installing sewer main pipelines, lift stations, and STEP systems
- Agrees that gravity is the ideal solution, but suggests STEP for lower cost and easier installation
- Suggests continuing to look at STEP design as a potential bid-alternate for construction due to potential cost savings from pipe depth, diameter, and installation type
- Suggested locating the sewer pipeline under the sidewalk to avoid PID and PG&E utilities in the roadway
- *Ad Hoc Committee Response: The Town will continue to examine ways to optimize project implementation cost and is utilizing STEP in low elevation areas to achieve this goal.*

Response to Public Comments

- Project cost and financing
  - Project cost per parcel served – Town objective for initial costs entirely funded with grants
  - Operational costs and rate payer burden – Hybrid collection and simple lagoon treatment with land discharge is the lowest operational cost alternative; the Town Council has committed to subsidize operational costs for the first 5 years
  - Formation of a special district – Not conducive to stimulating growth in service area
  - Cost escalation – Construction cost estimates were escalated at 5% per year to 2028, the estimated midpoint of construction

Response to Public Comments

- Construction duration 2027-2029
  - Subsequent EIR – 6-12 months
  - Right-of-way and property acquisition – 12-18 months
  - Design for collection system and treatment facility – approx. 2 years once design services have been procured
- Disruption to business during construction
  - The Town will work with the contractor and local businesses to minimize disruptions during construction, potentially including night work
  - All collection system alternatives will likely require open trench construction methods

Response to Public Comments

- O&M burden of large pump stations vs. small STEP pumps
  - Hybrid STEP/gravity collection system minimizes the number of central pump stations, and the initial project may not have any central pump stations
  - O&M concerns of STEP is due to more (smaller) pumps to maintain rather than fewer (larger) pumps
- Other communities with STEP systems have been successful, including some within Paradise
  - Owners report successes with full STEP implementation in smaller communities (<100 connections) and newer installations, but increased operational challenges with more connections and older systems

Response to Public Comments

- Treatment plant location and selection process/timeline
  - Treatment location selection and land acquisition in 2026
  - Location alternatives will be part of the Subsequent Programmatic EIR with opportunities for public review and comment
  - CDBG-DR funding prevents property purchase before completion of EIR or NEPA process
- Purple Pipe can be laid in the same trench as sewer lines
  - CA Code of Regulations requires minimum separation between sewer and reuse or potable water (minimum 1-ft vertical and 10-ft horizontal)

Response to Public Comments

- Directional boring of sewer lines will save time and money
  - PID experience validates that directional boring in Paradise is not necessarily faster or less expensive than open-trench construction, especially at required depths
  - Directional boring is not practical for most of Paradise due to rocky ground conditions
- Cost of treatment for septic effluent only vs. typical municipal wastewater
  - Septic effluent only decreases solids but does not significantly reduce soluble organics or nitrogen
  - Treatment facility sizing is driven by water flow not solids content
  - Primary clarification is typically not needed for small systems

Response to Public Comments

- Pressure reduction for a fully built out low-pressure/STEP system
  - Pressure reducing valves are not typically recommended for wastewater
  - Risks of failure are increased and include sewer spills or backup into homes
  - More moving parts = more points of failure

Response to Public Comments

- Feasibility of a STEG system with septic effluent only into a gravity collection system to reduce need for minimum velocities in collection system pipes
  - In Paradise's topography, pipe depth in a fully gravity sewer would be driven by the need to capture low elevation users, not by minimum velocities
  - Reducing solids in gravity pipes would not reduce pipe sizes
  - STEP/STEG requires equipment be maintained at every parcel, increasing O&M cost

TOWN OF PARADISE
SEWER PROJECT

Project Cost & Funding

Phase 1 Capital Cost Estimate

Total Project Cost Estimate Range for Alternative 1: Hybrid gravity/STEP collection system, aerated lagoon/pond treatment, and land discharge via percolation/evaporation ponds

Project Cost Components	Low Estimate	High Estimate
Engineering Design & Preconstruction	$ 9,100,000	$ 14,000,000
Town, OA (including Environmental) & Legal	$ 3,000,000	$ 4,500,000
Real Estate Acquisition & Professional Services	$ 4,400,000	$ 5,600,000
Environmental Permit / Agency Costs	$ 50,000	$ 100,000
Environmental Mitigation	$ 100,000	$ 500,000
Collection System Construction	$ 44,000,000	$ 51,000,000
Wastewater Treatment & Discharge Construction	$ 16,500,000	$ 19,300,000
Engineering Services During Construction	$ 1,800,000	$ 4,600,000
Construction Management & Inspection	$ 3,600,000	$ 5,600,000
Town Cost & Contingency	$ 6,600,000	$ 8,100,000
Estimated Total Project Cost	**$ 90,000,000**	**$ 114,000,000**

Notes: Costs are escalated to midpoint of construction in 2028 for system sized to 0.1 mgd buildout.
Range of estimate follows Association for the Advancement of Cost Engineering (AACE) guidelines for Class 5 cost estimate (-50% to +100%) – conceptual level estimate

Phase 1 Capital Cost Estimate

Project Cost Components	Low Estimate	High Estimate	Basis of Estimate
Engineering Design & Preconstruction	$9,100,000	$14,000,000	**15% to 20%** of construction value, based on industry metrics
Town, OA (including Environmental) & Legal	$3,000,000	$4,500,000	Estimate to complete through design **(+/- 20%)**
Real Estate Acquisition & Professional Services	$4,400,000	$ 5,600,000	Parcel-by-parcel estimate from HDR ROW estimating team
Environmental Permit / Agency Costs	$50,000	$100,000	Estimate from HDR environmental team based on reduced project scope and anticipated impacts
Environmental Mitigation	$100,000	$500,000	Estimate from HDR environmental team based on reduced project scope and anticipated impacts

Phase 1 Capital Cost Estimate

Project Cost Components	Low Estimate	High Estimate	Basis of Estimate
Collection System Construction	$44,000,000	$51,000,000	• Equipment, materials, installation, and labor costs – based on independently reviewed estimate from Mountain Cascade prepared for Paradise (collection) and HDR estimating standards for WWTP facilities • **Escalation** = **5% per year** through 2028 (based on current market conditions) • **Estimating contingency** = **20% to 30%** of escalated total, per AACE Estimating Guidelines • **Construction bonds, insurance, general conditions, and profit = 25 to 35%** of total including contingency, based on industry metrics
Wastewater Treatment & Discharge Construction	$16,500,000	$19,300,000	

Phase 1 Capital Cost Estimate

Project Cost Components	Low Estimate	High Estimate	Basis of Estimate
Engineering Services During Construction	$1,800,000	$4,600,000	**3% to 7%** of construction value, based on industry metrics
Construction Mgmt & Inspection	$3,600,000	$5,600,000	**6% to 8%** of construction value, based on industry metrics
Town Contingency	$6,600,000	$8,100,000	**10%** of construction phase costs (construction + ESDC + CM)

Construction Cost Estimates

- Hybrid Gravity/STEP Collection System includes:
  - Ground-up estimate using unit costs developed by a contractor for this project in Paradise, considering local geology
  - PVC gravity mains and manholes for gravity zones
  - PVC pressure force-mains for STEP zones
  - Service laterals from main to property line for all parcels in service area
  - Service laterals from property line to structure for all properties in the service area with existing structures
  - New STEP tank/pump system and power service for all existing structures in STEP zones
  - Assumes open trench construction for all piping
  - Pavement restoration
  - Potholing & utility verification
  - Traffic control during construction

Construction Cost Estimate

- Aerated Ponds Wastewater Treatment & Disposal facilities include:
  - Onsite buildings and lab
  - Influent pumping
  - Headworks
  - Clay-lined ponds with aerators
  - Nitrification/denitrification reactor
  - Onsite water service
  - Solids thickening, pumping, and drying beds
  - Electrical and I&C
  - Site work and misc. piping, metals, and concrete
  - Effluent discharge pumping and ponds (unlined)
  - Does not include aesthetic improvements (berms, wetland plants/habitat)
  - Does not include disinfection facilities – assumes discharge ponds are not publicly accessible

Committed Town Rate Subsidy

- On August 8, 2023, Paradise Town Council conceptually approved a rate subsidy plan...
  - Rate Study would establish potential average rates near $85.66/month (target 2% of MHI)
  - O&M Financing Assistance would establish an up-front operating reserve of $1,200,000 and commit $526,000 annually for first ten years of utility's operation
  - Total commitment estimated to be $6,460,000
  - Funding sources: Paradise Recovery & Operations (PRO) Fund Project Reserves

Rate Subsidy will need to be reviewed in the lens of the revised project scale and project costs (part of larger rate setting requirements)

Project Funding Secured & Probable

Secured Funding

(1) CDBG-DR APA-2 Design $30,000,000 (active for pre-construction)
(2) CDBG-DR Town Allocation $35,000,000 (secured for construction)
(3) EPA Community Grant $1,750,000 (pending)

Clean Water SRF Funding Opportunities

(4) Clean Water SRF (Grant) $28,097,669 (pending)
(5) Clean Water SRF (Grant) $TBD Future

Additional Funding Pursuits (Future Project Phases)

(6) USACE 219 - Initial Request $2,000,000
(7) USACE 219 - Remaining Butte County Allocation $48,000,000

Project Funding and Estimated Costs

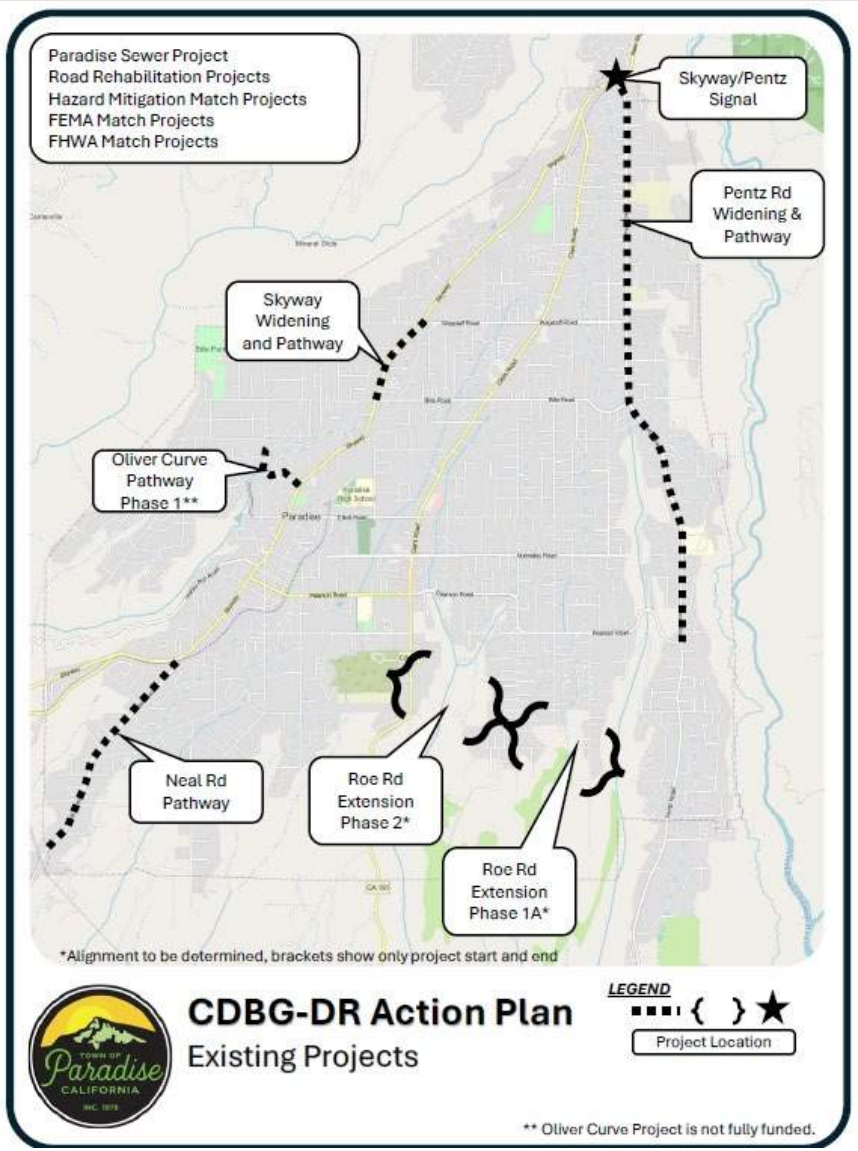
- For the purposes of establishing project direction, assume a project cost of $114M (high end)
- Safely the Town can state it has combined $84M available to complete the project.
- There are no plans for assessments or local contribution from Town residents for design or construction costs – all costs are to be covered by state and federal grant funding

- **Funding shortfall $114 - $84M = $30M**

Funding Shortfall Options

- Wait for more grant funding opportunities
- Take loans to finance the project shortfall
  - Repaid by owners
  - Repaid by Town
- Review CDBG-DR Infrastructure Allocation priorities and reallocate road funds to the Sewer Project

CDBG-DR Infrastructure

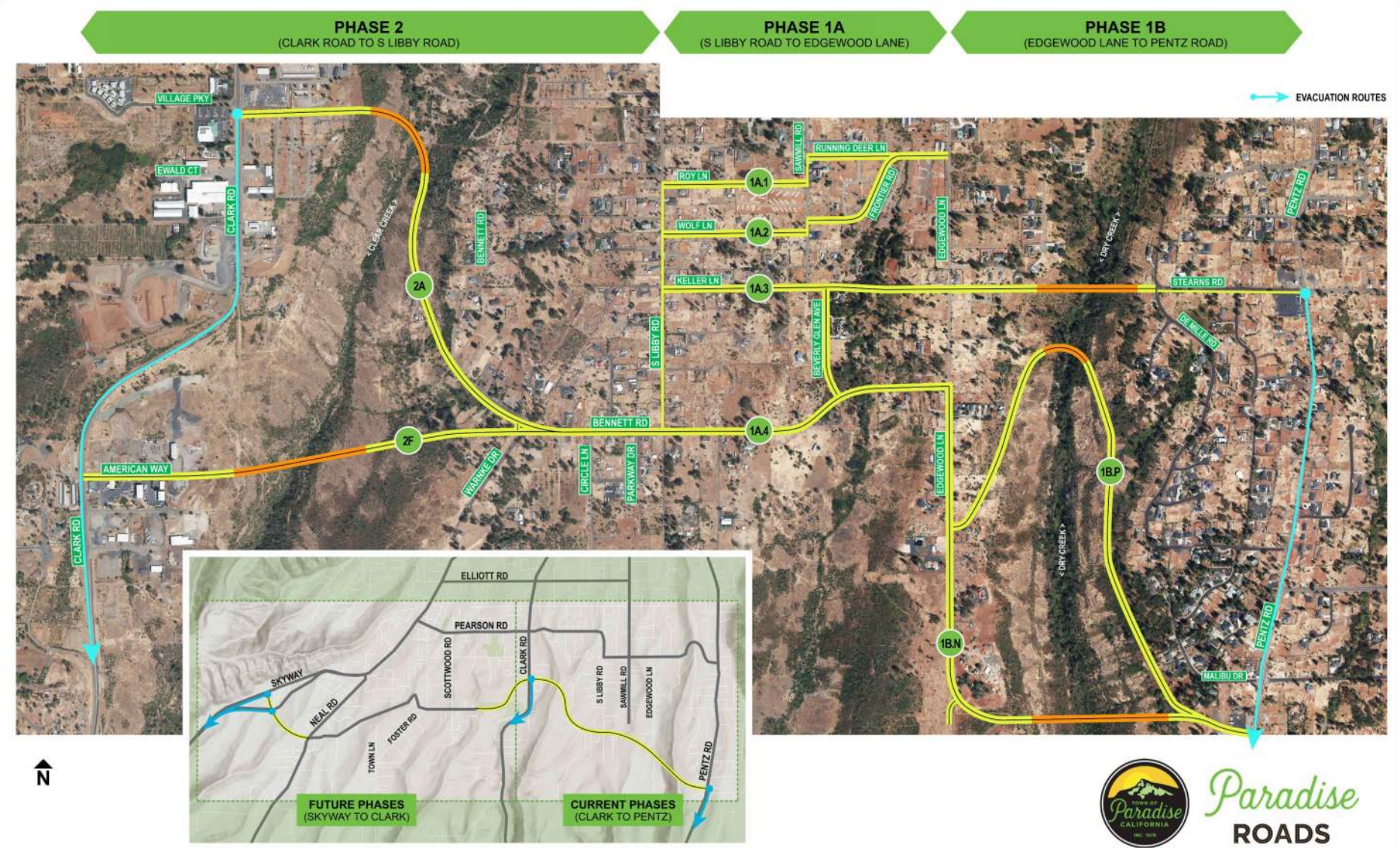


- Uses $200M allocation towards a diverse set of projects including:
  - Pentz Road Widening (Pearson to Skyway)
  - Skyway Widening (Bille to Wagstaff)
  - Traffic Signal at Skyway/Pentz
  - Constructing Roe Road between Edgewood to Clark Road
- Funding is administered by California Department of Housing & Community Development
  - Ongoing partnership to ensure Paradise's needs in an evolving recovery are met to maximum extent possible

CDBG-DR Funds Reallocation

- Environmental scoping of Roe Road Project, especially Phase 2, indicated little support for the project to move forward when considering neighborhood impacts.
- Town BUILD/RAISE funding application for $25M was recently unsuccessful

Roe Road 1 & 2 Phasing Concepts



CDBG-DR Funds Reallocation

CDBG-DR Funds (Flexible)

• Suspend Roe Road Phase 2 (S Libby to Clark)	-$52,000,000
• Supplement Roe Road Phase 1A (Edgewood to S Libby)	+$3,000,000
• Fully Fund Oliver Curve Phase 1 (Skyway to Valley View)	+$12,300,000
• Supplement Paradise Sewer Project Phase 1	+$36,700,000
Net Change	$0

LTCAP Funds (Not Flexible)

• De-obligate Roe Road Phase 2 (S Libby to Clark)	-$33,000,000
Net Change	-$33,000,000

CDBG-DR Funds Reallocation
Alternative

CDBG-DR Funds (Flexible)

• Abandon Current Scope/Limits of Roe Road Phases 1A/2	-$72,200,000
• Create new Scope/Limits of Roe Road Phases 1A/2	+$35,500,000
• Supplement Paradise Sewer Project Phase 1	+$36,700,000
Net Change	$0

LTCAP Funds (Not Flexible)

• Maintain Roe Road Phase 2 (S Libby to Clark) *Pending Approval*	$33,000,000
Net Change	$33,000,000

***Pending Approval* Town would need to engage on potential scope changes to remove bike path and other amenities with goal to only construct a new two-lane roadway along the corridor (limits TBD) with $70.3M budget.**

Project Funding and Estimated Costs

- For the purposes of establishing project direction, assume a project cost of $114M (high end)
- Safely the Town can state it has combined $84M available to complete the project.
- Advance concept of CDBG-DR Infrastructure Reallocation from Roe Road Phase 2 ($36.7M)
- Work with California Transportation Commission to retain $33M for re-tooled Roe Road project.

- **Sewer Funding surplus $120.7M for $114M project**
- Added contingency or budget available for additional parcels to be served in Phase 1

Updated Project Funding Picture

Secured Funding

(1) CDBG-DR APA-2 Design	$30,000,000 (active for pre-construction)
(2) CDBG-DR Town Allocation	$35,000,000 (secured for construction)
(3) EPA Community Grant	$1,750,000 (pending)

Clean Water SRF Funding Opportunities

(4) Clean Water SRF (Grant)	$28,097,669 (pending)
(5) Clean Water SRF (Grant)	$TBD Future

Reallocated Funding

(6) CDBG-DR Town Allocation	$36,700,000 (pending)

Additional Funding Pursuits (Future Project Phases)

(7) USACE 219 - Initial Request	$2,000,000
(8) USACE 219 - Remaining Allocation	$48,000,000

Project Forecast

August

- Public feedback on proposed alternative
- Special Town Council Meeting – August 14th, 6-8 pm

September

- Begin Subsequent EIR
- Begin procurement of treatment facility designer
- Resume funding application(s)

Fall 2025

- Resume collection design
- Begin wastewater treatment facility siting

2026

- Continue design of collection & treatment facilities
- Complete Subsequent EIR
- Begin Environmental permitting
- Begin ROW Acquisition

2027-2029

- Complete design
- Begin and complete construction

Project Approvals

- Town Council approval to proceed with design, environmental, ROW, and construction of the revised project description – 8/14/25
- CEQA – Subsequent EIR (see next slide)
- Town Council approval to award design contract for the treatment facility
- Town Council approval to award/approve construction contracts for the treatment facility and for the collection system
- Proposition 218 Protest Process
  - Required for setting sewer utility rates
  - Town must notify affected property owners and conduct a public hearing, and property owners have opportunity to submit written protests

Environmental Approach

- The Town is preparing a Subsequent Programmatic EIR
  - Incorporating relevant elements of prior EIR by reference
  - Focusing analysis on incremental changes to the analysis
- Input and comments received during prior CEQA process will be considered
  - Input received during regional sewer project process requested consideration of a local option
- In addition to the “No Project” alternative, the Town is looking at several locations for the proposed WWTP
  - Detailed analysis will be included for each site
- Project website will be kept up to date
  - There will be an opportunity for public input after public draft EIR is released for a 45-day public review period

Projected Environmental Forecast

Fall/Winter 2025/2026

- Completion of technical field studies
- Update tribal coordination
- Development of Subsequent PEIR

Spring 2026

- Regulatory agency coordination/ consultation
- Circulate Subsequent PEIR for public review
- Public Review Period + Meetings

Summer 2026

- Finalize Subsequent PEIR and MMRP
- NEPA Clearance

Summer/Fall 2026

- Certify CEQA Document
- Permitting

Why is this time different?

- We have the most experienced and capable team to deliver the project with the insight and knowledge from professionals who have built these facilities before.
- We know more now about what it takes to build a new sewer utility in Paradise than any preceding approach to this project.
- For the first time in the last 30+ years, the Paradise Sewer Project has a path to construction with funding secured, probable and available.
- Town Council has already committed to a rate subsidy as the Sewer is an investment into our recovery.
- Project recommended is the most scalable and affordable to design and construct now and operate into the future.
- Town has full support of the Regional Board for a local option.
- Further delays will reduce our ability to use critical CDBG-DR funds on the project with no replacement source in sight.

Next Steps

- **Action Requested**

1. Consider adopting Resolution No. 2025-___ "A Resolution of the Town Council of the Town of Paradise to Concur with the Paradise Sewer Project Ad Hoc Committee's Recommendation to Direct a Revised Project Description to Include Hybrid Gravity/Low Pressure Collection System, Aerated Lagoon Wastewater Treatment, and Percolation/Evaporation Pond Effluent Discharge" (Alternative 1); and,
2. Provide direction to staff to immediately commence and resume efforts to advance the project forward through environmental and design activities to the maximum and most efficient means feasible; and,
3. Provide direction to staff to bring back formal revisions to the Town's CDBG-DR Infrastructure Action Plan which provides additional funds to the Paradise Sewer Project's first phase, as well as coordinate with impacted funding agencies for action implementation. (ROLL CALL VOTE)

- **Receive Public Comments**
  - 3-Minute Limit (standard Council meeting)