



# TOWN OF PARADISE SEWER PROJECT

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## 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





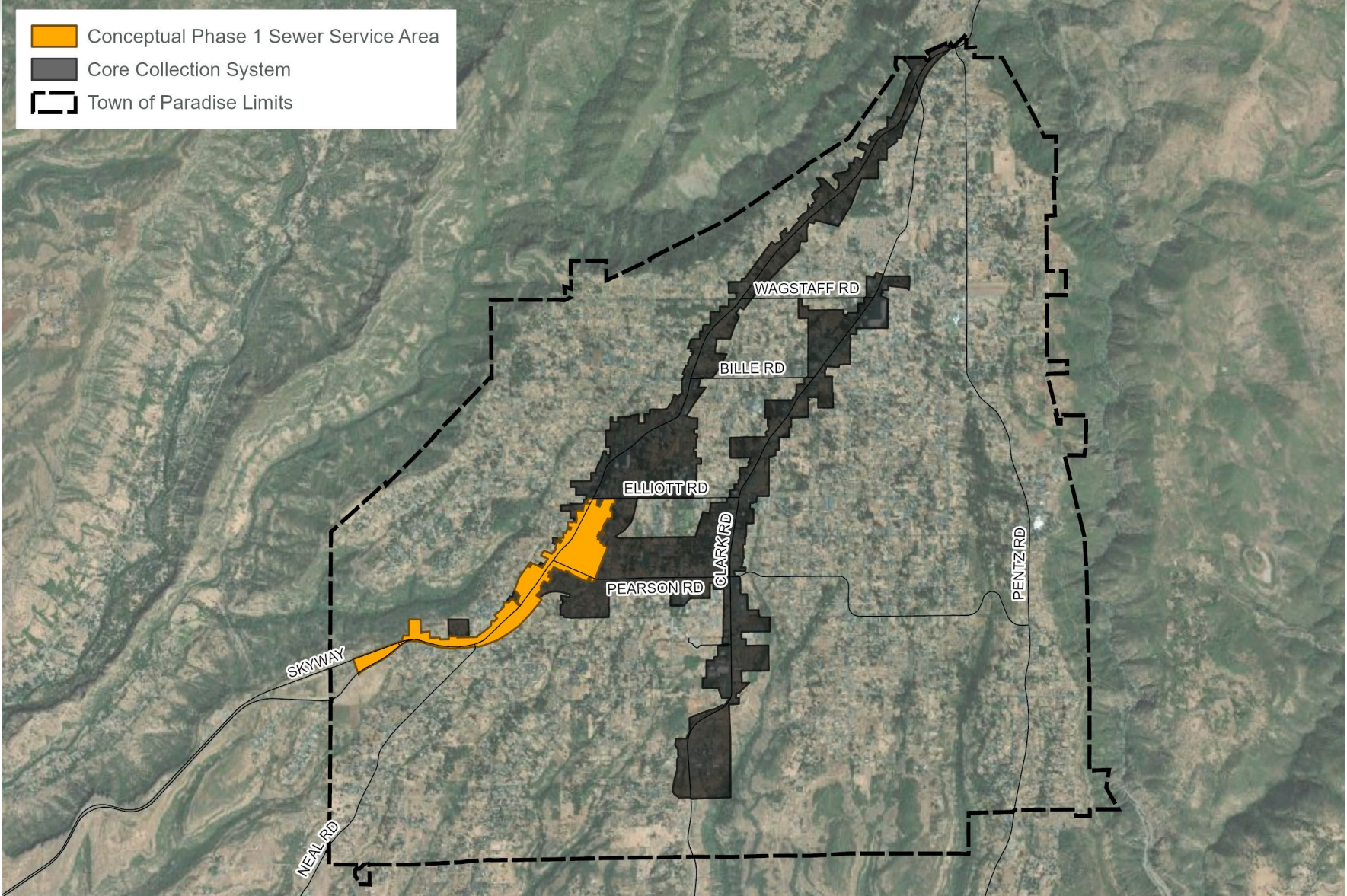


# Hybrid Gravity/STEP Sewer Concept

- 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



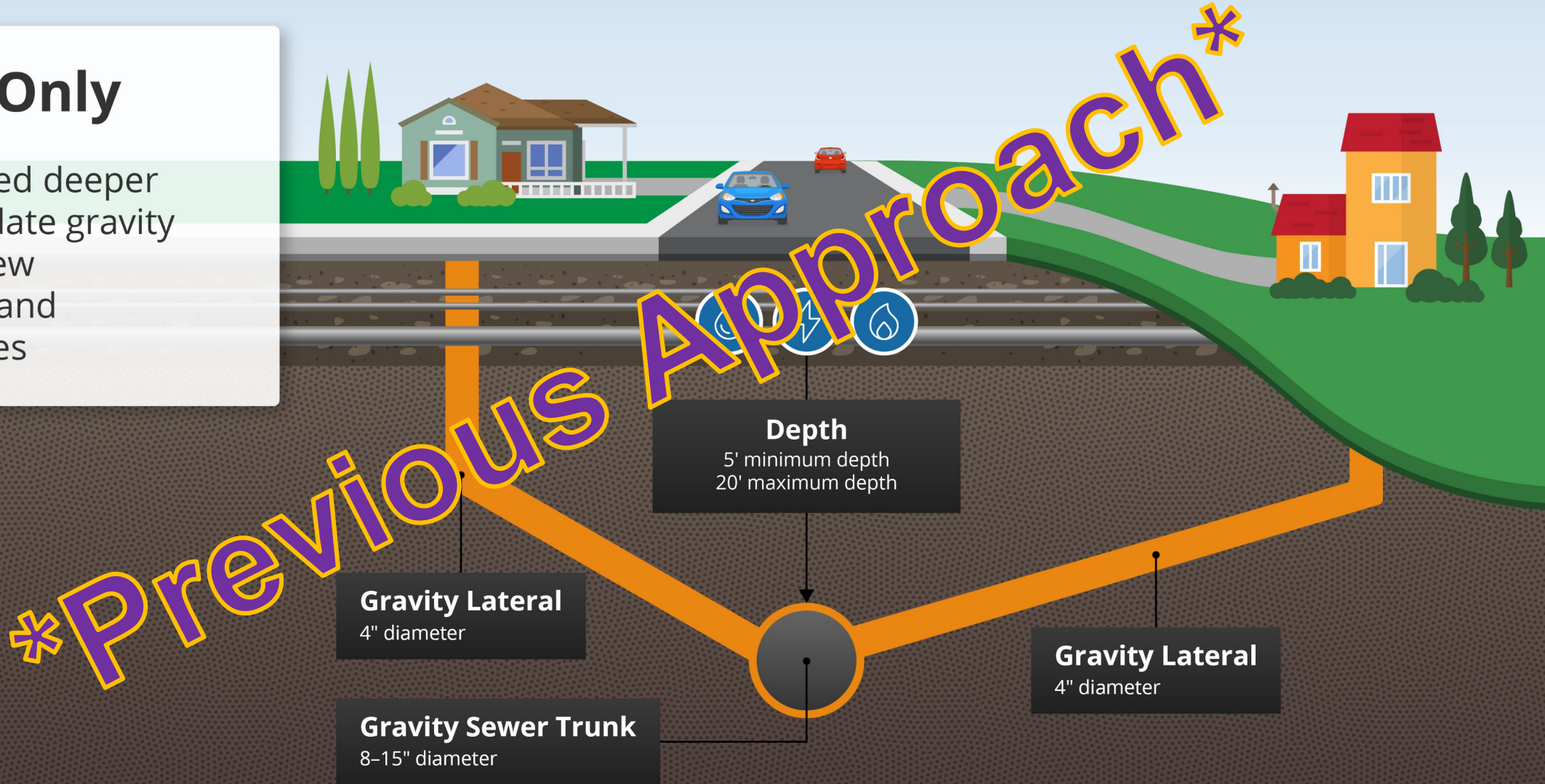




# Collection System Design Criteria for Gravity

## Gravity Only

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







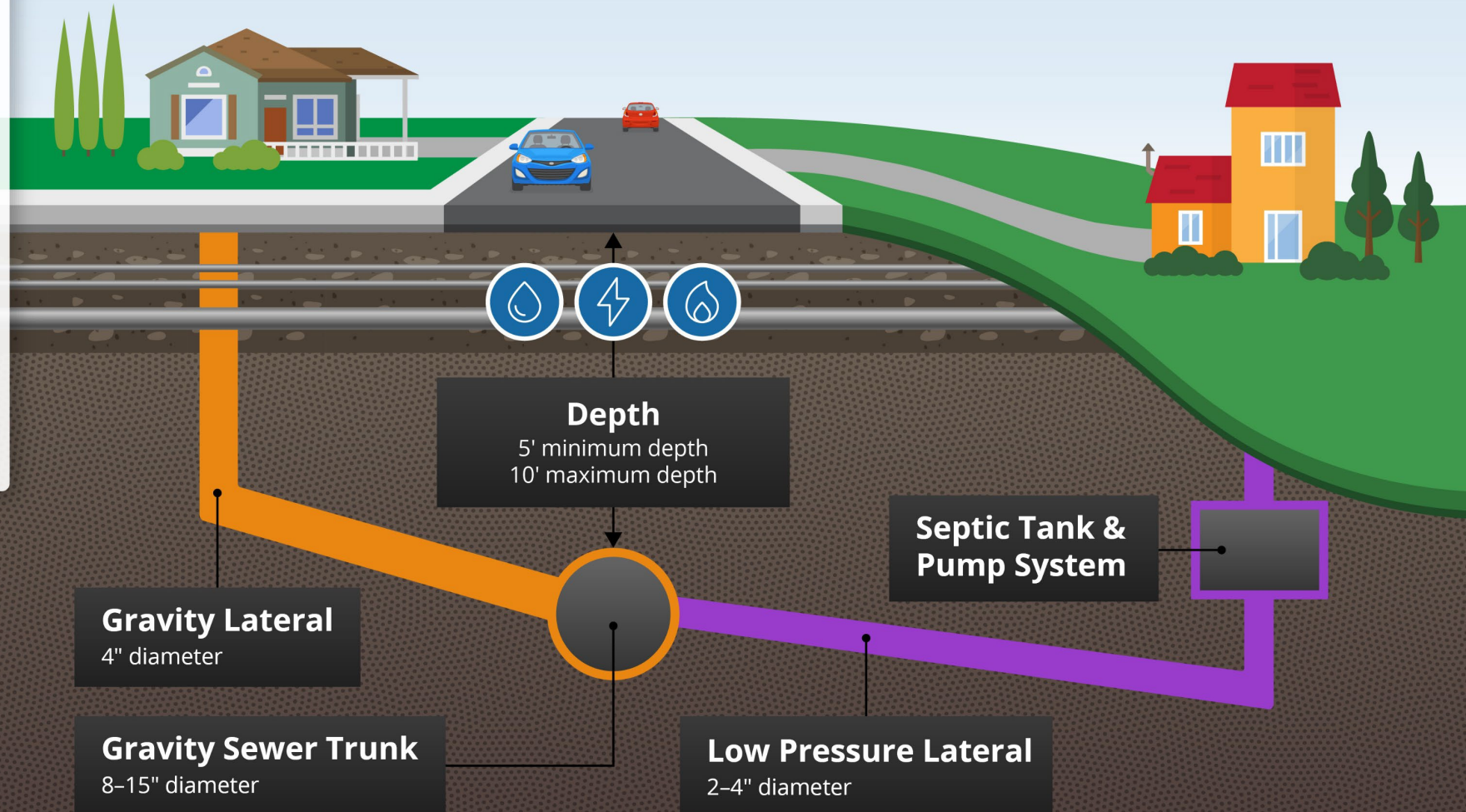
## Hybrid

New construction elects  
NOT to raise finished  
floor elevation

OR

Existing home is lower than  
engineered trunk depth

**NEW CONNECTIONS  
WANT FLUSH AND  
FORGET**







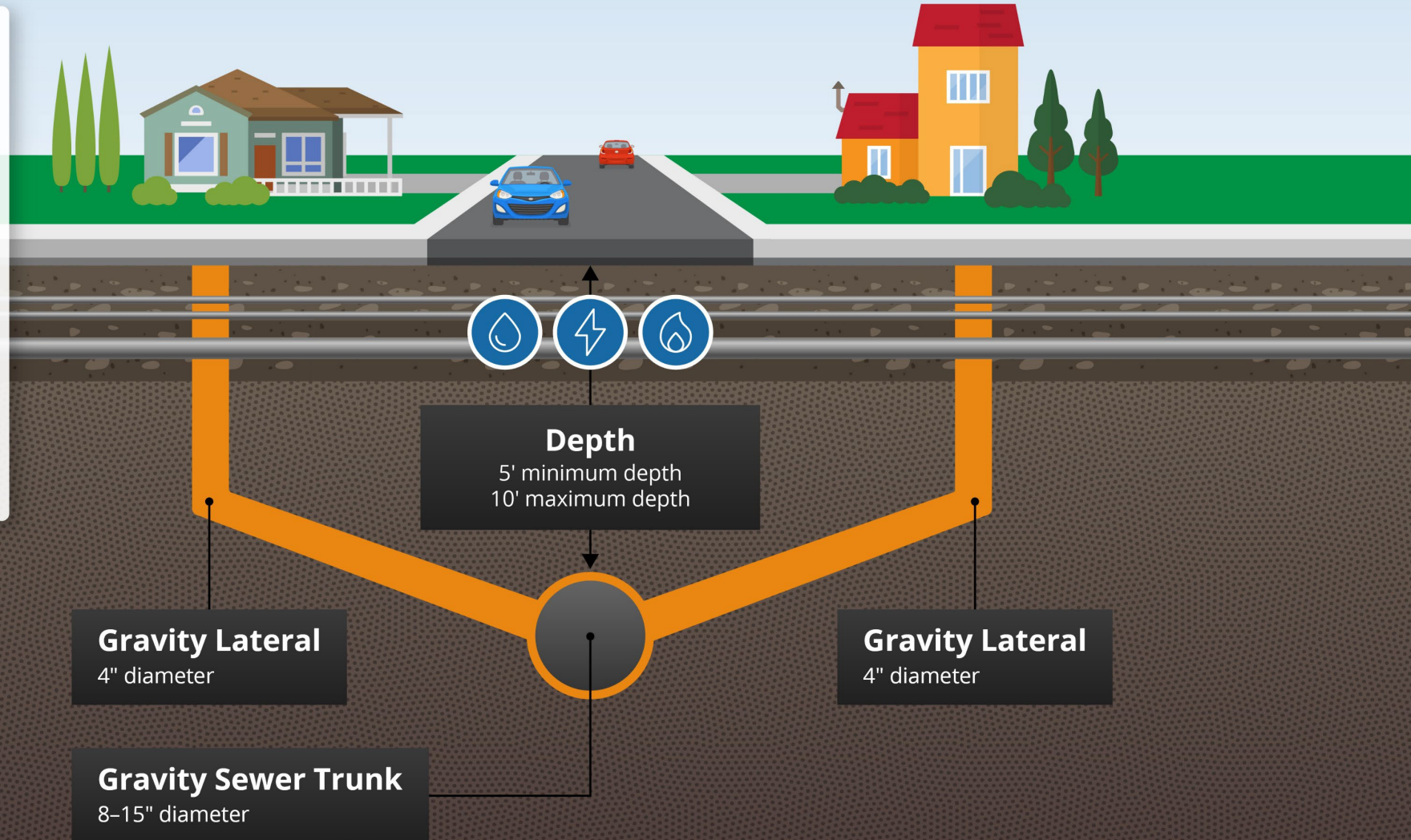
## Hybrid

New construction elects to raise finished floor elevation

OR

Existing home has sufficient grade to engineered trunk depth

**NEW CONNECTIONS  
WANT FLUSH AND  
FORGET**



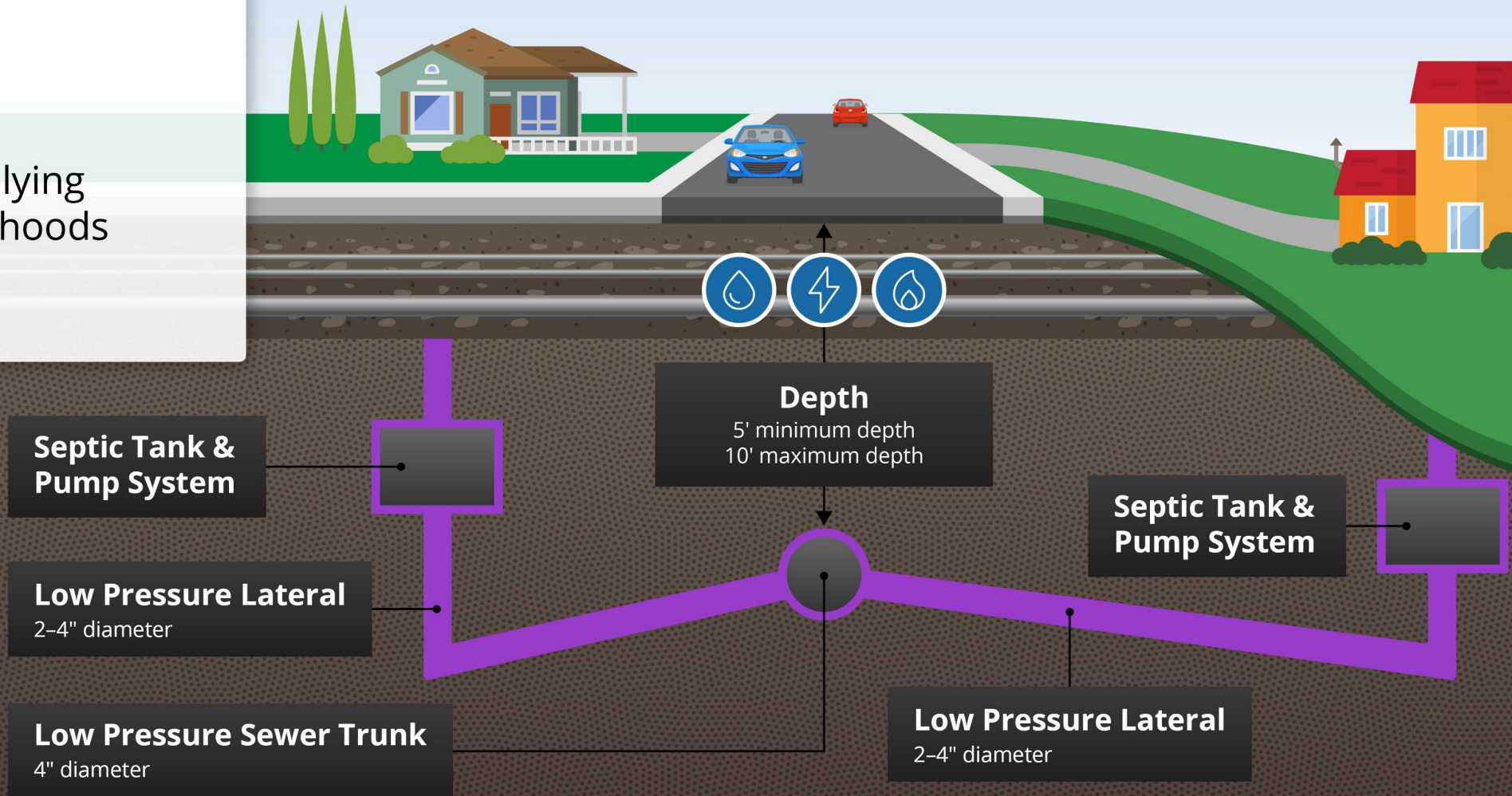




## Hybrid

Community low pressure for low lying streets/neighborhoods

**WHEN  
GRAVITY  
DOESN'T  
MAKE  
SENSE**







# Aerated Treatment Lagoon/Ponds

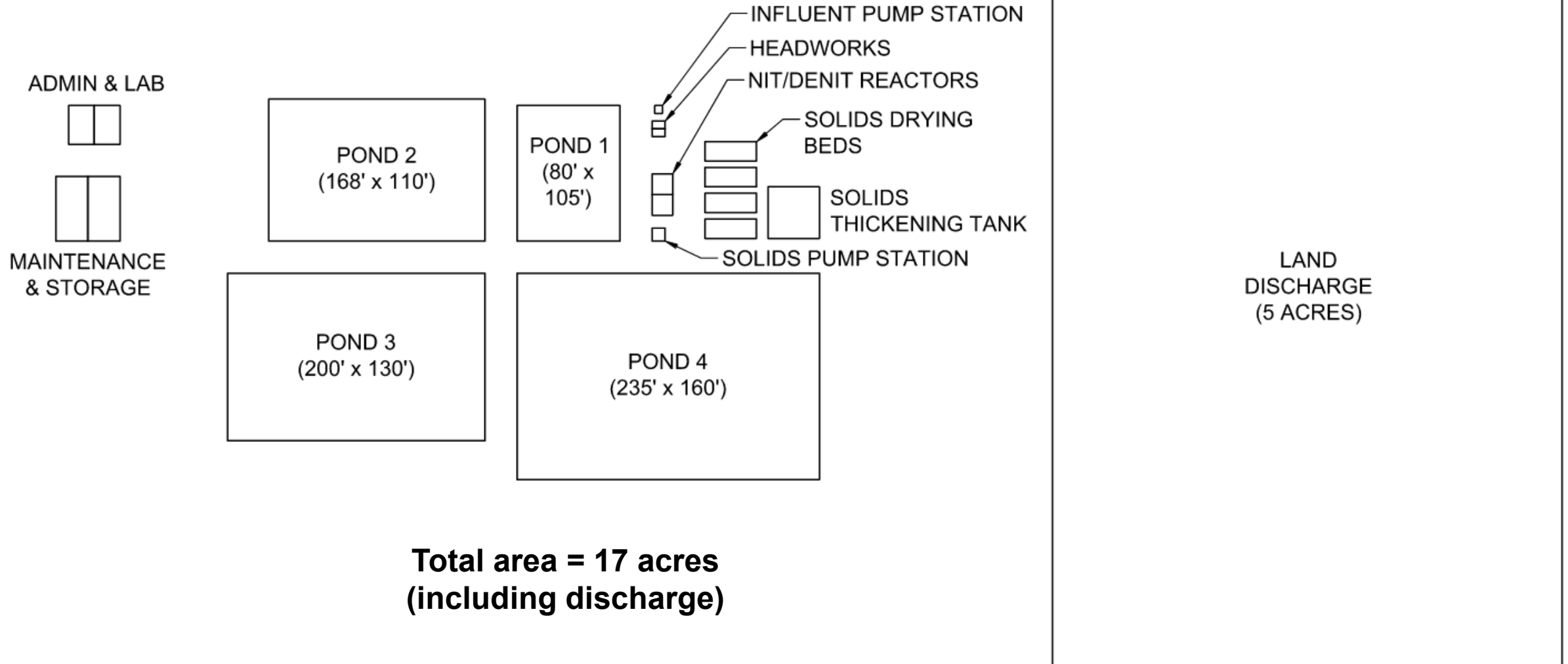
- Most cost effective (Capital and O&M)
- Simple operation – less operator experience required
- Less sensitive to smaller/inconsistent flows
- Largest footprint
- Facility sizing depends more on hydraulics (amount of water inflow) than solids/carbon content, and would not change significantly between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







# Aerated Treatment Lagoon/Ponds







# Land Discharge – Percolation/Evaporation Pond



- 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

An aerial photograph of a vast, deep, and rugged canyon. The canyon walls are steep and show signs of erosion, with some sparse vegetation. In the distance, a city is visible on a plateau under a sky filled with large, white and grey clouds. The overall scene is dramatic and expansive.

# 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
<b>Estimated Total Project Cost</b>	<b>\$ 90,000,000</b>	<b>\$ 114,000,000</b>

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	<b>15% to 20%</b> of construction value, based on industry metrics
Town, OA (including Environmental) & Legal	\$3,000,000	\$4,500,000	Estimate to complete through design <b>(+/- 20%)</b>
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	<ul style="list-style-type: none"><li>• 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</li><li>• <b>Escalation = 5% per year</b> through 2028 (based on current market conditions)</li><li>• <b>Estimating contingency = 20% to 30%</b> of escalated total, per AACE Estimating Guidelines</li><li>• <b>Construction bonds, insurance, general conditions, and profit = 25 to 35%</b> of total including contingency, based on industry metrics</li></ul>
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	<b>3% to 7%</b> of construction value, based on industry metrics
Construction Mgmt & Inspection	\$3,600,000	\$5,600,000	<b>6% to 8%</b> of construction value, based on industry metrics
Town Contingency	\$6,600,000	\$8,100,000	<b>10%</b> 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)***



## **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**

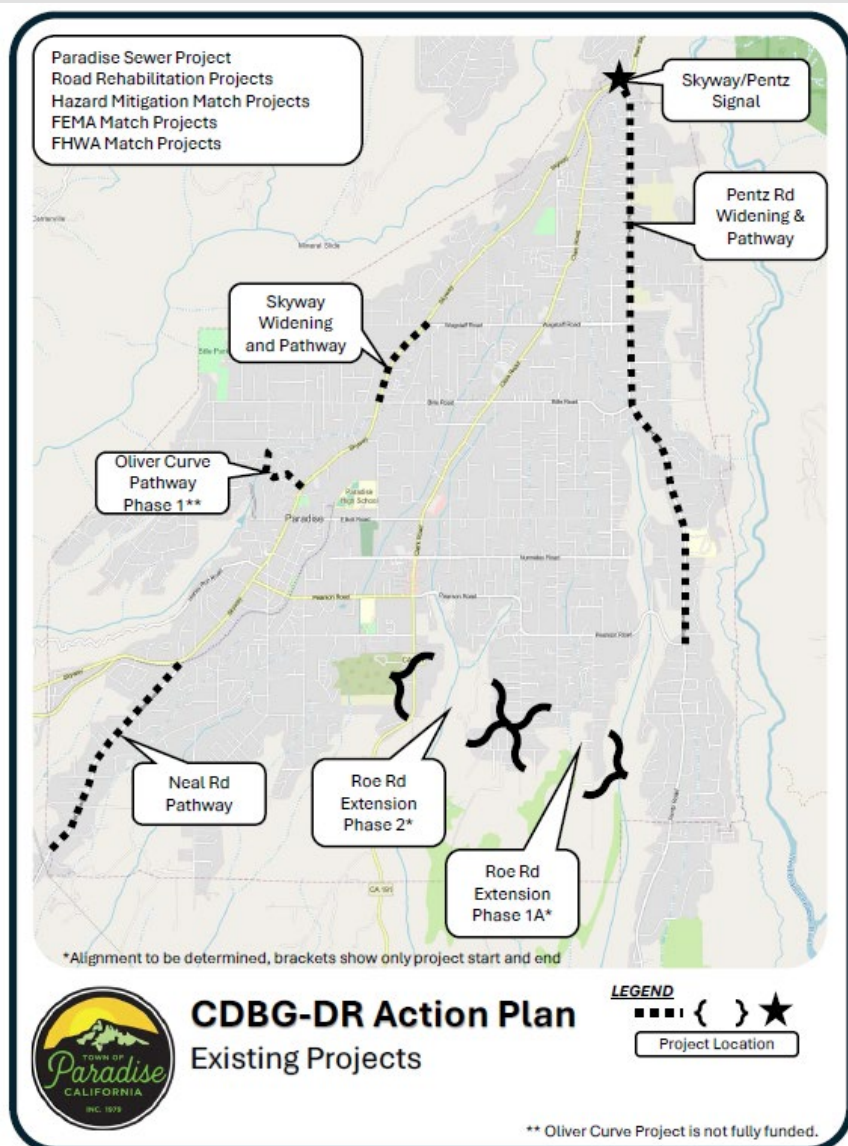


# Funding Shortfall Options

- 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





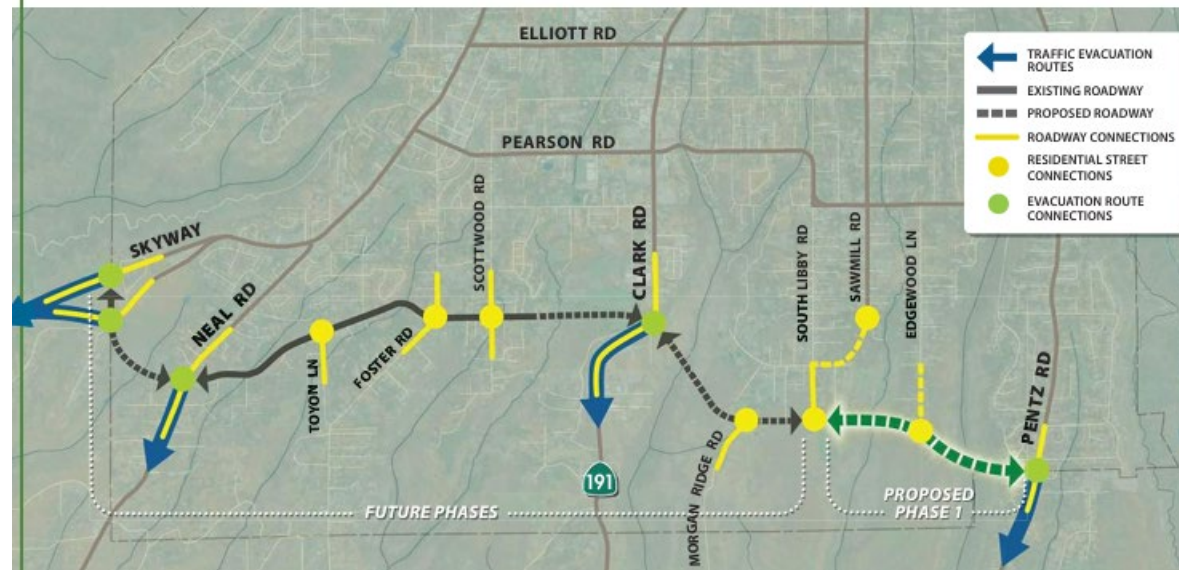
# CDBG-DR Funds Reallocation

- 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

## PROJECT FACT SHEET

### ROE ROAD EXTENSION PROJECT - PHASE 1

Implementing Agency: Town of Paradise

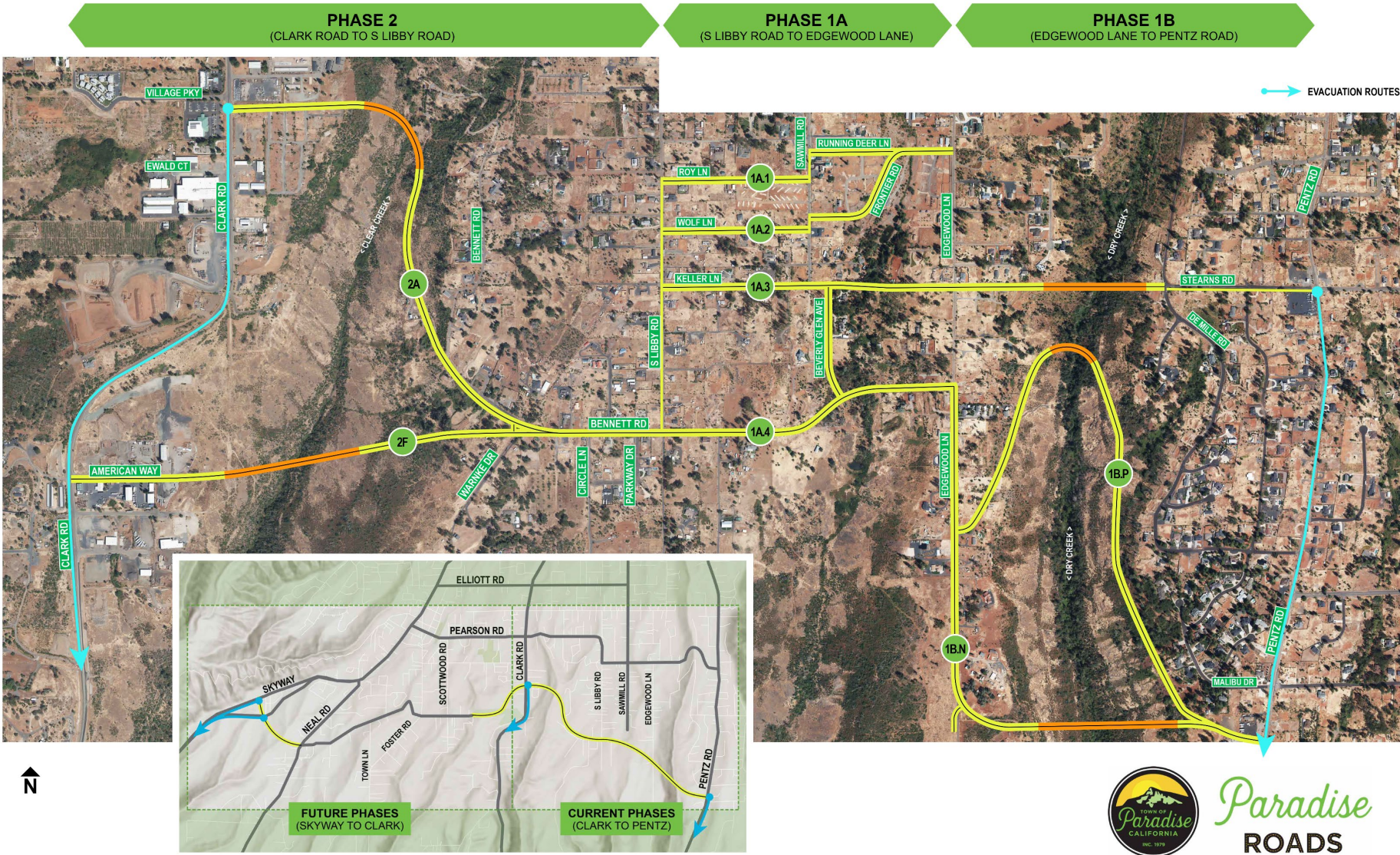






TOWN OF PARADISE  
**SEWER PROJECT**

# Roe Road 1 & 2 Phasing Concepts



*Paradise*  
**ROADS**



# 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
• <u>Supplement Paradise Sewer Project Phase 1</u>	<u>+\$36,700,000</u>
Net Change	\$0

## LTCAP Funds (Not Flexible)

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





## 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
• <u>Supplement Paradise Sewer Project Phase 1</u>	<u>+\$36,700,000</u>
Net Change	\$0

## LTCAP Funds (Not Flexible)

• <u>Maintain</u> 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**

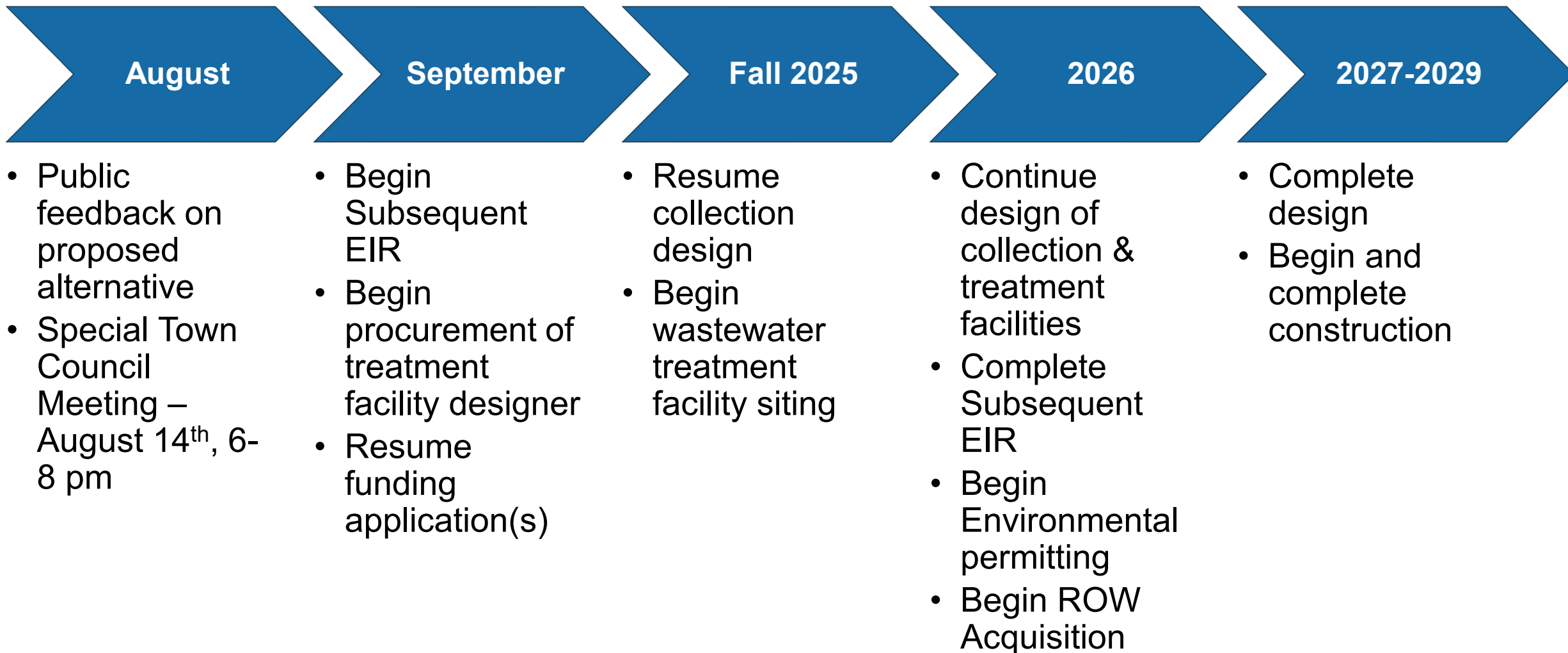
(6) CDBG-DR Town Allocation	\$36,700,000 (pending)
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## **Additional Funding Pursuits (Future Project Phases)**

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



# Project Forecast





# 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)