



POTENTIAL CONNECTION TO CITY OF SOLVANG WWTP

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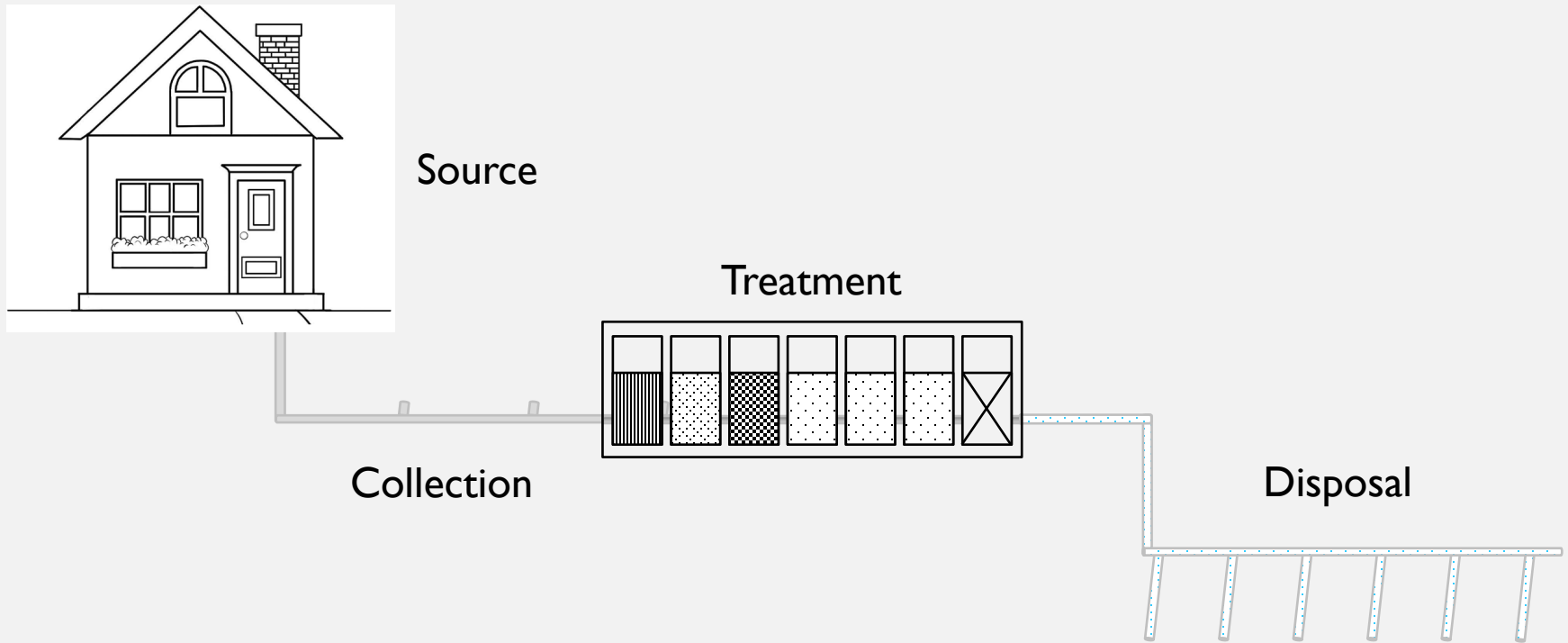
WEDNESDAY, NOVEMBER 13, 2024

POTENTIAL CONNECTION TO CITY OF SOLVANG INFRASTRUCTURE AND WWTP

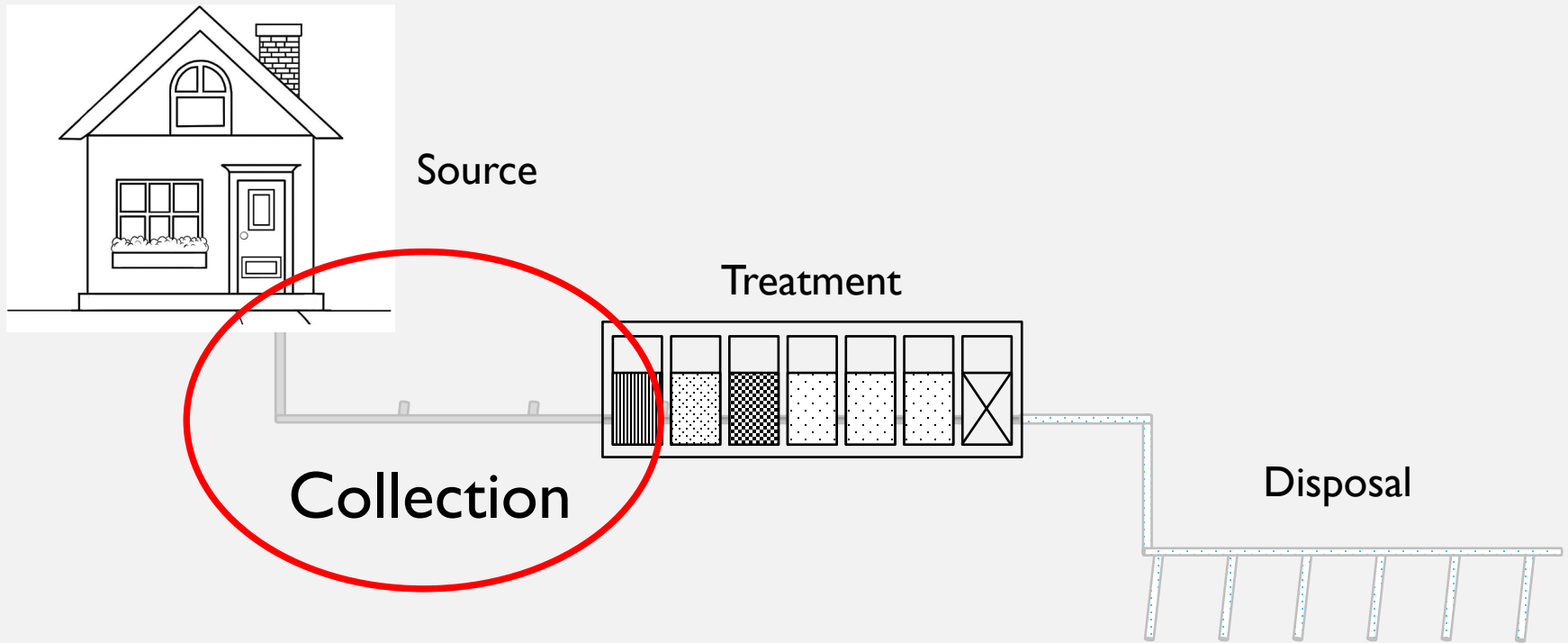
- Per discussion with City of Solvang, LOCSD hired WSC and Carollo to evaluate existing City of Solvang infrastructure and WWTP
- WSC and Carollo examined engineering feasibility and related costs
- Just because something is feasible from an engineering perspective, does not mean the LOCSD has agreement with the City of Solvang



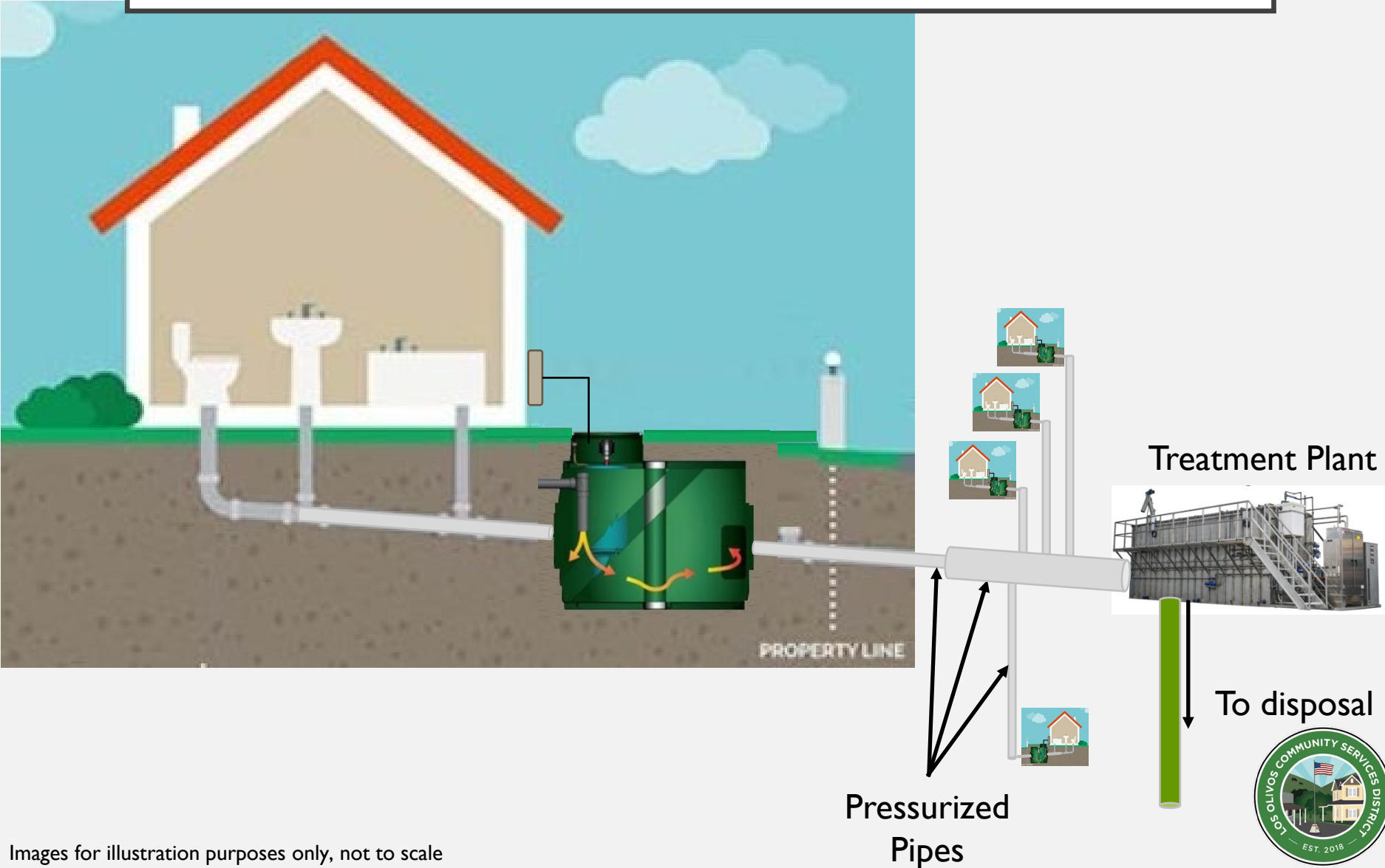
WASTEWATER PROCESS SIMPLIFIED



LOOKING AT COLLECTION MORE CLOSELY

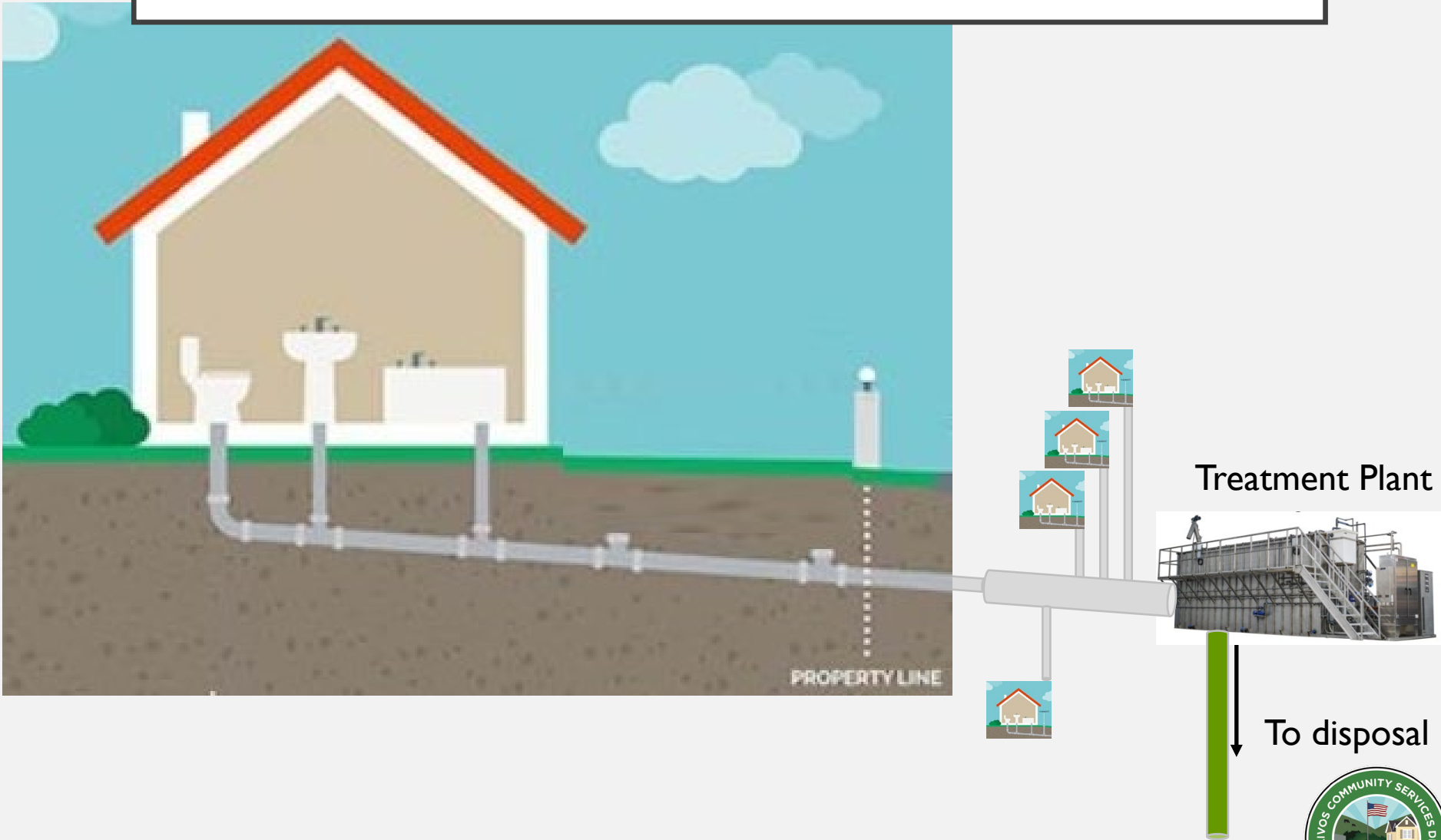


EFFLUENT COLLECTION



Images for illustration purposes only, not to scale

GRAVITY FED COLLECTION



IN-DISTRICT COLLECTION COSTS

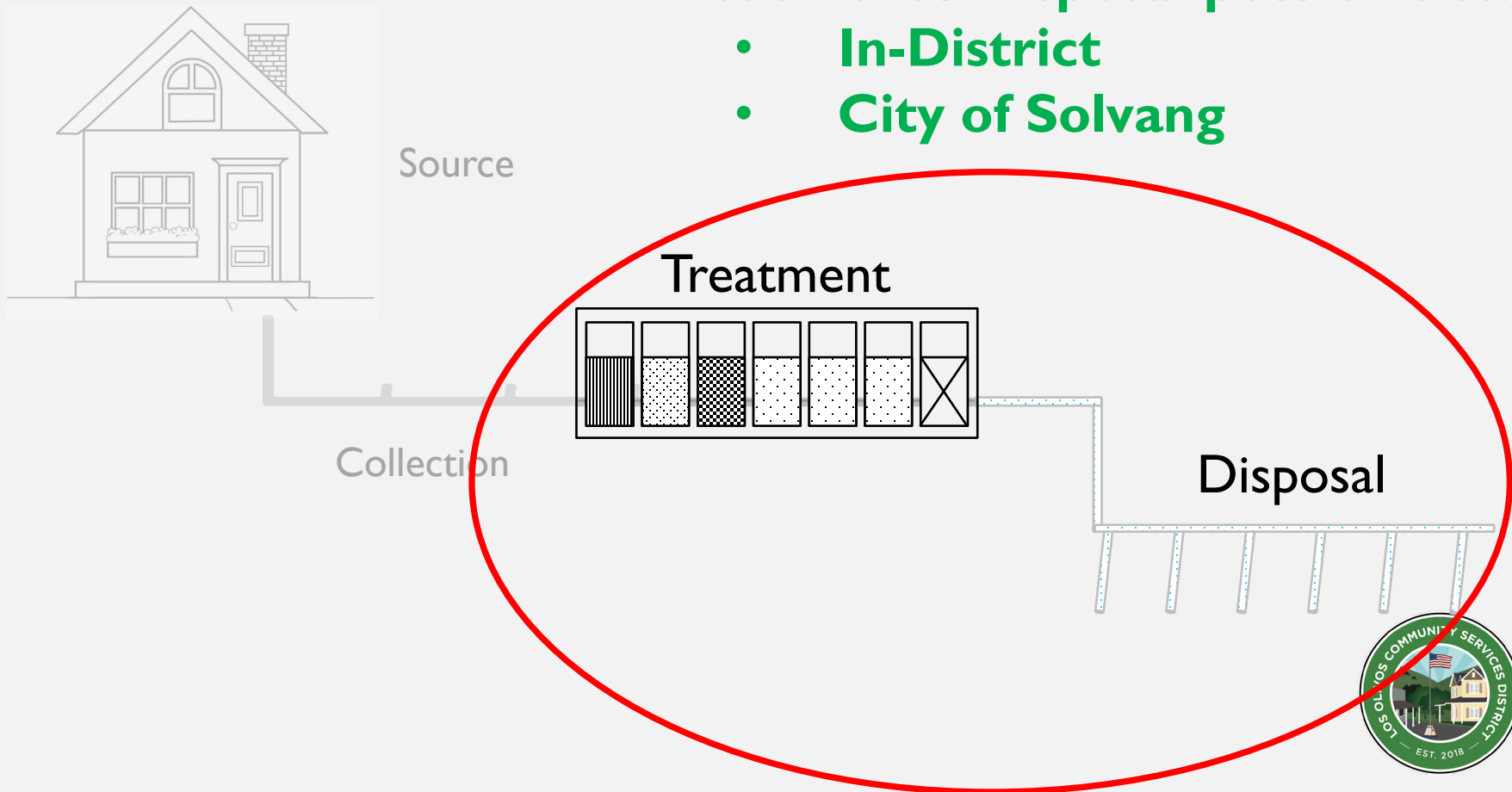
| Approach | Total |
|---|---------------|
| Effluent Collection REGEN Option B - entire District | \$ 21,637,095 |
| Gravity Collection South end of District treatment | \$ 27,938,000 |



TREATMENT AND DISPOSAL

Treatment / Disposal possibilities:

- In-District
- City of Solvang



IN-DISTRICT TREATMENT (AND DISPOSAL)

| Item | Estimate |
|---|---------------------|
| Treatment – 1.5 acre site, Cloacina MBR plant, offices, parking, etc. | \$19,900,000 |
| Disposal - 4 acre site, percolation chambers | \$ 5,200,000 |
| Total | \$25,100,000 |

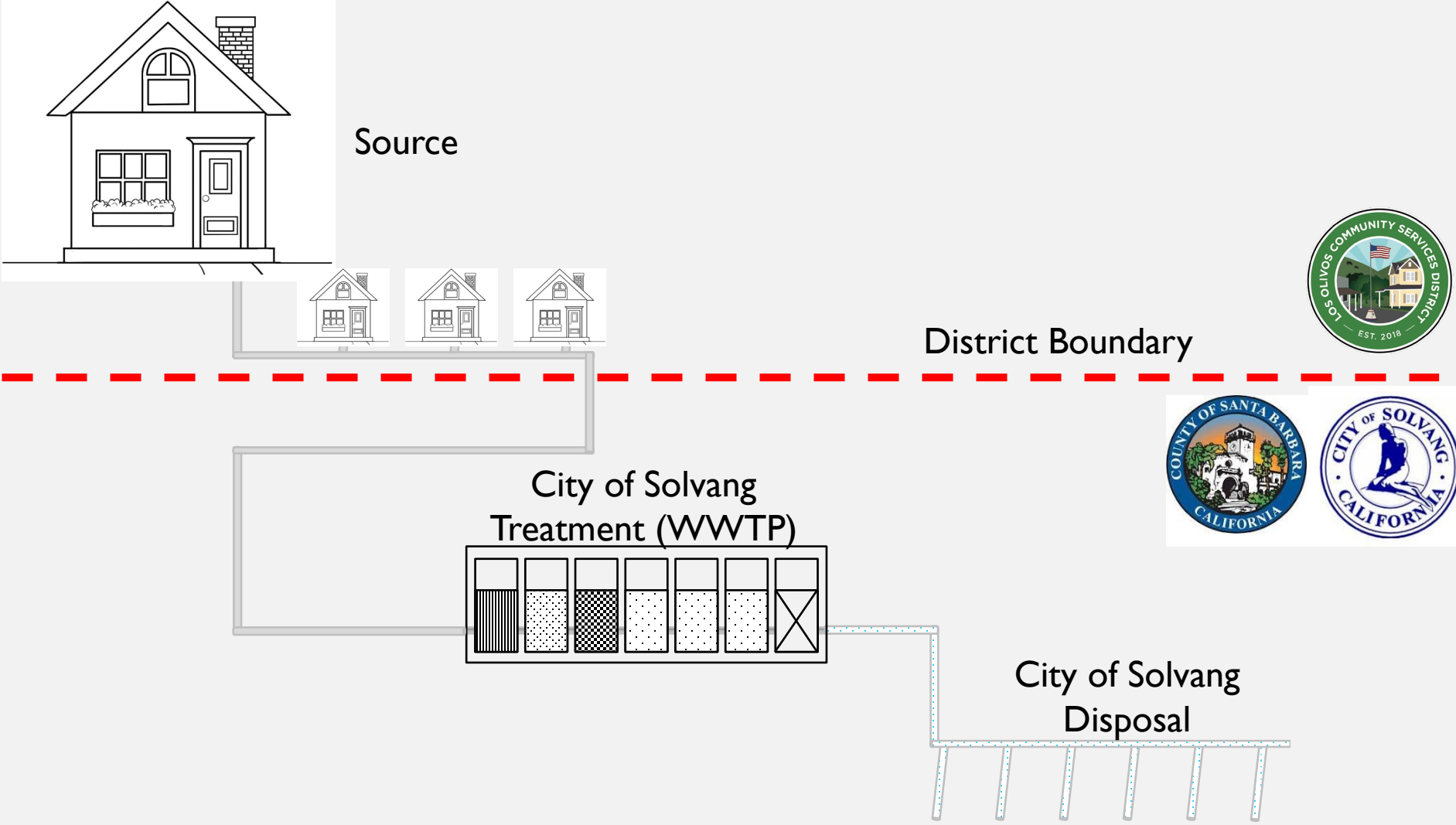


LOCAL OPTION

| | Effluent Collection | Gravity Fed Collection |
|--------------|----------------------|------------------------|
| Collection | \$ 21,637,095 | \$ 27,938,000 |
| Treatment | \$ 19,900,000 | \$ 19,900,000 |
| Disposal | \$ 5,200,000 | \$ 5,200,000 |
| Total | \$ 46,737,095 | \$ 53,038,000 |

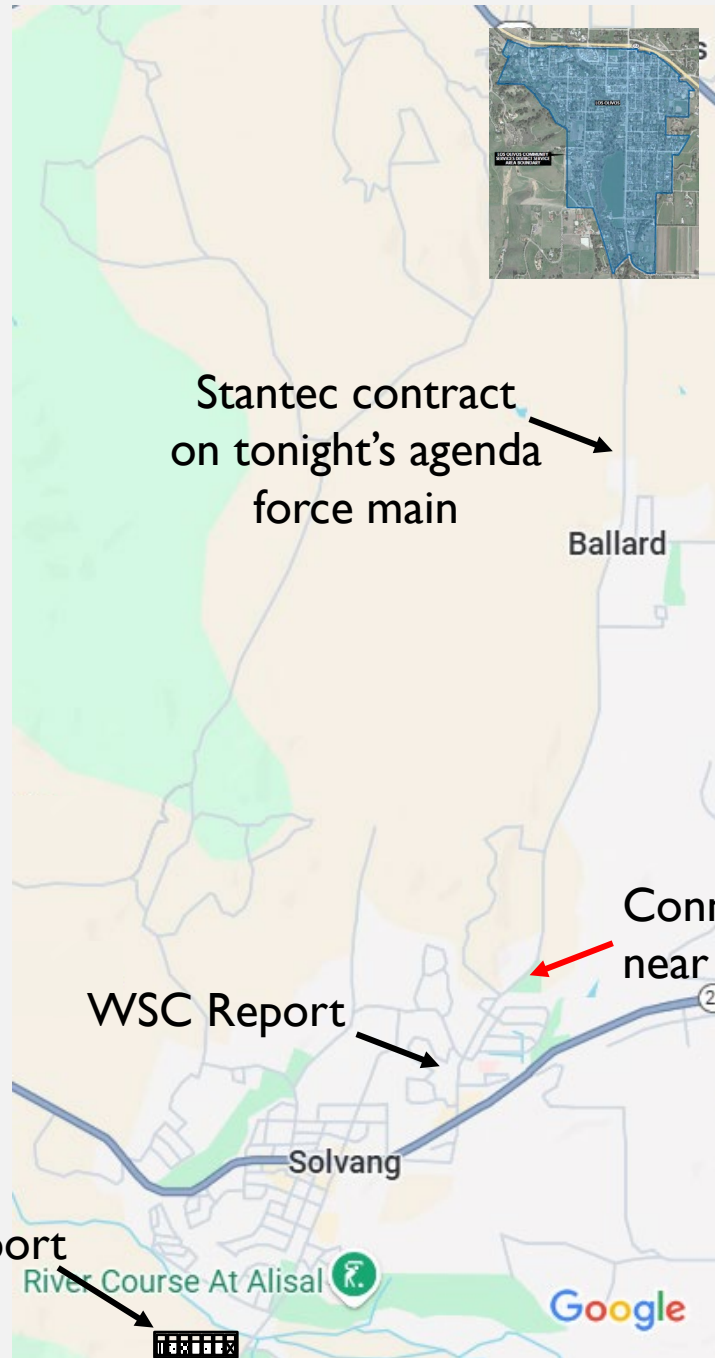


CITY OF SOLVANG TREATMENT (AND DISPOSAL)



LOCSD TO CITY OF SOLVANG COLLECTION

In-district collection
\$21.6-27.9M



Stantec contract
on tonight's agenda
force main

Ballard

Connect to City
near Sunny Field Park

WSC Report

Carollo Report

Solvang

River Course At Alisal

Google



WSC CONTRACT CONNECTION TO WWTP

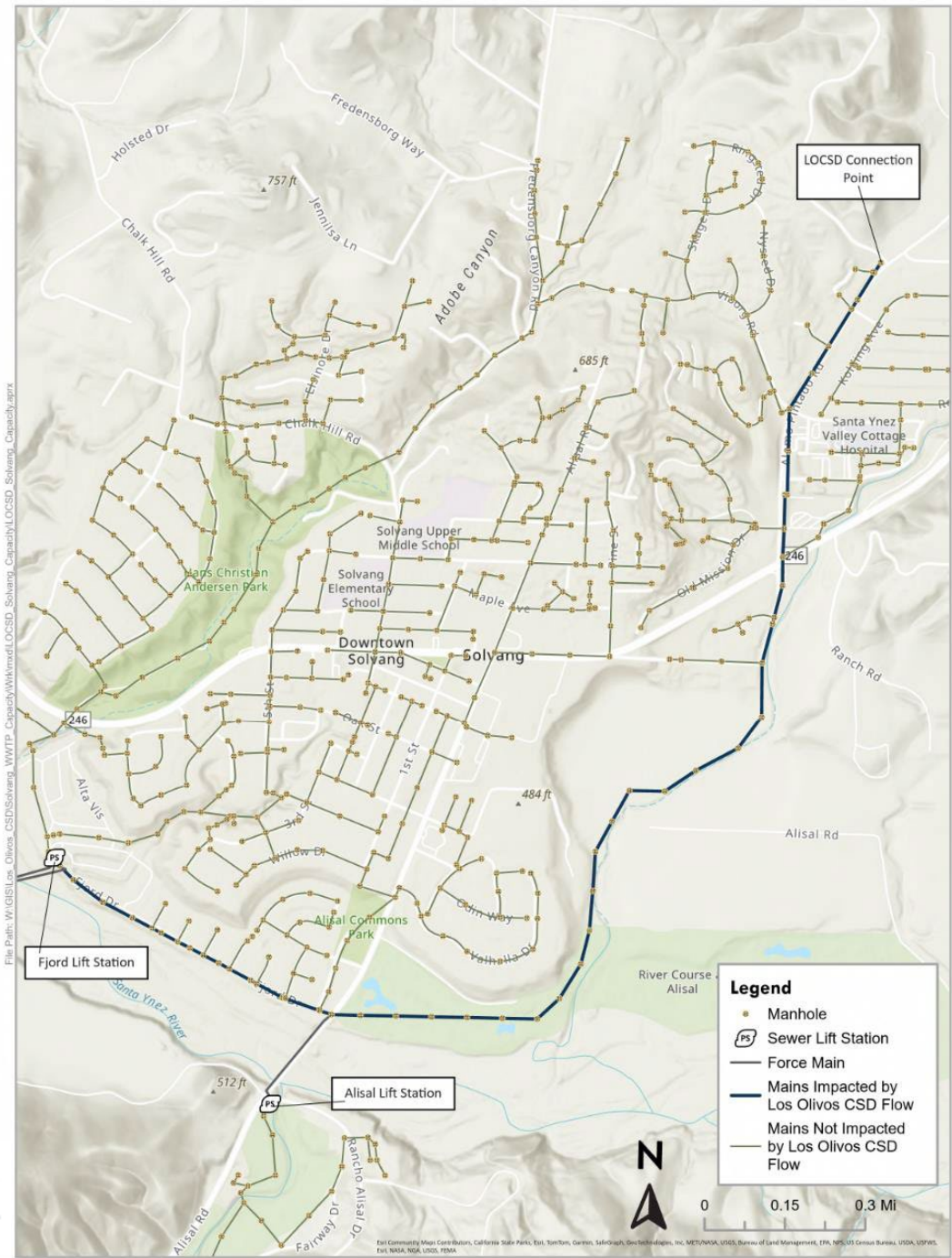
- Examine existing infrastructure (pipes, lift stations, etc.) to determine capacity
- Estimate costs where existing infrastructure insufficient

MODELING CAPACITY

- **Baseline Existing Average** - Existing average annual flow for Solvang only
- **Existing Average** - Existing average annual flow for Solvang with the addition of LOCSD
- **Baseline Buildout Average** - Buildout + infill average annual flow for Solvang only
- **Buildout Average** - Buildout average annual flow for Solvang with the addition of LOCSD
- **Buildout + Infill Average** - Buildout + infill average annual flow for Solvang with the addition LOCSD

HYDRAULIC MODELING RESULTS

- No pipe segments were identified as over capacity under average annual flow conditions
- Peaking factor of 4.0 was applied to the average dry weather flows to evaluate the peak hour wet weather flow (PHWWF) scenarios for existing and buildout development conditions



CONNECTION TO WWTP

- Identified nine projects (see section 4 of TM)
 - Four projects related to sewer mains
 - Five projects related to sewer lift stations
 - Projects not all immediate, some targeted to start 2033
- LOCSD to have a share of \$3,548,630

CAROLLO CONTRACT FEASIBILITY AT WWTP

- Evaluate LOCSD loads and flows on City of Solvang WWTP
- Included look at source drinking water (IDI)

| Source | Constituent | ADMMF Flow (gpd) | Avg. Influent Wastewater Concentration (mg/L) | WWTP Influent Load (lb/day) |
|---|------------------|------------------|---|-----------------------------|
| City of Solvang Wastewater ⁽¹⁾ | BOD ₅ | 713,000 | 263 | 2,018 |
| | TSS | | 201 | 1,542 |
| | TKN | | 59 | 453 |
| LOCSD Phase III Wastewater ⁽²⁾ | BOD ₅ | 133,800 | 416 | 451 |
| | TSS | | 320 | 347 |
| | TKN | | 63 | 68 |
| SYCSD Wastewater ⁽³⁾ | BOD ₅ | 300,000 | 320 | 658 |
| | TSS | | 176 | 503 |
| | TKN | | 63 | 148 |

Notes:

Abbreviations: gpd = gallons per day; lb/day = pounds per day; mg/L = milligrams per liter; avg = average

(1) WWTP average influent concentrations provided by City of Solvang.

(2) LOCSD estimated wastewater concentrations from 2022 Stantec BODR.

(3) SYCSD wastewater concentrations from 2017 Recycled Water Facilities Plan.



CITY OF SOLVANG WWTP

- City of Solvang WWTP is rated to treat 1.5 mgd of influent wastewater flow
- WWTP struggles to meet the effluent limits at current flows due to process limitations (Phase 2 project is intended to address)
- Highly unlikely that the WWTP in its current state would continue to meet permit limits with higher flows from LOCSD

Table 4 Solvang WWTP Effluent Concentrations

| Constituent | WWTP Effluent Permit Limit (mg/L) | Modelled Effluent Concentration (mg/L) |
|---------------------------------|-----------------------------------|--|
| BOD ₅ ⁽¹⁾ | 30 | 2.4 |
| TSS ⁽¹⁾ | 20 | 4.2 |
| TN ⁽²⁾ | 10 | 8.8 |

Notes:

Abbreviations: mg/L = milligrams per liter

(1) 30-day average effluent permit limit provided.

(2) 25-month rolling median effluent permit limit provided.

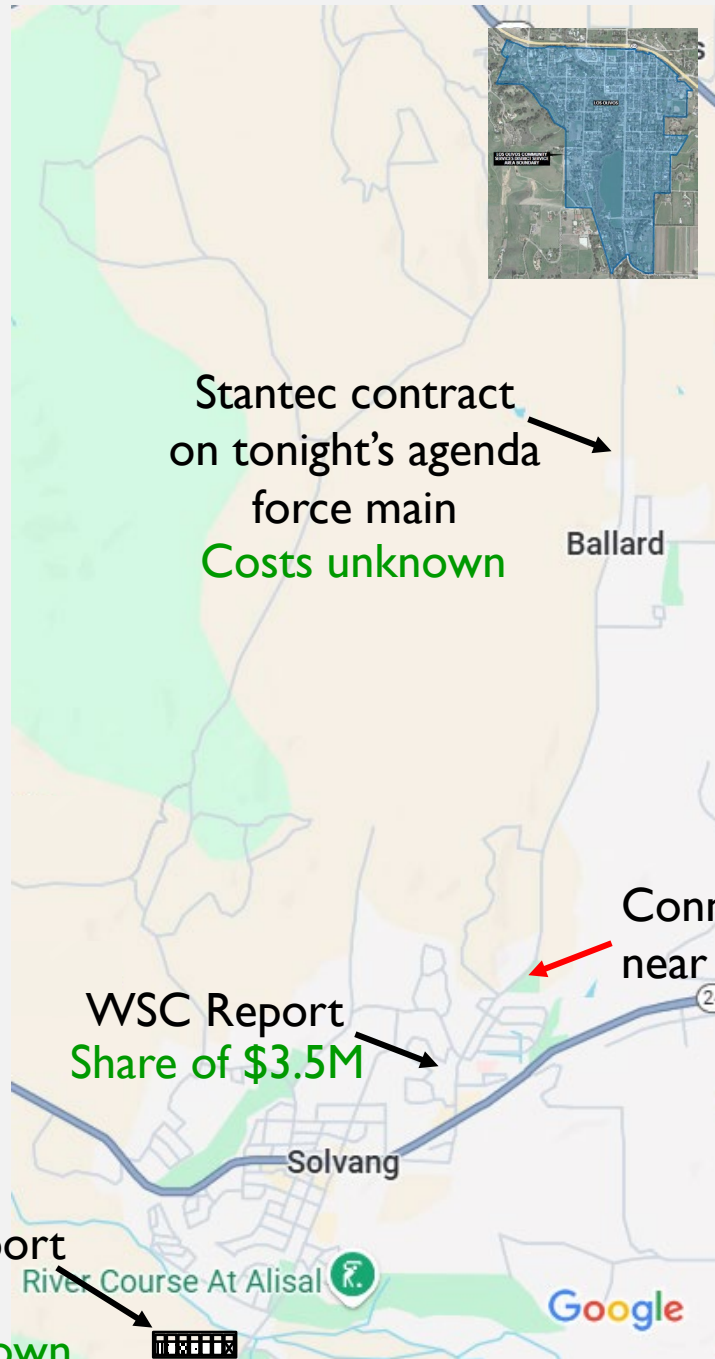
CONCLUSION: TECHNICALLY FEASIBLE

Post WWTP Phase 2 Upgrades:

- WWTP can effectively meet effluent permit limits while accepting full Phase 3 buildout ADMMF from LOCSD
- Addition of LOCSD wastewater will not affect the ability of the WWTP to meet its effluent permit limits, and the flow rate will not cause the WWTP to exceed its rated capacity
- Carollo does not foresee the background concentrations of TDS, sodium, or chloride in the LOCSD's drinking water (IDI) as negatively affecting the WWTP's ability to meet permit limits for these constituents
- Phase 2 Upgrades Project is currently entering the preliminary design phase and construction is anticipated to be completed in April 2028

SUMMARY:

**LOCSD TO
CITY OF
SOLVANG
COLLECTION**



In-district collection
\$21.6-27.9M

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Costs unknown

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WHAT'S NEXT?

- Consider Stantec contract
 - LOCSD to Sunny Field Park force main
- Discussion with City of Solvang
- Complete cost models

