

# Staff Report

**TO:** Board of Directors  
**FROM:** Doug Roderick, P.E. Director of Engineering  
**DATE:** April 12, 2023  
**SUBJECT:** Workshop – E. George to Lake Wildwood Pipeline Project

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## ***ENGINEERING***

### **RECOMMENDATION:**

Workshop discussion on the E. George to Lake Wildwood Pipeline Project (BEP).

### **BACKGROUND:**

On August 14, 2019 the Board of Directors adopted Resolution 2019-26 which approved the Mitigated Negative Declaration and approved the E. George to Lake Wildwood Backbone Extension Pipeline Project. The plan was to construct the pipeline over multiple years. The project stopped due to higher priority capital projects, the need to eliminate the phased construction approach and to determine plans for the Lake Wildwood Treatment Plant upgrades. The intent of this workshop is to discuss various alternatives and receive feedback.

### **BUDGETARY IMPACT:**

There is no money allocated for this project in the Approved 2023 Budget.

### *Attachments (1)*

- E. George to Lake Wildwood Pipeline Project Presentation

# E. GEORGE TO LAKE WILDWOOD PIPELINE PROJECT (BEP)

## WORKSHOP

# Discussion items for today

- ▶ Alternatives
- ▶ Costs
- ▶ Next steps

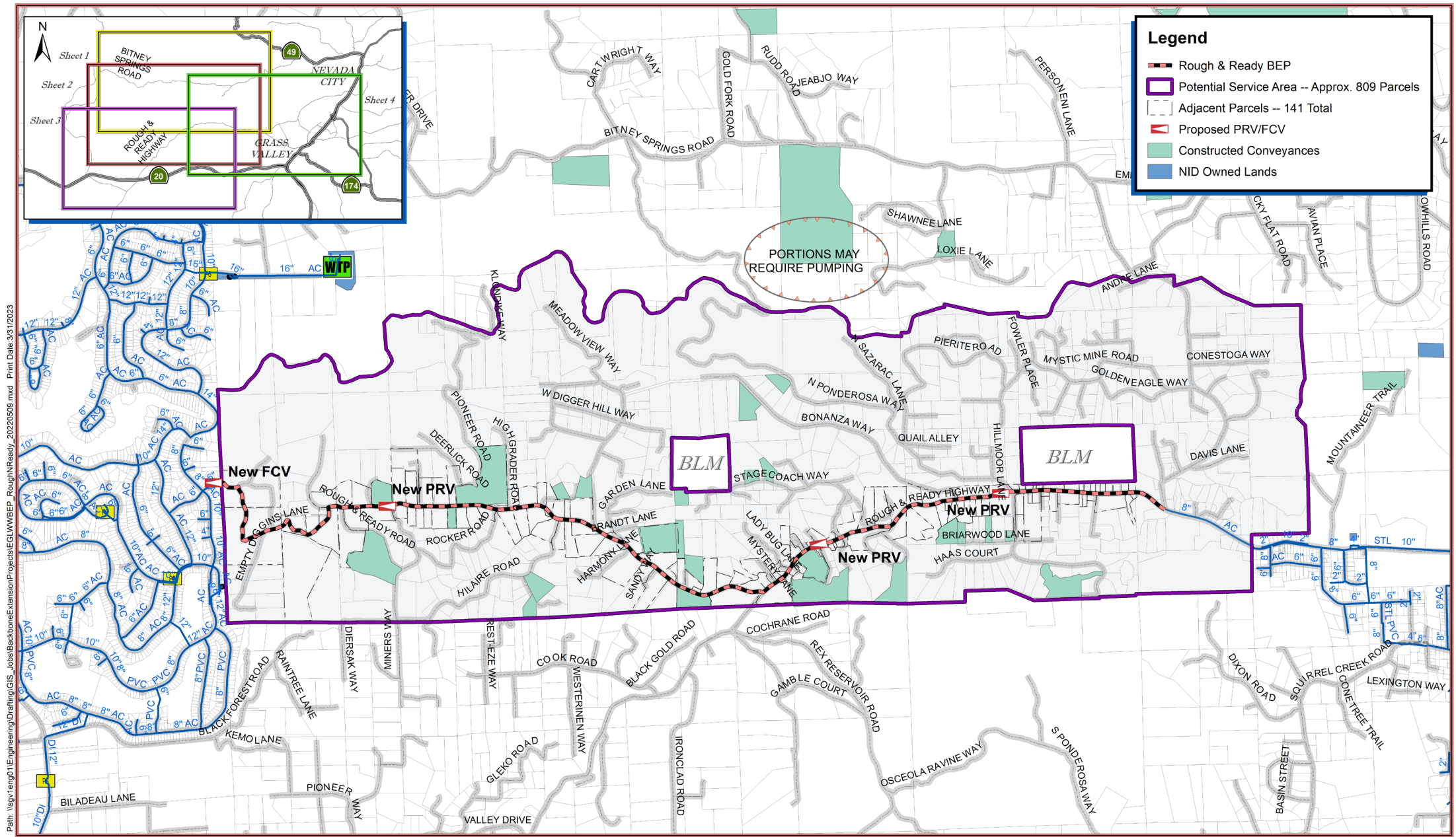
# Alternatives

- ▶ Alternative #1: Continue with Project As-Is
  - ▶ Install pipeline and upgrade existing piping system as required
  - ▶ Upgrade LWW Treatment Plant
- ▶ Alternatives #2, #3 and #4: Consolidate with E-George and take LWW Treatment Plant offline
  - ▶ Three alternative routes to connect with E-George
    - ▶ Alternative #2 - Bitney Springs Road route
    - ▶ Alternative #3 - Rough and Ready Highway/Rough and Ready Road route
    - ▶ Alternative #4 - Bitney Springs Road/Rough and Ready Highway
- ▶ Alternative #5: Upgrade LWW Treatment Plant
  - ▶ No pipeline connection with E. George

# Alternative #1 Project Description

## Rough and Ready Highway/Road Route and Lake Wildwood Treatment Plant Upgrades

- ▶ New Pipeline along Rough and Ready Highway and Rough and Ready Road
- ▶ Upgrade Lake Wildwood Treatment Plant
- ▶ Required improvements to existing E. George system
- ▶ Intended to supplement flows to Lake Wildwood Treatment Plant and give a backup supply
- ▶ Allow Lake Wildwood Treatment Plant to be taken offline during winter months for maintenance and reduction in O&M costs
- ▶ Originally planned to be built over an extended period to reduce capital impacts
- ▶ Some work within the E. George system completed



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**NEVADA IRRIGATION DISTRICT**

NEVADA COUNTY -- PLACER COUNTY  
GRASS VALLEY, CALIFORNIA

**EGLWW BEP via ROUGH & READY**

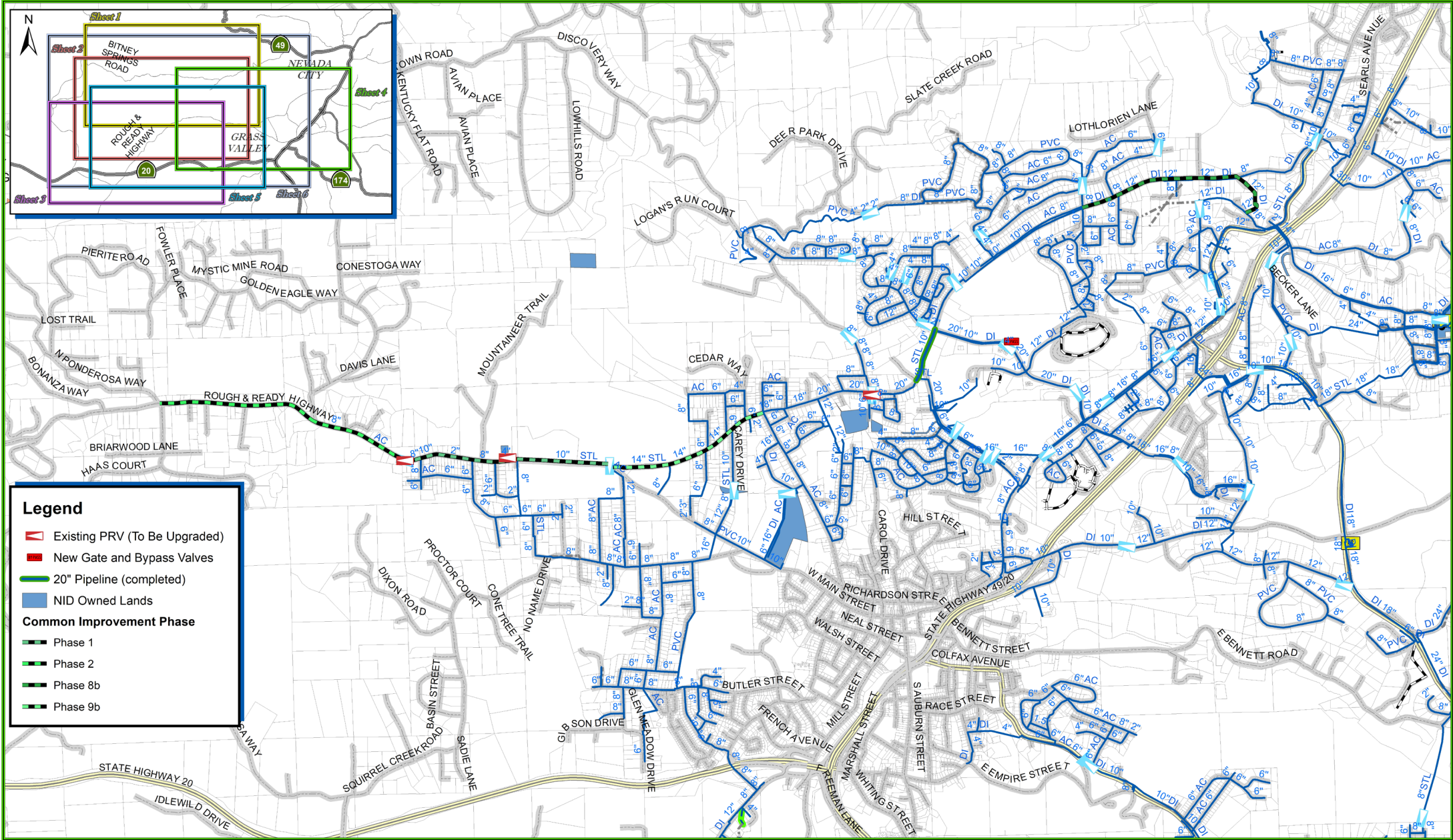
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## NEVADA IRRIGATION DISTRICT

NEVADA COUNTY -- PLACER COUNTY  
GRASS VALLEY, CALIFORNIA

## EGLWW BEP -- COMMON IMPROVEMENTS

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# Challenges with Alternative #1

- ▶ Phased construction creates long runs of dead-end pipe
- ▶ Overall Capital cost (pipeline and treatment plant): \$28,120,000
- ▶ Project stopped due to
  - ▶ Higher priority capital projects
  - ▶ Large capital cost requirements to eliminate phased construction
  - ▶ Plans for treatment plant improvements



# Pros/Cons of Alternative #1

## ▶ PROS

- ▶ Keeps two sources of supply to the Penn Valley/LWW areas
- ▶ Allows LWW TP to be taken offline for a period of time each year
  - ▶ Operate more as a peaking plant
  - ▶ Lowers overall O&M costs
  - ▶ Allows for longer maintenance window
- ▶ Lower impact to capital versus alternatives (TP and pipeline constructed separately)
- ▶ Brings treated water to areas that currently do not have access
- ▶ Fire hydrants

## ▶ CONS

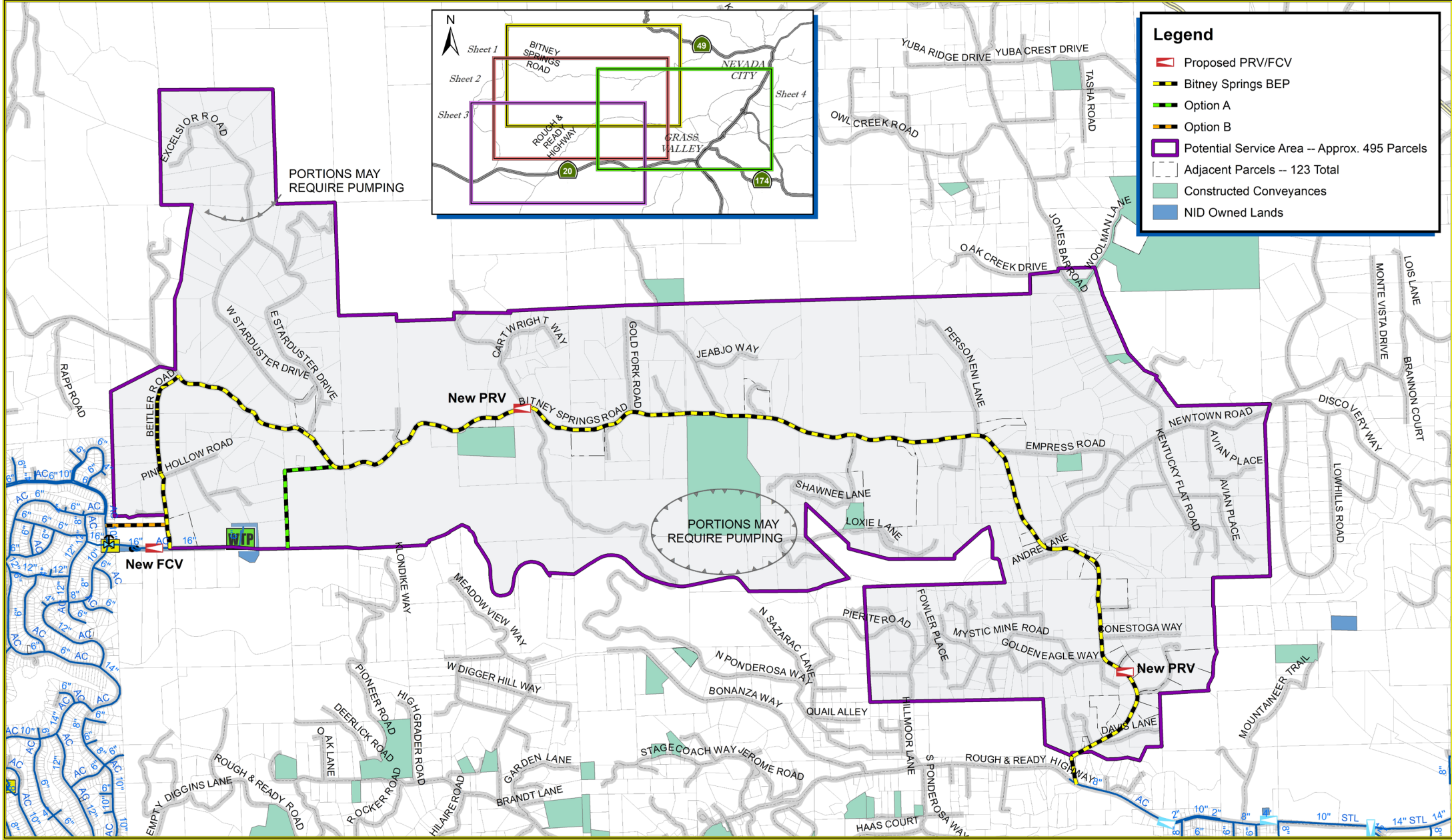
- ▶ Higher O&M costs versus alternatives
- ▶ Highest overall capital costs
- ▶ Lower life expectancy (TP) of project

# Alternative #2 Project Description

## Bitney Springs Road Route

- ▶ New Pipeline along Bitney Springs Road
- ▶ Required improvements to existing E. George system
- ▶ Intended to supply entire demand of the existing LWW system
- ▶ Lake Wildwood Treatment Plant would no longer be needed
  - ▶ Utilize existing capacity in E. George
- ▶ Minimal work on treatment plant to keep operating until pipeline completed
- ▶ Some work within the E. George system completed
- ▶ Overall Capital Costs: \$21,360,000

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NEVADA COUNTY -- PLACER COUNTY  
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**EGLWW BEP via BITNEY SPRINGS**

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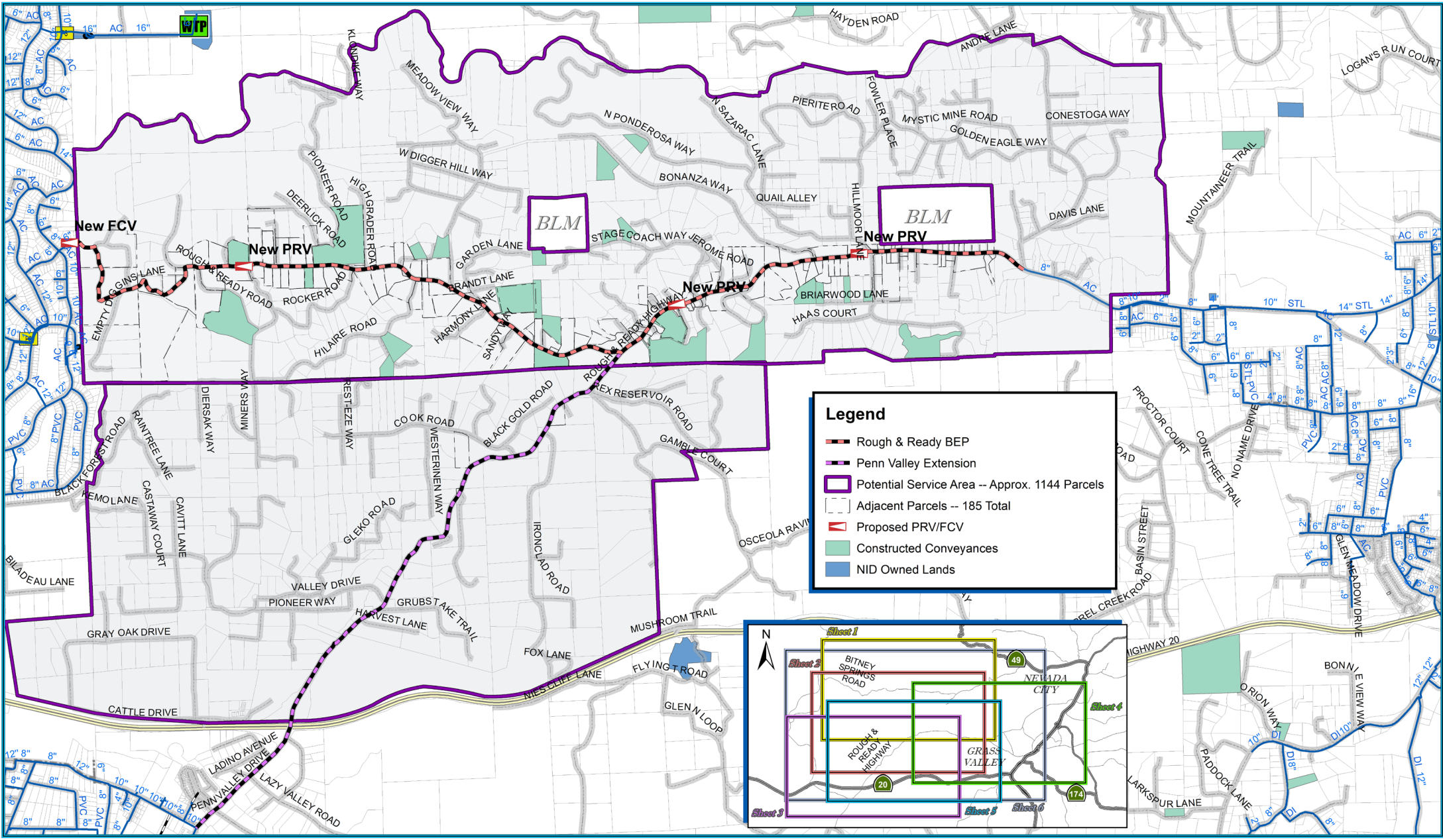
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# Alternative #3 Project Description

## Rough and Ready Highway/Rough and Ready Road

- ▶ New Pipeline along Rough and Ready Highway and Rough and Ready Road
- ▶ Provides secondary feed into Penn Valley
- ▶ Required improvements to existing E. George system
- ▶ Intended to supply entire demand of the existing LWW system
- ▶ Lake Wildwood Treatment Plant would no longer be needed
  - ▶ Utilize existing capacity in E. George
- ▶ Minimal work on treatment plant to keep operating until pipeline completed
- ▶ Some work within the E. George system completed
- ▶ Overall Capital Costs: \$23,380,000

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# NEVADA IRRIGATION DISTRICT

NEVADA COUNTY -- PLACER COUNTY  
GRASS VALLEY, CALIFORNIA

## EGLWW BEP -- ROUGH & READY with PENN VALLEY EXTENSION

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## Alternative #4 Project Description Bitney Springs Road/Rough and Ready Highway Route

- ▶ New Pipeline along Bitney Springs Road and Rough and Ready Highway
- ▶ Provides secondary feed into Penn Valley
- ▶ Required improvements to existing E. George system
- ▶ Intended to supply entire demand of the existing LWW system
- ▶ Lake Wildwood Treatment Plant would no longer be needed
  - ▶ Utilize existing capacity in E. George
- ▶ Minimal work on treatment plant to keep operating until pipeline completed
- ▶ Some work within the E. George system completed
- ▶ Overall Capital Costs: \$25,100,000



# Pros/Cons of Alternatives #2, #3 and #4

## ▶ PROS

- ▶ Water Quality
  - ▶ Easier to treat water at E. George vs at LWW TP
- ▶ Long life expectancy of project
- ▶ Very low O&M costs (pumping)
  - ▶ For Alt #2 and Alt #3 (secondary feed into Penn Valley)
- ▶ Lower capital costs versus current project
  - ▶ Amount of cost difference dependent on alternative
- ▶ Secondary pipeline into Penn Valley area
  - ▶ Eliminates feeder pipeline restrictions within existing LWW system (Alt #2 and #3)
  - ▶ Reduced pumping requirements
- ▶ Brings treated water to areas that currently do not have access
- ▶ Fire hydrants

## ▶ CONS

- ▶ Only one source of supply to the Penn Valley/LWW areas
- ▶ Highest capital impact (need to construct as one project)
- ▶ Difficult outage/maintenance due to single source
  - ▶ Most of new route would be out during outage (no tank feed)
- ▶ Water quality
  - ▶ Disinfection By Products (age of water)



# Alternative #5 Project Description

## Lake Wildwood Treatment Plant Upgrade

- ▶ Upgrade/replacement Lake Wildwood Treatment Plant
  - ▶ Clarifiers
  - ▶ Filters
  - ▶ Mechanical components
  - ▶ Drying Beds
  - ▶ Inlet structure
  - ▶ Chemical tanks
- ▶ Phased construction to keep treatment plant operational and spread capital over multiple budget years.
- ▶ No upgrades in the E. George system needed for this work
- ▶ Capital Costs: \$7,500,000

# Pros/Cons of Alternative #5

## ▶ PROS

- ▶ Lowest Capital costs
- ▶ Construction within existing footprint (no ROW needed)
- ▶ Upgrades to be modular, allow for easier expansion in the future if needed

## ▶ CONS

- ▶ Only one source of supply to the Penn Valley/LWW areas
- ▶ Water Quality (Newtown canal)
- ▶ Highest O&M costs with year round operation
- ▶ Lower life expectancy of project

# Summary of Alternatives Capital Costs

- ▶ Alternative #1: \$28,120,000
- ▶ Alternative #2: \$21,360,000
- ▶ Alternative #3: \$23,380,000
- ▶ Alternative #4: \$25,100,000
- ▶ Alternative #5: \$7,500,000

Current O&M costs for LWW TP is \$370,000 per year, including equipment, labor and chemicals.

# NEXT STEPS