



Charting Local Waters:

San Dieguito Groundwater Study

An OMWD Sustainable Supplies Project

Informational Meeting #2

October 17, 2017





Project Background

- State of Water Today
 - Heavy reliance on far-off supplies
 - Imported water costs continue to rise
 - Drought is cyclical and will return “3 seasons in CA”
 - Local supplies provide local control over reliability and cost
 - Diversification is a new way of conservation
- Challenges
 - Certainty as to availability of groundwater
 - Availability of land
 - Brine disposal
 - Environmental concerns





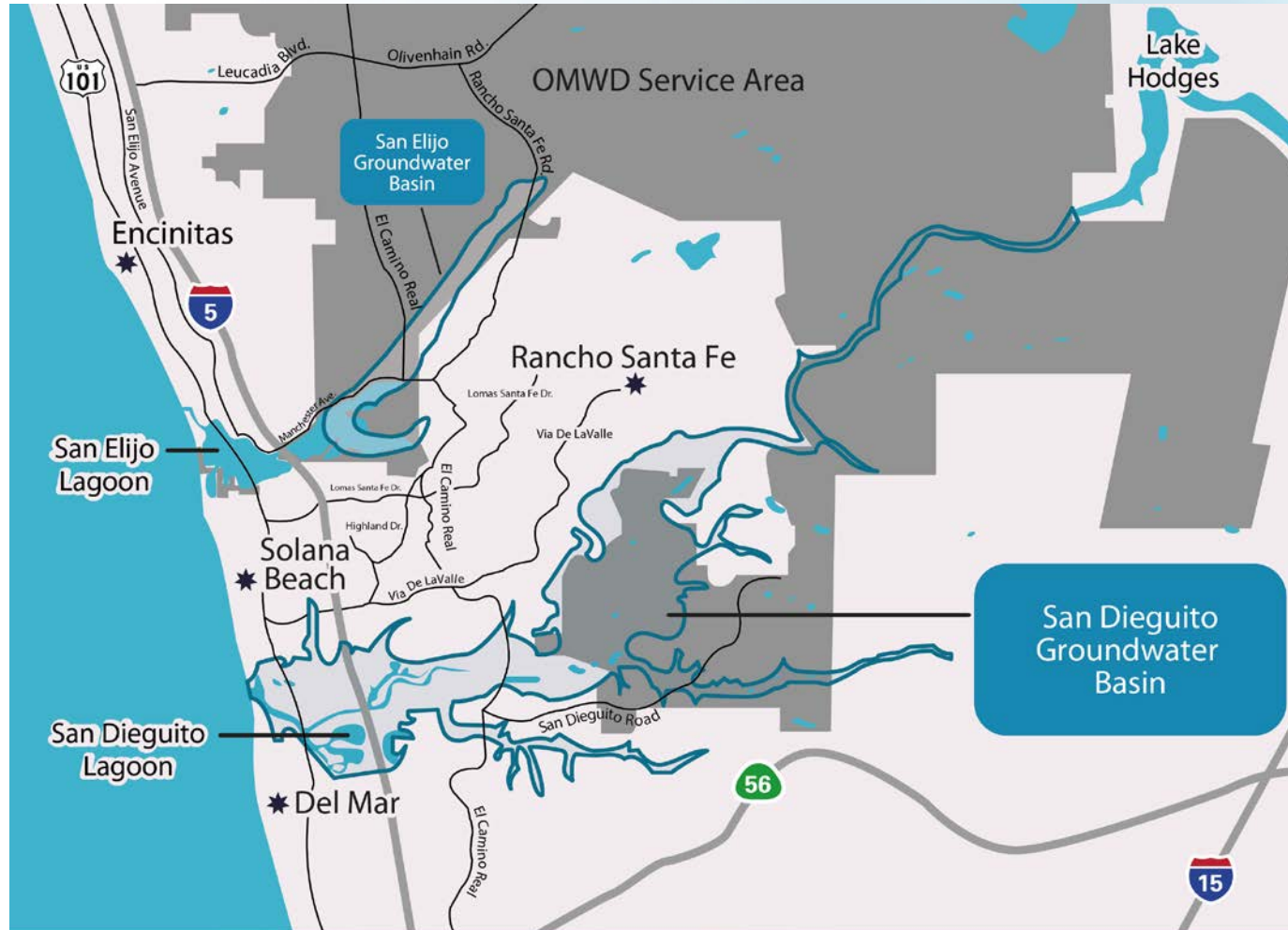
Project Costs

- Study paid for through DWR Desalination Grant (\$250,000)
- Costs for potential project being calculated through study
- OMWD planned for potential costs of a local supply project in its long-term capital improvement budget
- Further supported through potential state and federal grants such as Title XVI (USBR) and future rounds of DWR Desalination Grant Program





Project Study Area





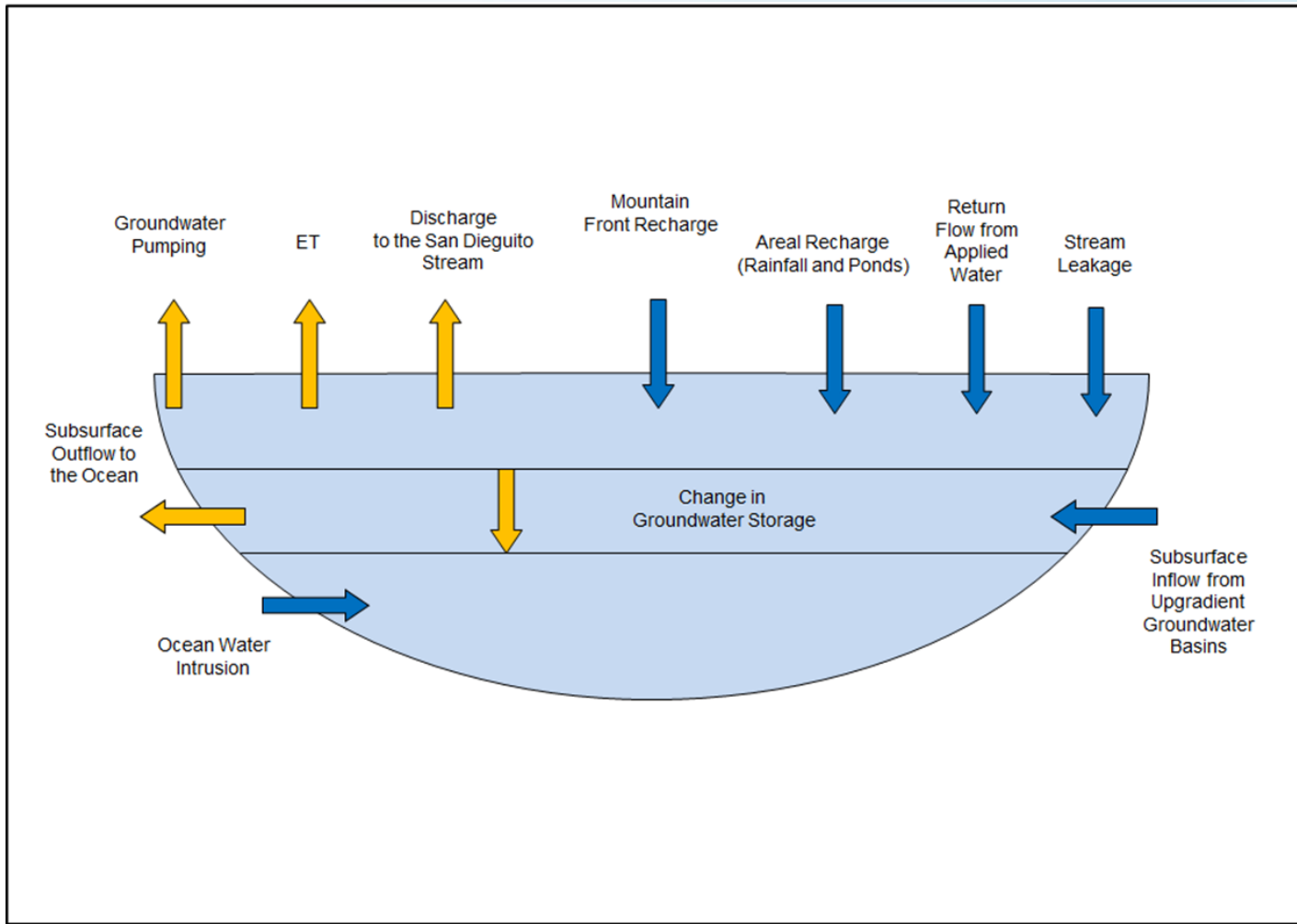
Project Status

- Studying feasibility of concept
- Potential project would:
 - Extract groundwater from wells (water balance)
 - Deliver to desalination facility
 - Treat via reverse osmosis (process)
 - Distribute potable supply available for various uses for OMWD customers
- Potential supply would be above and beyond amount pumped by existing groundwater users (sustainable yield)



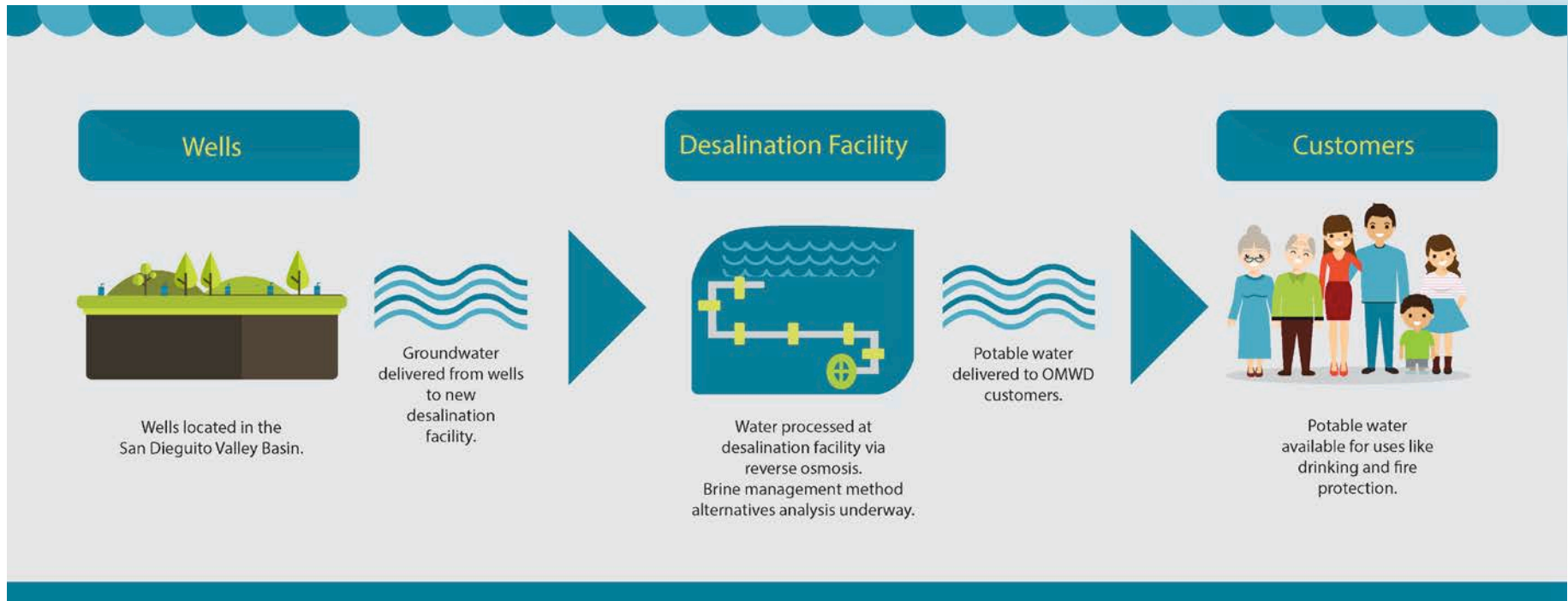


Water Balance Components





Process





Project Study Focus

- Amount of groundwater
- Quality of groundwater
- Best groundwater treatment method
- Operation assets
- Costs to produce
- Cost-efficiency of alternatives such as seawater desalination





Environmental Interests

- Sustainable water supplies (SGMA)
- Brine disposal
- Overdraft
- Environmental impact analysis and report





Draft Results - Alternatives Analysis

- Evaluated 6 alternatives
 - 2 treatment plant sites
 - 3 brine disposal alternatives for each site
- North treatment plant site, well field, and brine discharge to San Elijo JPA ranked highest





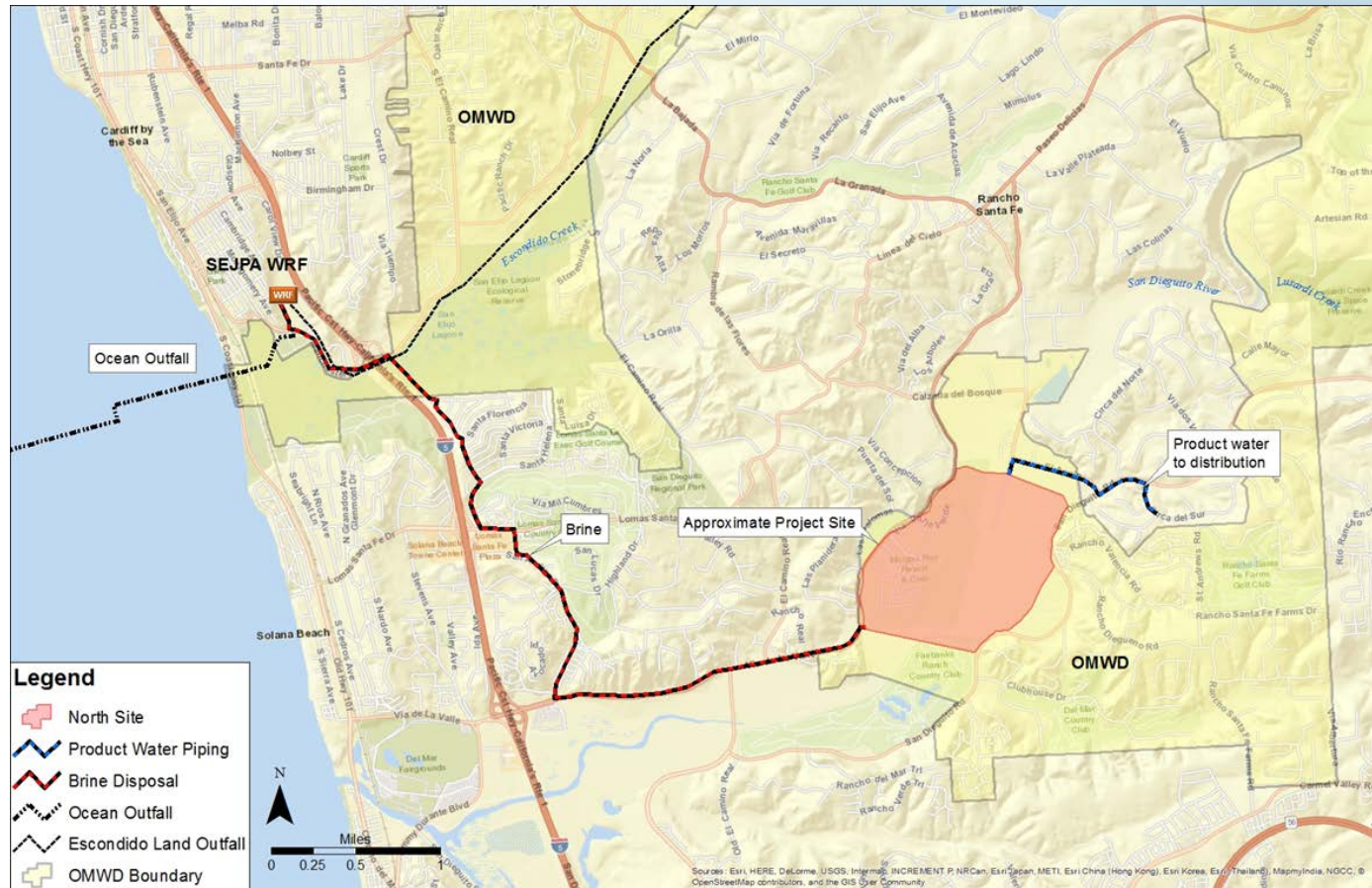
Draft Results - Preferred Alternative

- North treatment plant site
- Well field
- Brine discharge to San Elijo JPA
- Cost estimated to be approximately \$2,000/AF
 - Competitive with imported water
 - Less than desalinated seawater





Draft Results - Preferred Alternative





Draft Results - Hydrogeology

- Well field 1 (1, 1a)
 - 1,250 AFY sustainable
 - 1,350 AFY potentially impacts local wells
 - Under influence of surface water
- Well field 2 (2, 2a)
 - 1,350 AFY sustainable
 - Not under influence of surface water
 - A sustainable supply available for project
- **Well field 2 preferred**





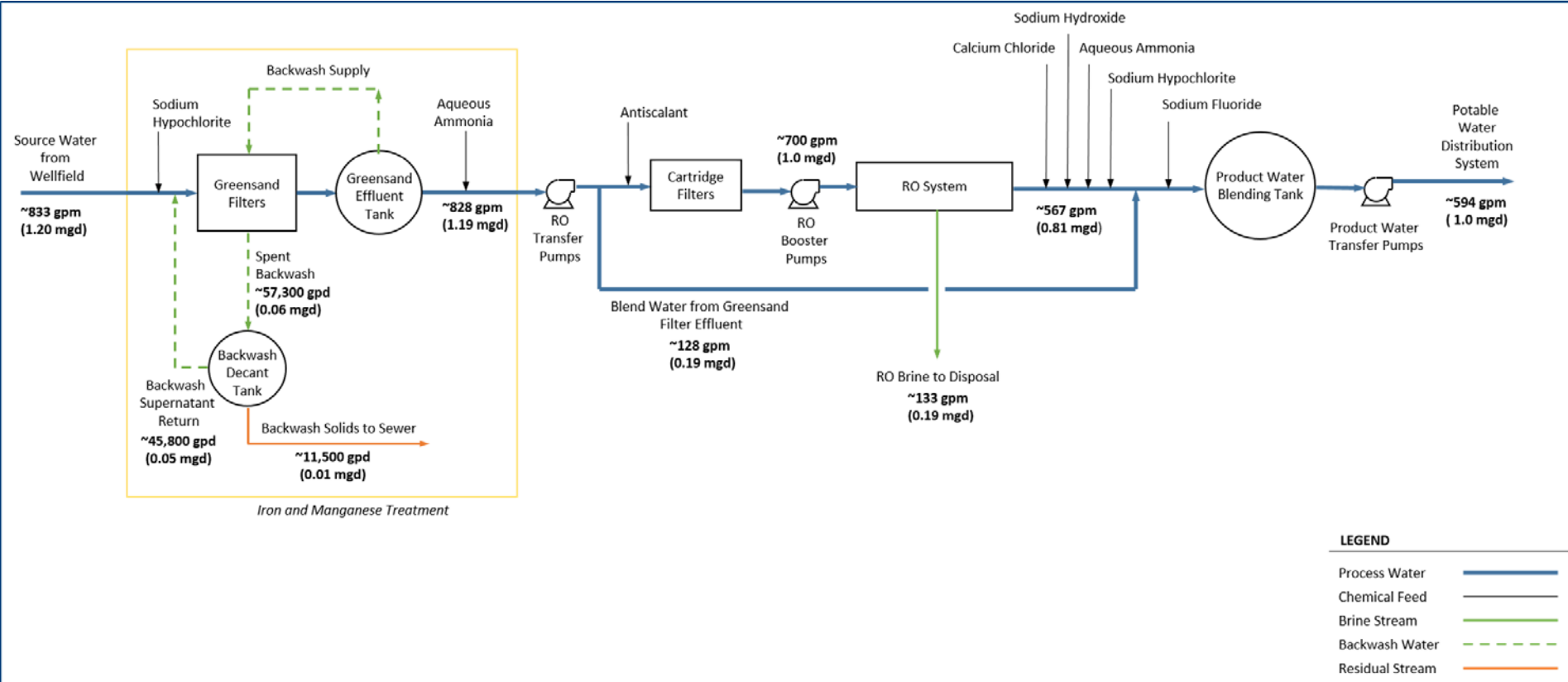
Draft Results - Treatment Plant

- Pre-treatment to remove iron and manganese
- Reverse osmosis membranes to reduce total dissolved solids
- Disinfection to match other OMWD supplies
- Meets all state and federal drinking water regulations
- Flexible building architecture to match surroundings
- ½ acre lot required, 1 acre preferred





Detailed Process Graphic





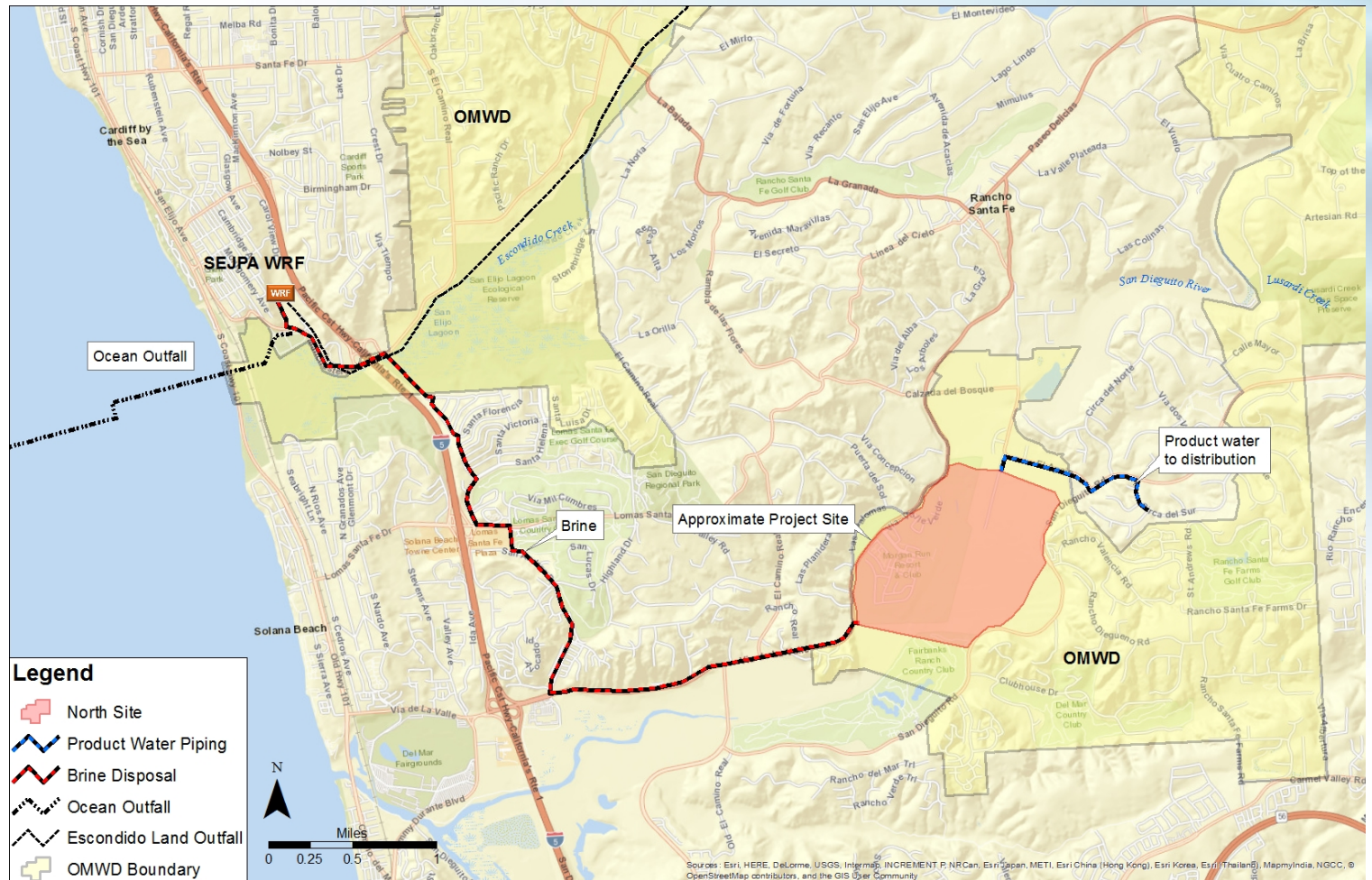
Draft Results - Brine Management

- Evaporation ponds - not feasible
- Live stream discharge - not feasible
- Municipal sewer discharge - not feasible
- Estuarine discharge - not feasible
- Zero liquid discharge - not feasible
- **Deep well injection near the coast - feasible**
- **Discharge to coastal water through an existing outfall - feasible**





Draft Results - Brine Management





Working Together

- Project partners needed
- Land for facility
- Wells
- Potential impacts mitigated
- Assist OMWD customers in managing water resources





Next Steps

- Study complete by December 2017
- Possible design pilot project
 - Construct a test well and field test treatment technologies to refine hydrogeologic model and treatment design criteria prior to construction of a full-scale project
- Project could begin producing water as early as 2022





Q&A

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