

Oceanside Seawater Desalination Feasibility Study

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Mission Basin Groundwater Purification Facility

A Facility with Many Names:

- Mission Basin Desalting Facility
- Desalter
- RO Plant

Reverse Osmosis Treatment

Brackish Groundwater Extraction From Basin

6.37 MGD Rated Capacity

Approx. 75% Recovery

Goals Moving Forward

- * Increase Local Supply and Production
- * Reduce Dependency on Imported Water
- * Increase Sustainability and Reliability

Constraints

- * Limited Water Supply in Basin
- * Extraction Capabilities
- * Environmental Regulations

Water Supply

- * Locate a New Supply
- * Quality
- * Quantity
- * Location

The City of Oceanside Seawater Desalination Project

Feasibility and Pilot Study

“The primary objective of the pilot study was to develop design parameters for a treatment process which supports implementation of a full-scale seawater desalination project at MBGPF.”

-Seawater Desalination Feasibility Report 2010

Project Objectives

- * Pilot Test Site Selection
- * Monitoring/Test Well Siting, Design and Construction
- * Pilot Testing
- * Raw Water Pipeline Alignment Study
- * Brine Line Analysis
- * Preliminary Plant Design
- * Cost of Facilities
- * Recommend Additional Studies

Site Selection



OCEANSIDE MARINA

SAN LUIS RIVER

SITE B

76

PACIFIC OCEAN

Test Well

EXISTING
SEWER LIFT
STATION

DRAIN LINE

TANK(S)

ELECTRICAL LINE

FENCED
AREA



LEGEND

 Well Location

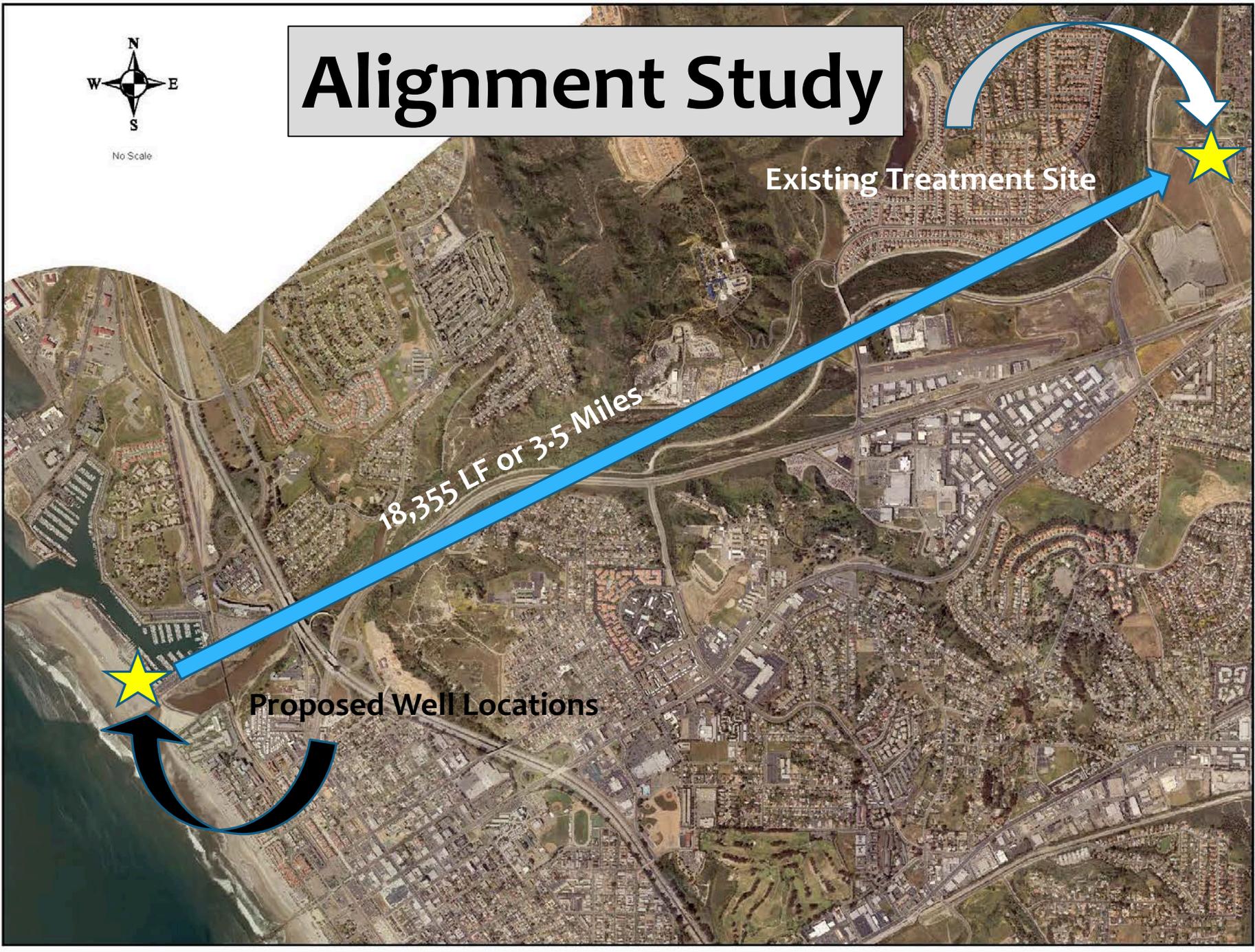
 Temporary Pilot Facility Footprint
(1 year)





No Scale

Alignment Study

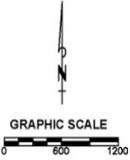


Existing Treatment Site

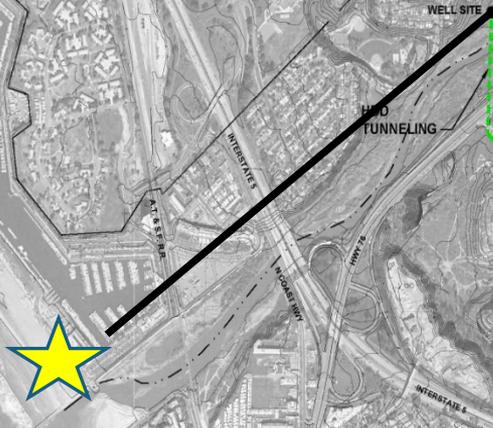
18,355 LF or 3.5 Miles

Proposed Well Locations

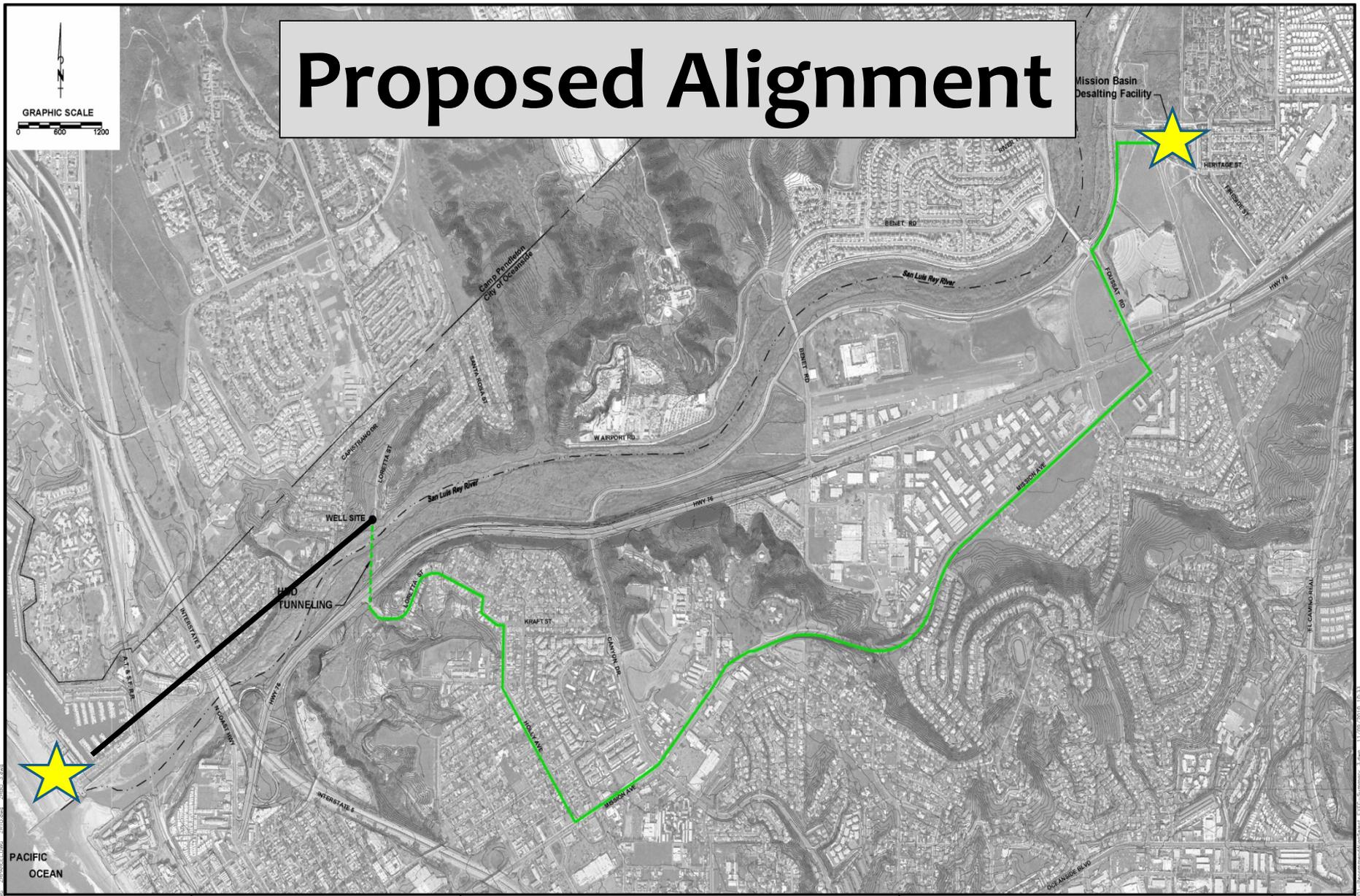
Proposed Alignment



Mission Basin
Desalting Facility



PACIFIC
OCEAN



Brine Line

City of Oceanside
Brine Line

City Brine Line

OUTFALL

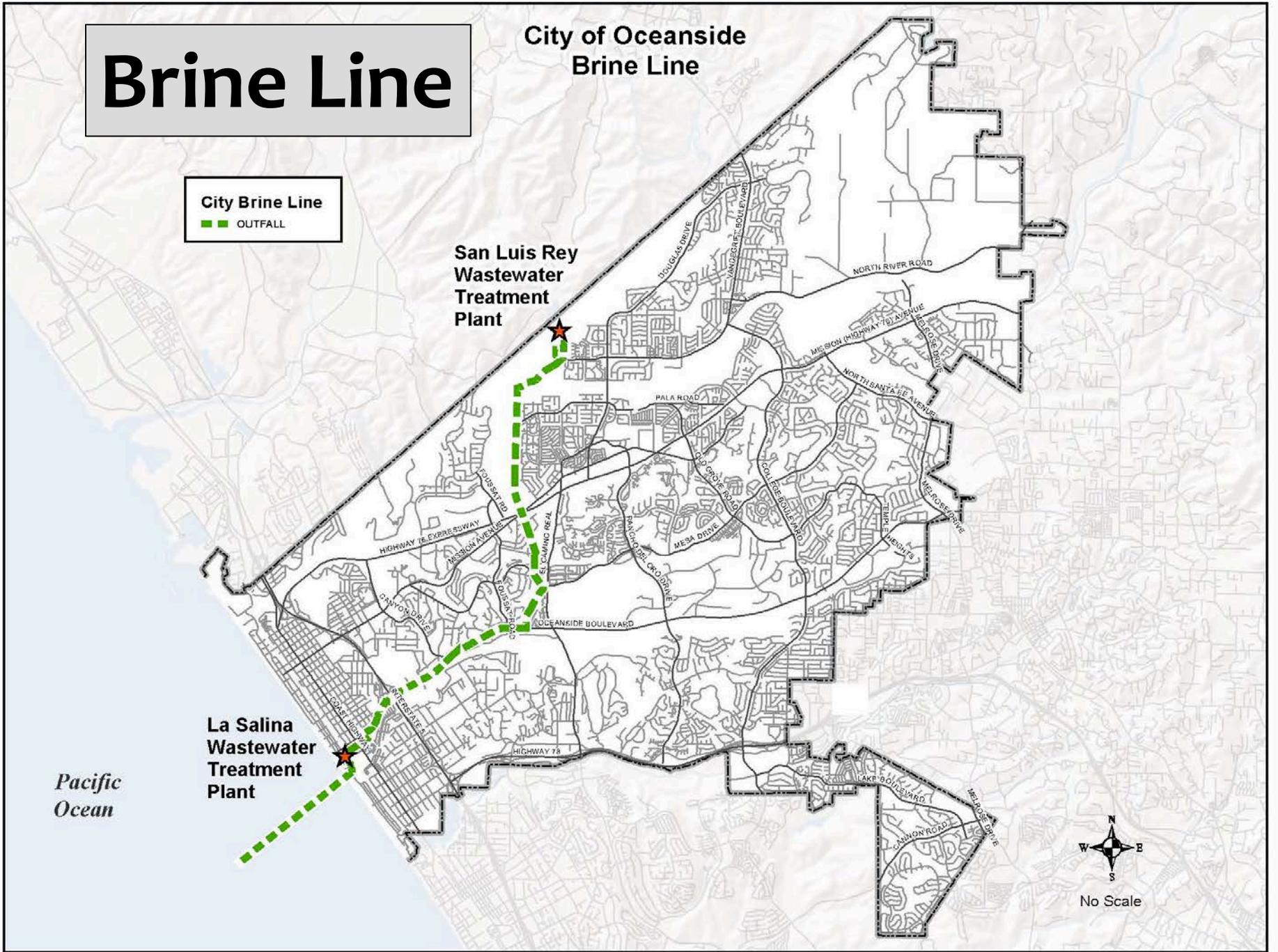
San Luis Rey
Wastewater
Treatment
Plant

La Salina
Wastewater
Treatment
Plant

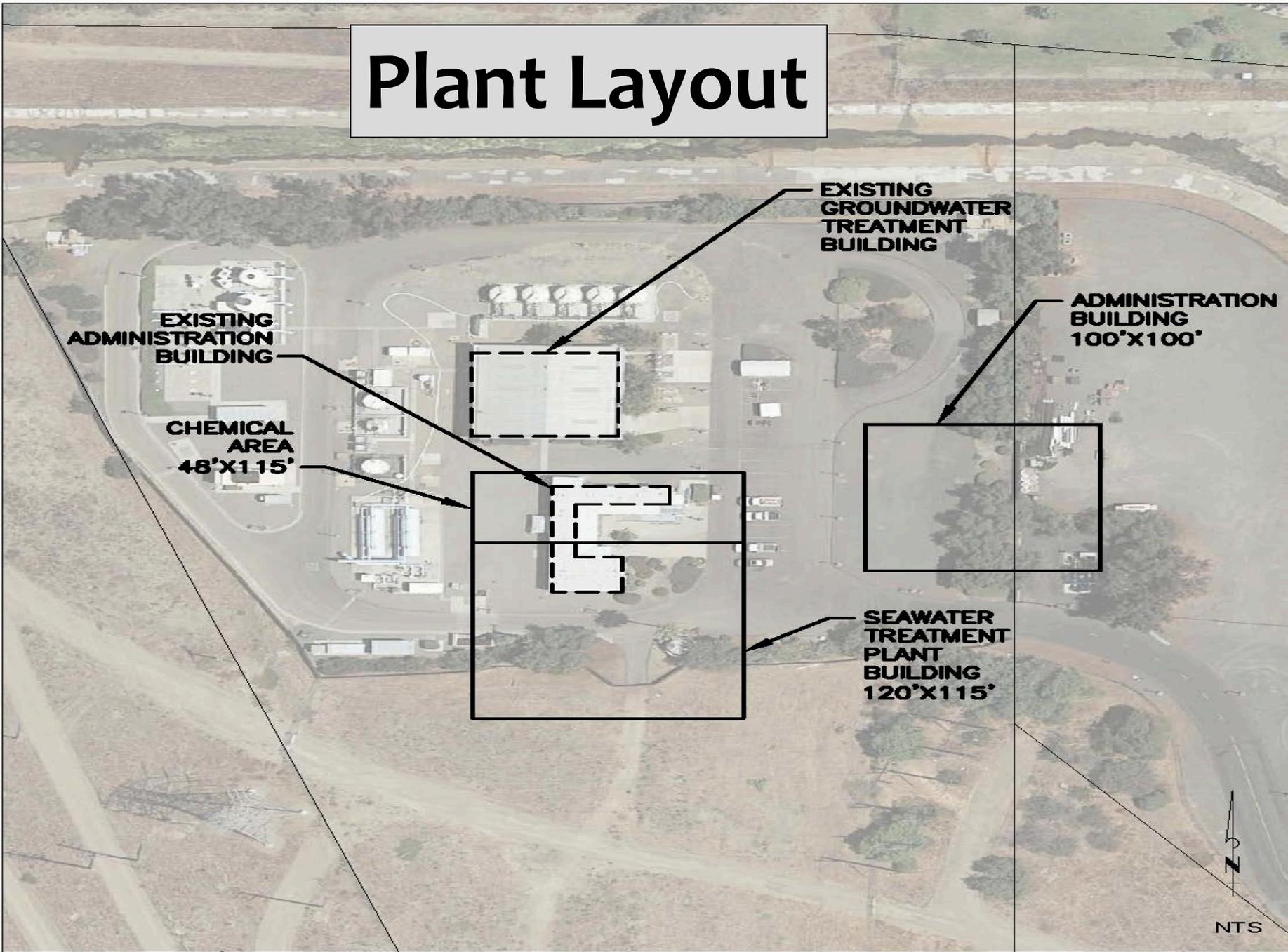
*Pacific
Ocean*



No Scale



Plant Layout



**EXISTING
ADMINISTRATION
BUILDING**

**CHEMICAL
AREA
48'X115'**

**EXISTING
GROUNDWATER
TREATMENT
BUILDING**

**ADMINISTRATION
BUILDING
100'X100'**

**SEAWATER
TREATMENT
PLANT
BUILDING
120'X115'**



NTS

Estimated Costs

*5 MGD Facility - \$90 Million

*10 MGD Facility - \$150 Million

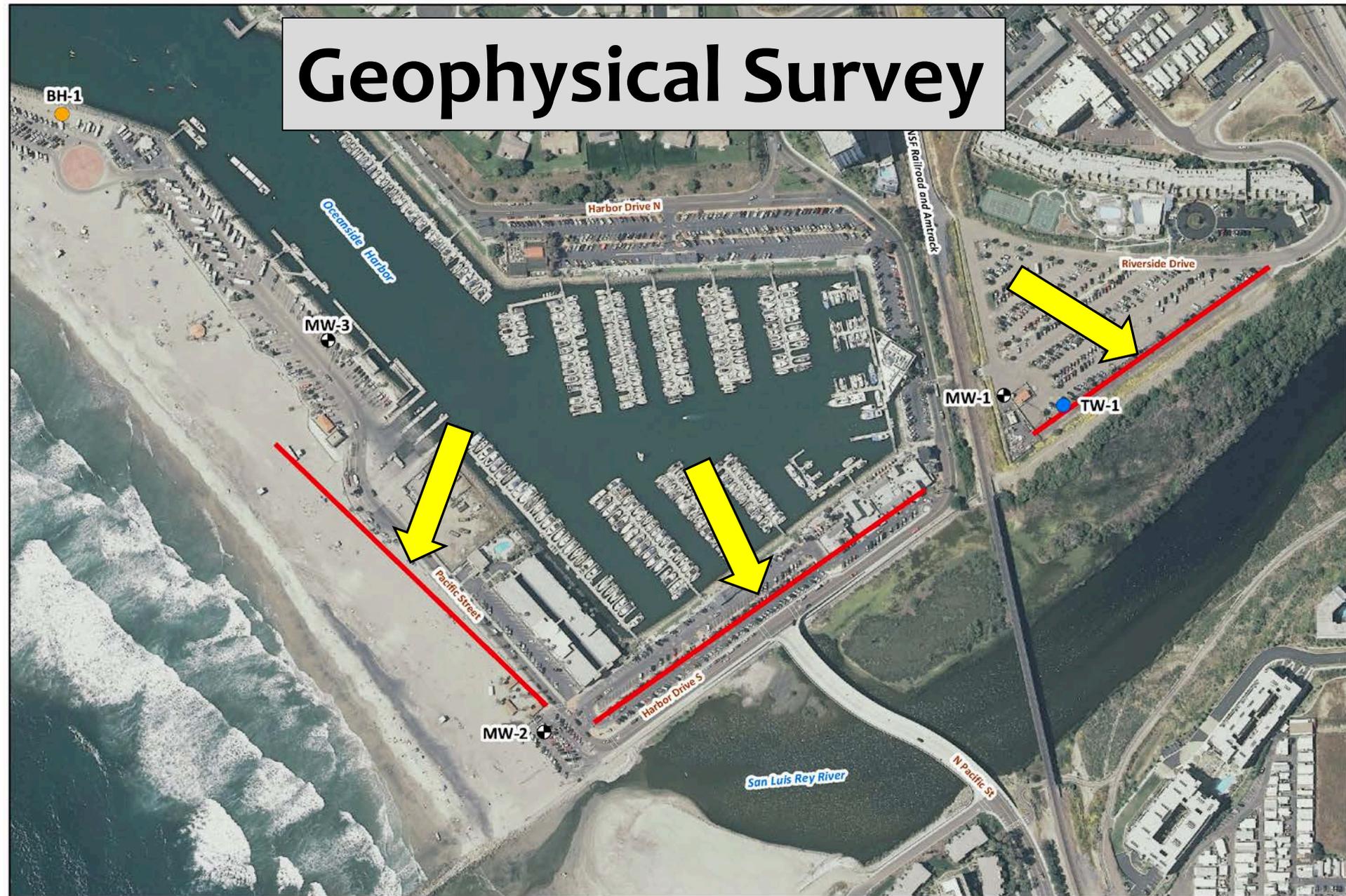
Conclusions of Feasibility and Pilot Study

- * Estimate Quality of Water
- * Pumping Characteristics (Quantity)
- * Estimated Project Costs
- * Moving Forward with Well Siting Study

Well Siting Study

- * Perform Surface Geophysical Surveys
- * Exploratory Borings
- * Install Monitoring Wells
- * Construct Test Well
- * Well Pump Test
- * Evaluation, Analysis, and Conclusions
- * Recommendations

Geophysical Survey



Exploratory Borings

BH-1

MW-3

MW-1

TW-1

MW-2

Oceanside Harbor

Harbor Drive N

Riverside Drive

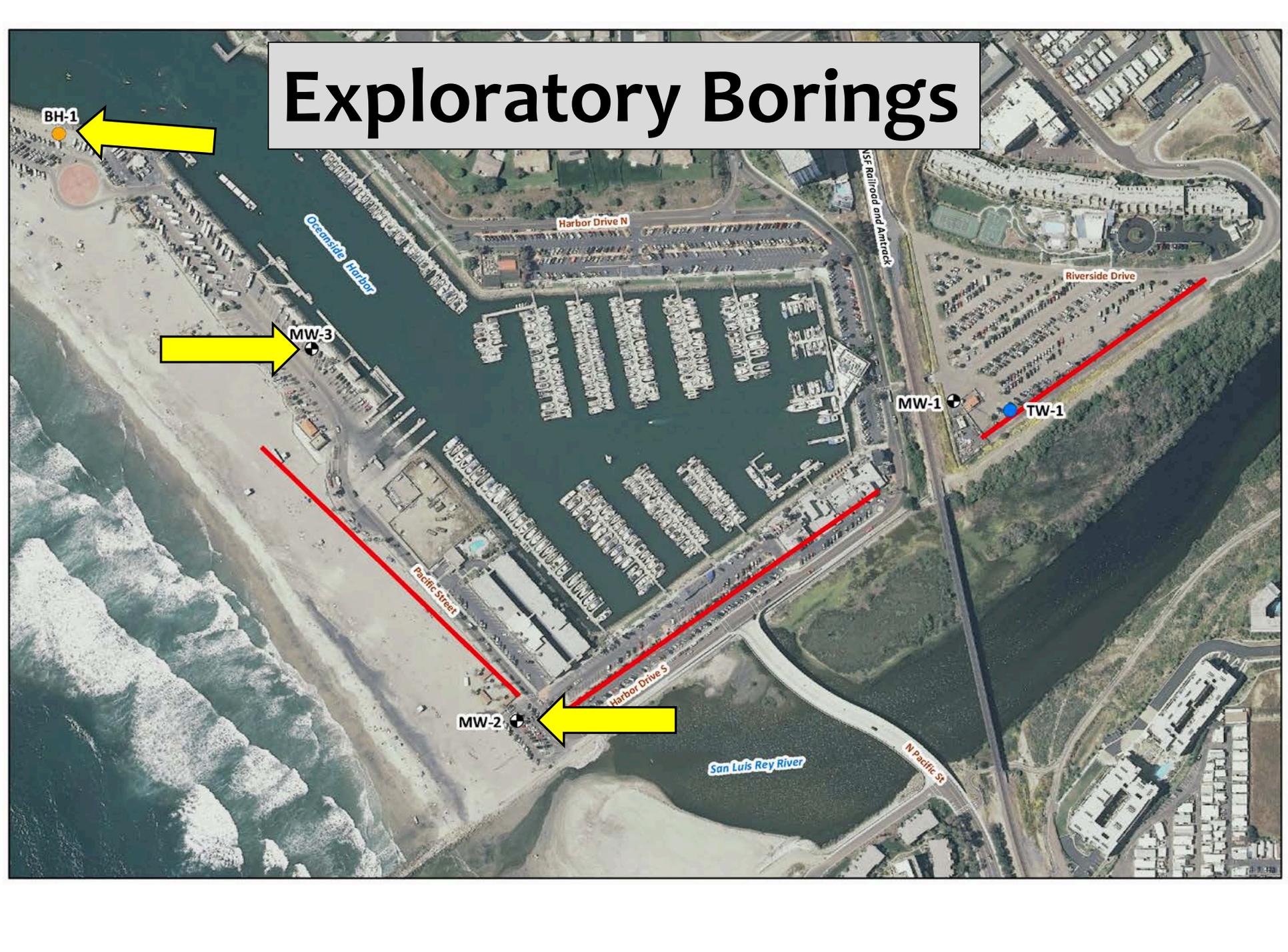
Pacific Street

Harbor Drive S

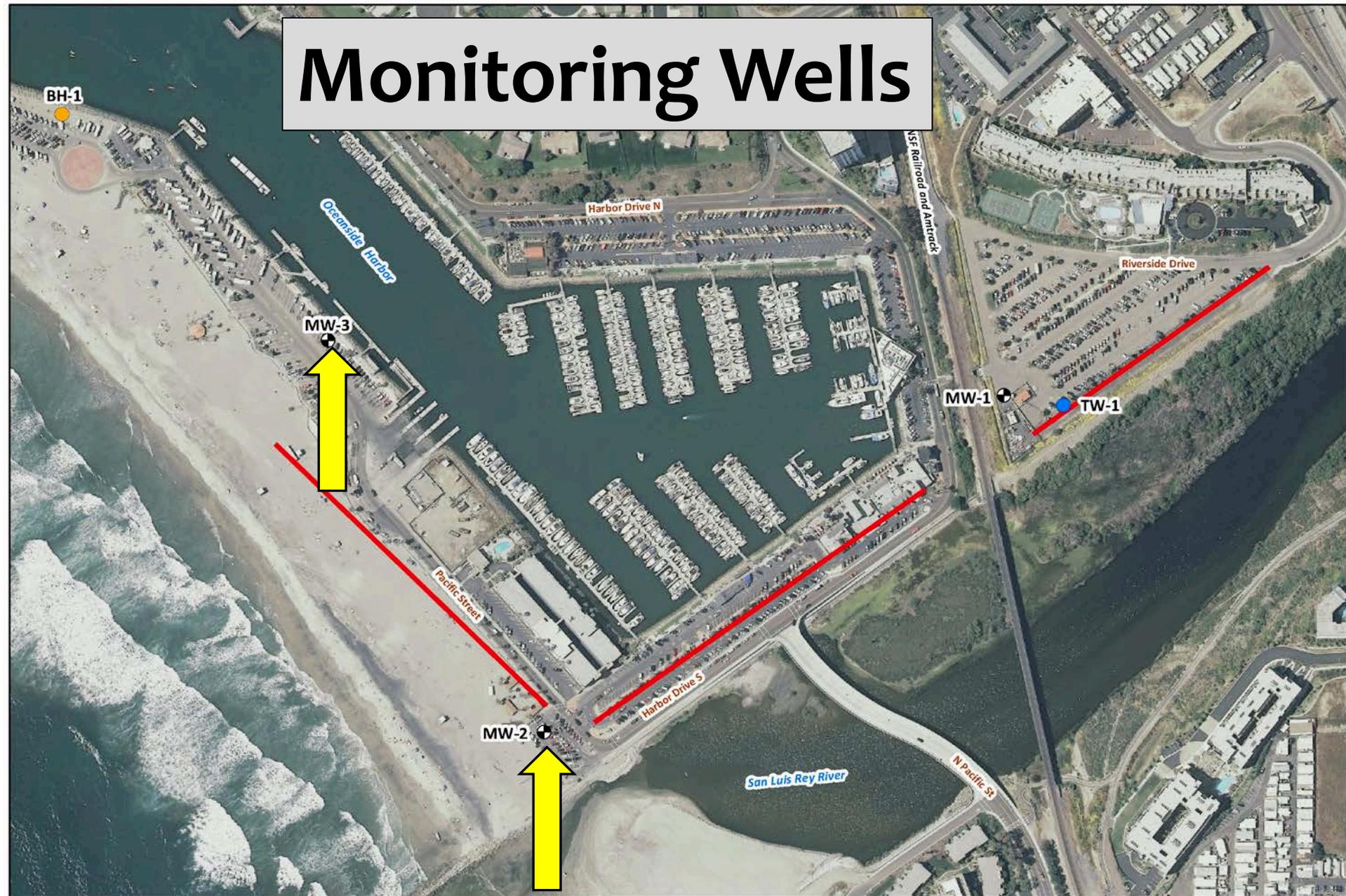
San Luis Rey River

N Pacific St

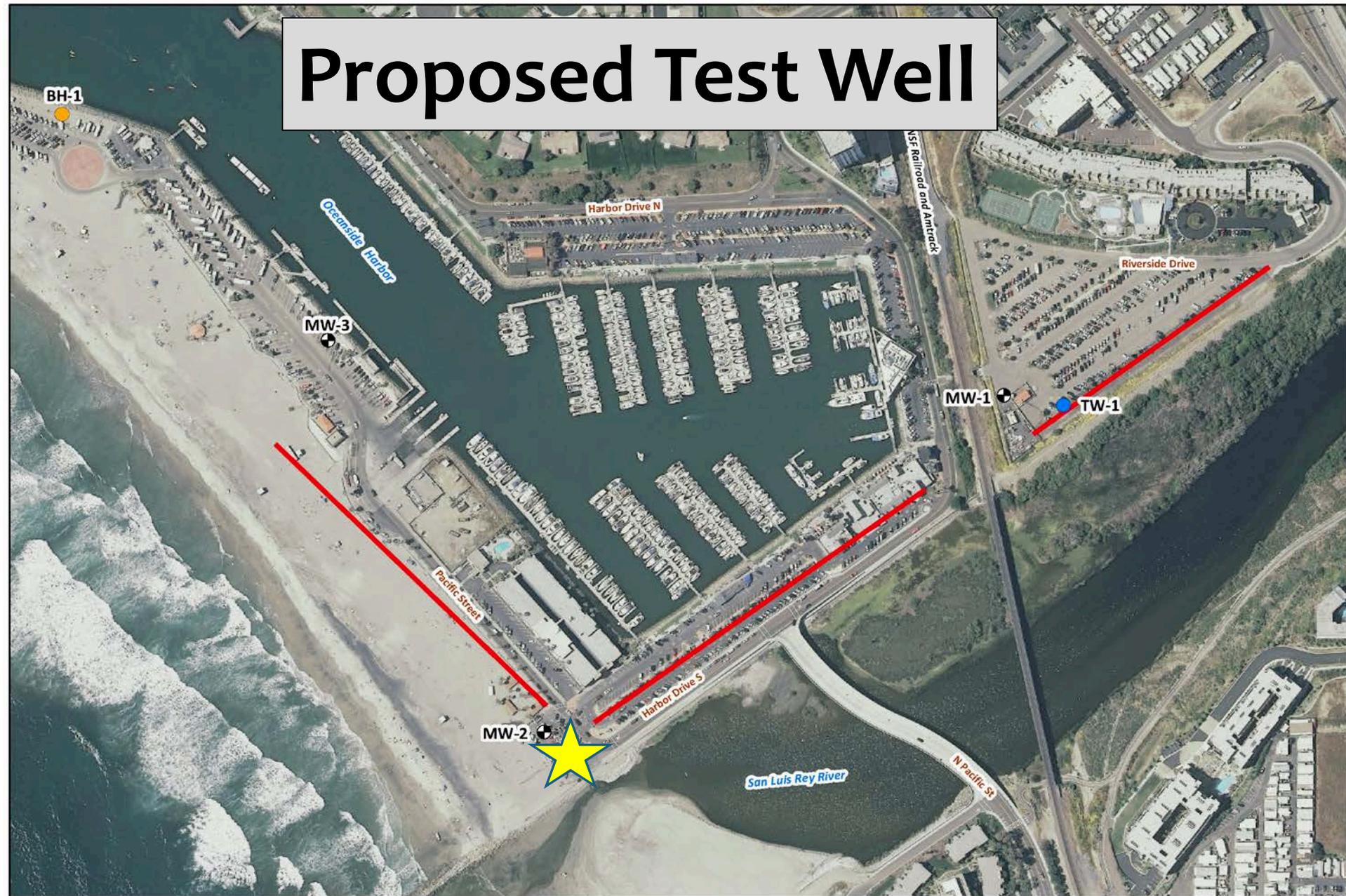
NSF Railroad and Amtrack



Monitoring Wells



Proposed Test Well



Next Steps

- * Construct Test Well
- * Perform Pump Test
- * Analyze Data
- * Recommendations

Questions?