

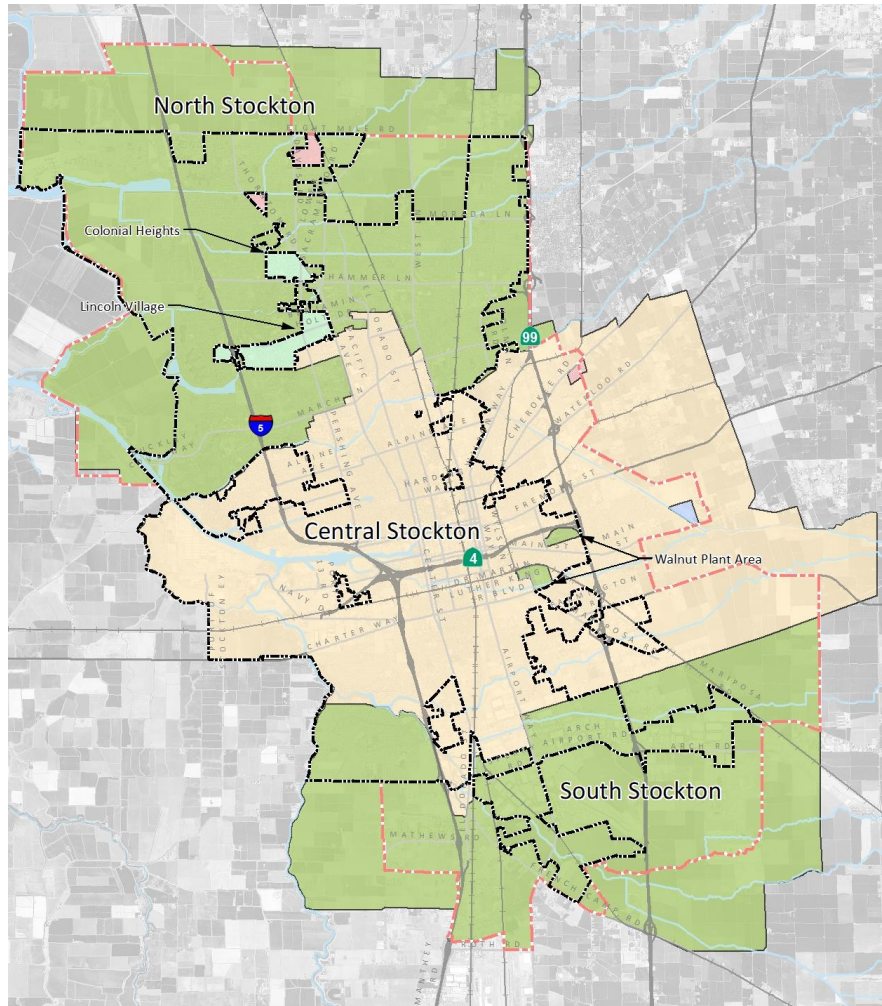
SOUTH STOCKTON GROUNDWATER WELL REHABILITATION AT WELL SSS8 PROJECT

Municipal Utilities Department

January 13, 2022

Agenda Item No. 3.2

WATER SERVICE AREAS



NORTH STOCKTON

BOUNDED

IN NORTH – EIGHT MILE ROAD

IN SOUTH – CALAVERAS RIVER

IN EAST – HWY 99

IN WEST – SAN JOAQUIN RIVER &
WHITE SLOUGH

SOUTH STOCKTON

BOUNDED

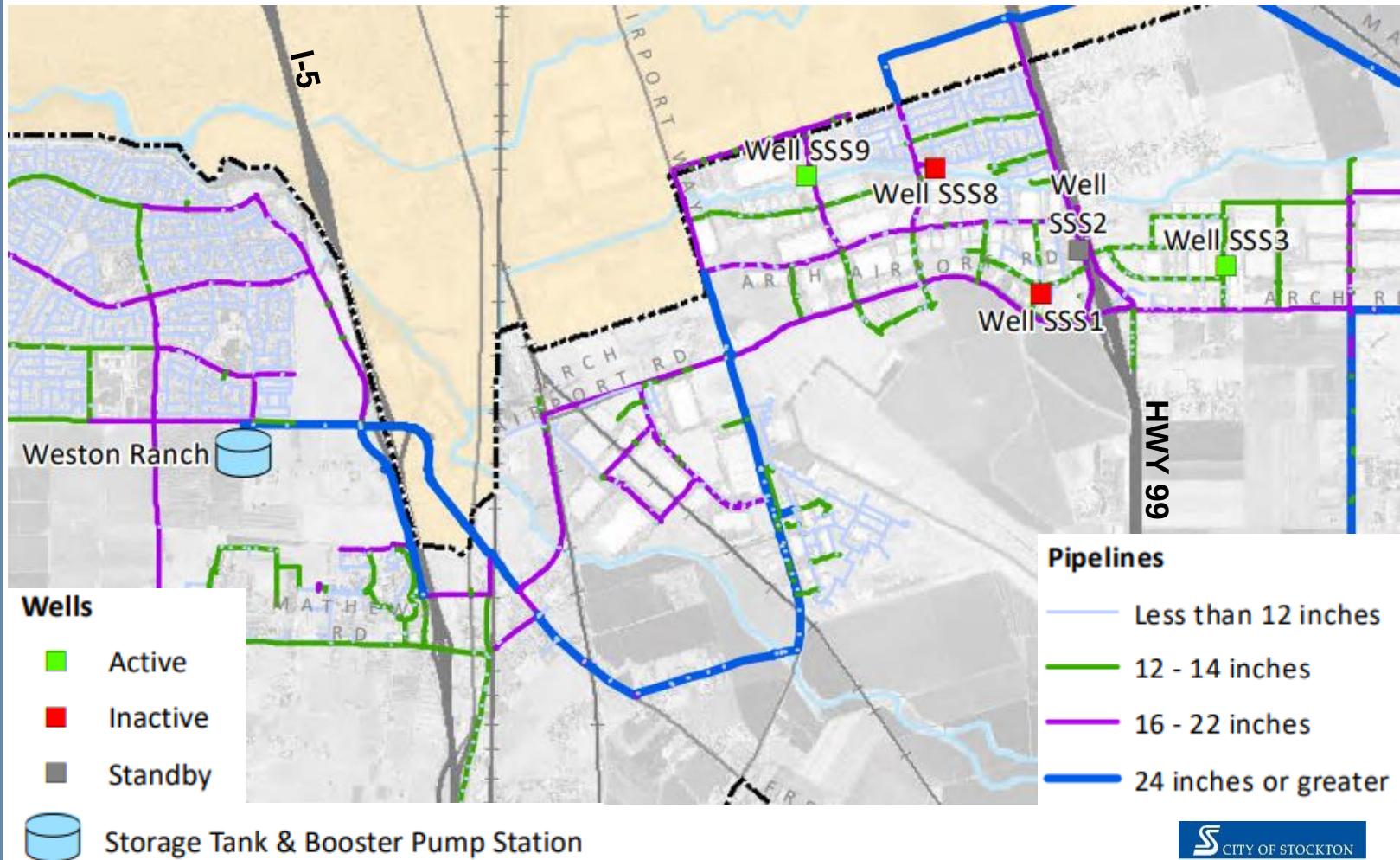
IN NORTH – CALAVERAS RIVER

IN SOUTH – FRENCH CAMP ROAD

IN EAST – KAISER ROAD

IN WEST – SAN JOAQUIN RIVER

SOUTH STOCKTON SERVICE AREA



WELL SSS8 LOCATION MAP

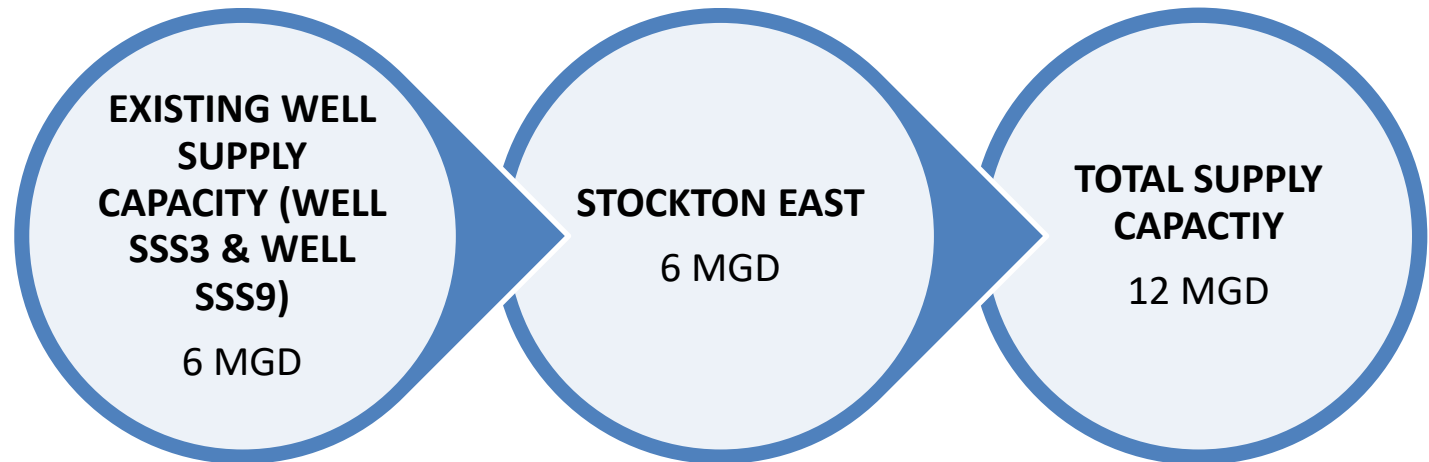


WATER SUPPLY AND DEMAND

- South Stockton Water Supply
 - Total of 5 wells
 - 2 active wells
 - 3 inactive wells
 - Stockton East Water District
- South Stockton Water Demand
 - Existing Maximum Day Demand – 9 MGD

SOUTH STOCKTON WATER SUPPLY

Normal Year



SOUTH STOCKTON WATER DEMAND

Existing Maximum Day Demand 9 MGD

When Stockton East Water District Supply is available,
water supply surplus 3 MGD

If Stockton East Water District Supply is not available due to drought or
emergencies,
water supply deficit 3 MGD

Existing Water Well SSS8 Supply Capacity 4 MGD

If Water Well SSS8 is in service,
water supply surplus 1 MGD

Above stated values are rounded to the next whole number

REQUEST FOR PROPOSAL (RFP)

9/25/2021 - Advertised RFP in
Stockton Record and City's Bid Flash

10/7/2021 - Held a job walk with 4
prospective proposers in attendance

10/28/2021 - Proposal due date –
Received 2 proposals

11/16/2021 - Selection Committee
ranked proposals

11/30/2021 - Notice of intent letters
sent to the proposers

WELL SSS8 WATER QUALITY

Constituent	Highest Measured Value (2000 – 2021)	Threshold	Value
PFOA	9.1 ng/L	Public Notification Level Response Level	5.1 ng/L 10 ng/L
PFOS	29 ng/L	Public Notification Level Response Level	6.5 ng/L 40 ng/L
Arsenic	12 µg/L	Primary MCL	10 µg/L
Iron	14,000 µg/L	Secondary MCL	300 µg/L
Manganese	190 µg/L	Secondary MCL	50 µg/L
Turbidity	4.8 NTU	Secondary MCL	5 NTU

PROJECT REQUIREMENTS

- CEQA documentation
- Geotech investigations
- Surveying
- Design
- Construction
- Permitting
- Commissioning and Start-up

DESIGN APPROACHES

- PFOA and PFOS exceeds Notifications Levels
 - Granular Activated Carbon (GAC) or Ion Exchange (IX)
- Iron, manganese, and arsenic are within manageable levels
 - Can be removed by cartridge filtration
- Analyze existing electrical system, existing pumps and motors
- Replace inactive gaseous chlorine with sodium hypochlorite disinfection system
- 8-foot block wall around project site

Two Feasible Treatment Technologies for PFAS Wellhead Treatment

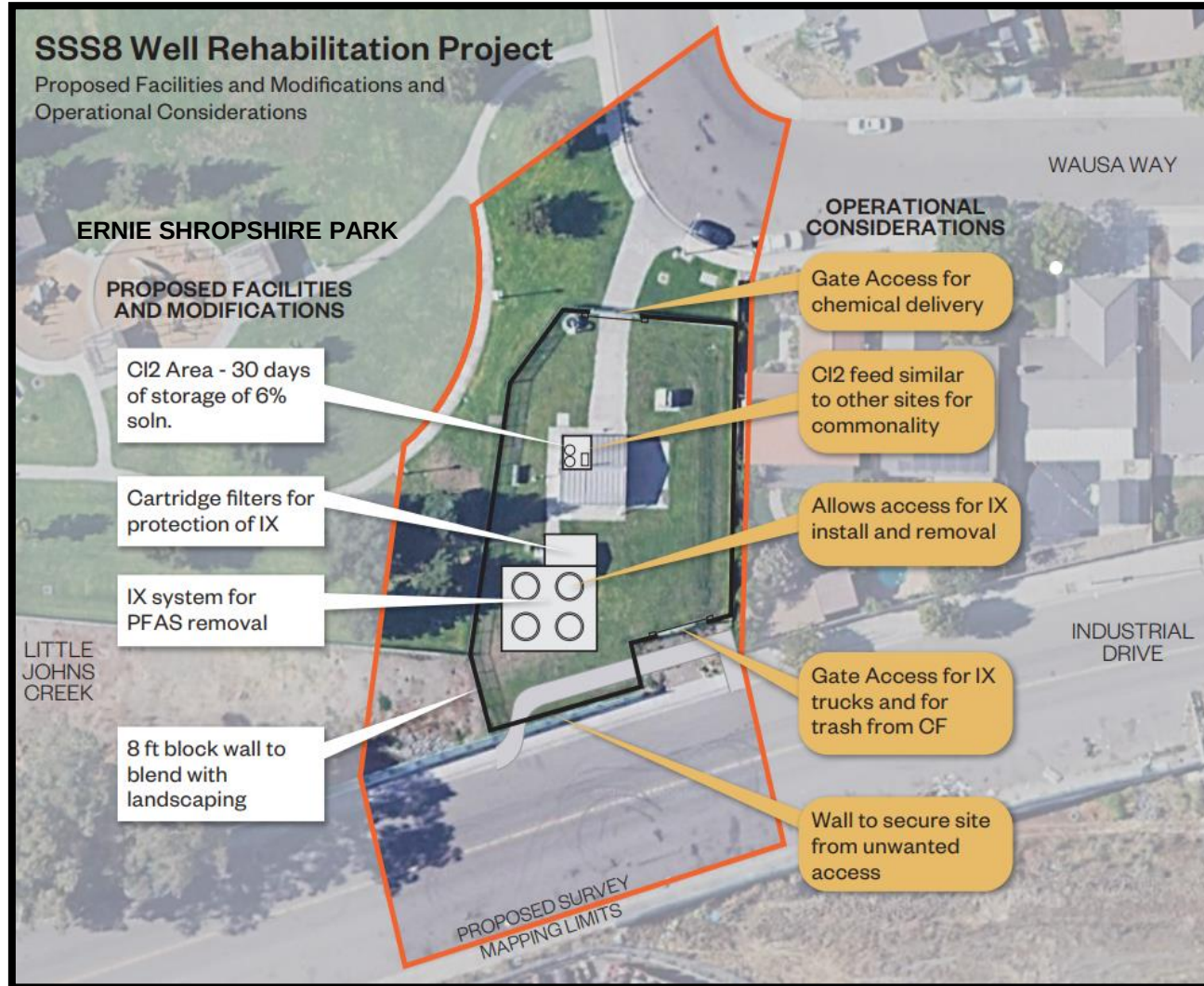
GAC

- Larger footprint, would not fit on existing well site
- Higher capital cost
- Lower O&M cost
- Requires a sewer connection for backwash waste
- Less effective for short-chain PFAS
- Effective for VOC removal
- Microbial growth

Ion Exchange (IX)

- Smaller footprint, fits on existing well site
- Lower capital cost
- Higher O&M cost
- No backwash produced, does not require sewer connection
- More effective for short-chain PFAS
- Not effective for VOC removal

PROJECT APPROACH



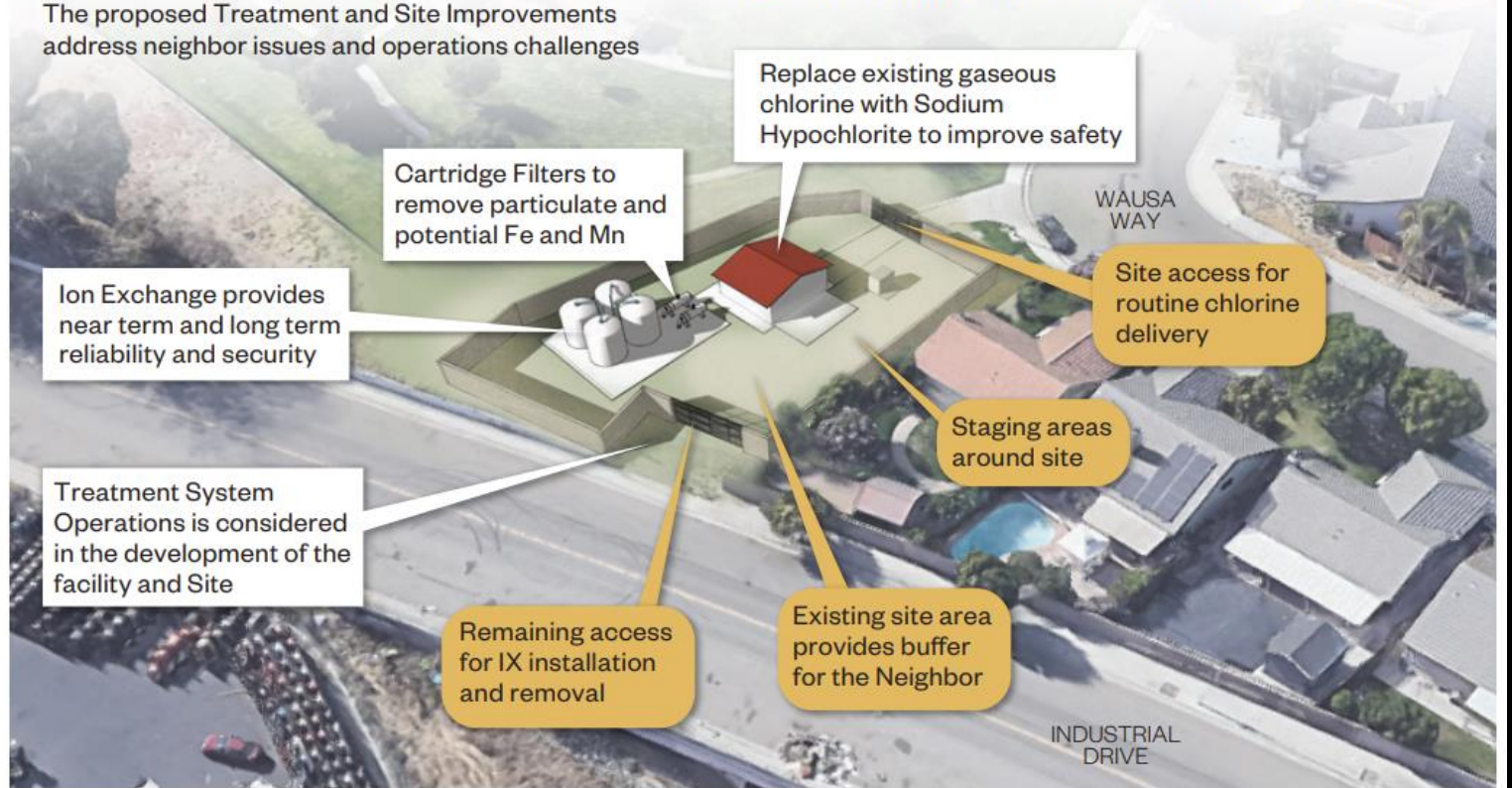
PROJECT APPROACH

Figure 5 / Proposed Treatment and Site Improvements

SSS8 Well Rehabilitation Project

The proposed Treatment and Site Improvements address neighbor issues and operations challenges

■ SITE IMPROVEMENTS □ TREATMENT OBJECTIVES



RECOMMENDATION

- Forward the Progressive Design-Build contract to the City Council for consideration and approval