# City of Galt – Carillion Deep Well Project

## Project Introduction – August 7, 2024

WOOD RODGERS

BUILDING RELATIONSHIPS ONE PROJECT AT A TIME

# Introduction

- City of Galt
  - Chris Erias, Interim City Manager
  - Trung Trinh, Acting Deputy Public Works Director
  - Brandon Woods, Associate Engineer
- Wood Rodgers, Inc.
  - Jeff Lodge, PE, Principal Engineer
  - Sean Spaeth, PG, CHG, Principal Hydrogeologist

# Project Introduction

- Construction of a deep municipal supply well, the Carillion Deep Well, to replace capacity from the failed Carillion Well 16
- Destruction of Carillion Well 16
- Site improvements
  - Civil
  - Electrical
  - Storage
  - Distribution

# City Water Supply

- The City of Galt relies solely on groundwater, from two regional aquifers
  - Laguna Formation (less than 1,000 feet depth)
    - » Historically, the primary source for potable water supply
    - » Requires well head treatment to reduce concentration of arsenic
    - » Multiple City wells that are constructed in the Laguna Formation are now non-operational
  - Lower Mehrten Formation (greater than 1,000 feet depth)
    - » Three wells target the deeper formation
      - Two wells co-located at the Industrial WTP site
    - » Lower concentration of arsenic

# Water System Demand

- The City of Galt 2020 UWMP Water Demand
  - No changes to potable water demand

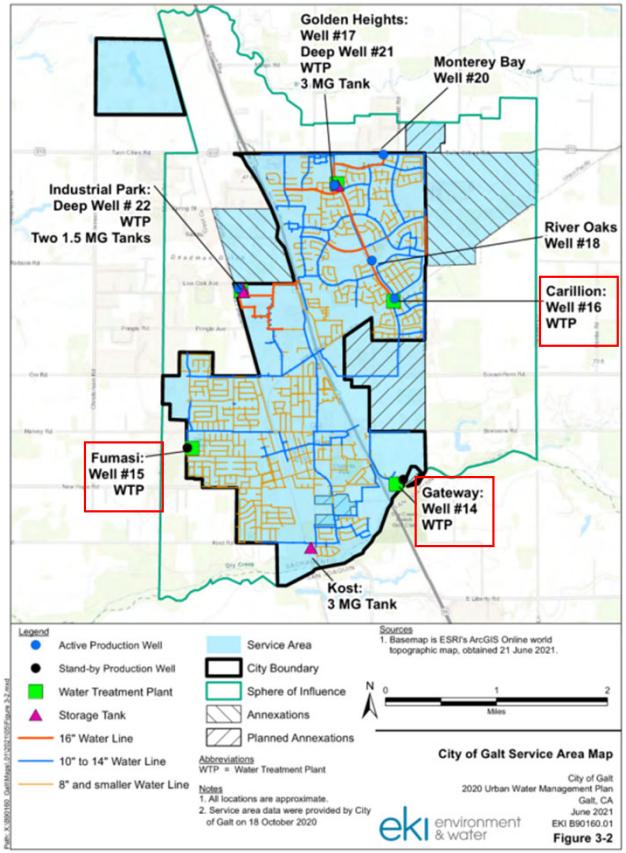
**Table 4-9: Total Water Use (Potable and Non-Potable)**

| | 2020 | 2025 | 2030 | 2035 | 2040 | 2045 |
|---|---|---|---|---|---|---|
| Potable Water, Raw, other Non-potable | 4,781 | 4,897 | 5,013 | 5,303 | 5,615 | 5,950 |
| Recycled Water Demand | 655 | 655 | 655 | 655 | 655 | 655 |
| **Total Water Use** | **5,436** | **5,552** | **5,678** | **5,968** | **6,280** | **6,615** |

Notes:
(a) Units are in acre feet
(b) Table 4-9 from City of Galt 2020 UWMP

# Water System

- The City of Galt Water System consists of:
  - 8 Wells
    - 4 on-line
    - 3 offline
    - 1 standby (Well #17)
  - 1 Pending Well
    - Industrial Deep Test Well
  - 1 Planned Well
    - Carillion Deep Well



# Water System Capacity – All Wells

| Well Name | Well No. | Depth (feet, bgs) | Aquifer | Status | Capacity (gpm)[1] |
|---|---|---|---|---|---|
| Gateway | 14 | 750 | Laguna | Inactive | 600[2] |
| Fumasi | 15 | 652 | Laguna | Inactive | 940[2] |
| Carillon | 16 | 870 | Laguna | Inactive | 875[2] |
| Golden Heights | 17 | 930 | Laguna | Standby | 1,500 |
| River Oaks | 18 | 913 | Laguna | Active | 1,200 |
| Monterey Bay | 20 | 850 | Laguna | Active | 1,500 |
| Golden Heights Deep | 21 | 1,539 | Mehrten | Active | 1,950 |
| Industrial Park Deep | 22 | 1,627 | Mehrten | Active | 2,000 |
| | | | | **Total System Capacity:** | **10,565** |

3,915 gpm

[1] 2020 UWMP

[2] No longer in service since publication of 2020 UWMP

# Water System Capacity – Active Wells

| Well Name | Well No. | Depth (feet, bgs) | Aquifer | Status | Capacity (gpm)[1] |
|---|---|---|---|---|---|
| Gateway | 14 | 750 | Laguna | Inactive | 0 |
| Fumasi | 15 | 652 | Laguna | Inactive | 0 |
| Carillon | 16 | 870 | Laguna | Inactive | 0 |
| Golden Heights | 17 | 930 | Laguna | Standby* | 1,500* |
| River Oaks | 18 | 913 | Laguna | Active | 1,200 |
| Monterey Bay | 20 | 850 | Laguna | Active | 1,500 |
| Golden Heights Deep | 21 | 1,539 | Mehrten | Active | 1,950 |
| Industrial Park Deep | 22 | 1,627 | Mehrten | Active | 2,000 |
| | | | | **Total Available Capacity:** | **6,650** |

*Emergency backup (limited annual use)

# Groundwater Basin

- Located in the Cosumnes Subbasin
- As defined in Cosumnes GSP, Project is within the Basin Plain subarea

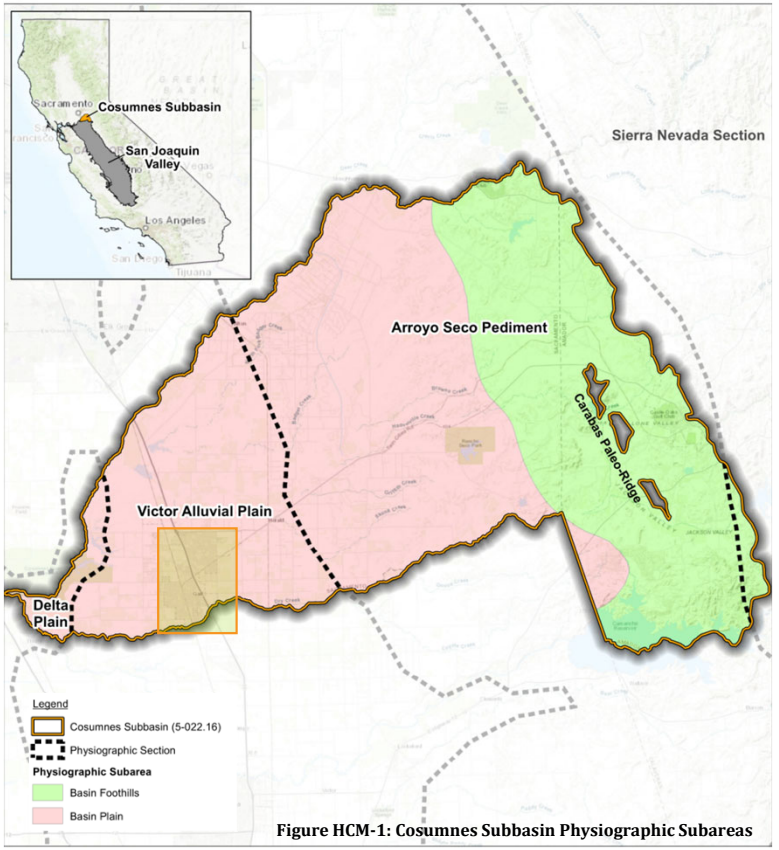



**Figure HCM-1: Cosumnes Subbasin Physiographic Subareas**

# Groundwater Basin

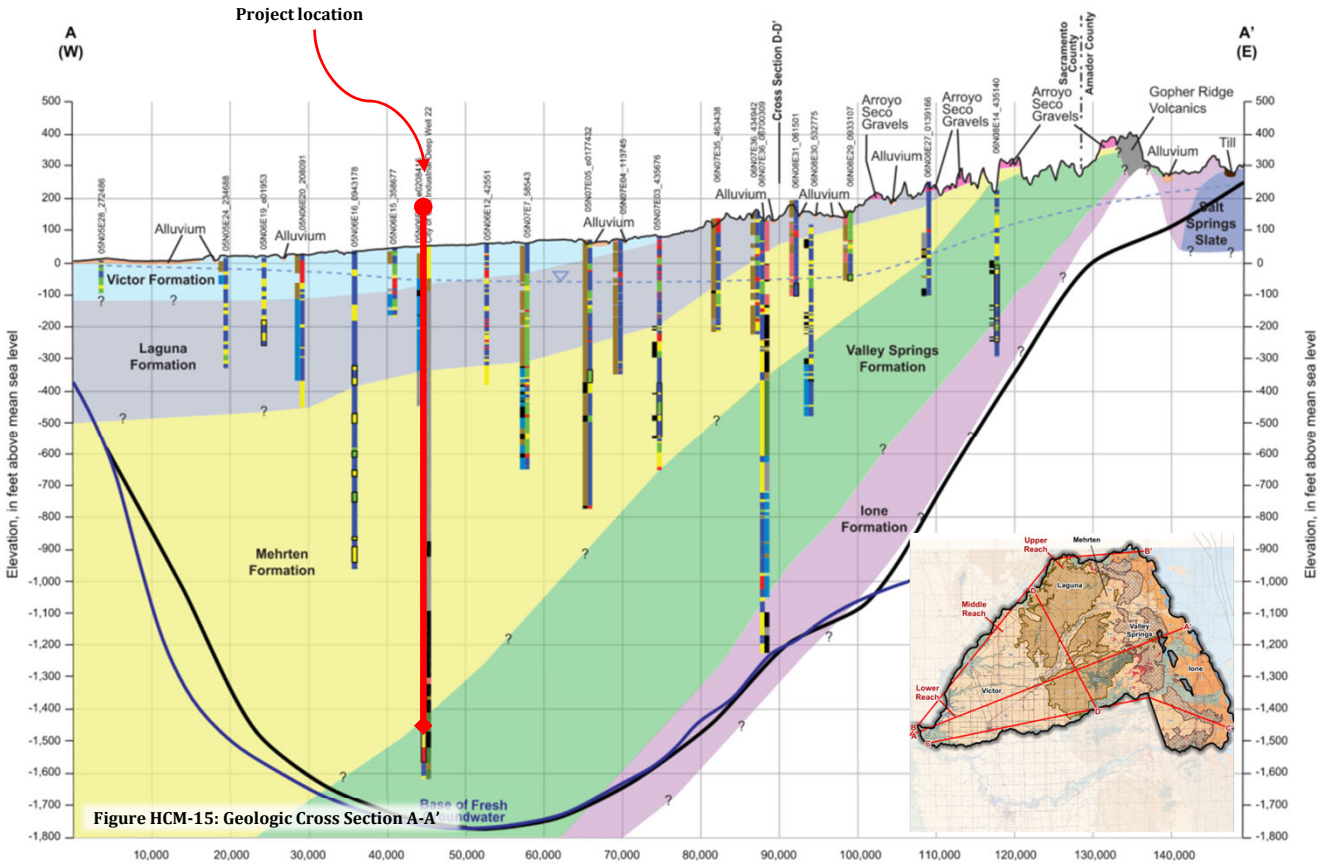
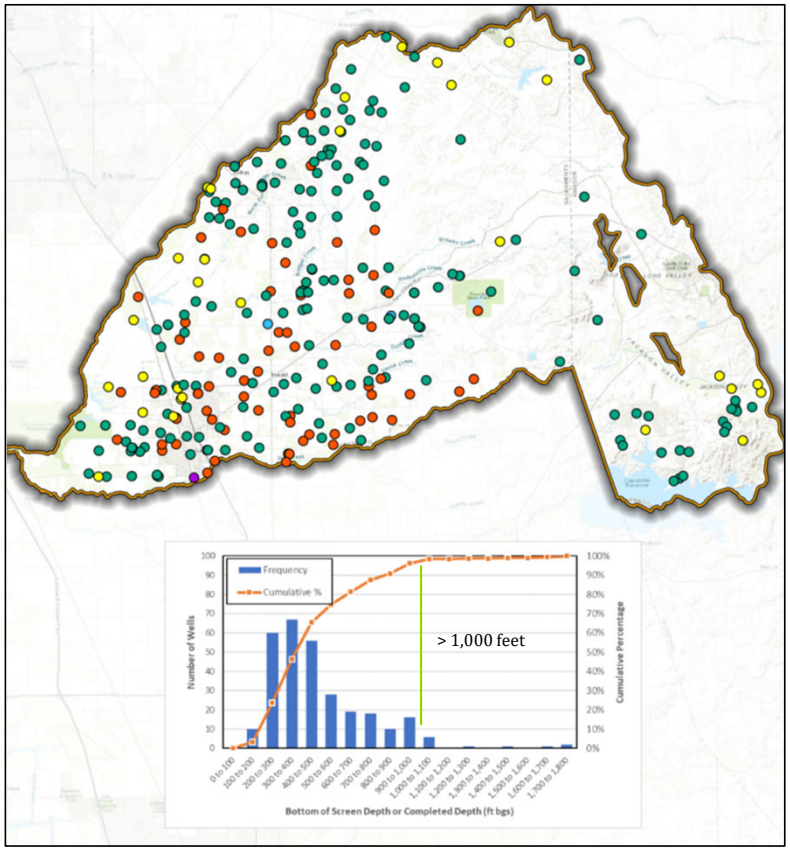



Figure HCM-15: Geologic Cross Section A-A'

# Distribution of Wells by Depth




Well Depths

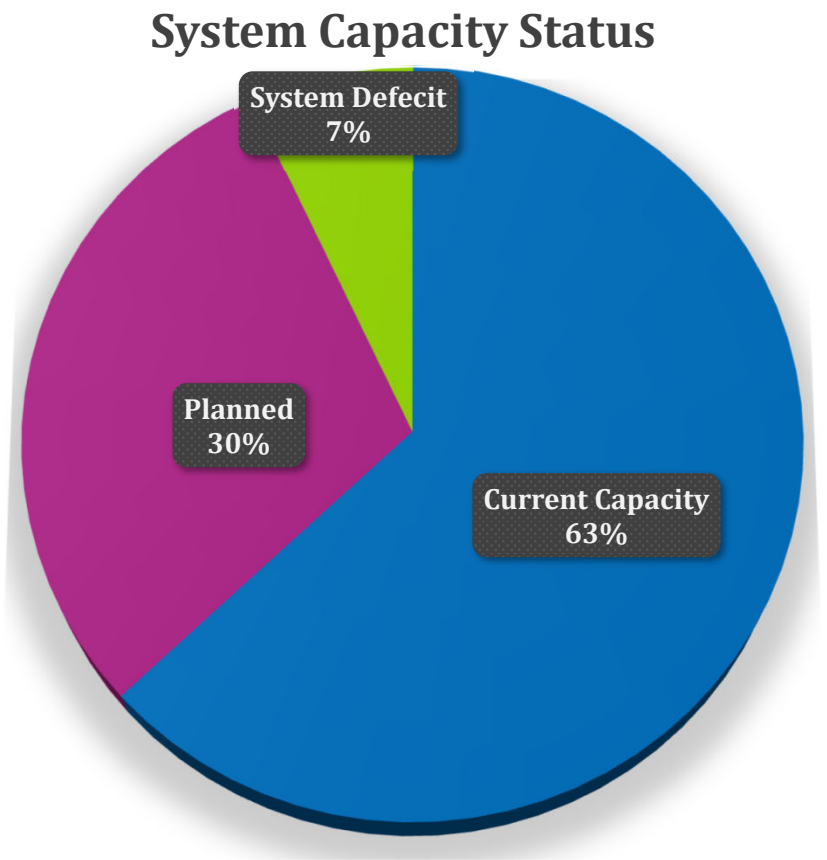
- 90% of wells shallower than 900 feet
- Deepest well in Basin Plain is 1,720 feet

# Project Description

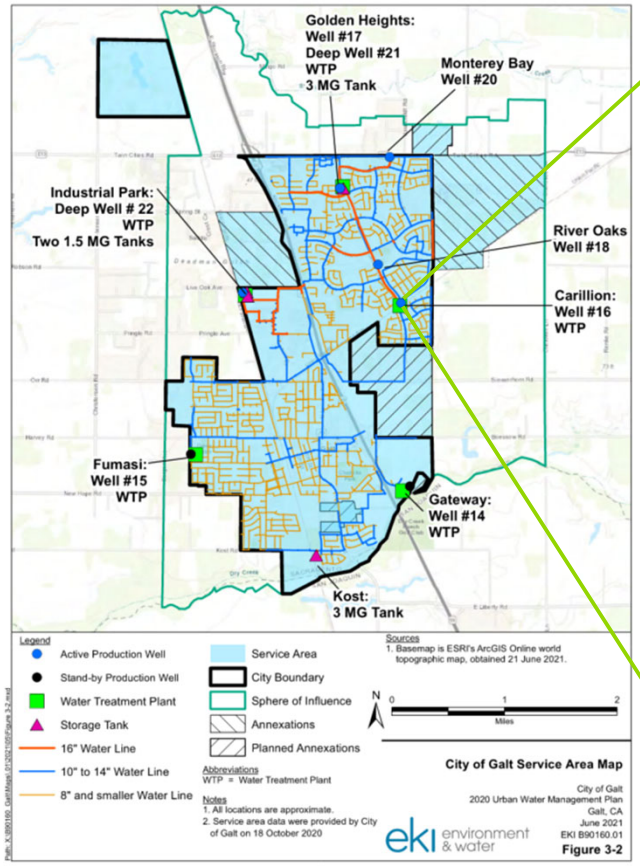
- Increase capacity of City of Galt Water Supply to meet system demands (with redundancy)
- Reduces risk if/when other wells go offline
- Reduces amount of treatment to meet drinking water standards
- Reduces arsenic waste to the wastewater treatment plant

# Water System Capacity Goals

| | Gallons per Minute |
|---|---|
| Total System Capacity | 10,565 |
| Removed Capacity | 3,915 |
| Current Capacity | 6,650 |
| Planned Capacity | 3,150 |
| System Deficit | - 765 |



# Project Location





- Located at the intersection of Carillion Boulevard and Di Maggio Way.

# Project Objectives

- Destroy Well 16 per DWR Bulletin 74-81 & 74-90 Standards
- Design a well with a capacity of up to 2,000 gallons per minute
- Design a well with the best possible water quality
- Replace lost source capacity from multiple offline wells
- Provide system redundancy and water supply security
- Design water storage and new booster pump station

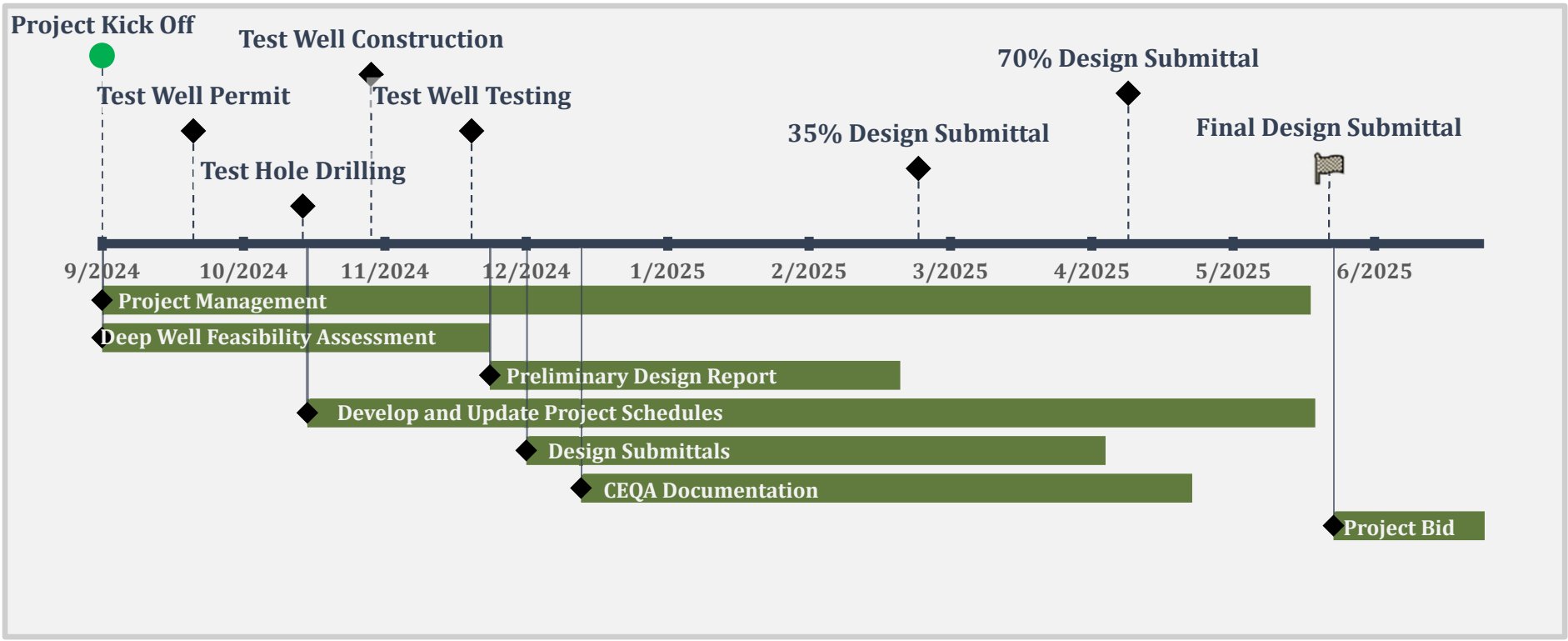
# Scope of Work

- Test Well permitting
- Drill a test hole to an approximate depth of 1,500 feet
- Depth-specific water quality sampling (i.e., zone testing) to characterize the groundwater quality of the Mehrten Formation
- Construct a 12-inch diameter Test Well to collect data regarding:
  - Groundwater levels
  - Groundwater quality
  - Well capacity
- Data will provide information into the feasibility of constructing a separate but permanent production well

# Scope of Work (cont.)

- CEQA Analysis and Public Outreach
- Prepare Design drawings:
  - Production well + pump station
  - Booster pump station
  - 1.5 million gallon above grade storage reservoir
- Solicit Contractor Bids
- Construction

# Project Timeline



# Questions

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