AIM Norman - Water/Wastewater

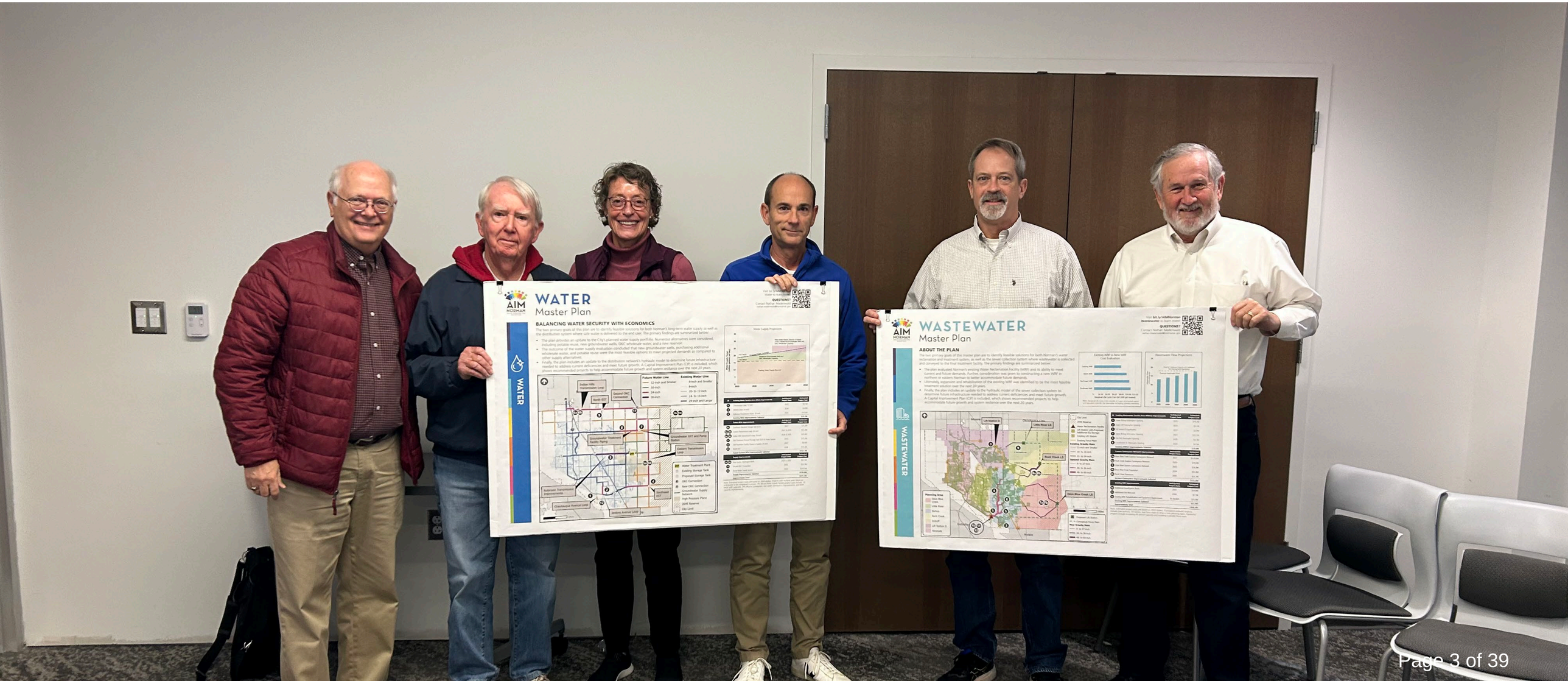
January City Council Study Session

January 21, 2025

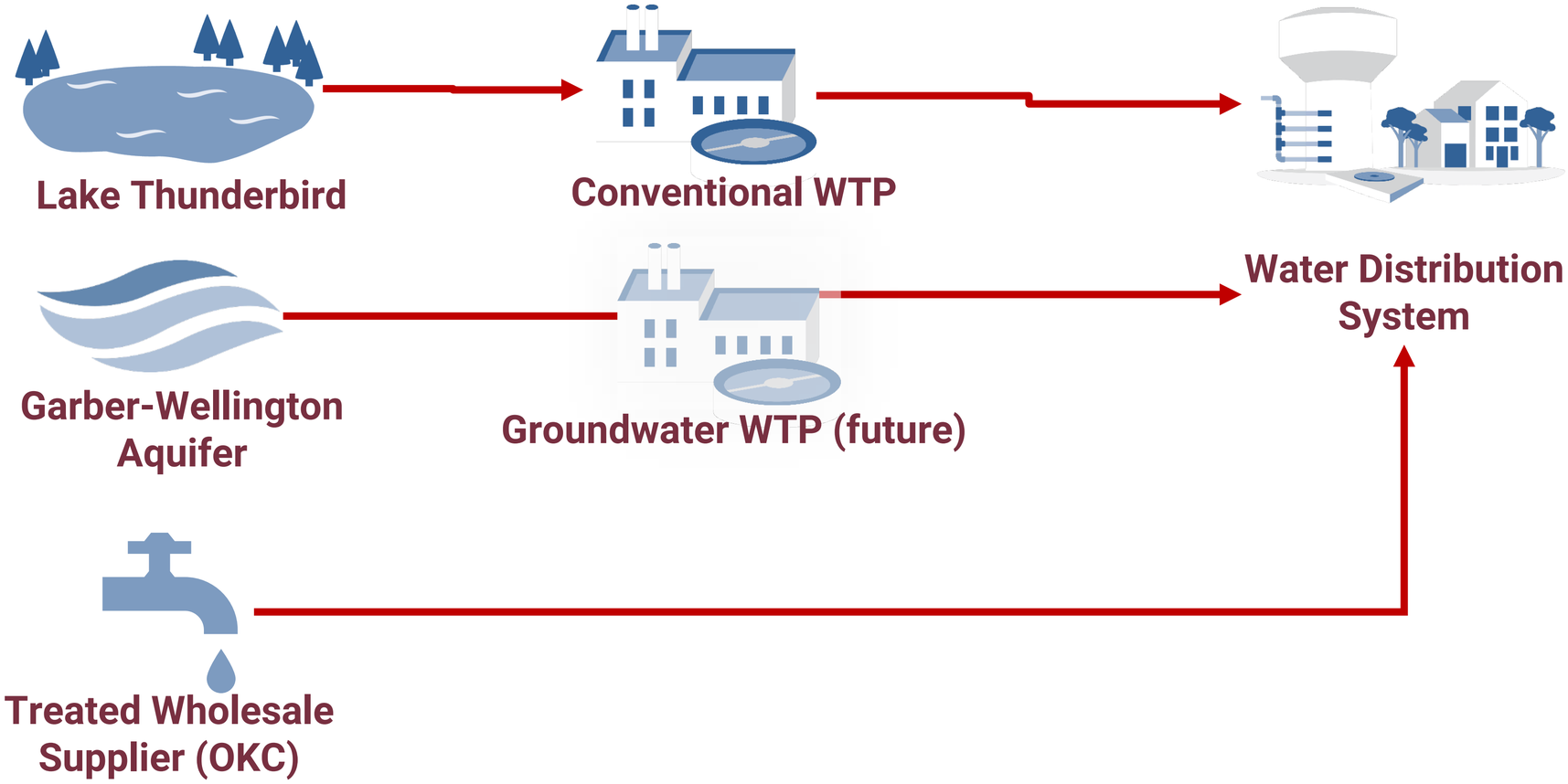
AIM NORMAN
AREA & INFRASTRUCTURE MASTER PLAN

The goal of today's meeting is to provide an update and review major findings from the Water and Wastewater Master Plans.

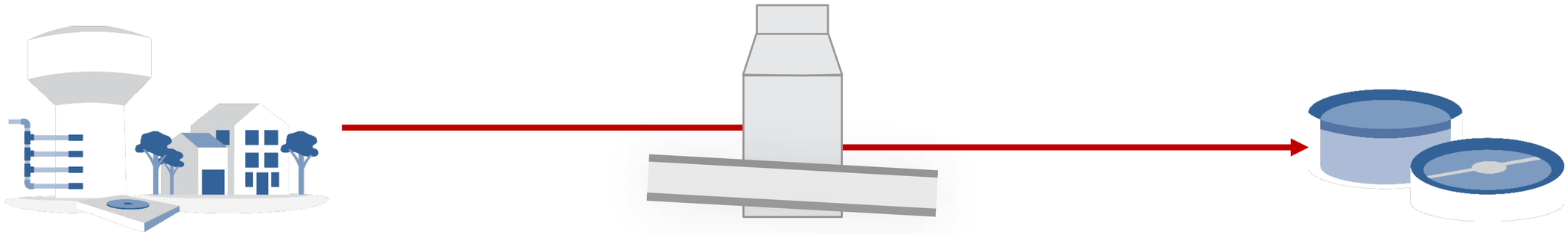
The W/WW Team had a fantastic Subcommittee!



The Water Master Plan is focused on bolstering water supply resources and delivering safe drinking water to the end user.



Similarly, the WW Master Plan focuses on the collection system and water reclamation.

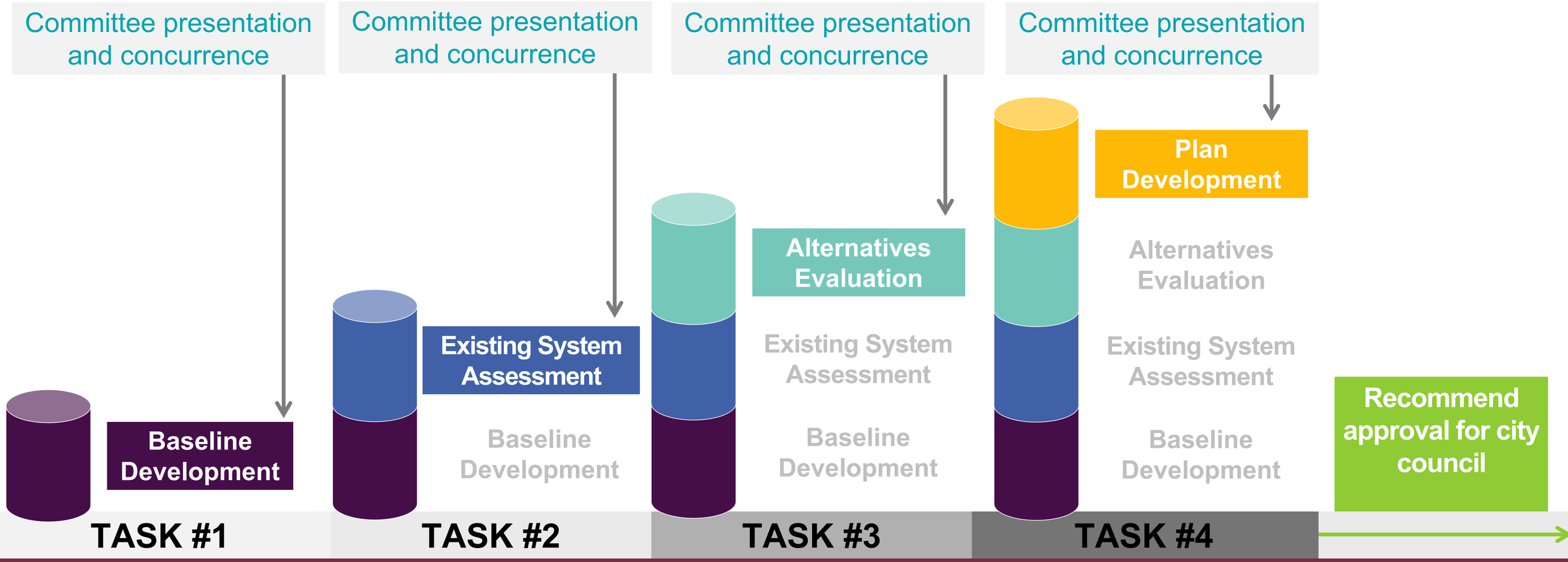


Water Users

Collection System (Gravity Mains, Lift Stations, and Force Mains)

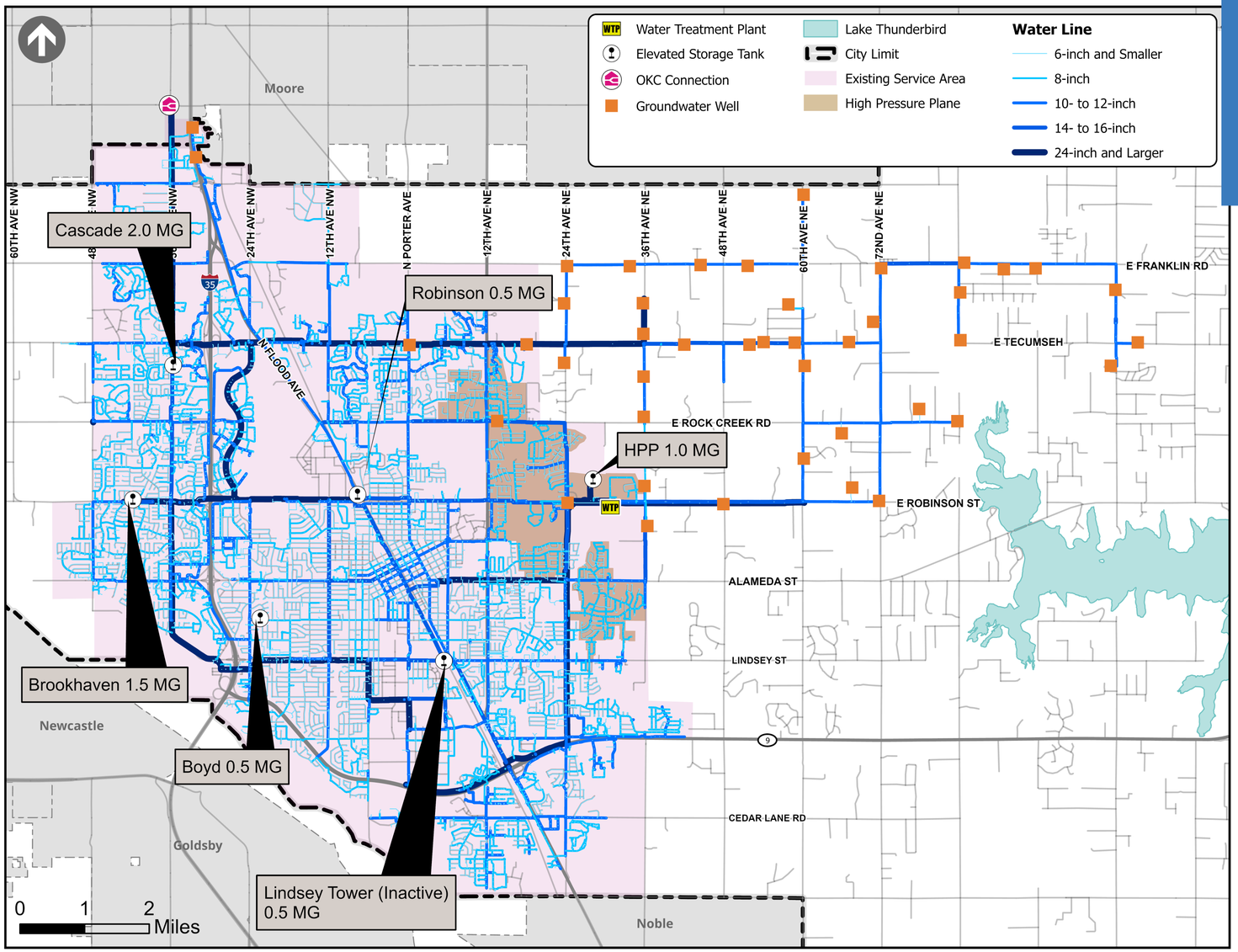
Water Reclamation Facility (WRF)

Master Plans are developed through specific tasks that build on each other as we move through the process.



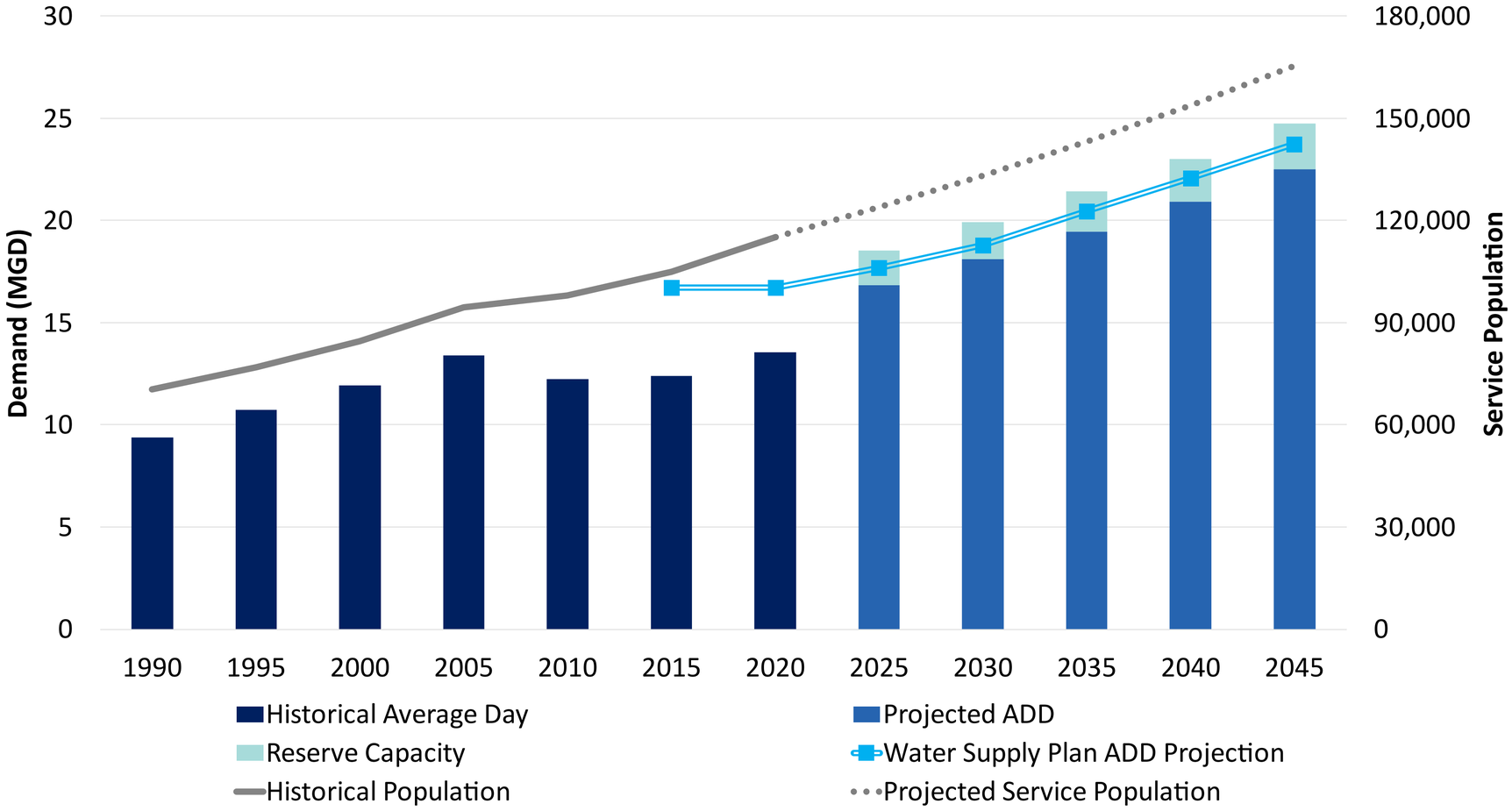
Water Master Plan

Norman's distribution system consists of miles of underground pipes and water storage facilities throughout the City.

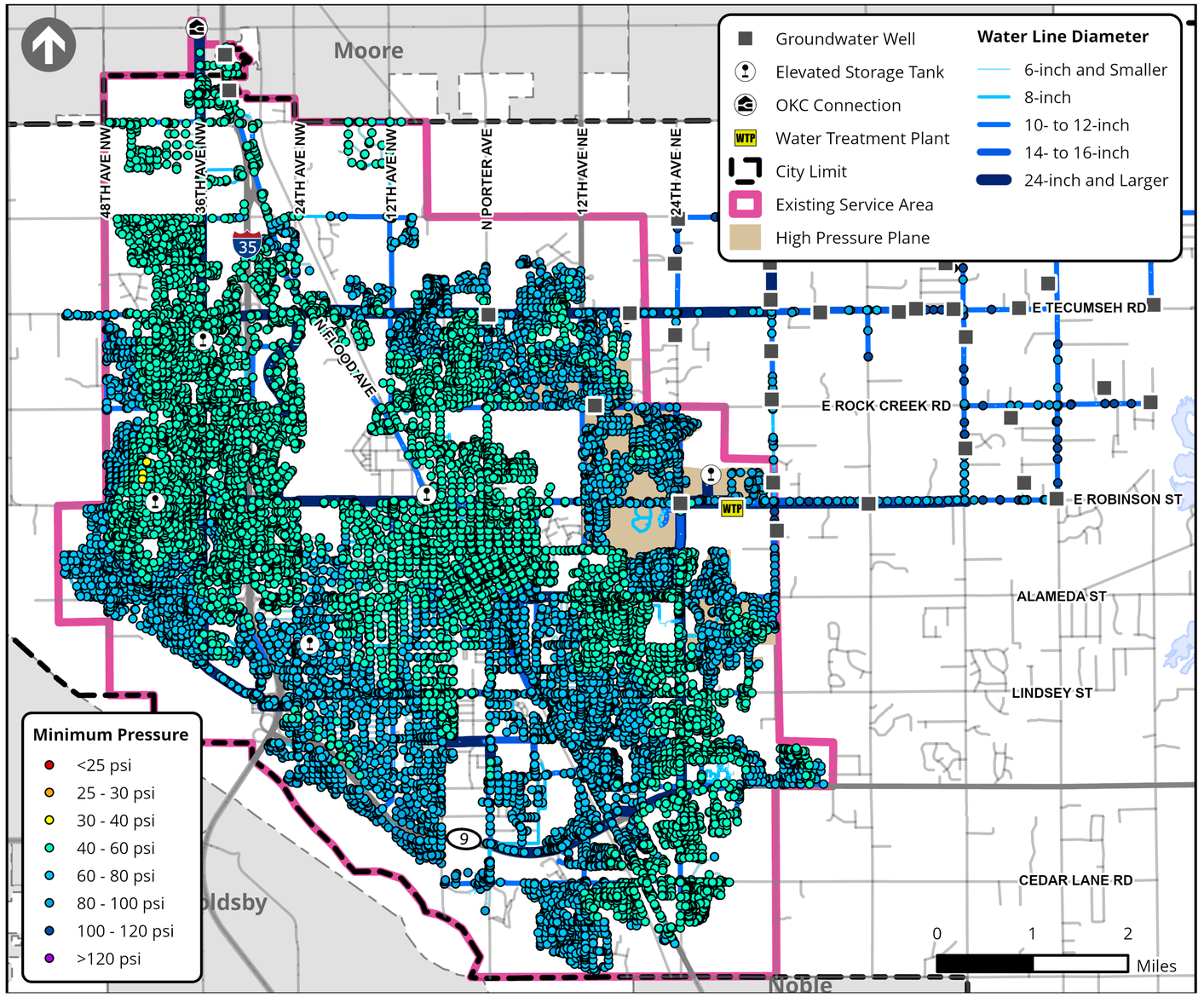


Water

Water demands are projected to increase proportionally with the service population.

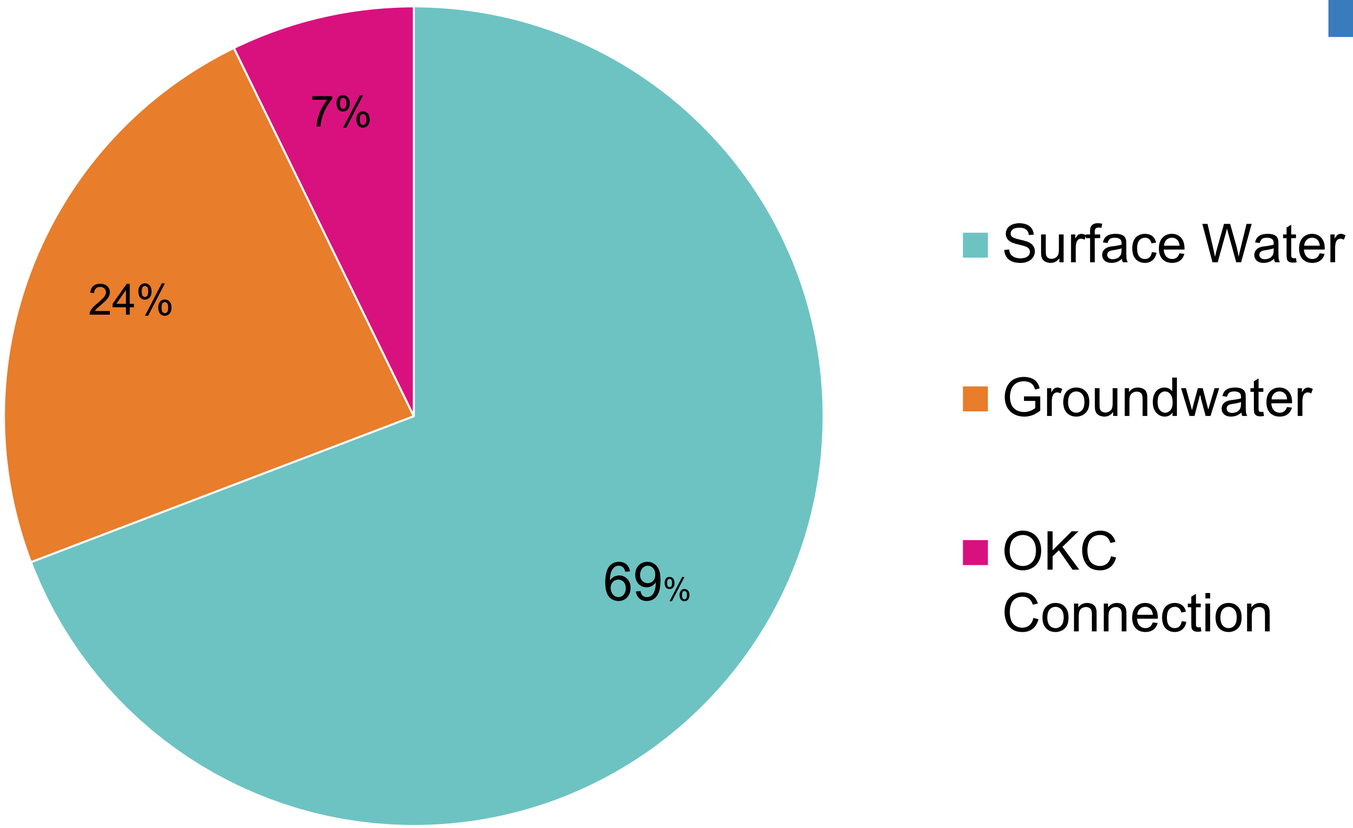


In the distribution system, performance under current average and maximum day conditions are generally good throughout the system.

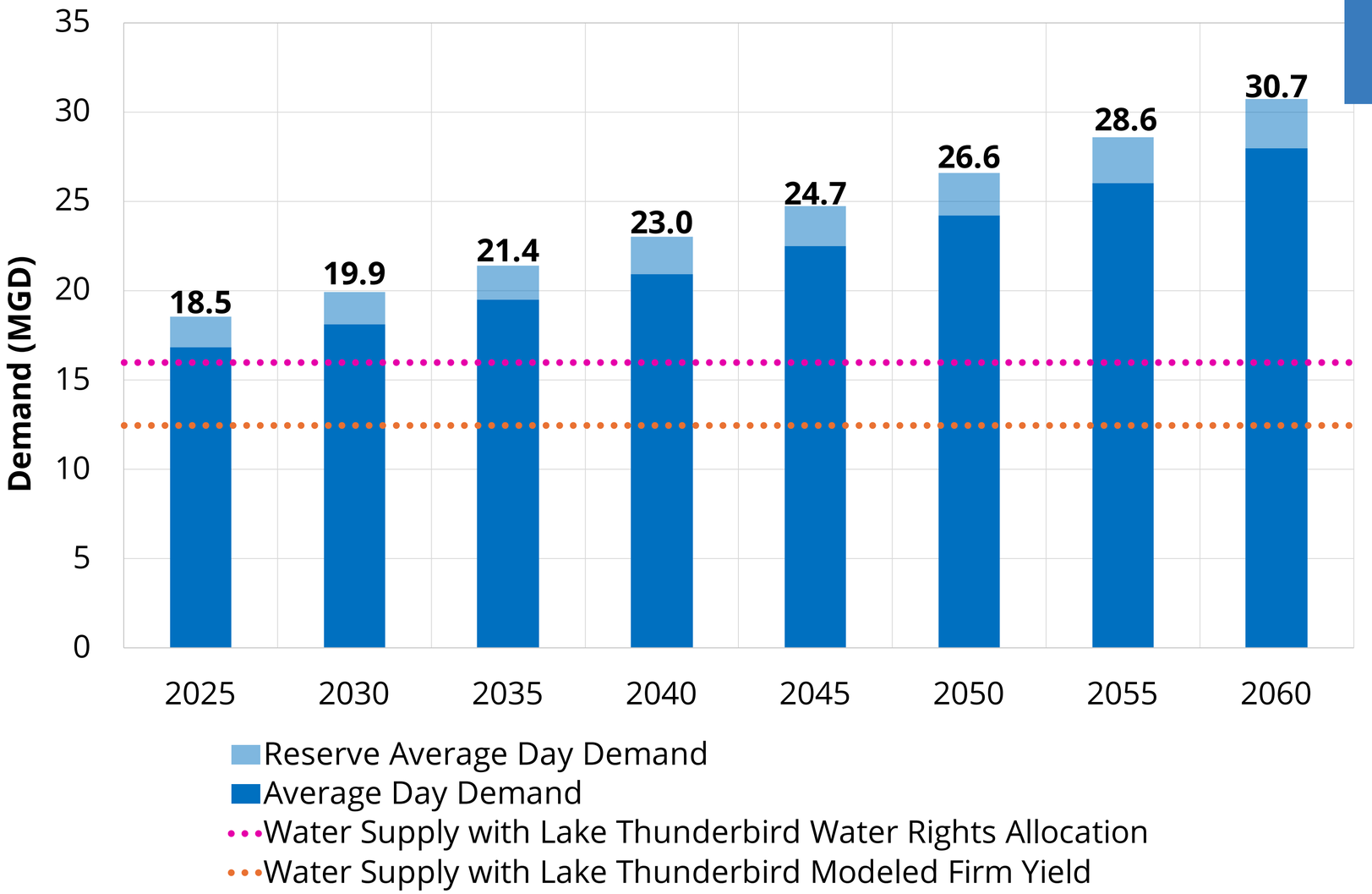


Water

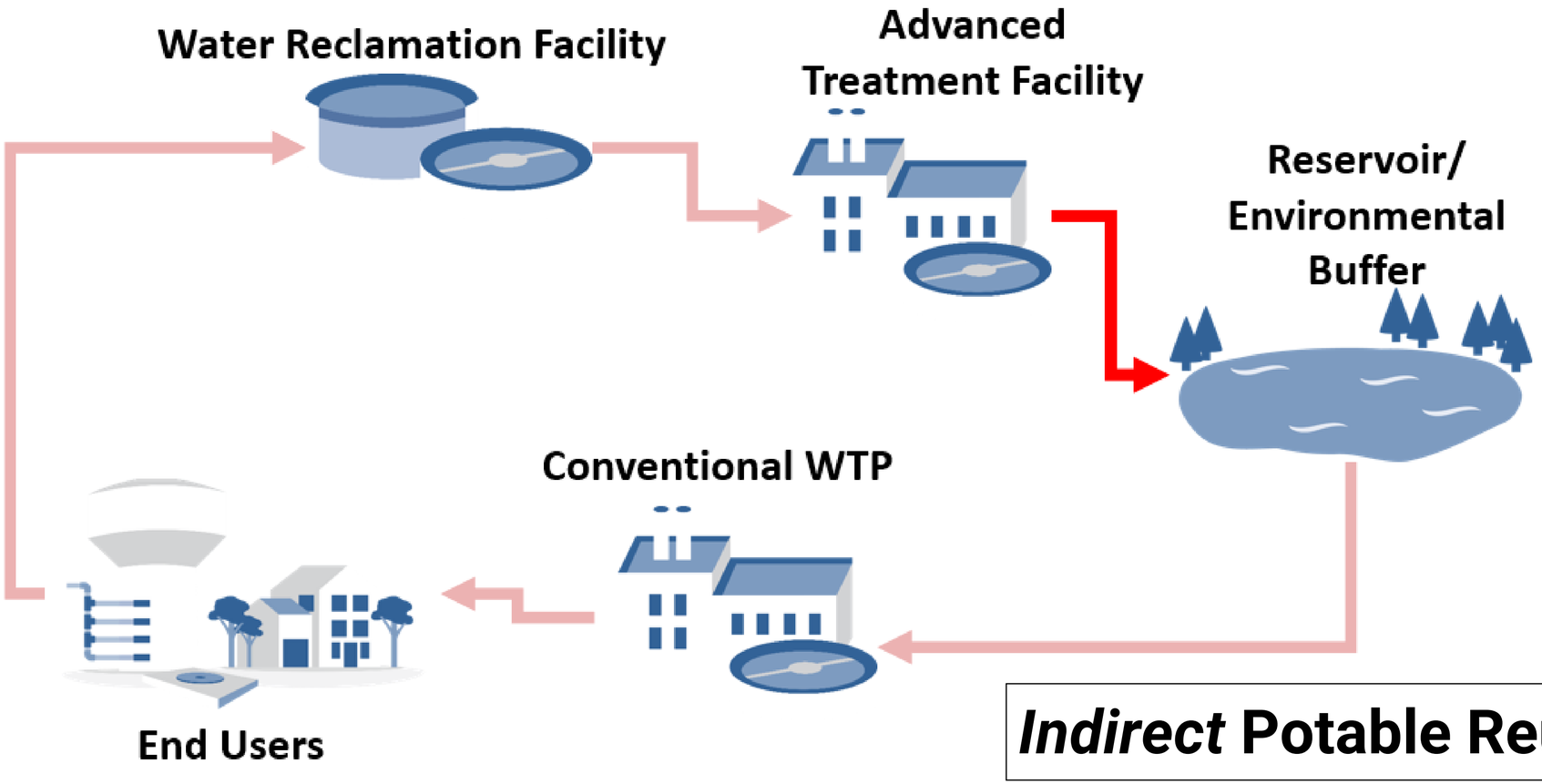
Lake Thunderbird is currently the largest source of supply and supplies about 70% of system demands.



Gap analyses identify a potential water supply gap of approximately 9 MGD by 2045.



Potable reuse is an active effort to reclaim wastewater with engineered or natural barriers.



***Indirect* Potable Reuse**

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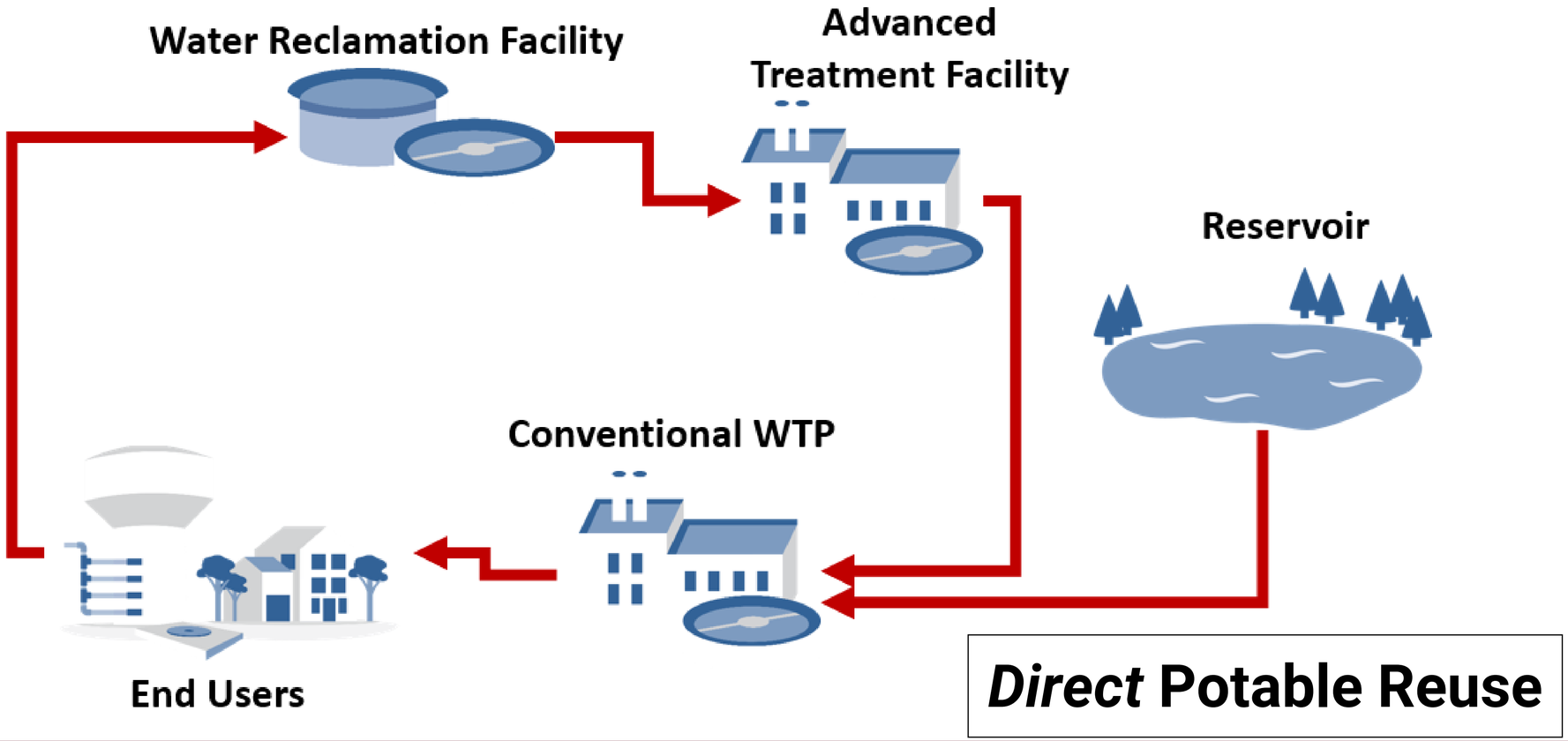
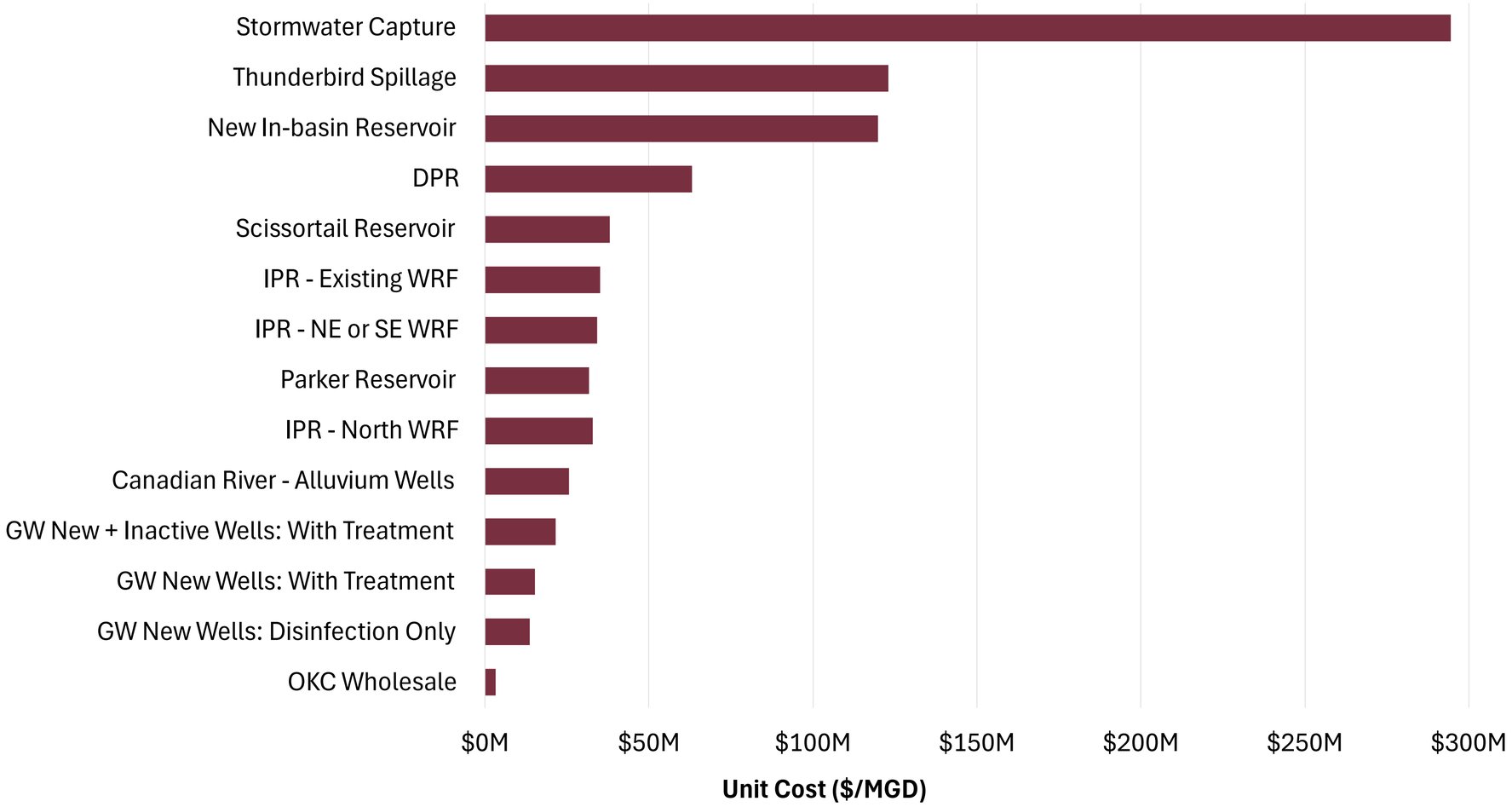
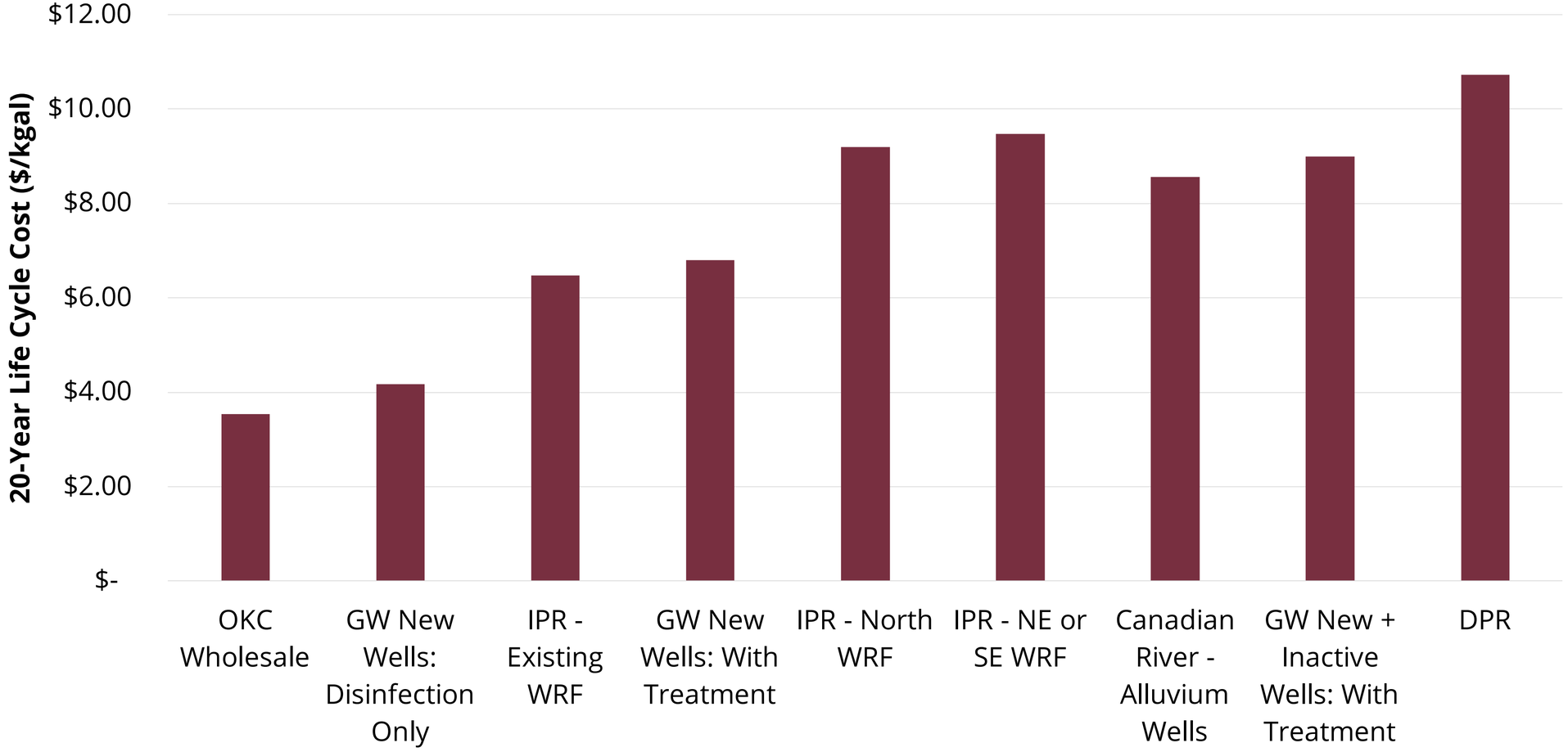


Potential water supply alternatives were screened for economic viability.



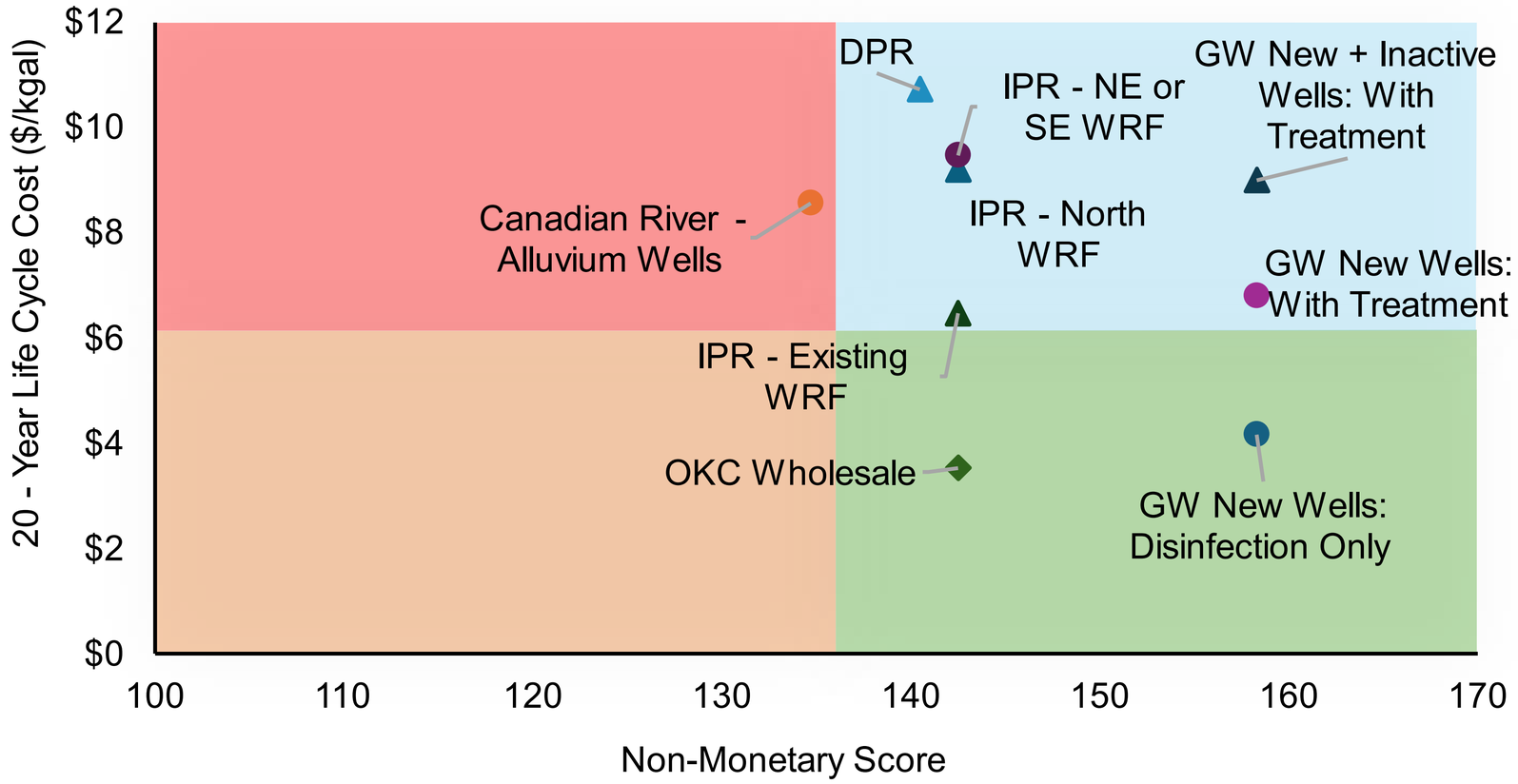
20-year lifecycle costs were developed for short-listed alternatives.



The use of weighted non-monetary criteria to rate supply options allows for project cost to not be the main driver when selecting an alternative.

Water

Potential water supply alternatives were evaluated through both a non-monetary and monetary scoring system.



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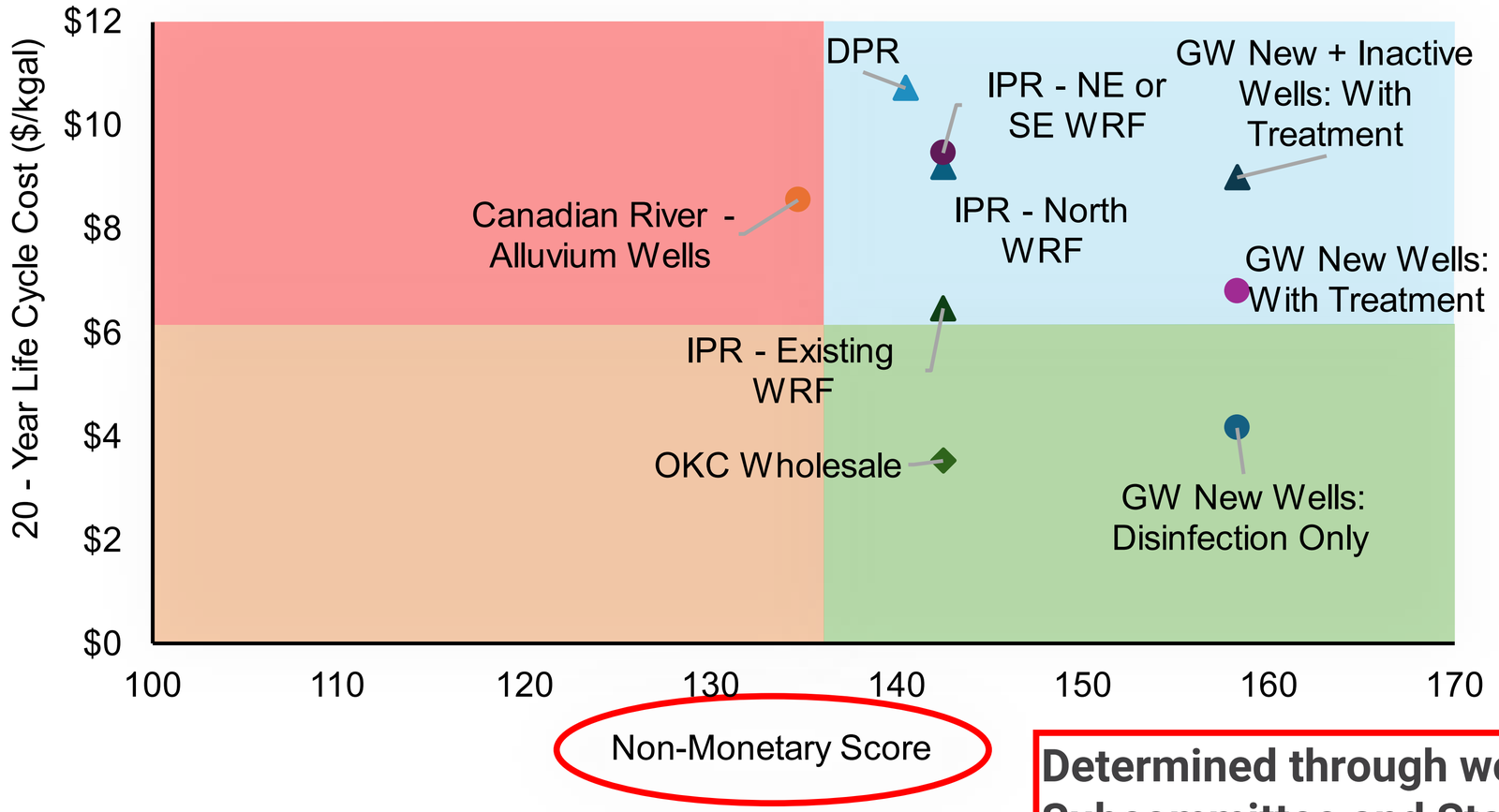

Determined through workshops with Subcommittee and Staff

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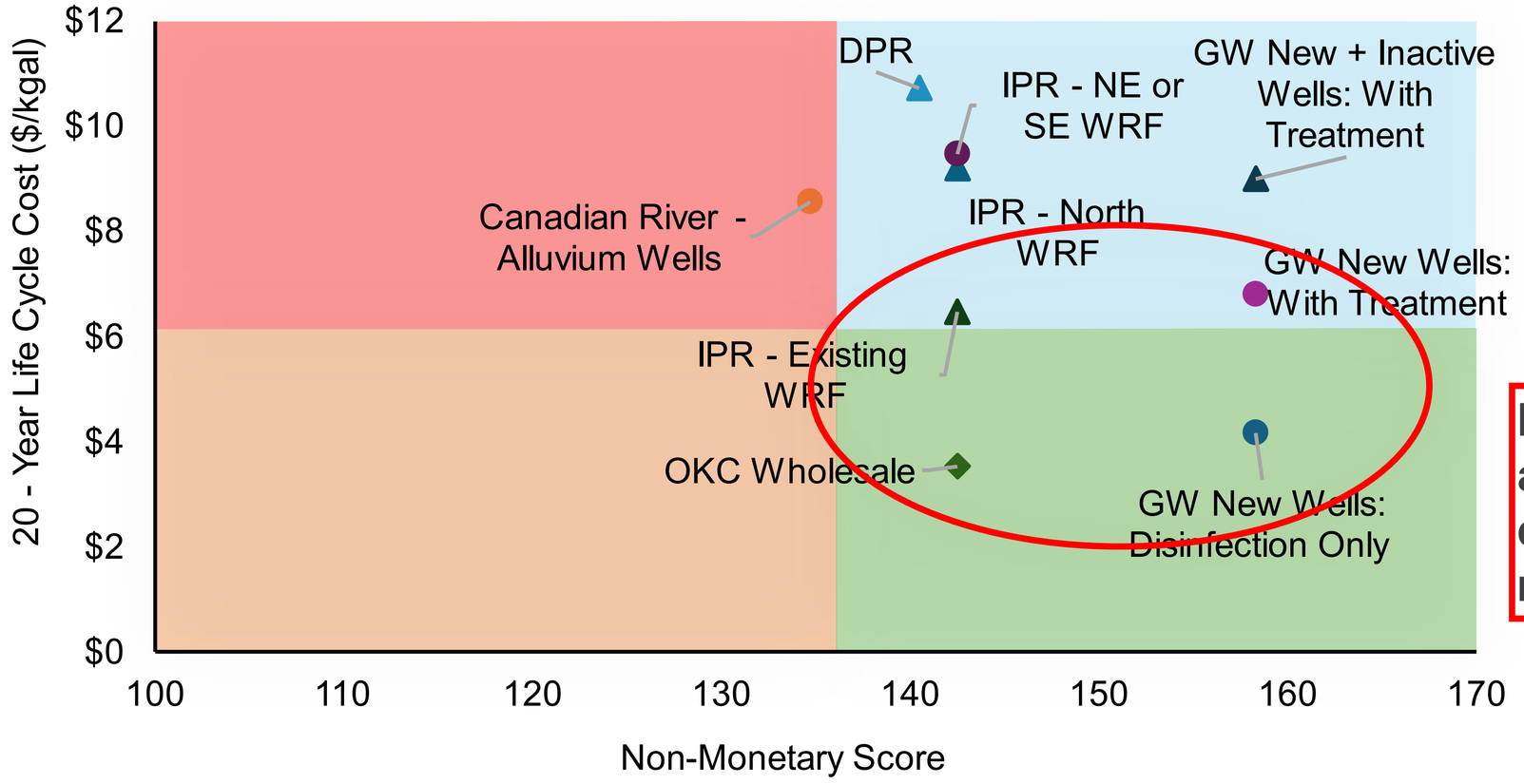
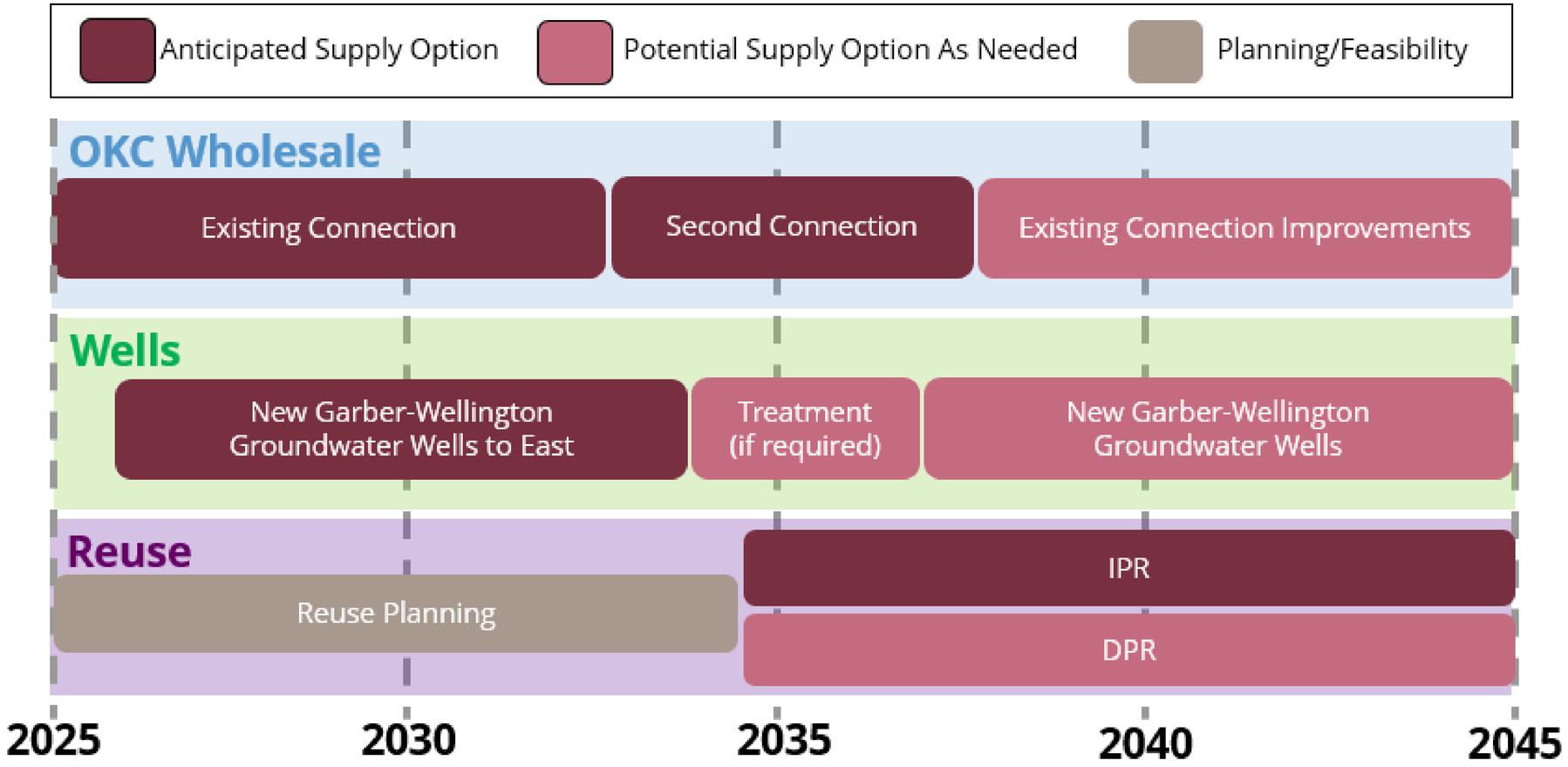


Preferred alternatives (lower cost and high non-monetary value)

The strategy for increasing supply may adapt to growth, costs, and regulatory conditions over time.



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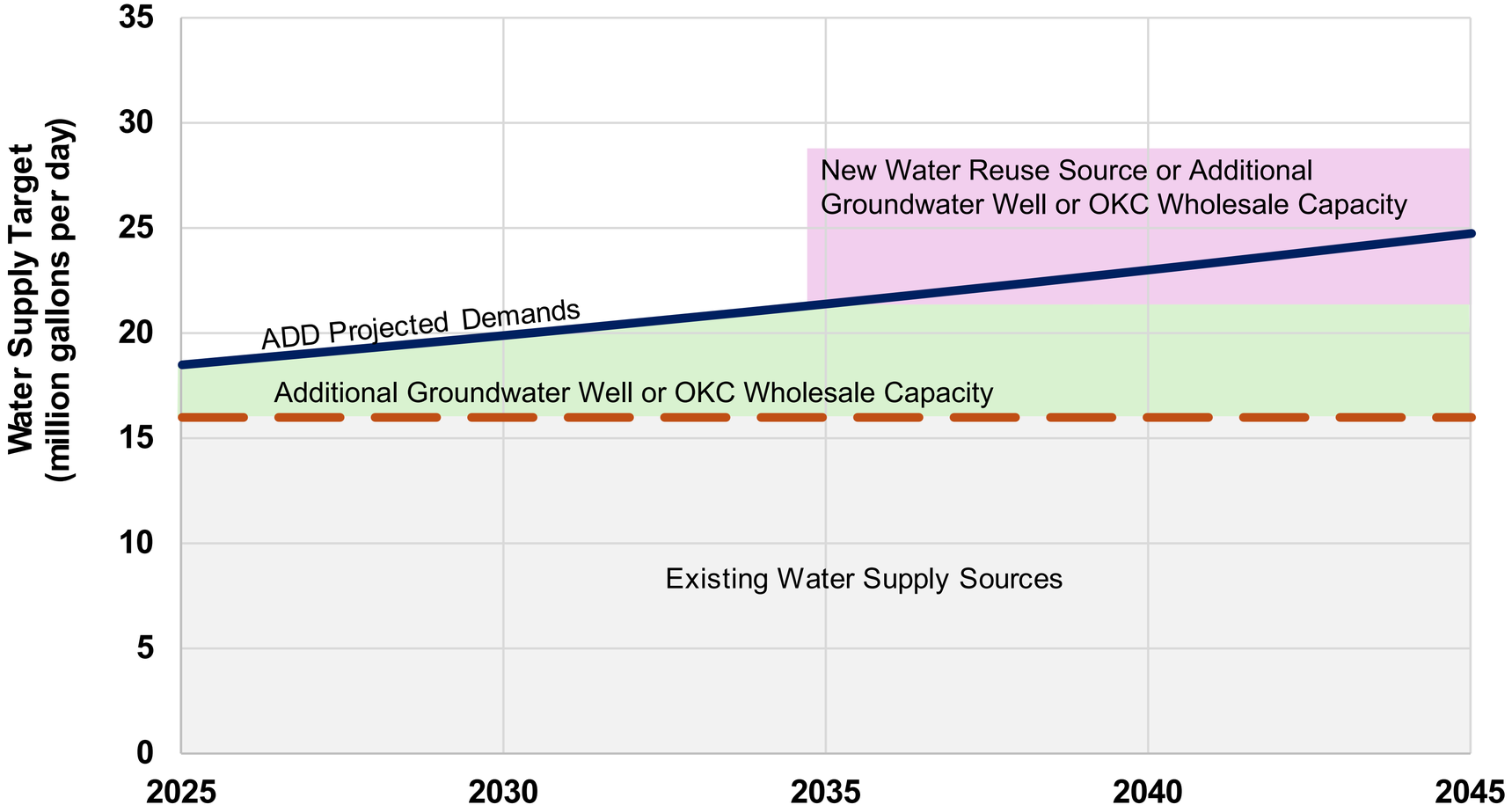

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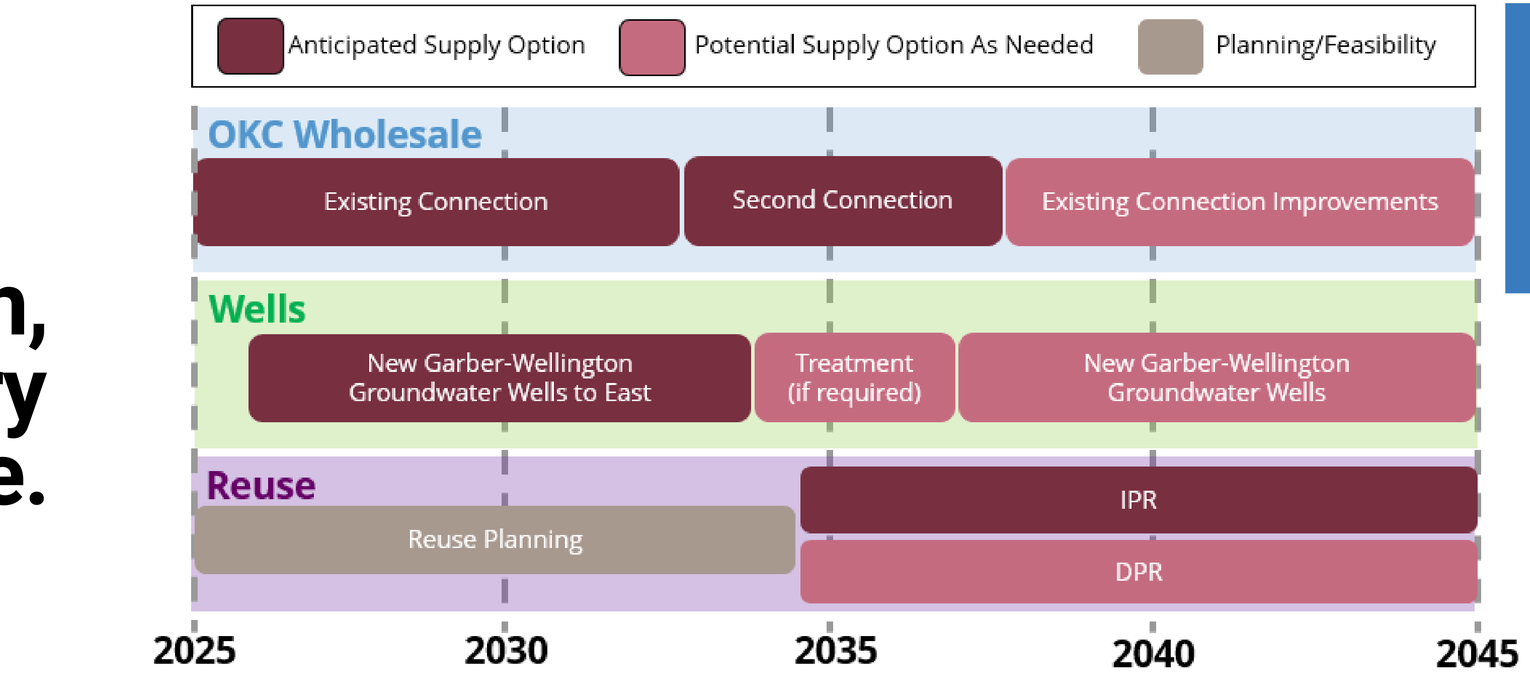
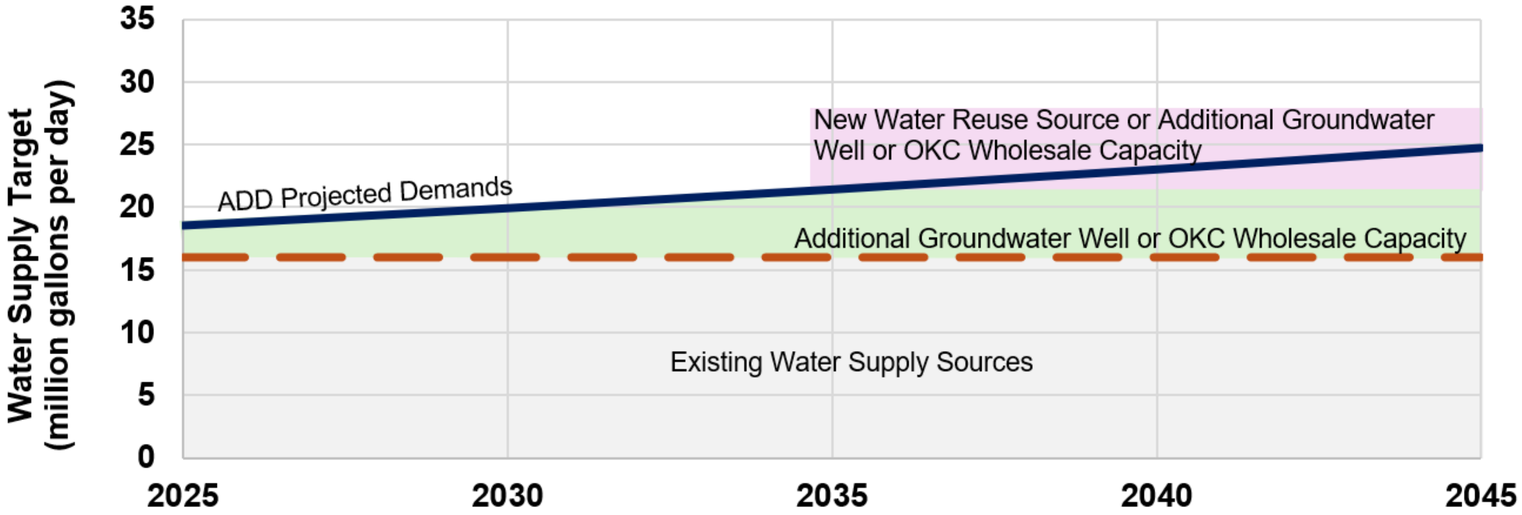


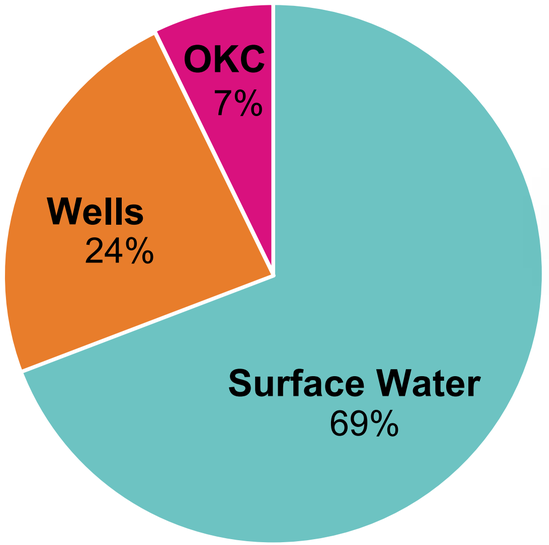


Three sources of supply were selected as most feasible and flexible for meeting future demands.

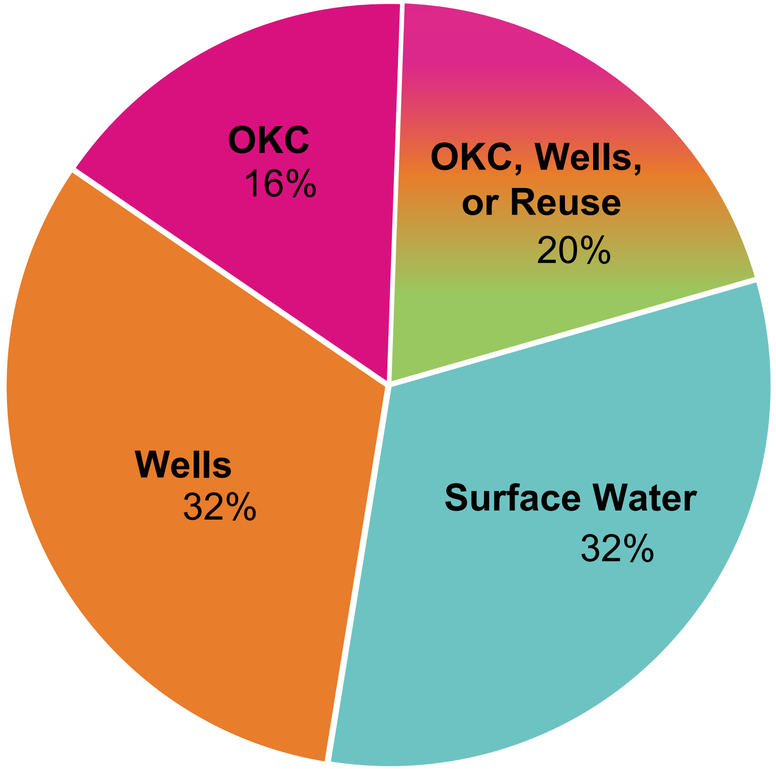
Water

Finished Water from Oklahoma City	• Increasing purchase volumes • Second connection (if needed)
Garber-Wellington Wells	• Additional wells • Centralized storage, treatment, and pump station
Reuse	• Lake Thunderbird Augmentation (IPR), or • Direct Potable Reuse (DPR)

Existing Supply

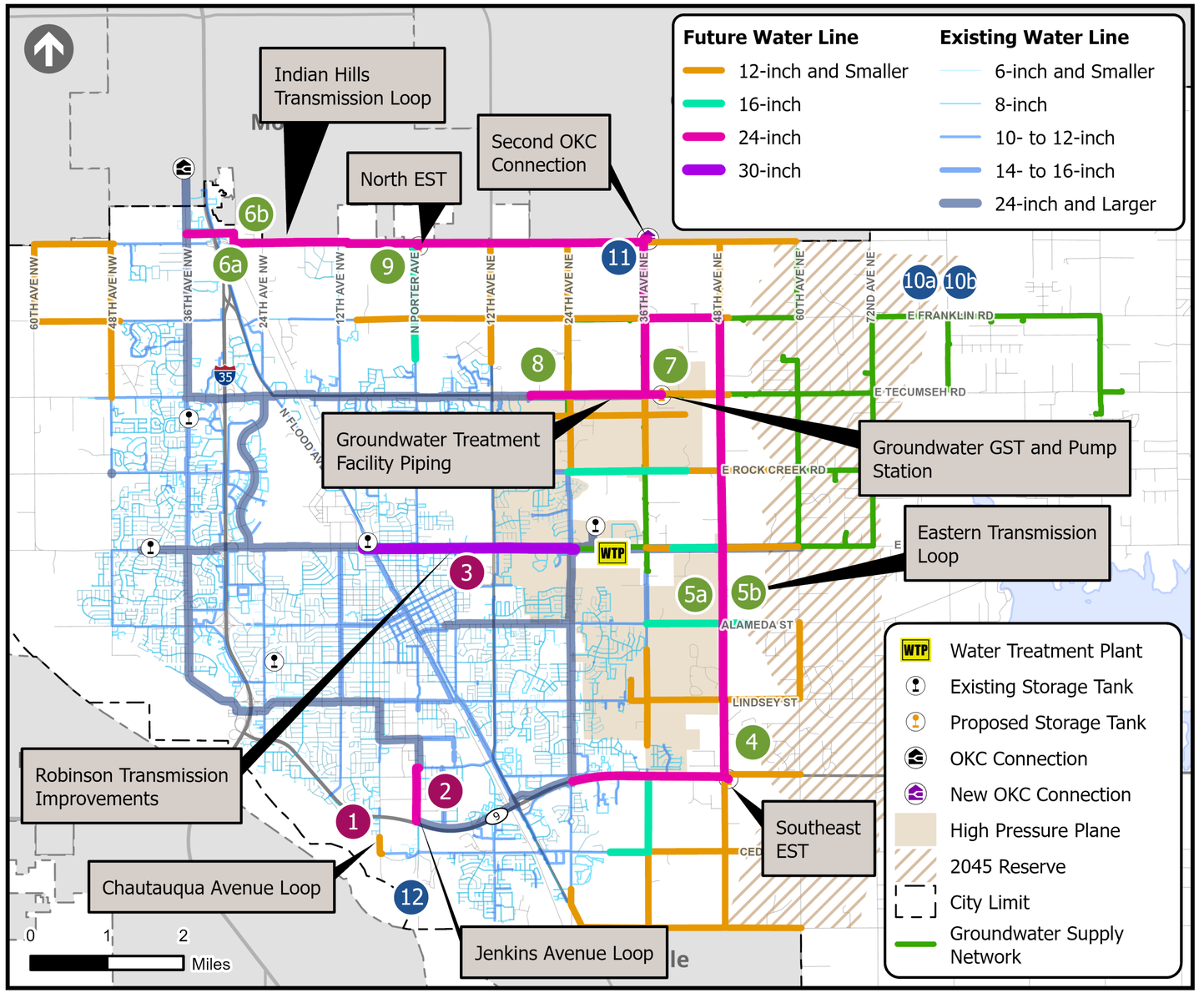


Potential 2045 Supply



20-year CIP Overview

- Existing Water Service Area Improvements
- Future Water Service Area Improvements
- Supply Improvements



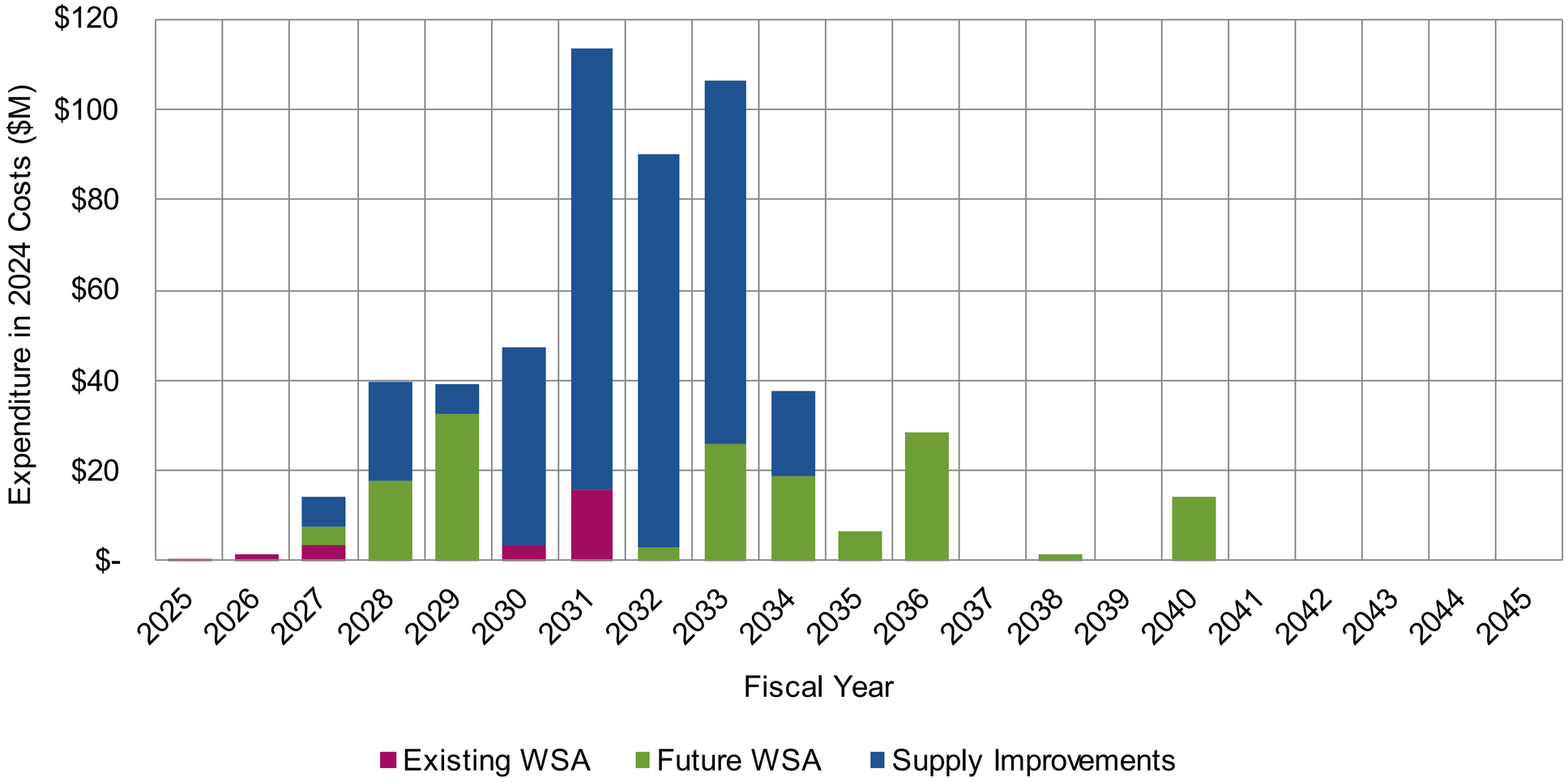
20-year CIP Improvements

Project Number	Existing Water Service Area (WSA) Improvements	Anticipated Date of Project	Estimated Project Cost (2024 Dollars)
1	Chautauqua Loop: 12-inch	2025	$0.7M
2	Jenkins Loop: 24-inch	2026	$4.0M
3	Robinson Transmission Main: 30-inch	2030	$19.5M
		Existing WSA Improvements Subtotal	**$24.2M**

Project Number	Future WSA Improvements	Anticipated Date of Project	Estimated Project Cost (2024 Dollars)
4	Southeast Elevated Storage Tank (EST)	2027	$15.3M
5a, 5b	Eastern Transmission Loop: 24-inch	2027 & 2035	$51.4M
6a, 6b	Indian Hills Transmission Loop: 24-inch	2028 & 2033	$45.8M
7	GW Treatment Ground Storage Tank (GST) & Pump Station	2032	$15.3M
8	GW Treatment Facility Piping to System: 24-inch	2032	$9.6M
9	North EST	2038	$15.3M
		Future Eastern WSA Improvements Subtotal	**$152.7M**

Project Number	Supply Improvements	Anticipated Date of Project	Estimated Project Cost (2024 Dollars)
10a, 10b	New Garber-Wellington Wells	2029 & 2036	$65.5M
11	Second OKC Connection	2033	$23.3M
12	Reuse Water Supply System	2034	$350.0M
		Supply Improvements Subtotal	**$438.8M**
		Improvements Total	**$615.7M**

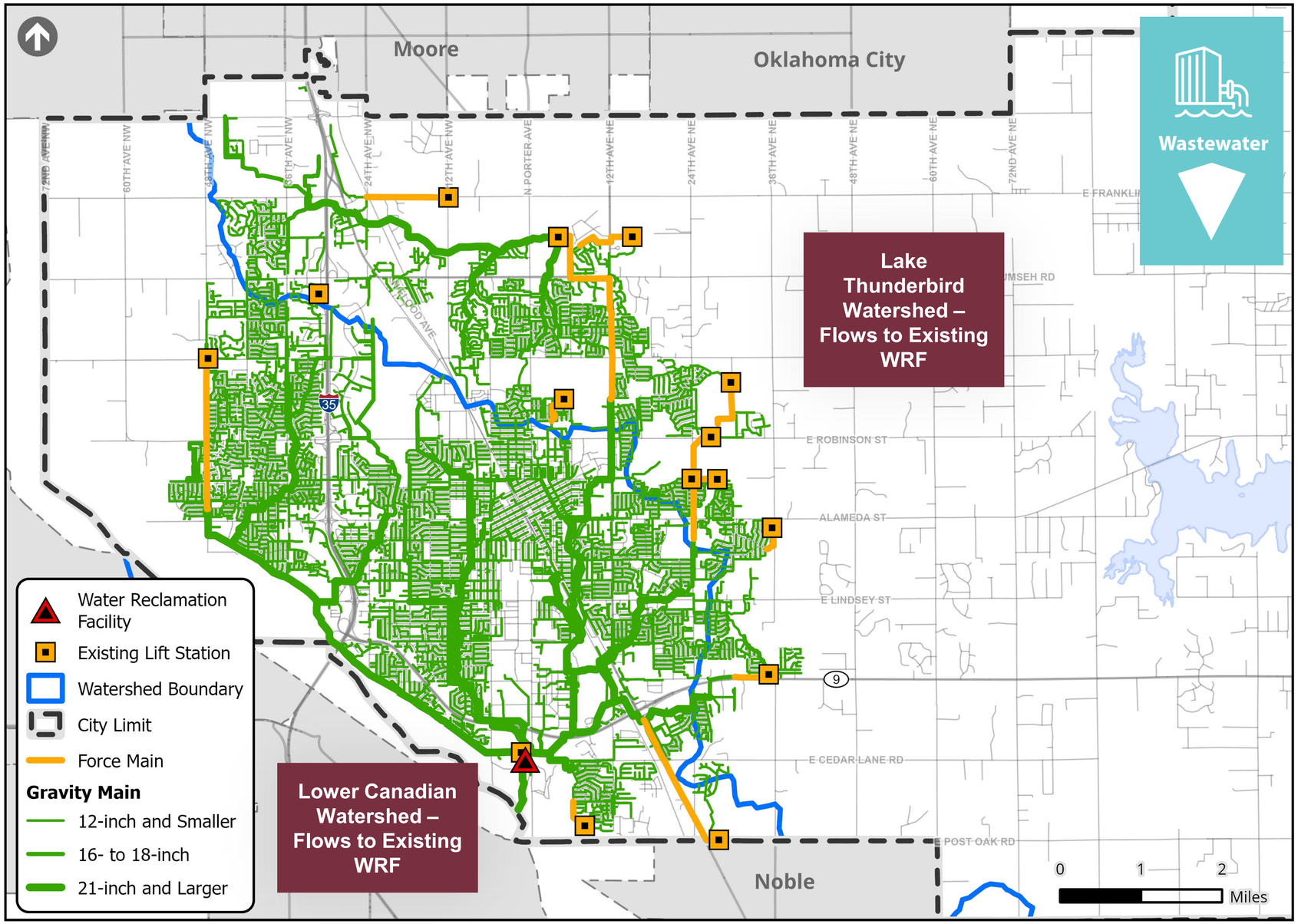
Proposed Capital Outlay Schedule



Wastewater Master Plan

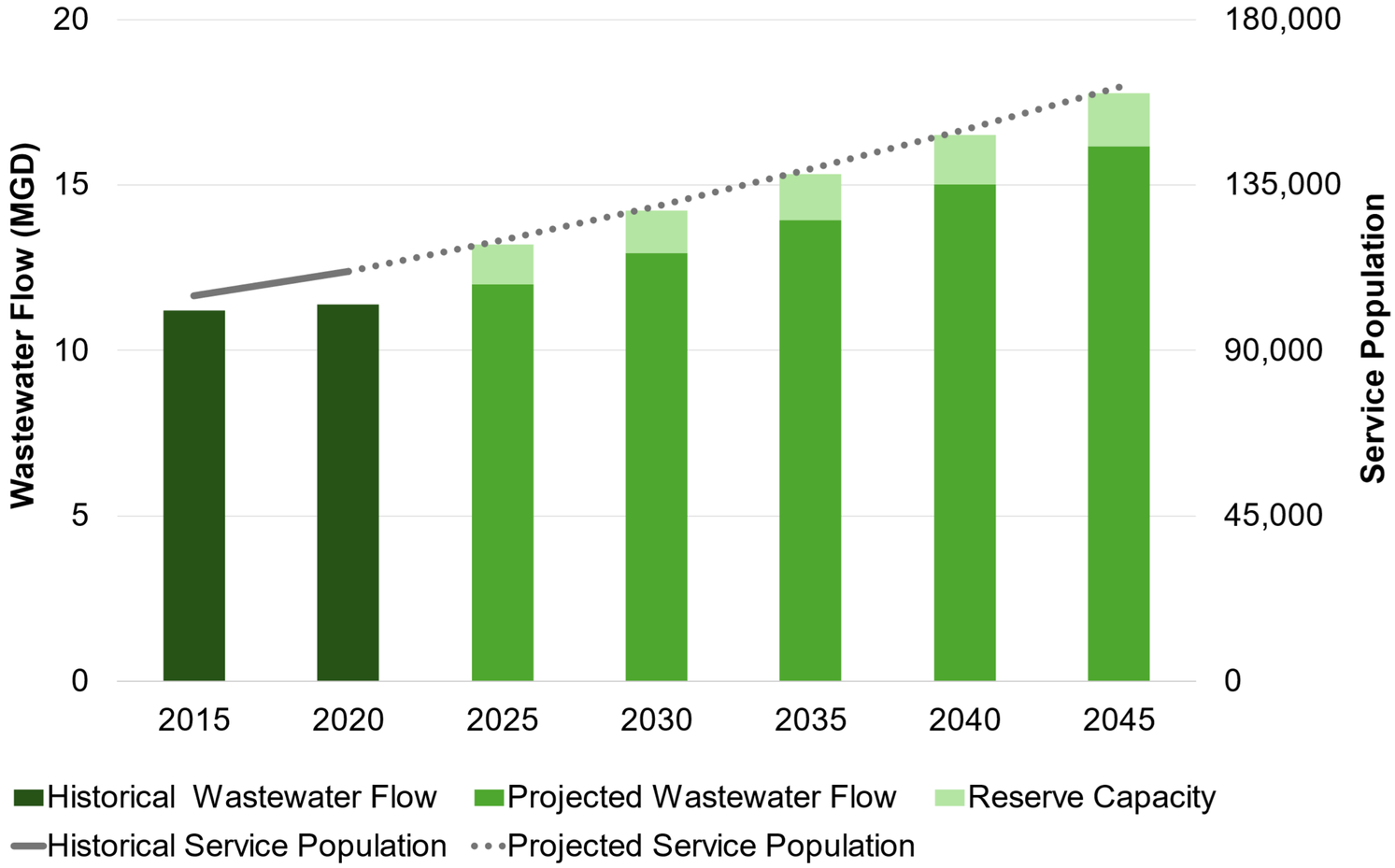
AIM NORMAN
AREA & INFRASTRUCTURE MASTER PLAN

Norman's collection system consists of miles of gravity and force mains, lift stations, and the Water Reclamation Facility.

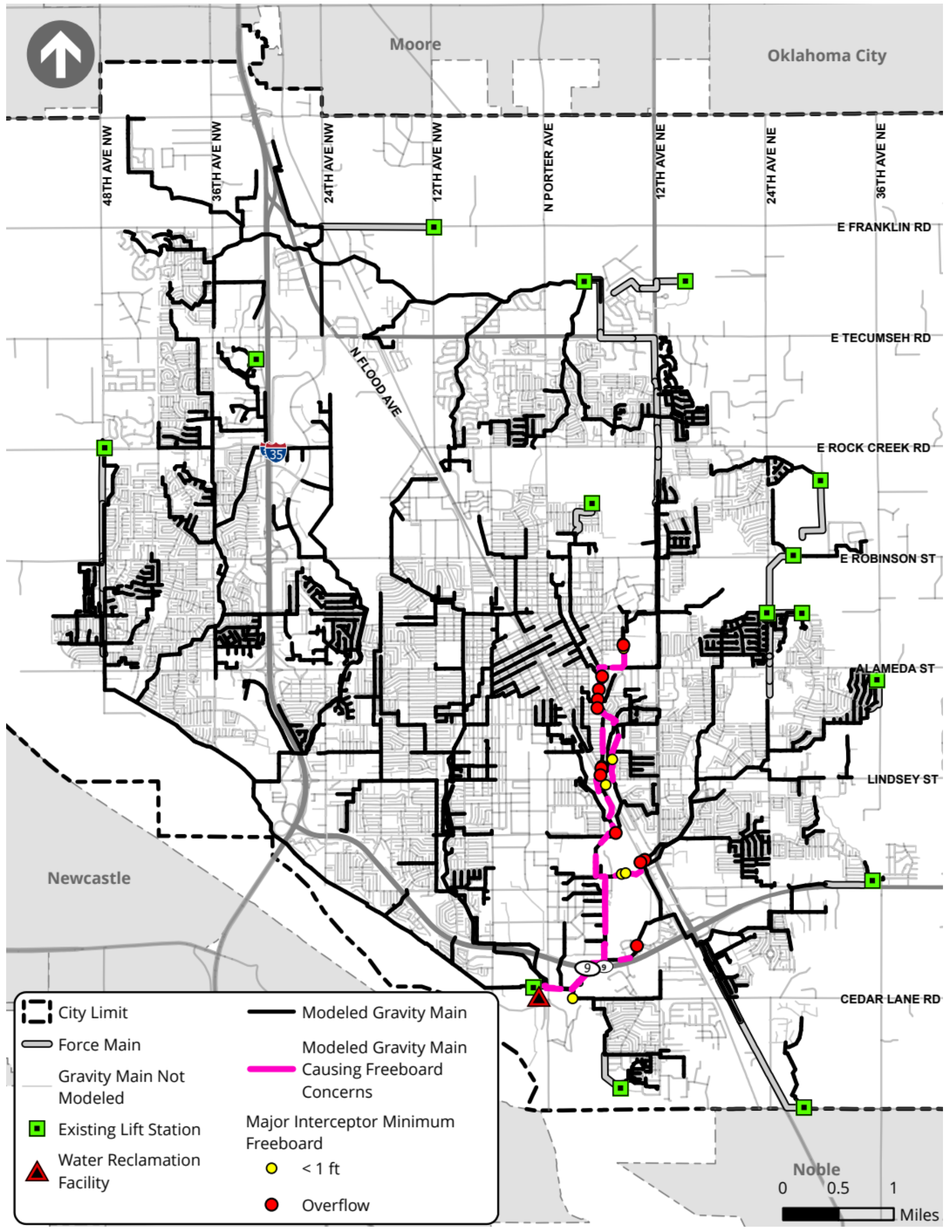


Wastewater flows are projected to increase proportionally with the service population.

Wastewater

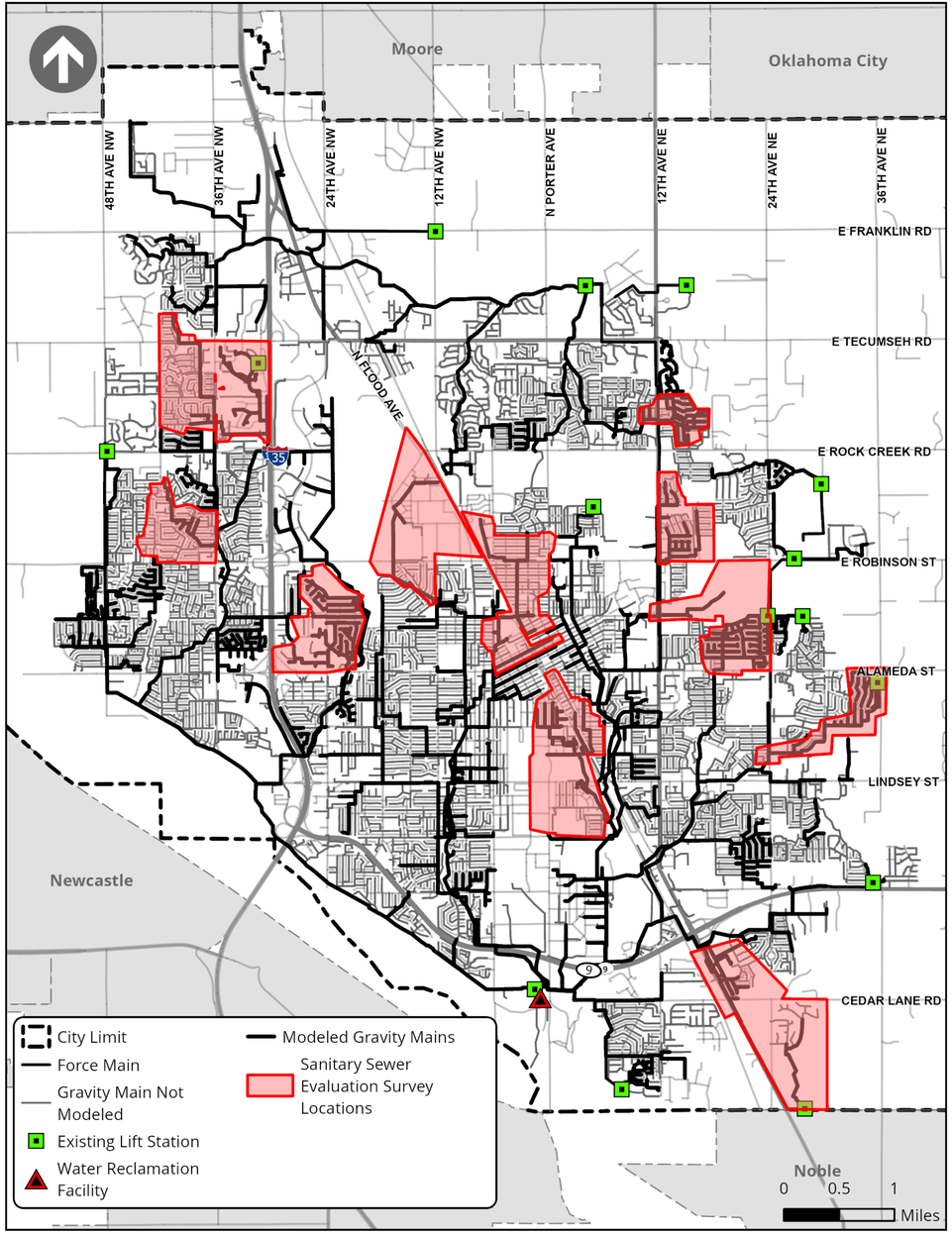


Key areas for improvement within the existing collection system include trunk mains in the core service area.



Wastewater

Several localized areas have potential capacity constraints, and sanitary sewer evaluations are recommended to identify inflow sources and necessary rehabilitation or upsizing projects.

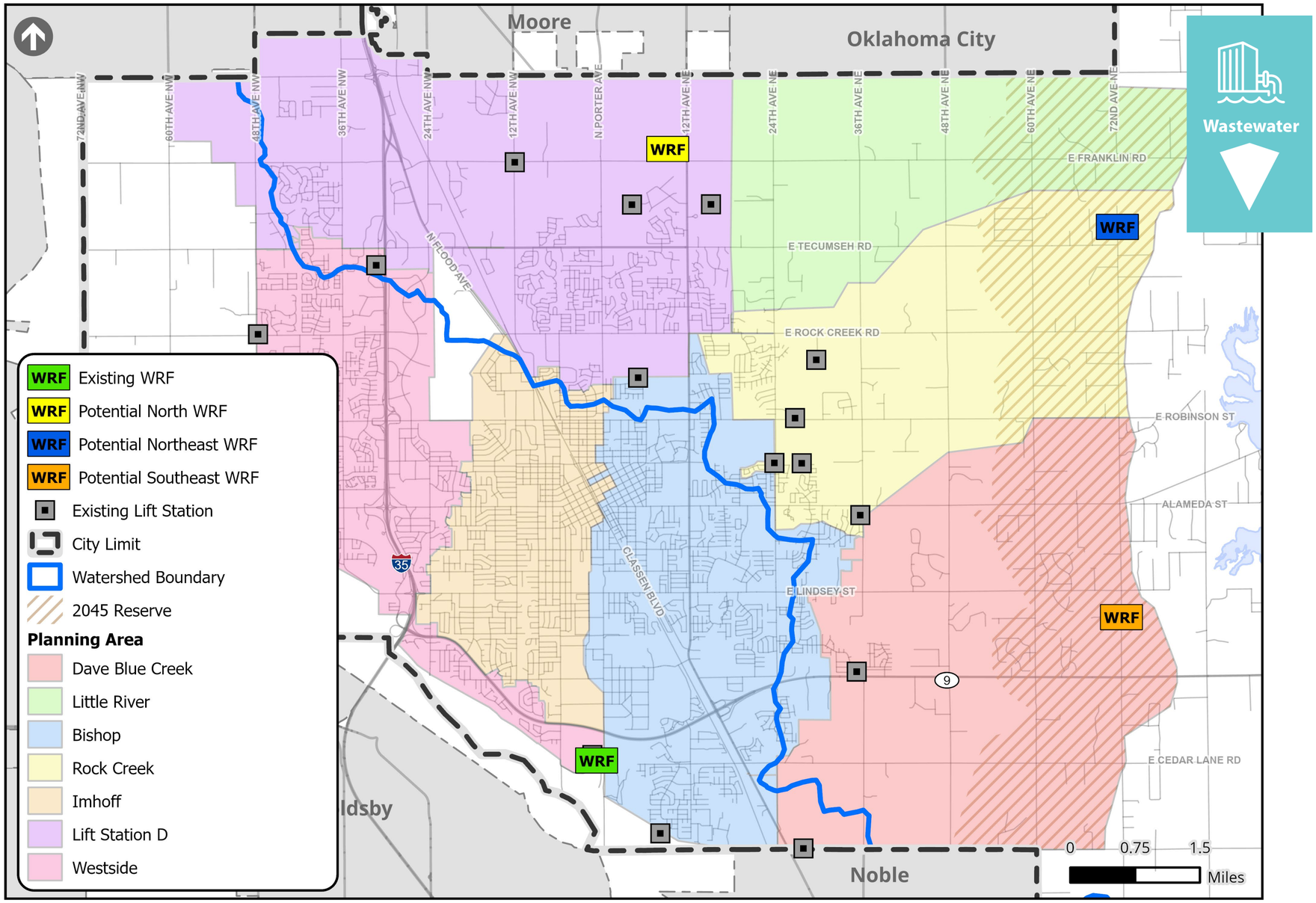


Wastewater

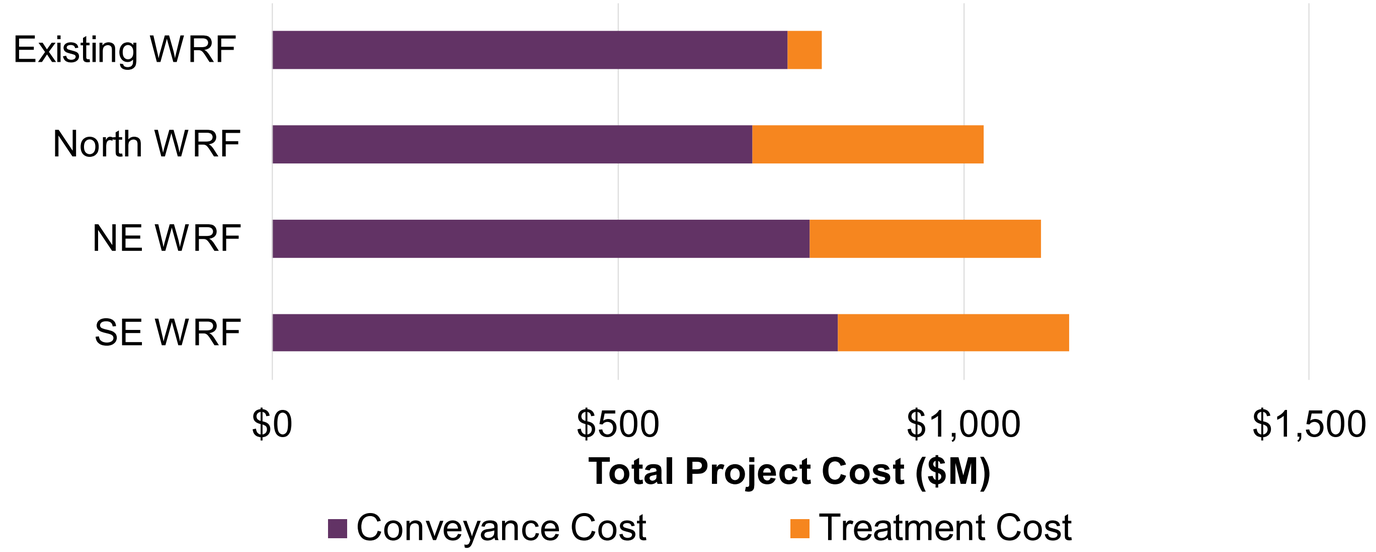
The existing WRF is rated for 16 MGD and in good condition.

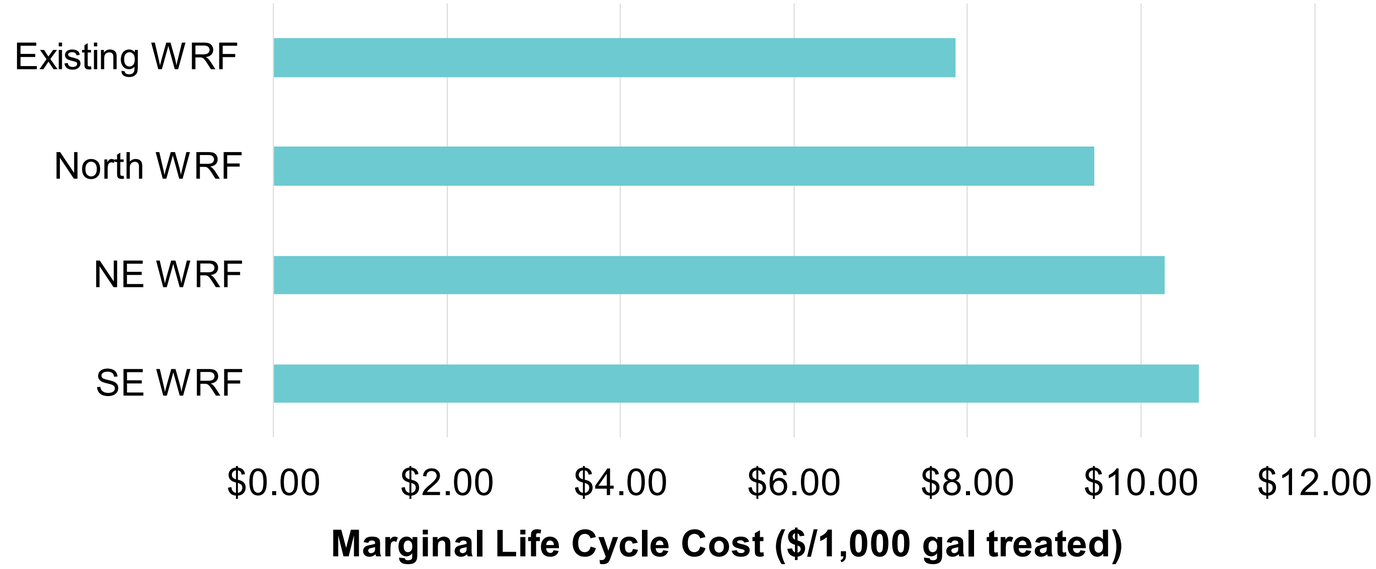
Wastewater

Several potential WRF locations were evaluated, but ultimately the existing WRF is recommended for the 20-year horizon.



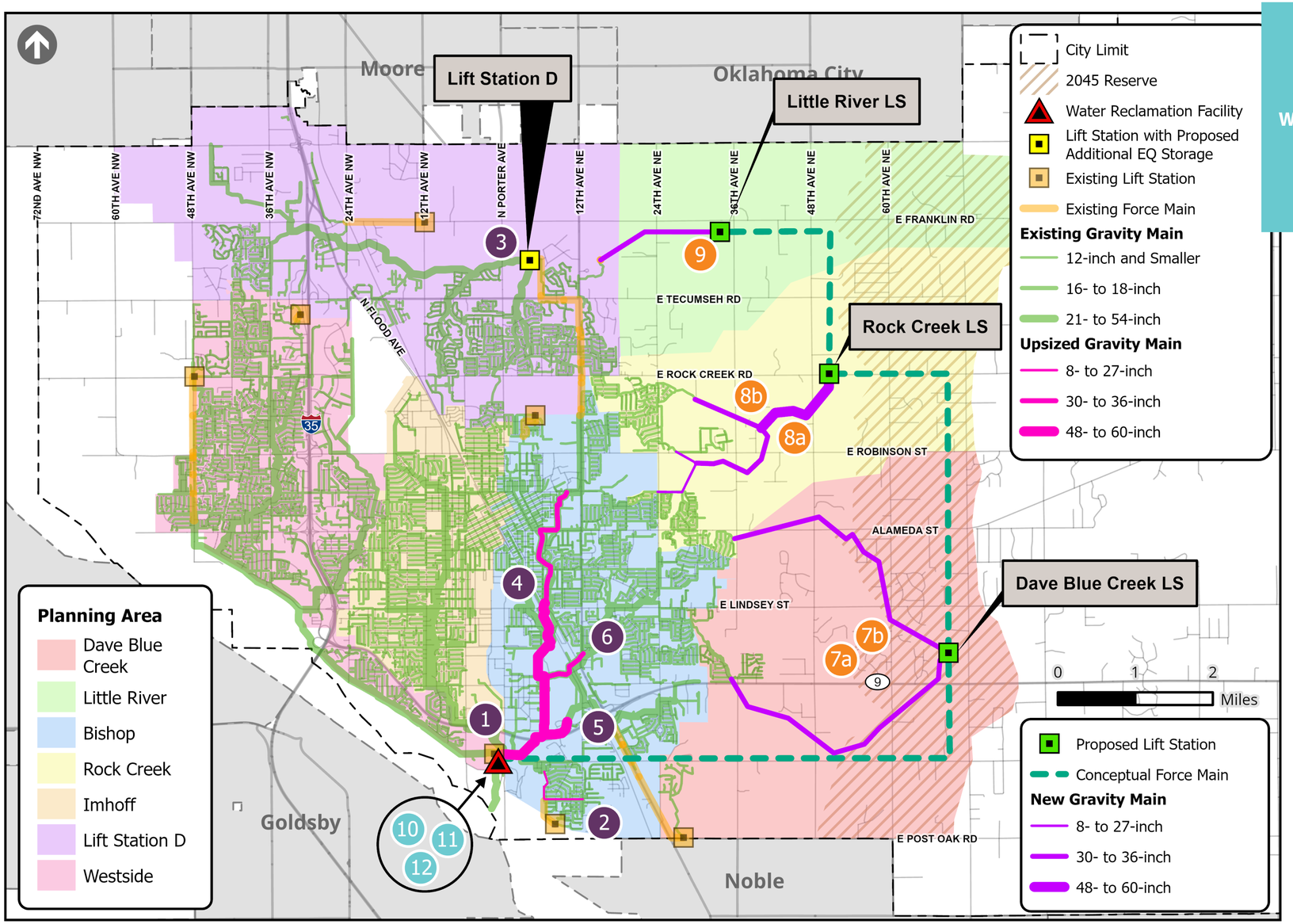
Expansion of the existing WRF is the most cost-effective alternative.





20-year CIP Overview

- Existing Wastewater Service Area Improvements
- Future Eastern Conveyance Improvements
- Existing WRF Improvements

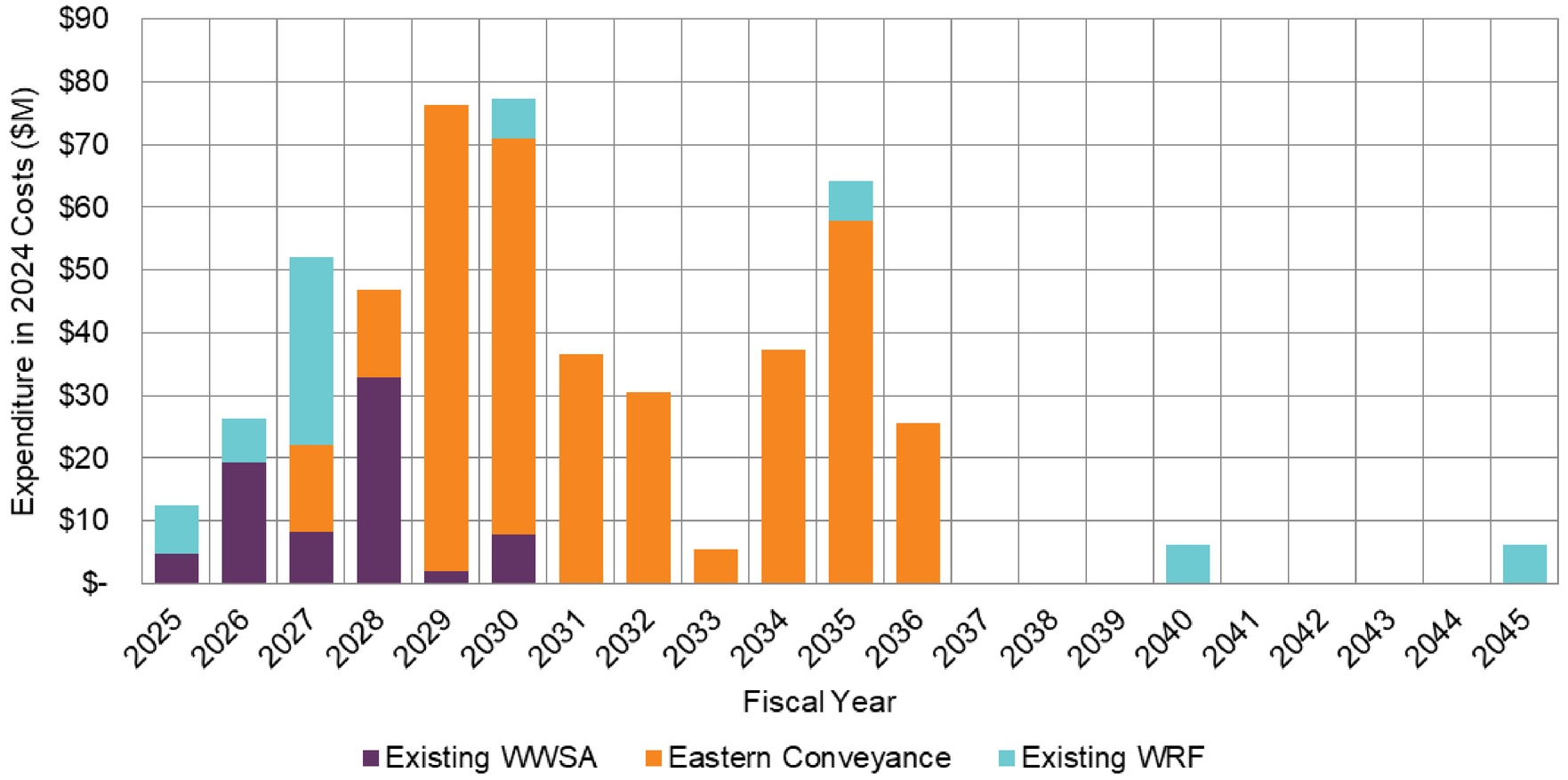


20-Year CIP Improvements

Wastewater

Project Number	Existing Wastewater Service Area (WWSA) Improvements Projects	Anticipated Date of Project	Estimated Project Cost (2024 Dollars)
1	Lower Bishop Interceptor Upsizing	2025	$19.8M
2	Eagle Cliff Interceptor Upsizing	2025	$4.4M
3	Lift Station D Equalization	2027	$5.9M
4	Upper Bishop Interceptor Upsizing	2027	$35.3M
5	Oak Tree Interceptor Upsizing	2029	$5.0M
6	Constitution St. Interceptor Upsizing	2029	$4.6M
		Existing WWSA Improvements Subtotal	**$75.0M**
Project Number	**Eastern Conveyance Improvements Projects**	**Anticipated Date of Project**	**Estimated Project Cost (2024 Dollars)**
7a	Dave Blue Creek Eastern Conveyance Network	2027	$150.2M
8a	Rock Creek Eastern Conveyance Network	2029	$82.1M
9	Little River Eastern Conveyance Network	2033	$29.8M
7b	Dave Blue Creek Expansion	2034	$51.4M
8b	Rock Creek Expansion	2035	$25.7M
		Eastern Conveyance Improvements Subtotal	**$339.2M**
Project Number	**Existing WRF Improvement Projects**	**Anticipated Date of Project**	**Estimated Project Cost (2024 Dollars)**
10	Additional Equalization Basin	2025	$29.8M
11	Additional Grit Removal	2026	$7.7M
12	Existing WRF Rehabilitation and Equipment Replacement	As needed	$25.0M
		Existing WRF Improvements Subtotal	**$62.6M**
		Improvements Total	**$476.8M**

Proposed Capital Outlay Schedule



Open Discussion