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Pine Valley Water Supply and Conservation Project Business Plan and Water Needs Assessment

CICWCD WATER ADVISORY COMMITTEE

CITY COUNCIL – CEDAR CITY

CITY COUNCIL – ENOCH CITY

CENTRAL IRON COUNTY WATER CONSERVANCY DISTRICT BOARD

JOHN REHRING

CODY BERG

JAKE BAER

CEDAR CITY & ENOCH CITY // FEBRUARY 2020

// Key Stakeholders and Planning Team

Key Stakeholder: Cedar City

- Paul Bittmenn
- Jonathan Stathis

Key Stakeholder: Enoch City

- Rob Dotson

Project Lead: Carollo Engineers

- Cody Berg
- Jennifer Ivey
- John Rehring
- David Tufte (SUU)

Project Support: CICWCD

- Paul Monroe
- Jessica Staheli
- Kelly Crane (Ensign)
- Curtis Nielson (Ensign)

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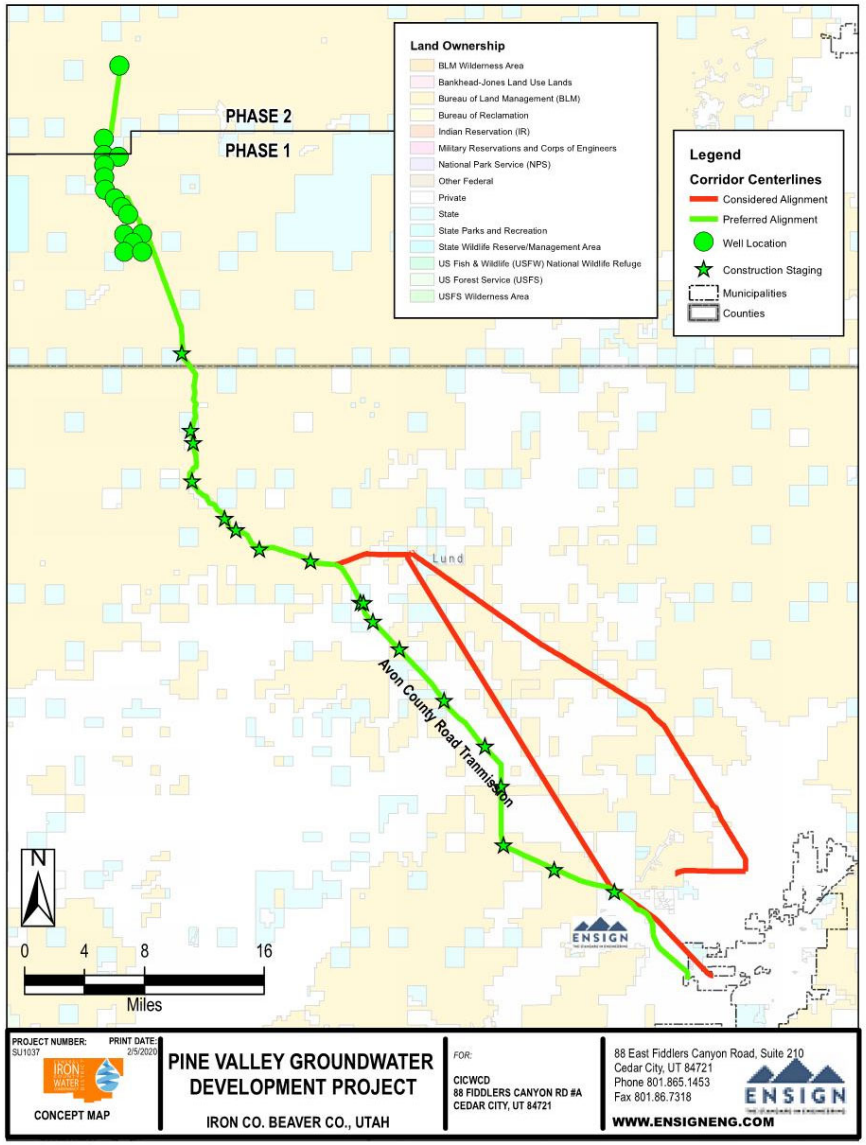
// Pine Valley Water Supply Project Basics

- 15,000 AFY
- Fully reusable water
- 70 mile pipeline
- Sustainability focus



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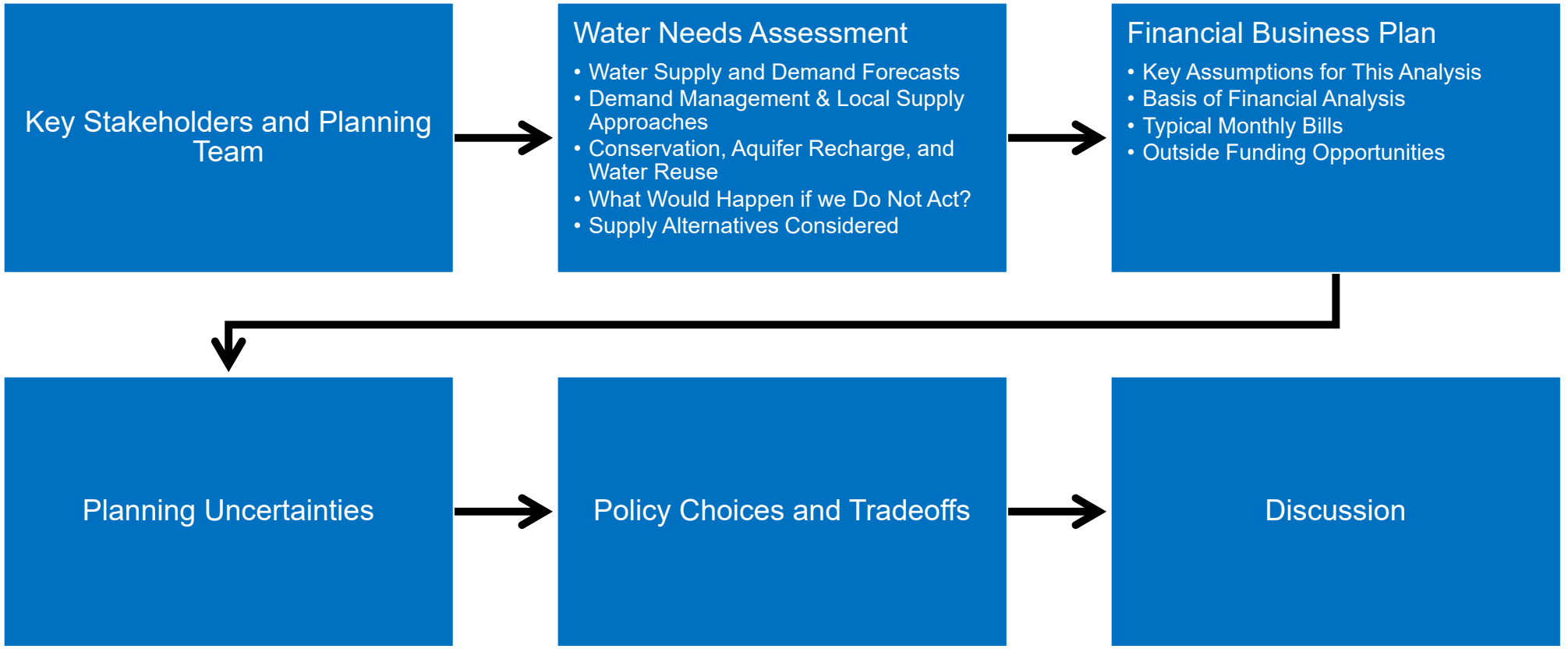
// Overview of Discussion



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// Planning Uncertainties

- Population and Demand Projections
- Future Cost of Agricultural Water Rights
- Groundwater Management Plan Implementation
- Potential Stakeholder Agreements
- Existing and New Wells (future yield?)
- Recharge Credit Ratio (1 to 1 or less?)

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// Policy Choices and Tradeoffs

- Operations under Current Conditions
- Agricultural Water Rights Purchases and Implications
- Conservation Targets: Amounts and How to Achieve
- 2070 and Beyond

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Water Needs Assessment

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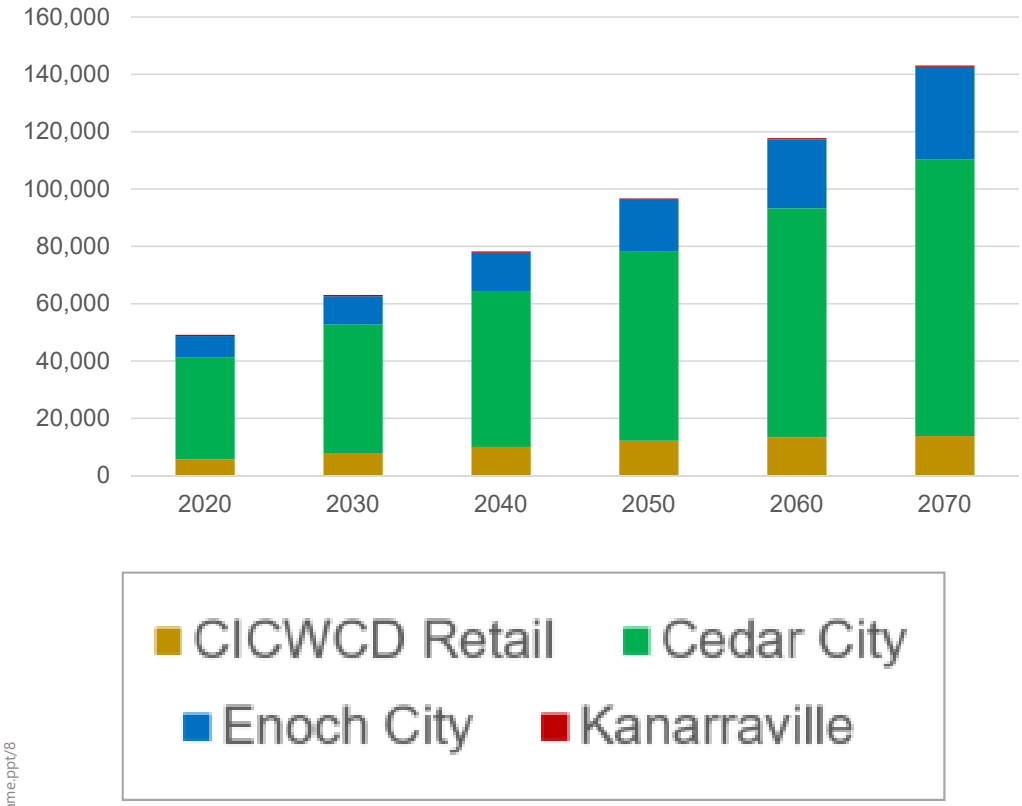
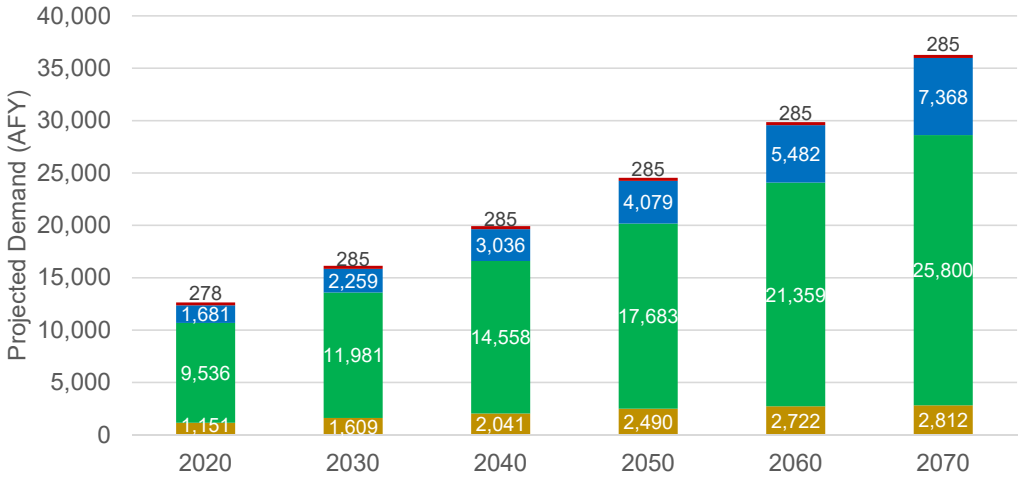
// Water Supply and Demand Forecasts

Population Forecast 2020-2070



Demand Forecast 2020-2070
(Prior to Additional Conservation)



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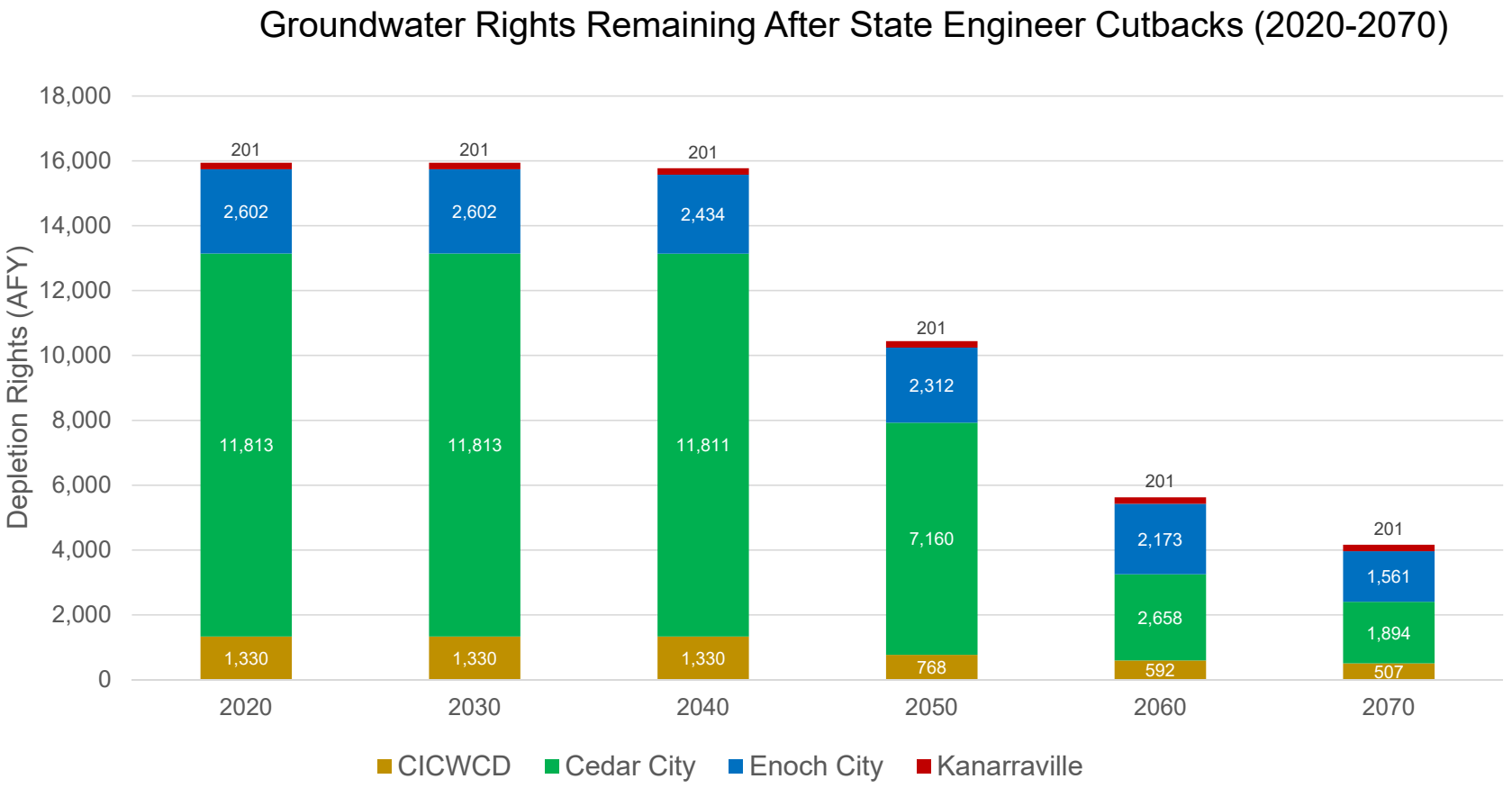
// Draft Groundwater Management Plan



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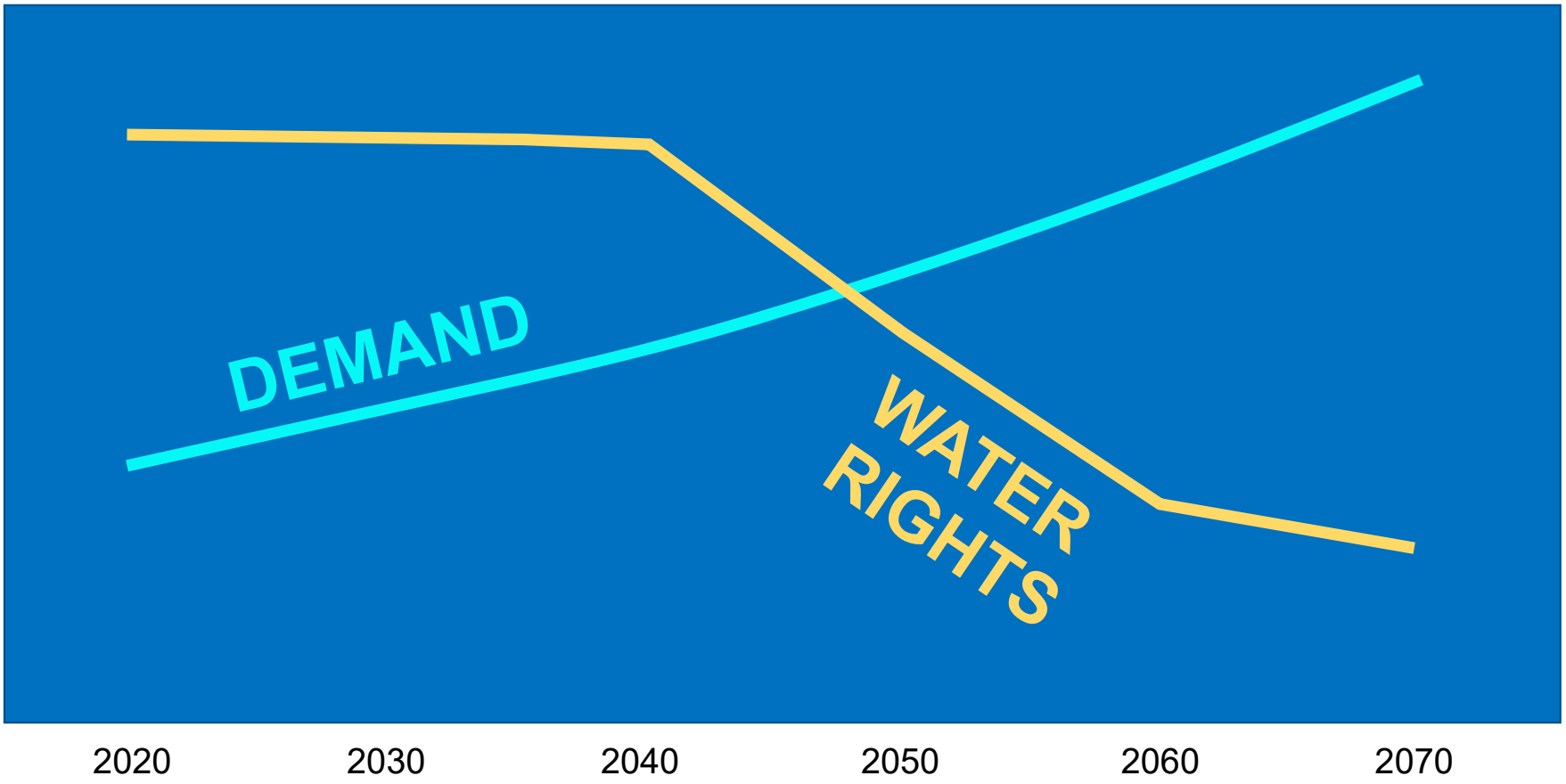
// Demands Will Exceed Legally-Available Supplies



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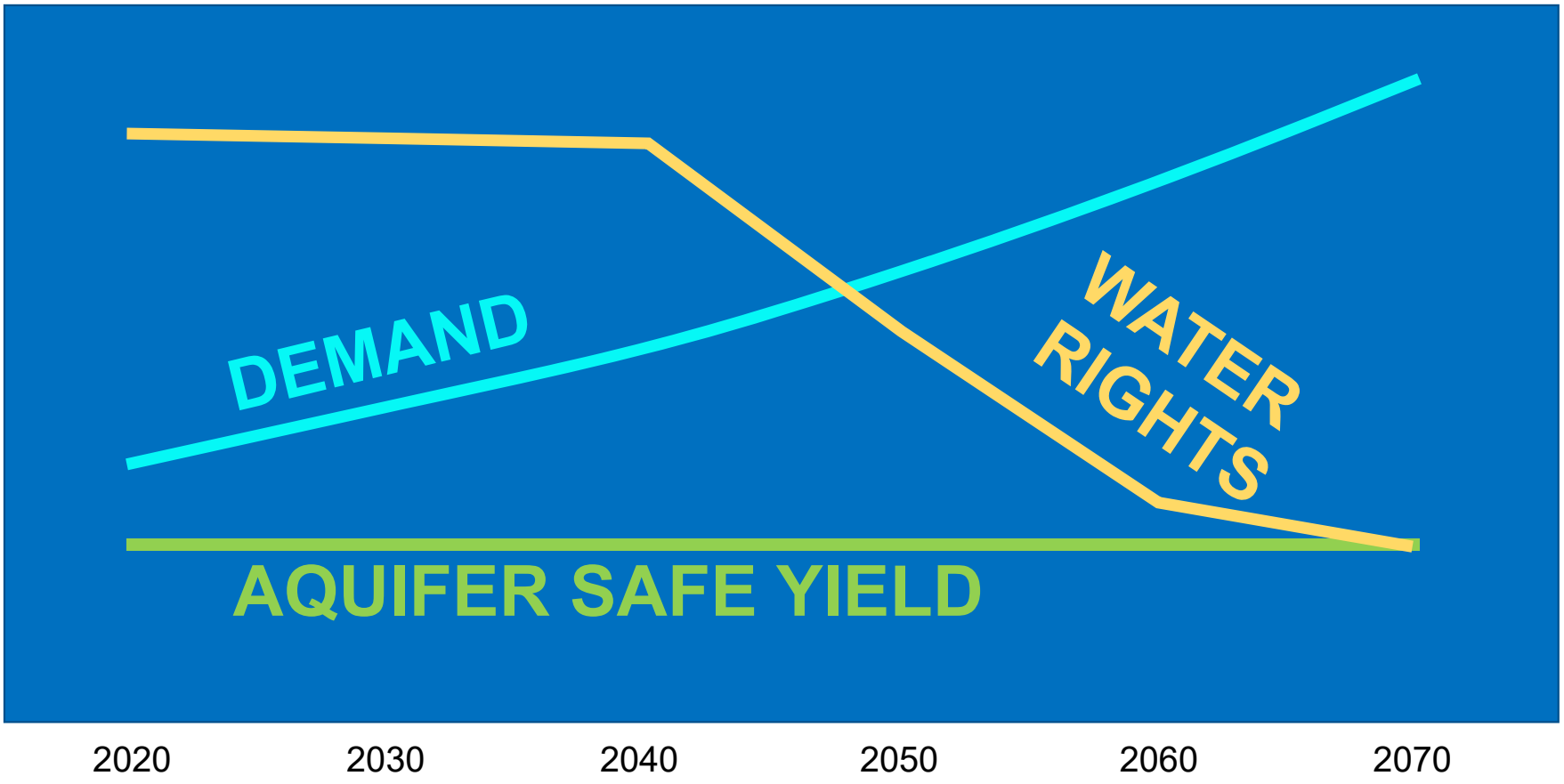
// We Are Already Using Water Faster than it is Replenished



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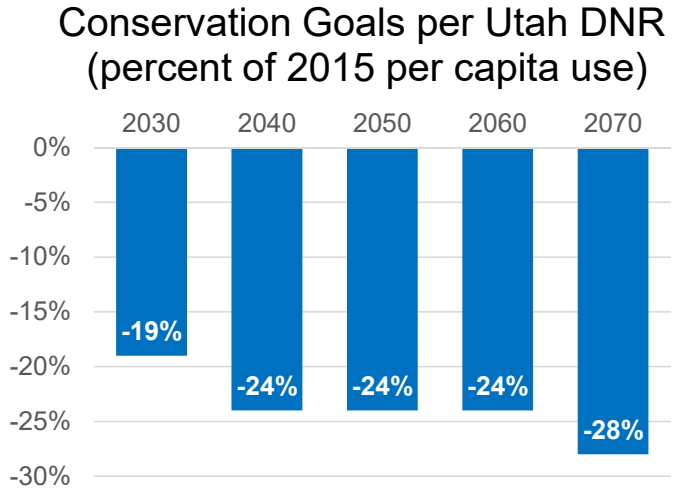
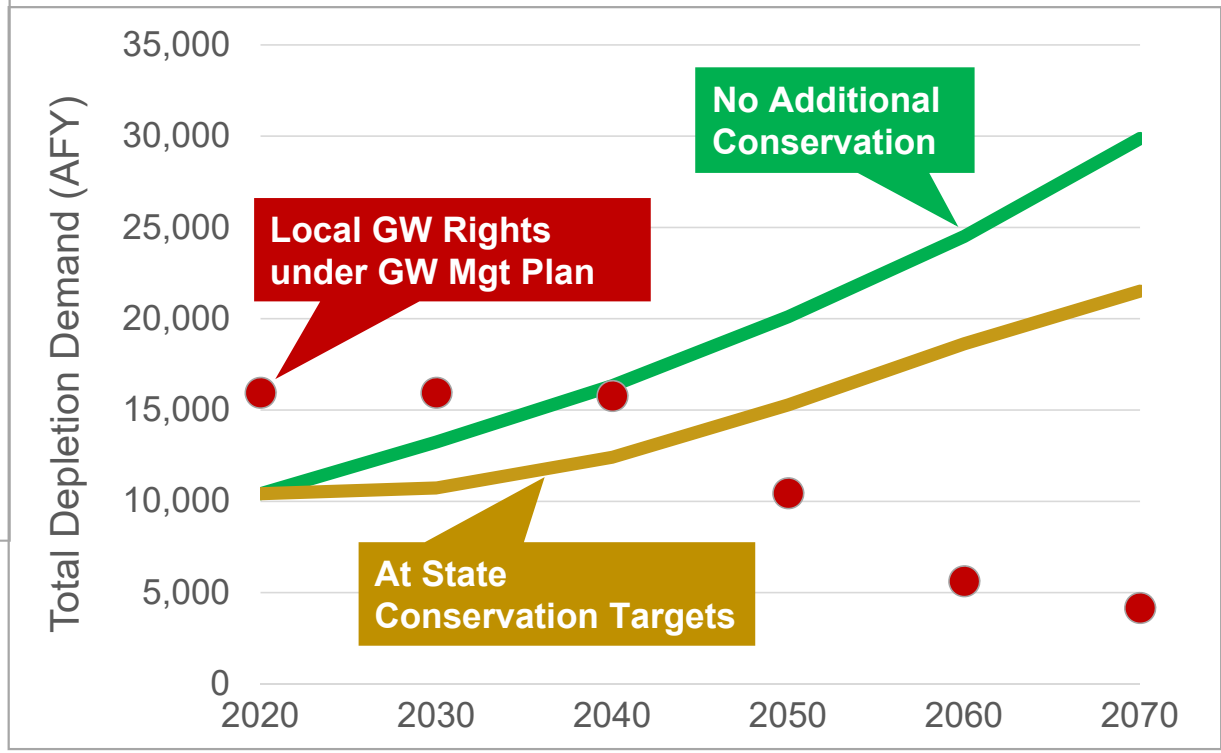
// Demand Management & Local Supply Approaches: Conservation, Aquifer Recharge and Water Reuse

DEMAND MANAGEMENT



Approx. cost = $10s of millions



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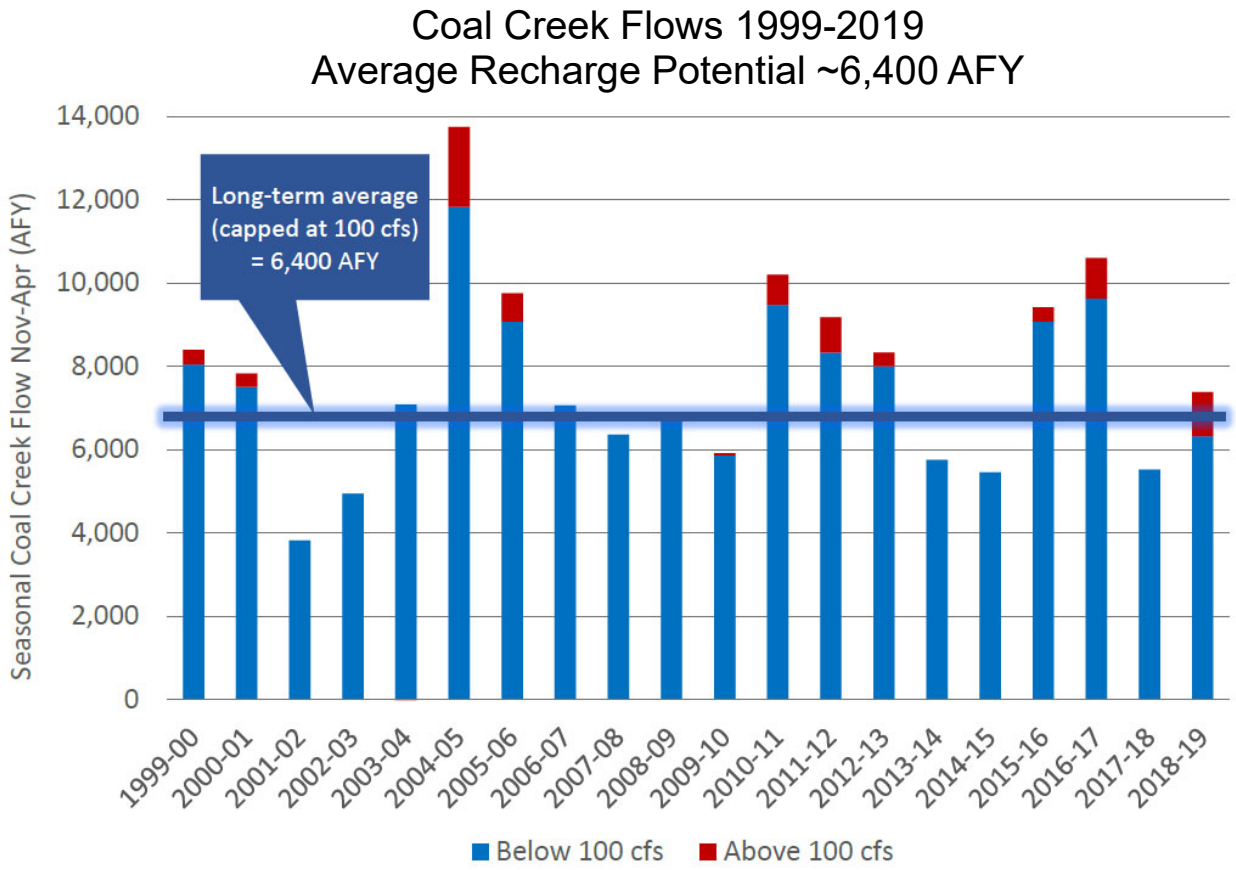
// Demand Management & Local Supply Approaches: Conservation, Aquifer Recharge and Water Reuse

AQUIFER RECHARGE



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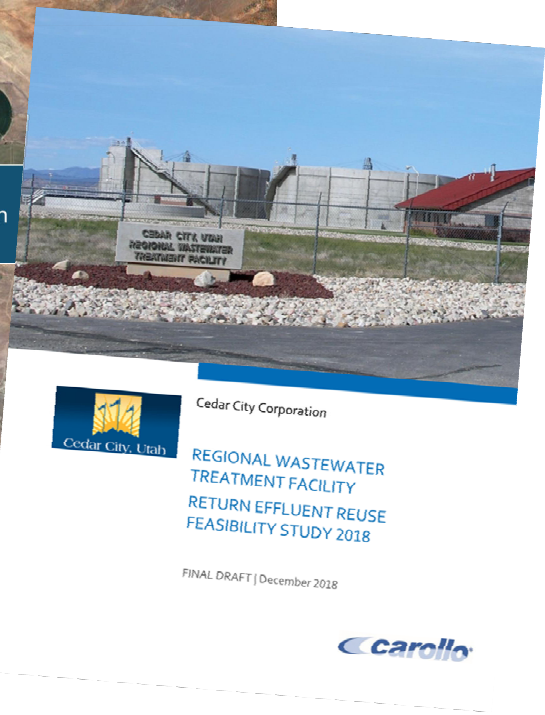
// Demand Management & Local Supply Approaches: Conservation, Aquifer Recharge and Water Reuse

WATER REUSE

- 2018 Cedar City Reuse Study
- Irrigation in Enoch Graben or near WWTF
- About 2,000 AFY of water supply
- $17M - $29M



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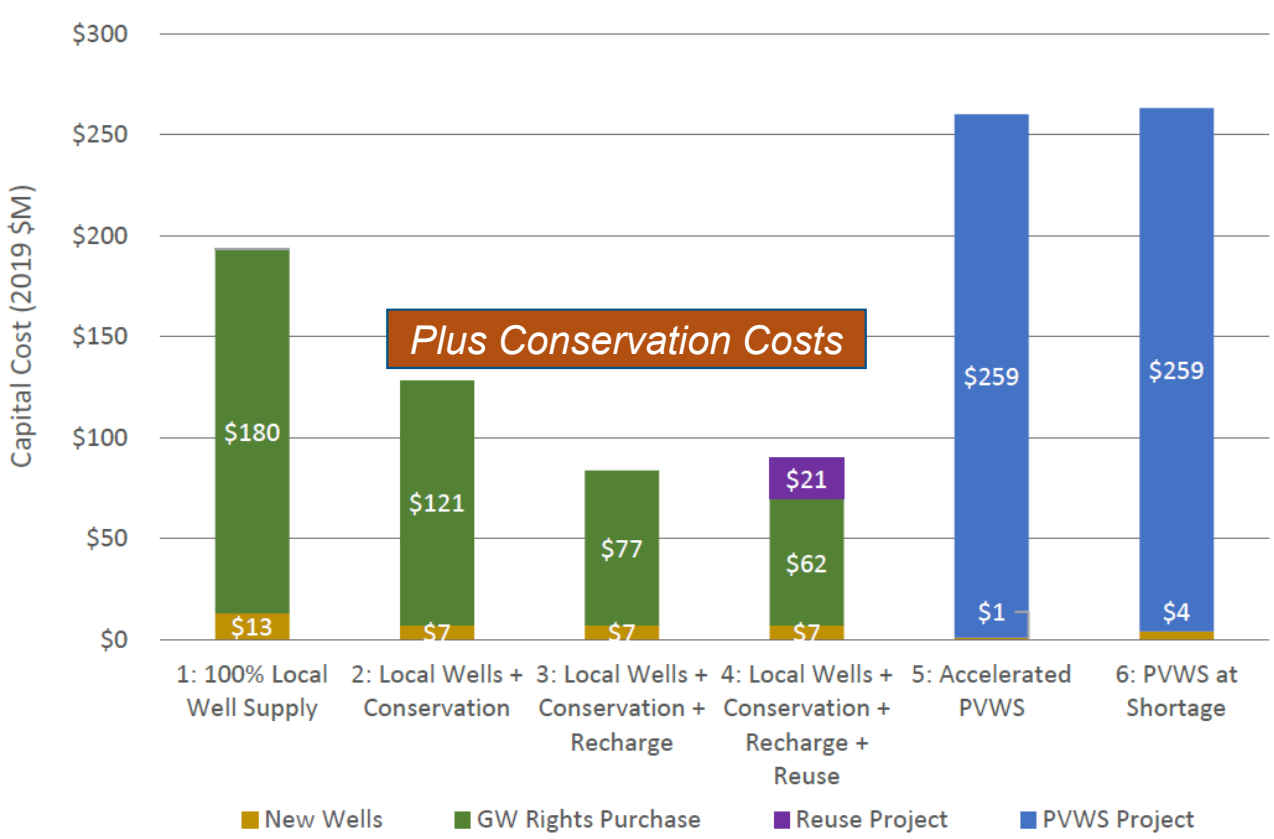
// Supply Alternatives Considered in Current Study

Scenario	Add'l Conserva-tion	Buy Local GW Rights	Recharge	Reuse	PVWS ASAP	PVWS @ Shortage
1		✓				
2	✓	✓				
3	✓	✓				
4	✓	✓				
5	✓					
6	✓					



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Financial Business Plan

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// Key Assumptions for Financial Analysis

District Issues Debt

- Revenue Increases (Ratepayers)
- Debt Service Coverage Requirement (1.30x)
- Positive Cashflow

Water Sales Revenue

- District's Retail Customers
- Wholesale Customers (Key Stakeholders)

Additional Wells

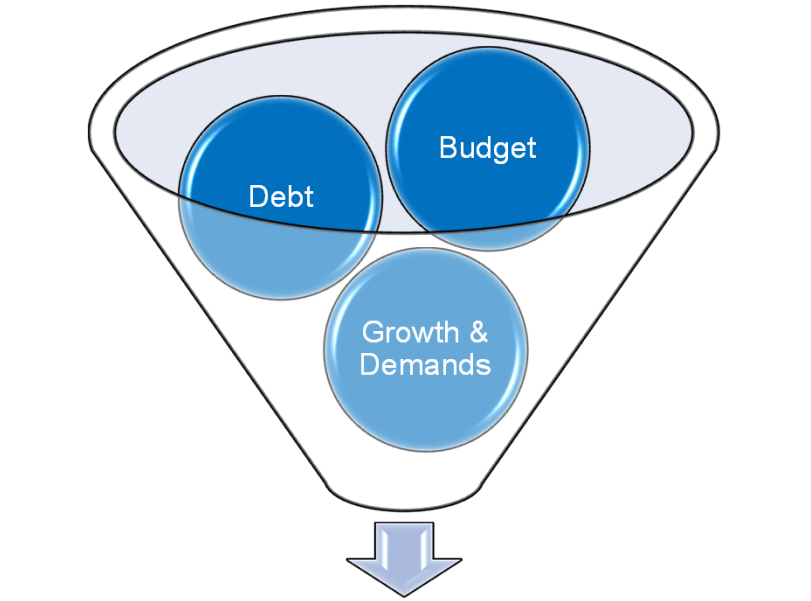
- Drilled on an as-needed basis (Demands)
- No new wells after PVWS project is online
- Water rights constraints per DNR Groundwater Management Plan

// Basis of Financial Analysis

Data

Annual Projections

Cashflow Scenario Analysis



Cashflow → Rates → Bills

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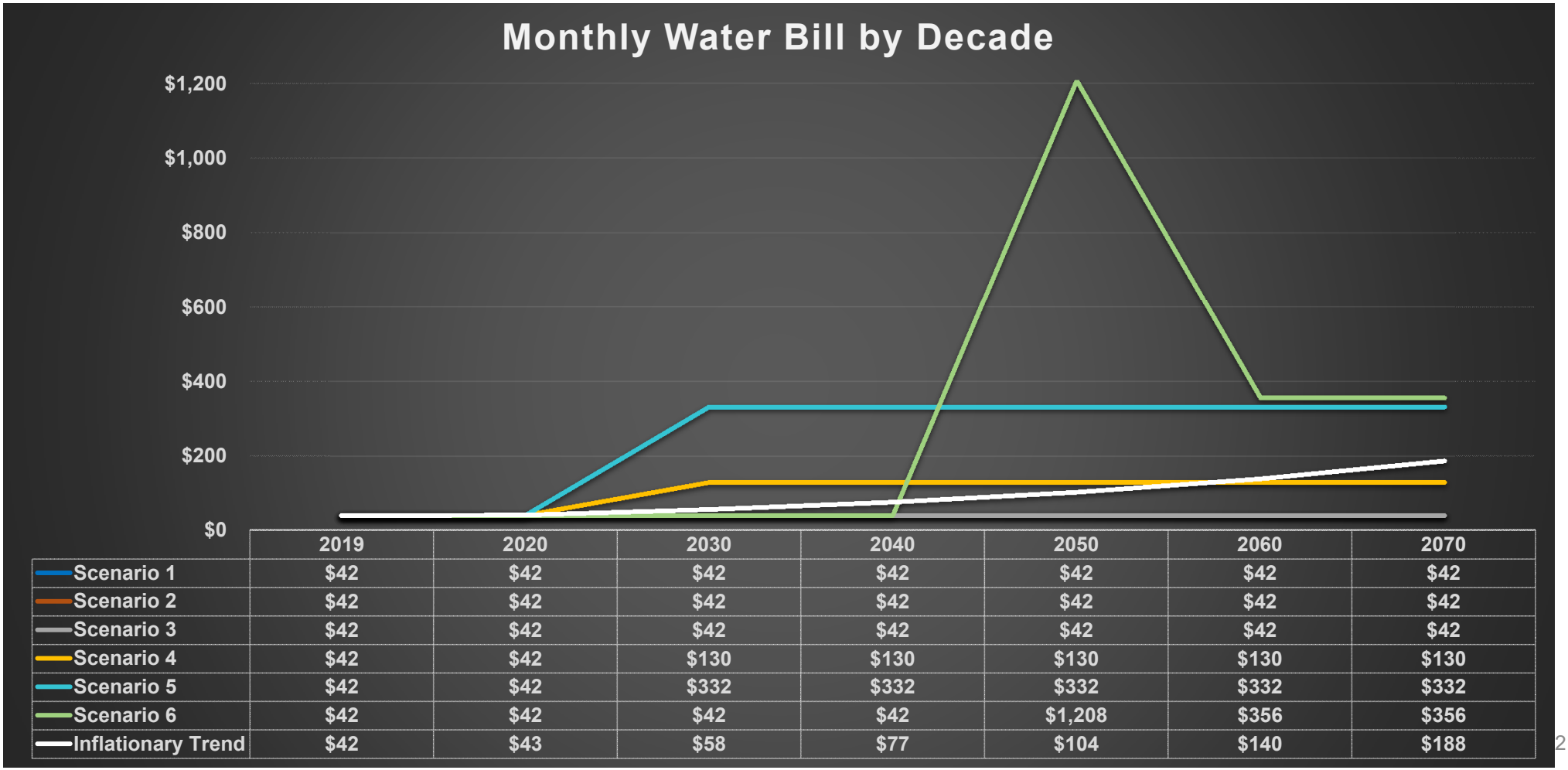
// Typical Monthly Bill – CICWCD



	2019	2020	2030	2040	2050	2060	2070
Scenario 1	$42	$42	$42	$42	$42	$42	$42
Scenario 2	$42	$42	$42	$42	$42	$42	$42
Scenario 3	$42	$42	$42	$42	$42	$42	$42
Scenario 4	$42	$42	$130	$130	$130	$130	$130
Scenario 5	$42	$42	$332	$332	$332	$332	$332
Scenario 6	$42	$42	$42	$42	$1,208	$356	$356
Inflationary Trend	$42	$43	$58	$77	$104	$140	$188

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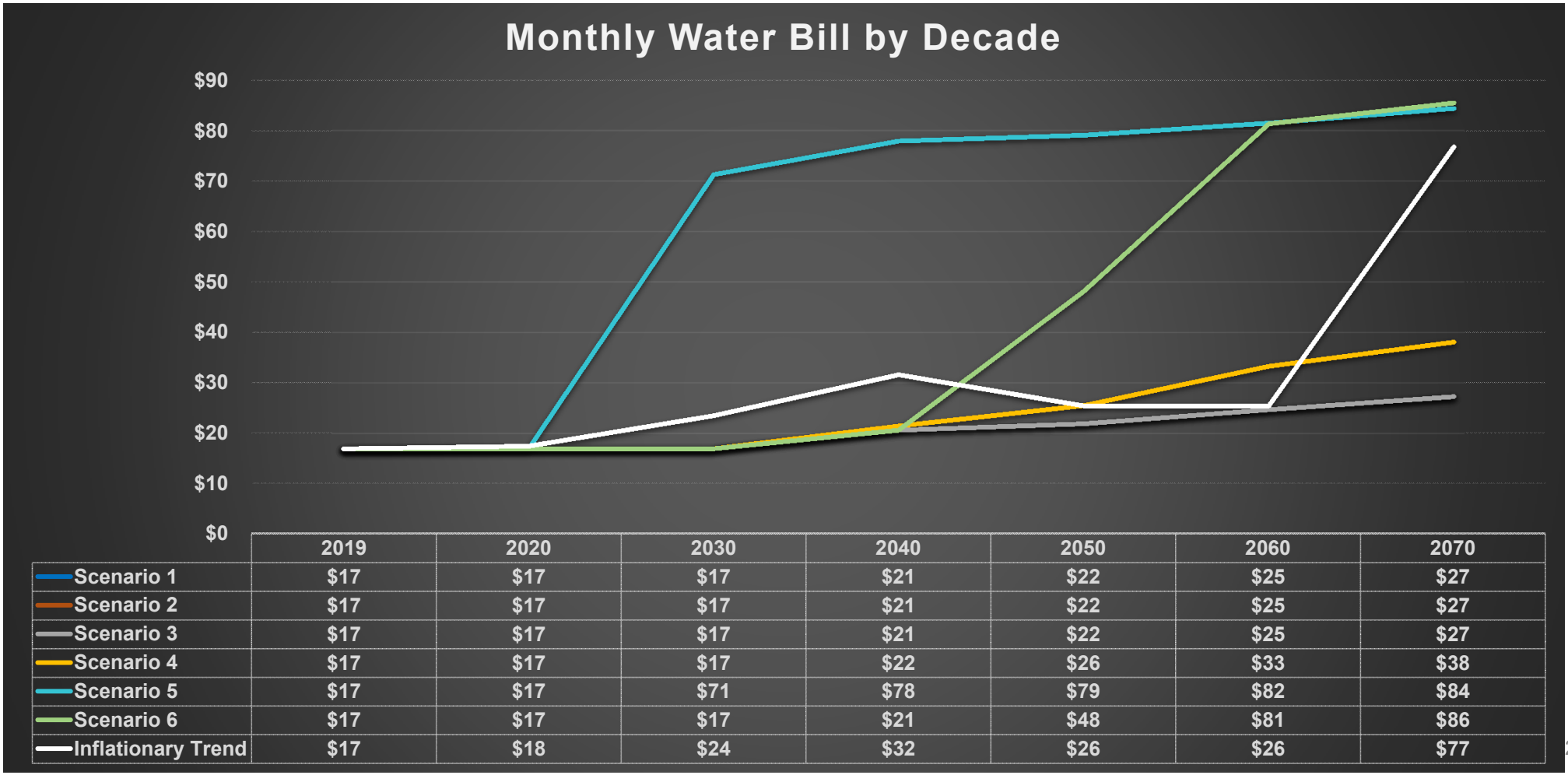
// Typical Monthly Bill – Cedar City



	2019	2020	2030	2040	2050	2060	2070
Scenario 1	$17	$17	$17	$21	$22	$25	$27
Scenario 2	$17	$17	$17	$21	$22	$25	$27
Scenario 3	$17	$17	$17	$21	$22	$25	$27
Scenario 4	$17	$17	$17	$22	$26	$33	$38
Scenario 5	$17	$17	$71	$78	$79	$82	$84
Scenario 6	$17	$17	$17	$21	$48	$81	$86
Inflationary Trend	$17	$18	$24	$32	$26	$26	$77

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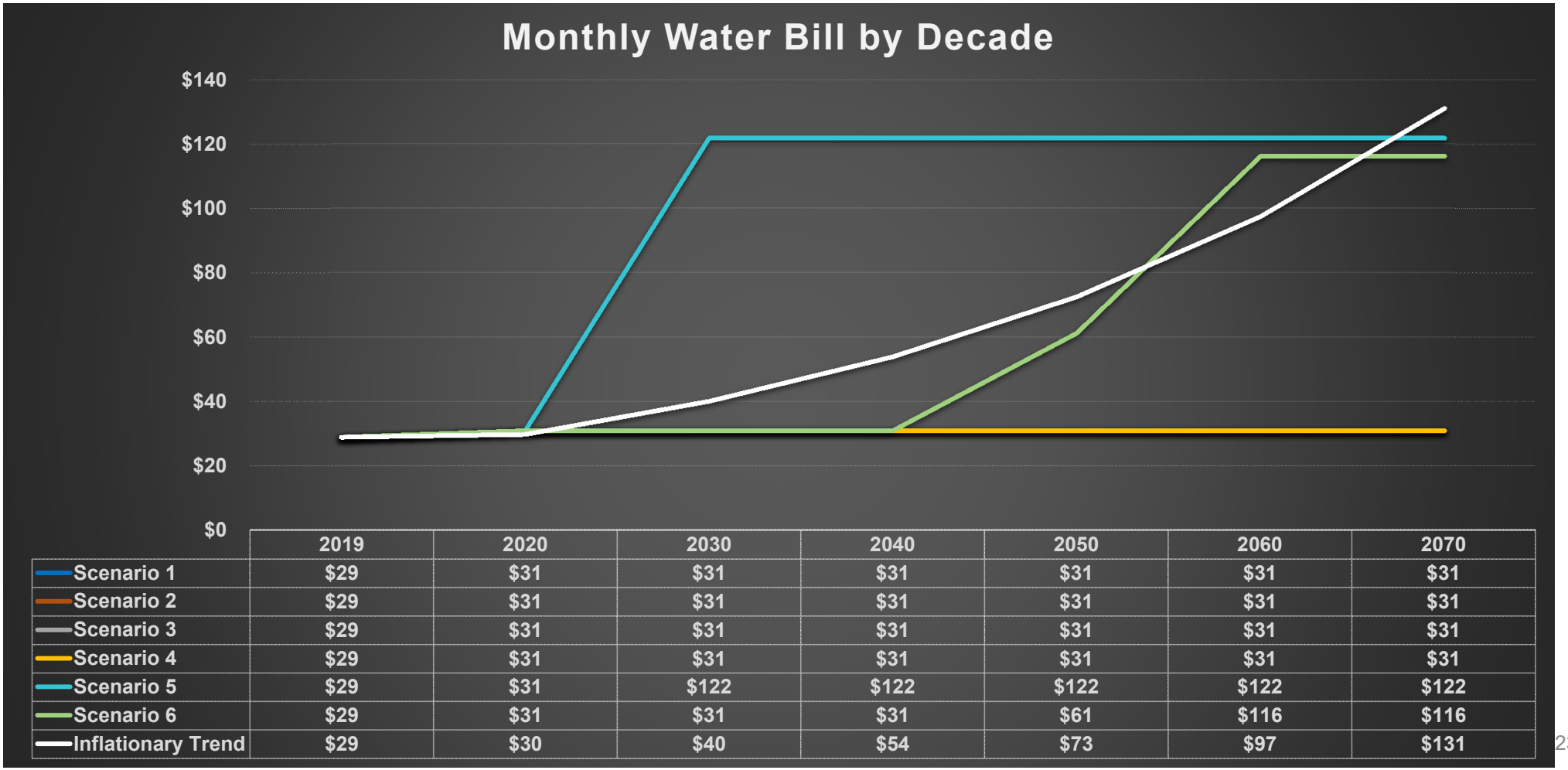
// Typical Monthly Bill – Enoch City



	2019	2020	2030	2040	2050	2060	2070
Scenario 1	$29	$31	$31	$31	$31	$31	$31
Scenario 2	$29	$31	$31	$31	$31	$31	$31
Scenario 3	$29	$31	$31	$31	$31	$31	$31
Scenario 4	$29	$31	$31	$31	$31	$31	$31
Scenario 5	$29	$31	$122	$122	$122	$122	$122
Scenario 6	$29	$31	$31	$31	$61	$116	$116
Inflationary Trend	$29	$30	$40	$54	$73	$97	$131

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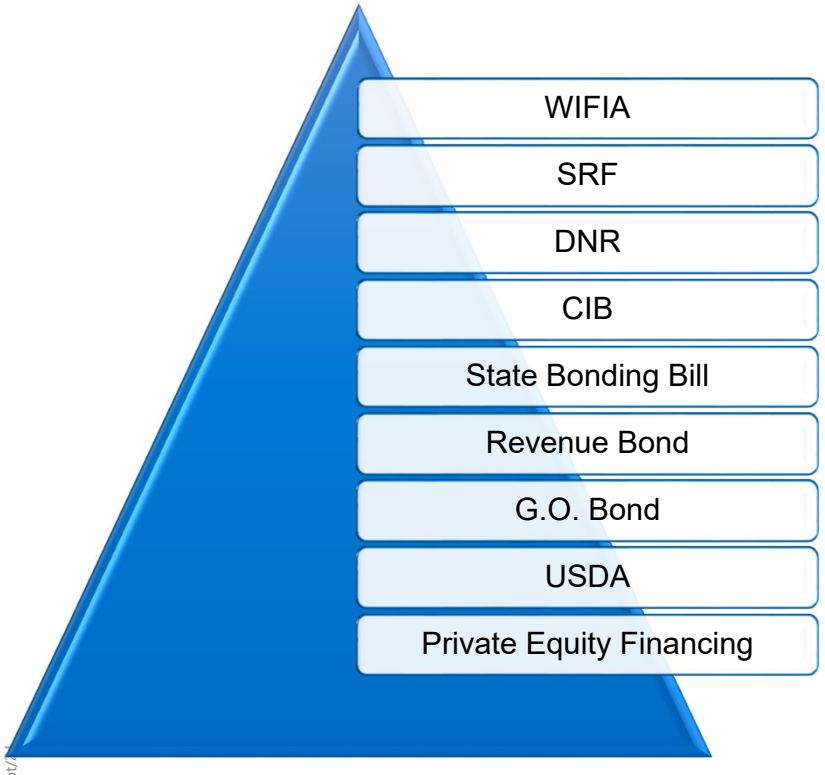
// Outside Funding Opportunities



Optimal Funding Selections

Program	Type	Interest Rate	Term	Percent Funding	DSC Ratio
WIFIA	Loan	3.15%	30 yrs.	~49%	130x
SRF	Loan	2.00%	20 yrs.	~25%	130x
Revenue Bonds	Loan	5.00%	30 yrs.	~25%	130x
Cash Reserves	Cash	N/A	N/A	Varies	N/A

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