



Minutes of the Special Meeting of the Board Supply Contract Proposals

December 11, 2023

10:00am – 3:30pm

Held at Cascade’s Office and Via Zoom

Time	Agenda Item	Board Action
10:00am	<p>Call to Order, Roll Call, and Approval of Agenda</p> <p>Penny Sweet, Board Chair</p> <p><u>Board Members Present:</u> City of Kirkland (Sweet), City of Redmond (Birney), City of Tukwila (Ekberg), Sammamish Plateau Water & Sewer District (Warren), and Skyway Water and Sewer District (Ault)</p> <p><u>Board Member Absent:</u> City of Bellevue (Barksdale), City of Issaquah (Joe)</p> <p><u>Board Alternates Present:</u> City of Bellevue (Stokes)</p>	
	<p>Presentation regarding the most recent water supply contract proposals from Seattle and Tacoma</p> <p><u>Recap:</u> Cascade staff last briefed the Board on Seattle’s and Tacoma’s water supply proposals in July 2023. Recently both utilities submitted updated terms, and Cascade staff presented these to the Board. Attached is the presentation that staff made.</p>	Presentation
	<p>Discussion based on presentation</p> <p><u>Recap:</u> The Board discussed the two updated proposals, and staff responded to the Board’s questions.</p>	Discussion
	<p>Executive Session (if needed)</p> <p><u>Recap:</u> There was no Executive Session.</p>	
	<p>Announcement of Next Special Board Meeting – January 4, 2024, at 10:00 a.m. held at Cascade’s office and via Zoom</p> <p>Penny Sweet, Board Chair</p>	
11:30 am	Lunch (optional)	

12:30 pm	Contract Proposals “Deep Dive” (optional) <u>Recap:</u> Cascade staff delved more deeply into Seattle’s and Tacoma’s updated proposals and responded to the Board’s and member staff’s questions. The attached presentation was also presented during this session.	Presentation and Discussion
3:30 pm	Adjourn	

APPROVED BY:



Penny Sweet, Chair



Angela Birney, Vice-Chair



Update on Water Contract Supply Options

December 11, 2023

Background

In July, 2021 the Board directed staff to pursue in parallel two potential supply contracts in order to evaluate supply development options. In addition to the existing plan to develop Lake Tapps by around 2040, the two options were:

- 1. A contract extension with Seattle, for 20 years or more.**
- 2. A supply contract with Tacoma for 20 years or more, beginning when the existing Seattle block begins to decline in 2040.**

In July, 2023 staff reported on contract proposals from Seattle and Tacoma. The Board directed further work to extend and improve those offers.

This session reviews potential new contract terms and their impacts.

Outline of Review

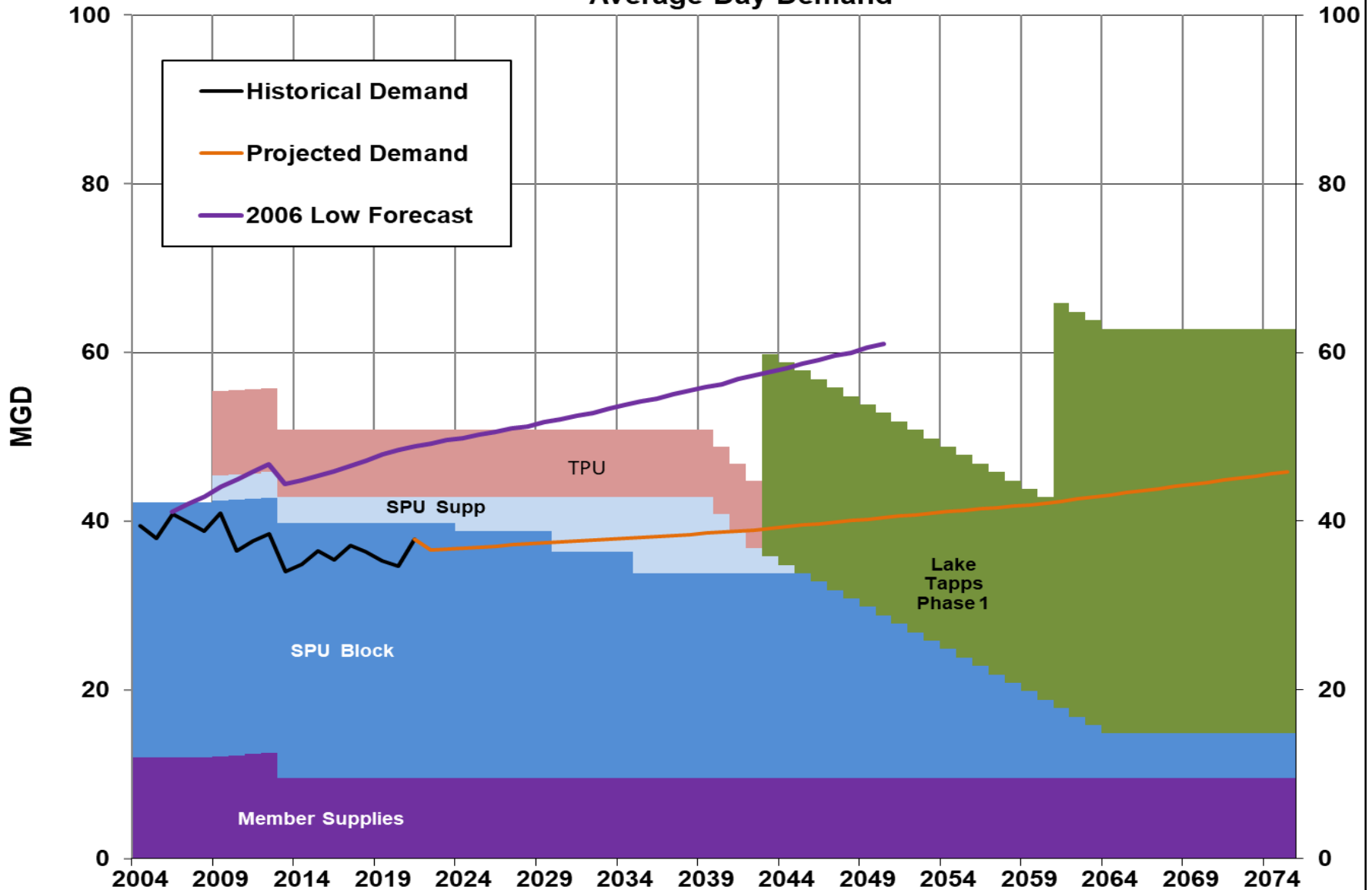
- 1. Review of Cascade Supply Strategy**
- 2. Updated Contract Proposals**
 - A. Seattle
 - B. Tacoma
- 3. Summary of Contract Options**
- 4. Evaluation of Supply Scenarios**
- 5. Findings of Supply Evaluation**



Cascade Supply & Demand Forecast

Base Scenario: Lake Tapps 2042

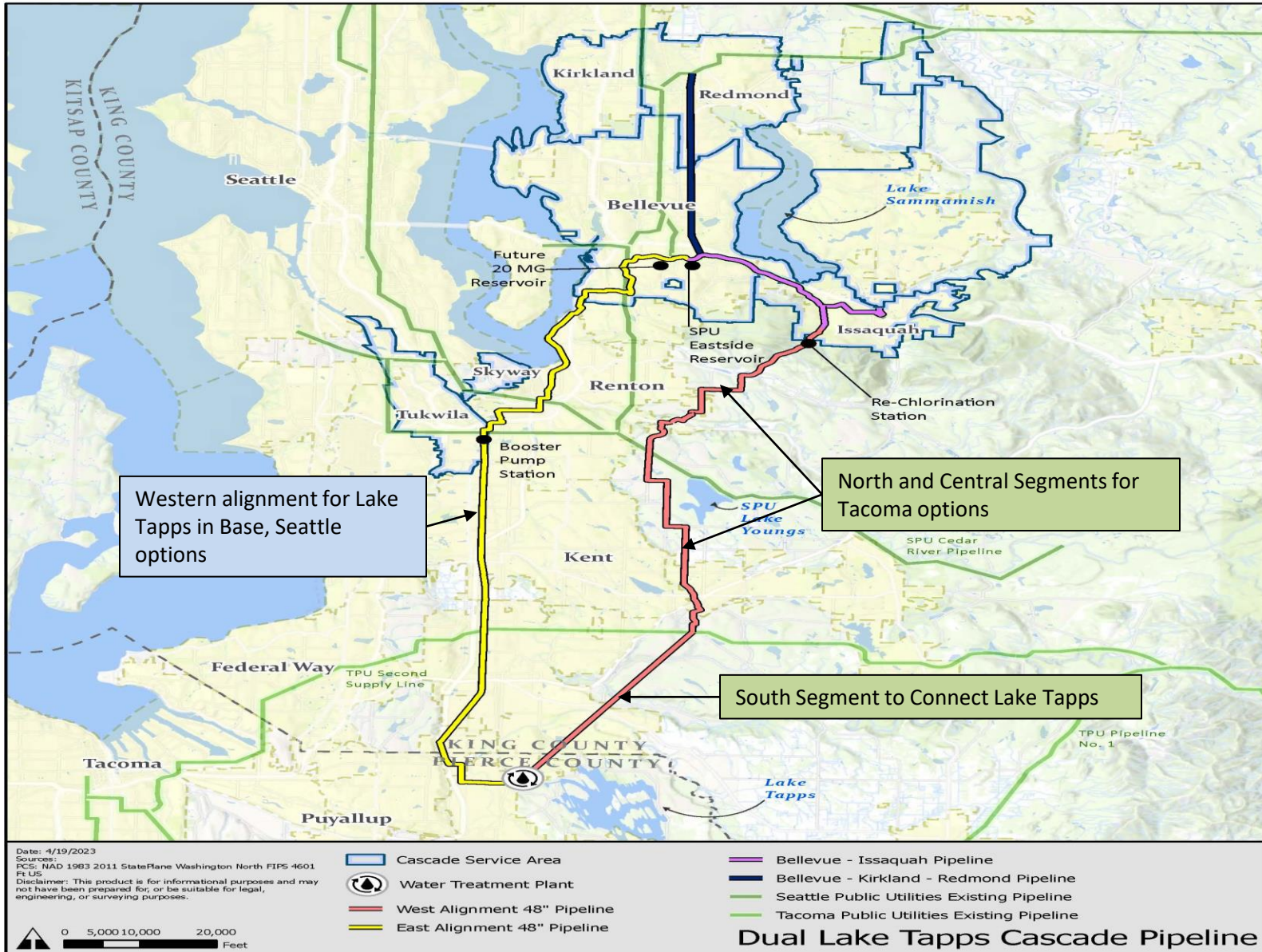
Average Day Demand



Base Scenario

- **Current contract terms with Seattle:**
 - **33.3 MGD average block and 63 MGD peak**
 - **Block declines from 2039 through 2063**
 - **Starting 2064, can purchase up to 5.3 MGD**
- **Base scenario requires developing Lake Tapps Reservoir by 2042, in two phases:**
 - **Phase 1: By 2042, treatment and transmission in place**
 - **Phase 2: By 2062, treatment expansion completed**
- **Water Supply Development Fund (WSDF):**
 - **Board approved in November 2021**
 - **Accumulates cash for 20% minimum equity requirement and to mitigate rate increases**

Potential Supply System



Basic Supply Negotiation Objectives

- 1. 20 Year (or longer) extension of contract supply**
- 2. Extension sufficient to defer Lake Tapps development**
- 3. Reasonable and predictable costs**
- 4. Net economic and/or rate benefit versus current Lake Tapps development plans**
- 5. Flexibility in contract term and/or quantity to allow for future variation in supply and demands**
- 6. Possible further extensions if mutually beneficial given supply/demand status**
- 7. Possible partnership opportunities for assets of regional significance**

What Has Changed from Seattle?

Prior Terms	Latest Proposal
Maximum of 10 year extension at 33.3 MGD	Same terms for initial 10 year extension
Increased charges now and in the future -- cost of block increases to match Seattle's wholesale rates	Increased charges now and in the future -- cost of block increases to match Seattle's wholesale rates
Added lump sump transition payments: \$5 million in 2026, 2028, 2030, 2033	Added lump sump transition payments: \$5 million in 2026, 2028, 2030, 2033
No further extensions	<p><i>Two potential 5 year extensions:</i></p> <ul style="list-style-type: none"> • <i>Trigger dates 15 years prior to extension (2034, 2039) for extensions to 2054, 2059</i> • <i>Contingent on Seattle supply/demand criteria (specified in contract)</i>
Possible transition path back to F&P supply; not yet defined	<p><i>Potential conversion to wholesale contracts in 2060:</i></p> <ul style="list-style-type: none"> a) <i>Only offered to Cascade individual members, not Cascade <ul style="list-style-type: none"> i. <i>Cascade will not be a wholesale customer or provider</i> ii. <i>Cascade's assets and liabilities (incl. Lake Tapps) remain as Cascade issues</i> iii. <i>Members will need to pay (somehow) for all future Cascade obligations as well as Seattle payments</i> </i> b) <i>Provides a 40 year contract through 2099</i> c) <i>Contingent on Seattle supply/demand criteria (specified in contract) and exercising prior 5 year extensions</i> d) <i>Rate premium (or lump sum payment) to offset new supply costs borne by Seattle</i>

How Are We Evaluating Seattle's Updated Proposal?

Analyze 3 Seattle Scenarios

- 1. *Original 10 Year extension: no change***
- 2. *10 Years with Two 5 year Extensions (total 20 years)***
 - a) Assumes the threshold conditions for extensions are met**
 - b) Cost of block remains equivalent to Seattle's wholesale rates**
- 3. *10 + 10 plus 40 year wholesale contract***
 - a) Assume all members transfer to new contract**
 - i. Lake Tapps supply is not developed**
 - ii. For analysis, treat it as if a Cascade contract**
 - b) Assume all members also remain in Cascade**
 - i. Other Cascade costs and obligations remain**
 - ii. If not, members would owe "make whole" buy-out charges to Cascade to leave**
 - c) Assume 30% rate premium beginning 2060**
 - i. Intended to compensate for costs of new Seattle supplies**
 - a. Lake Tapps is not a supply option**
 - d) Assume no new transition payments or facilities charges**



What Has Changed from Tacoma?

Prior Terms	Latest Proposal
<p>20 year at full supply beginning in 2040, plus 15 years at 50%</p> <p>Contract Capacity of 20 MGD average, 30 MGD peak through 2060</p> <p>Capacity of 10 MGD average, 15 MGD peak from 2060 to 2075</p>	<p><i>Extends 20/30 MGD through 2065 or 2070; 10/15 MGD through 2085 (or longer)</i></p> <p><u>Problem:</u> Cascade needs more supply after 2060 as Seattle block continues to decline: roughly 5 MGD average and 10 MGD peak</p> <ul style="list-style-type: none">a) Tacoma SSP capacity is constrained as usage increases; peak capacity is reachedb) More supply may be available through:<ul style="list-style-type: none">i. Shares owned by Second Supply partners (Covington, Kent and Lakehaven)ii. Upgrades to Tacoma system<ul style="list-style-type: none">• Pumping• In-system upgrades to enable alternate delivery to SSP partnersiii. Modified Seattle ramp downiv. Other potential suppliers
<p>Defined rate methodology and terms</p>	<p>Same rate methodology</p>
	<p><i>Capacity reservation charge beginning around 2030:</i></p> <ul style="list-style-type: none">a) <i>Begins when current payments to Tacoma declines</i>b) <i>Pricing to be determined but should be on the order of \$500k per year</i>c) <i>Payments will credit against future water purchases</i>

How Are We Evaluating Tacoma's Updated Proposal?

Analyze 2 Tacoma Scenarios

- 1. *Original 20 Year contract: no change***
- 2. *25 Year term at full capacity through 2065***
 - a) Factor in capacity reservation payments**
 - b) Assume expanded capacity after 2060 to meet Cascade demands**
 - i. Priced at Tacoma wholesale rate**
 - ii. No other added costs or investments to secure added supply**
 - c) Additional 20 year term at 50% capacity (through 2085)**
 - i. Allows Cascade to delay Phase 2 of Lake Tapps until 2085**
 - ii. Delivers both Tacoma and Lake Tapps water to Cascade members**

Economic Criteria that we looked at

- A. Lowest Cost: Net Present Value**
- B. Lowest Unit Cost: Levelized Cost per CCF and per CERU**
- C. Smoothest Rate Profile: Average Rate Increase by Decade**
- D. Strongest Financial Performance**
 - 1. Debt Funding as % of Phase 1**
 - 2. Debt Funding as % of Total Projects**
- E. Stability of Results: sensitivity analysis from prior iteration provides guidance**

In all cases, annual rates were projected to meet annual obligations (cash flow and debt coverage) and then adjusted upward, if needed, to minimally meet the 80/20 debt/equity constraint.

Key Unknowns

Seattle:

1. Whether threshold criteria for 5 year extensions would be met
2. Whether threshold criteria for 40 year conversion would be met
3. If additional lump sum transition payments would be due
4. If (or when) facilities charge payments would become applicable
5. What rate premium would apply after 2060 (ballpark estimate of 20-35%)

Tacoma:

1. Where added capacity after 2060 would be found
 - a) *Best Case: Available from Tacoma and/or its partners*
 - b) *Worst case: back to the 20 year contract schedule for Lake Tapps development*
2. Terms for capacity reservation payment
3. Potential benefits from regional interconnection (incl. financial)

Both Seattle and Tacoma Systems:

1. How future capital projects/costs may impact wholesale rates
2. Potential impacts on supply yields due to climate change
3. Possible impacts of deferral on Lake Tapps supply development



Summary of Prior Terms

	Current Contract	Seattle 10 Year Extension	Tacoma 20 Year Supply Contract
Term	Declining block through 2063	Declining block through 2063	Full capacity thru 2060, then 50% thru 2075
Capacity	33.3 MGD Average	33.3 MGD Average	20 MGD Average/30 MGD Peak
	63 MGD Peak	63 MGD Peak	
	Annual decline of 3 mgd 2040-2042 then 1 mgd	Annual decline of 3 mgd 2050-2055, 2 mgd 2056 then 1 mgd	2061-75 10/15 MGD
Rate / Financial Features	Slow transition to higher cost wholesale rates.	Rapid transition to higher cost wholesale rates.	Cost-Based rate defined; roughly 20% below Seattle
	Last “Transition payment” of \$5 million in 2024	Added transition payments of \$5 million in 2026, 2028, 2030 and 2033	Rate structure includes ready to serve and volume charge (25%/75%)



Summary of Latest Proposals

	Seattle 10 Year plus 2 5-Year Extensions	Seattle 10 plus 10 plus 40 years	Tacoma 20 Year plus 5 year Extension
Term	Declining block through 2073 Requires 2 extensions Conditional extensions not assured; likelihood <50%?	Block through 2059 Requires 3 extensions Conditional extensions not assured; likelihood <50%	Requires added capacity for 5 or more years (multiple options, assumed at TPU pricing) Extension not assured but multiple options available; likelihood >80%
Capacity	33.3 MGD Average	33.3 MGD Average, 63 MGD Peak through 2059	20 MGD Average/30 MGD Peak through 2065
	63 MGD Peak	No limit after 2059	
	Annual decline of 1 mgd 2059-2061, then ~2.1 mgd through 2072		2065-85 10/15 MGD
Rate / Financial Features	Rapid transition to higher cost wholesale rates.	Rapid transition to higher cost wholesale rates.	Cost-Based rate defined; roughly 20% below Seattle
	Added transition payments of \$5 million in 2026, 2028, 2030 and 2033	Transition payments of \$5 million in 2026, 2028, 2030 and 2033 Assumed 30% rate premium after 2059 (new supply charge)	Rate structure includes ready to serve and volume charge (25%/75%)

Summary of Risk Assessment

Risk Factor	Description	Base Case	<i>Seattle 10 +5 +5 year</i>	<i>Seattle 10 +10 + 40 year</i>	<i>Tacoma 20 + 5 Year</i>
OVERALL	<i>Rough Composite of Risks Below</i>	HIGH RISK	HIGH TO MODERATE RISK	HIGH RISK	MODERATE RISK
SUPPLY ADEQUACY AND RELIABILITY	<i>Quantity, Flexibility and Resiliency of Supply Portfolio</i>	MODERATE RISK Increases supply diversity and available quantities.	HIGH TO MODERATE RISK Closer balance of supply and demand and reduced supply diversity.	HIGH TO MODERATE RISK Closer balance of supply and demand and reduced supply diversity.	MODERATE TO LOW RISK Increased supply surpluses and diversity and increased future options.
ABILITY TO COMPLETE THE PROJECT	<i>Organizational, Financial and Regulatory Capacity</i>	HIGH RISK Requires major construction projects in parallel with related organizational and financial expansion.	HIGH RISK Requires entire project at once with related organizational and financial expansion. Relaxes permitting schedule.	HIGH TO MODERATE RISK If extension is not provided, requires entire project at once with related organizational and financial expansion.	MODERATE TO HIGH RISK Separates projects into smaller phases, but still requires timely franchise and permitting.
ECONOMIC AND RATE IMPACTS	<i>Overall Cost, Rate Impacts, Generational Equity, and Ability to Manage Financial Outcomes.</i>	HIGH RISK Major construction on tight timeline limits flexibility, imposes high costs during construction period.	MODERATE TO HIGH RISK More flexible schedule, but uncertain extensions, increased front-end costs and reduced equity. Major construction still poses rate challenges.	MODERATE TO HIGH RISK More flexible schedule, but uncertain extensions and increased front-end costs and rate impacts. Major construction could pose rate and funding challenges.	MODERATE TO LOW RISK Separating project phases and stretching timeline improves economics, finances and equity.
LEGAL AND REGULATORY	<i>Contract, Permitting and Legal Risks</i>	LOW RISK No new contracts needed; water rights and diversions in place	MODERATE RISK New contract needed with complex terms for extensions; water rights and diversions in place	MODERATE RISK New contract needed with complex terms for extensions; water rights and diversions in place	MODERATE RISK A new contract needed, plus reliance on multiple watersheds and water rights.

Summary of Financial Results

Seattle

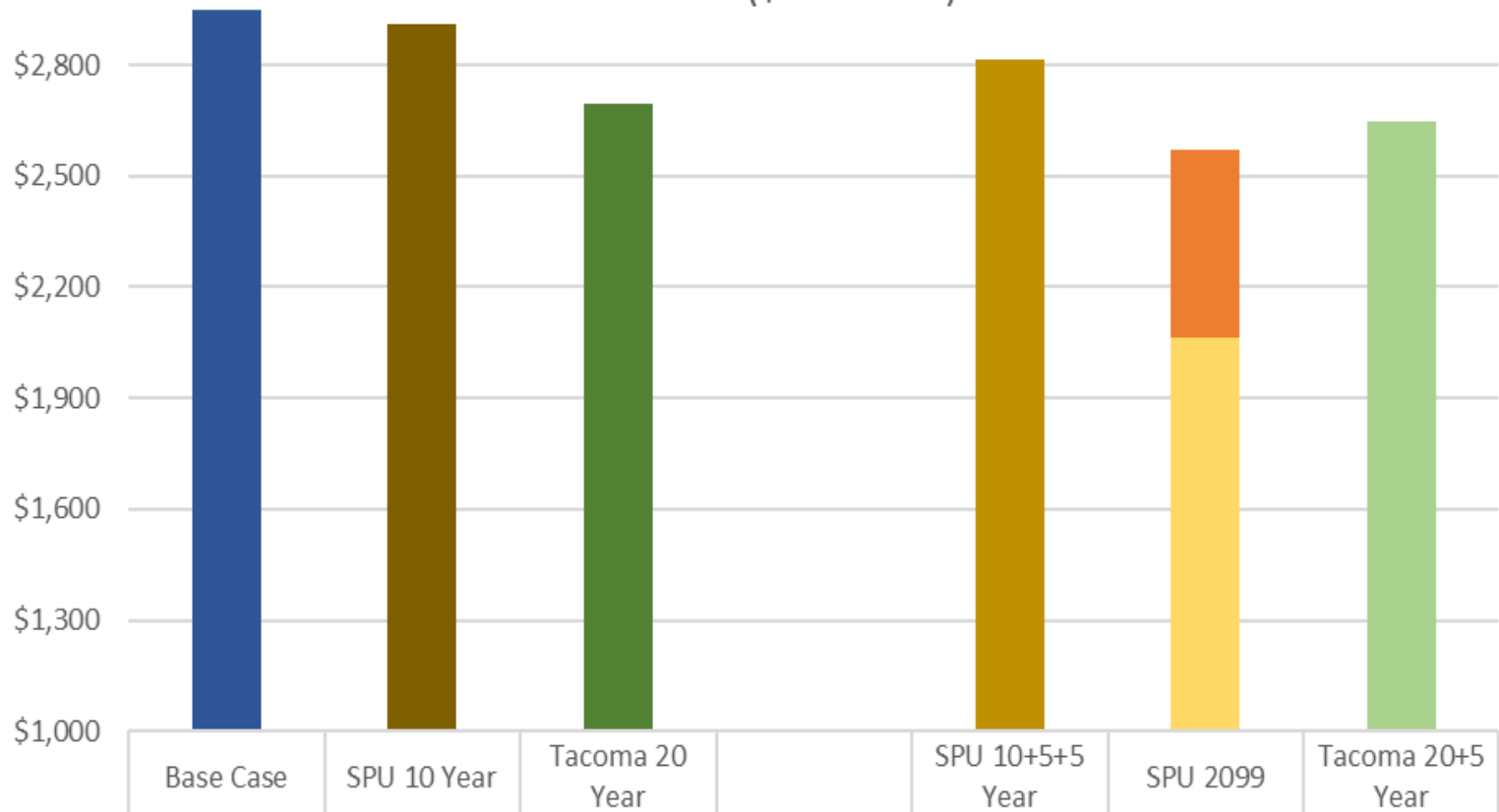
<u><i>Original 10 Year</i></u>	<u><i>Updated 20 Year</i></u>	<u><i>Updated 20 + 40 Year</i></u>
\$37 million in NPV savings	\$132 million in NPV savings	\$885 million in NPV savings
\$144 million increased payments to Seattle	\$320 million increased payments to Seattle	\$754 million increased payments to Seattle
Reduced WSDf opportunity and increased rate spike	Reduced WSDf opportunity and increased rate spike	WSDf not required; Smoother rate trend and lower long-term rates w/o Lake Tapps
Begin paying premium for supply now to secure future extension	Risk of future extension availability	Risk of extension availability, terms for wholesale conversion and possible need to build Lake Tapps

Tacoma

<u><i>Original 20 Year</i></u>	<u><i>Updated 25 Year</i></u>
\$251 million in NPV savings	\$299 million in NPV savings
\$117 million wholesale payments to Tacoma	\$184 million wholesale payments to Tacoma
Phasing of supply development and using WSDf mitigate rate impacts	Phasing of supply development and using WSDf mitigate rate impacts
	Minimal extension risk given small scale of added savings

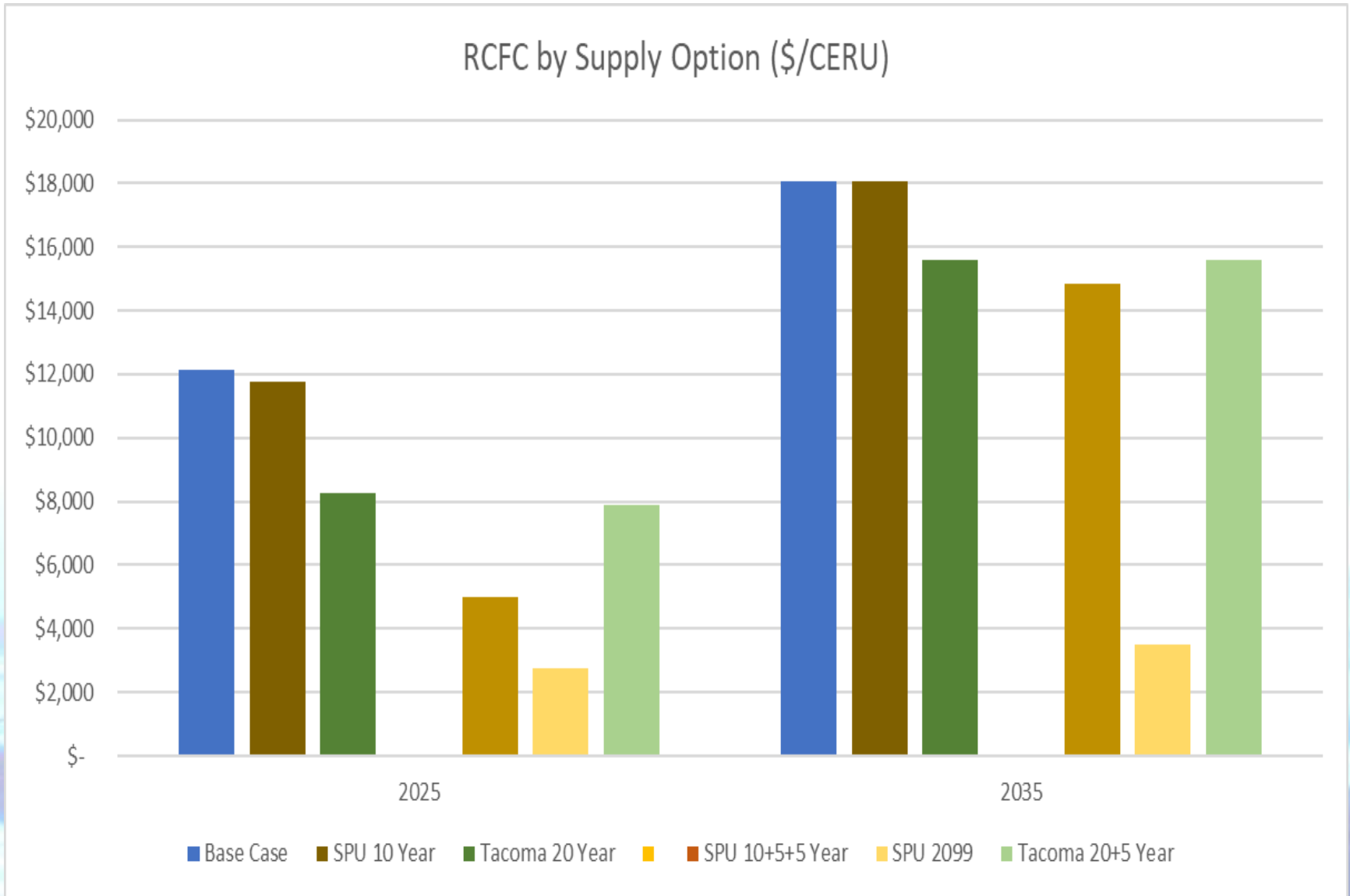
Net Present Value of Supply Scenarios

Comparison of Net Present Value by Supply Option
All Member Payments to Cascade
 2023-2100 (\$ millions)



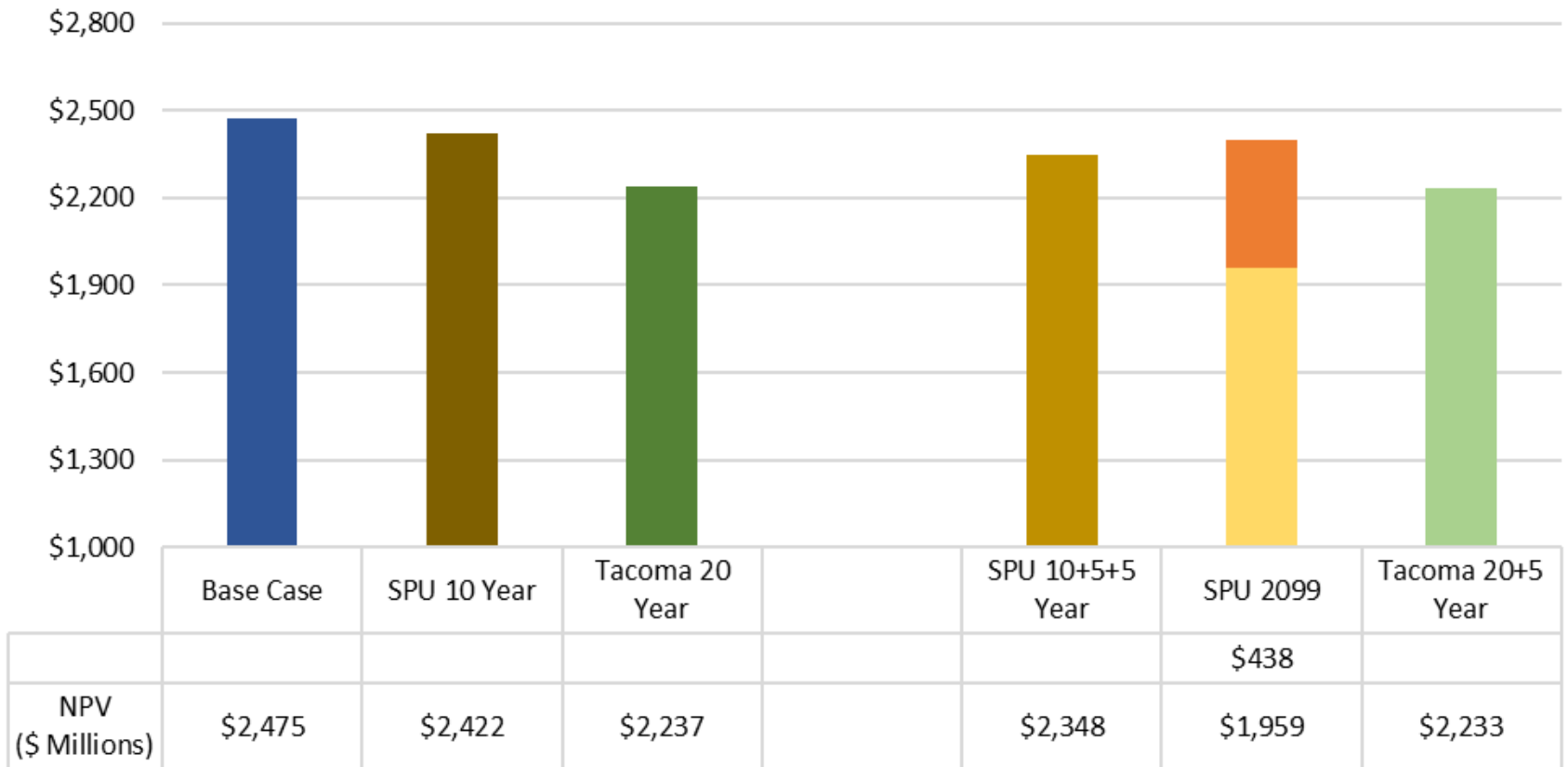
					\$507		
NPV (\$ Millions)	\$2,947	\$2,910	\$2,696		\$2,815	\$2,062	\$2,648

Projected RCFC

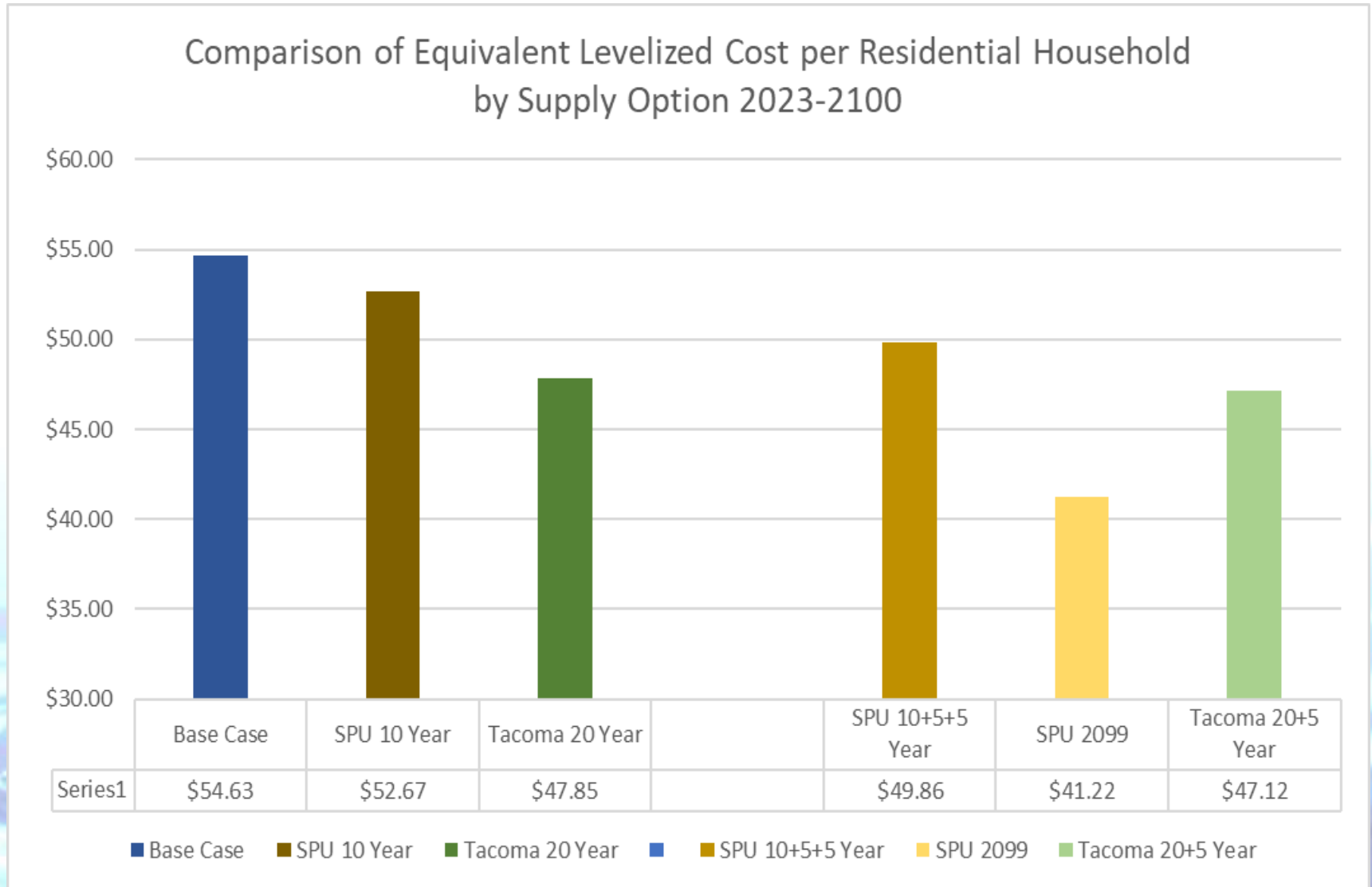


Net Present Value of Supply Scenarios

Comparison of Net Present Value by Supply Option
 Member Charges ***excluding RCFCs***
 2023-2100 (\$ millions)

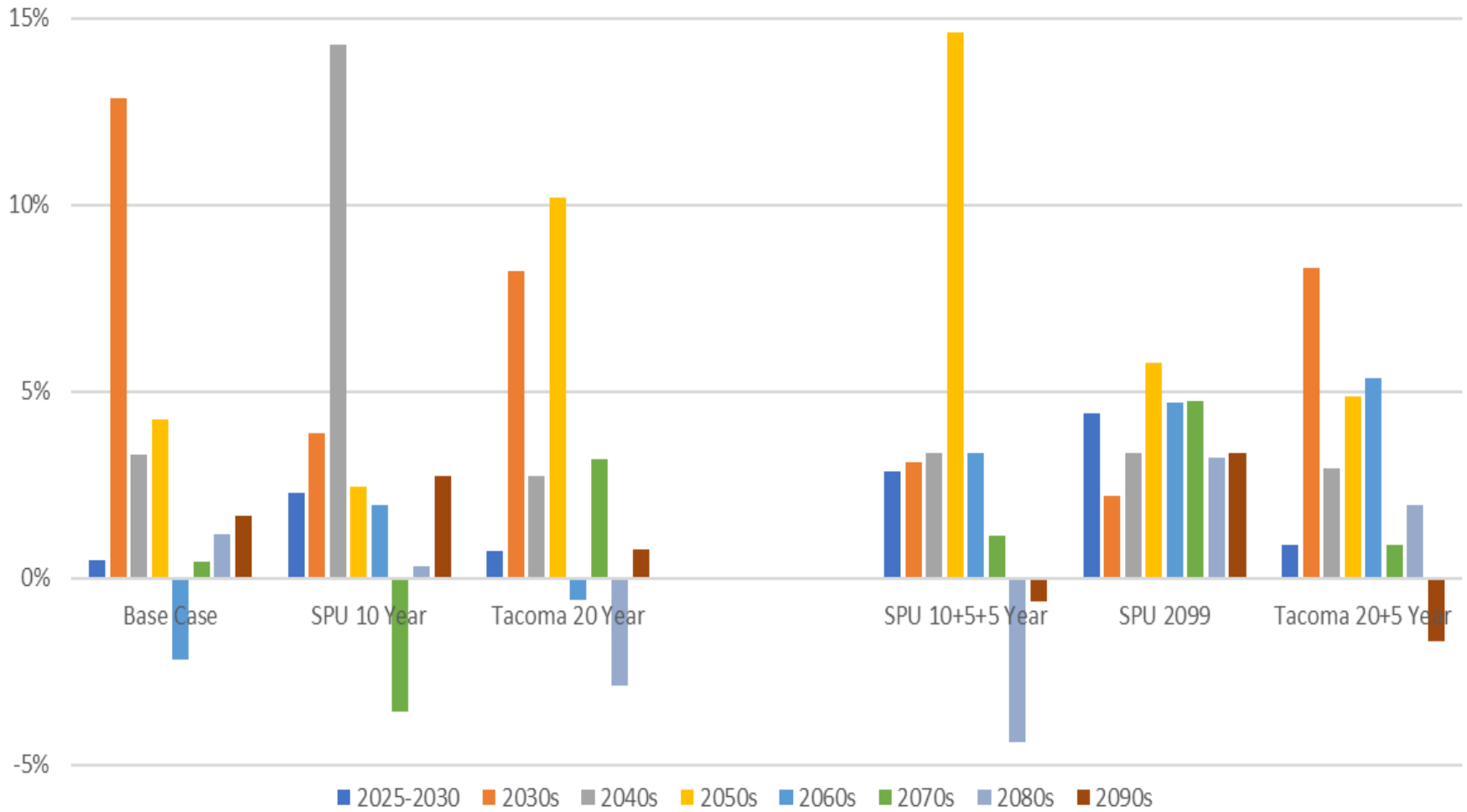


Cascade Present Value Unit Cost: Levelized \$/Month/CERU

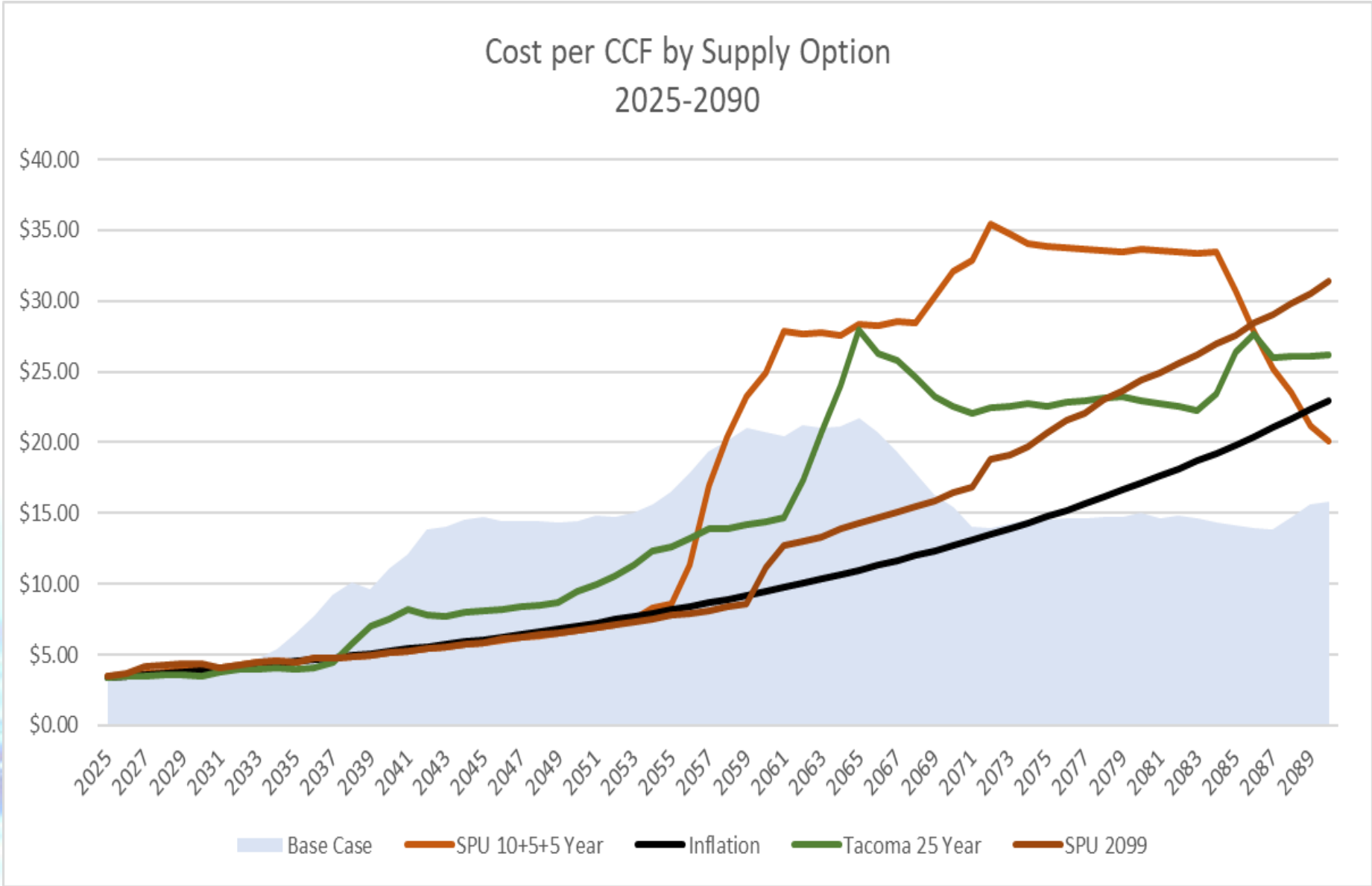


Cascade Rate Profile

Average Annual Rate Increase by Supply Option
by Decade 2023-2090



Cascade Rate Trends: SPU & TPU Compared



Findings Regarding New Proposals

A. Seattle extensions can provide significant savings

- Savings are dependent on *elimination* of Lake Tapps supply development
- Remain solely dependent on the Seattle system
 - No connections to other systems
 - No competitive pressure
 - Supply options remain limited
 - No progress toward Lake Tapps supply development
- Savings are entirely at risk due to conditional thresholds for extensions
 - Subject to conservative standard for supply availability
 - Much of savings is in RCFCs, not rates
 - Disrupts financial planning and RCFC basis
- Transfer to wholesale contracts
 - Only available to individual members
 - Revises Cascade vision and purpose
 - Added layers of new supply costs
- If not extended, concentrates Lake Tapps development due to limited lead time on extension availability
 - Inhibits WSDf and other financial tools
 - Adequate access to debt markets is unlikely
 - Adds \$500m to NPV results for scenario

Findings Regarding New Proposals

B. Tacoma extension can provide added savings and benefits

- **Requires increased contract supplies**
 - Not available from Tacoma via Second Supply pipeline
 - Numerous options for augmenting supply for limited term
- **Extension of reduced capacity allows further deferral of Lake Tapps expansion**
 - Moderate rate trends spread out over more time
- **Regionalization and improved resiliency & reliability**
- **Greater flexibility of supply and transmission options now and in the future**
 - Can consider 2 pipeline options with improved rate outcomes and system reliability
 - With transmission in place, multiple options for future supplies
- **Best financial performance of options examined**
 - When considering reliability of outcomes as well as financial and rate results



Update on Water Contract Supply Options “Deep Dive”

December 11, 2023

Outline of Review

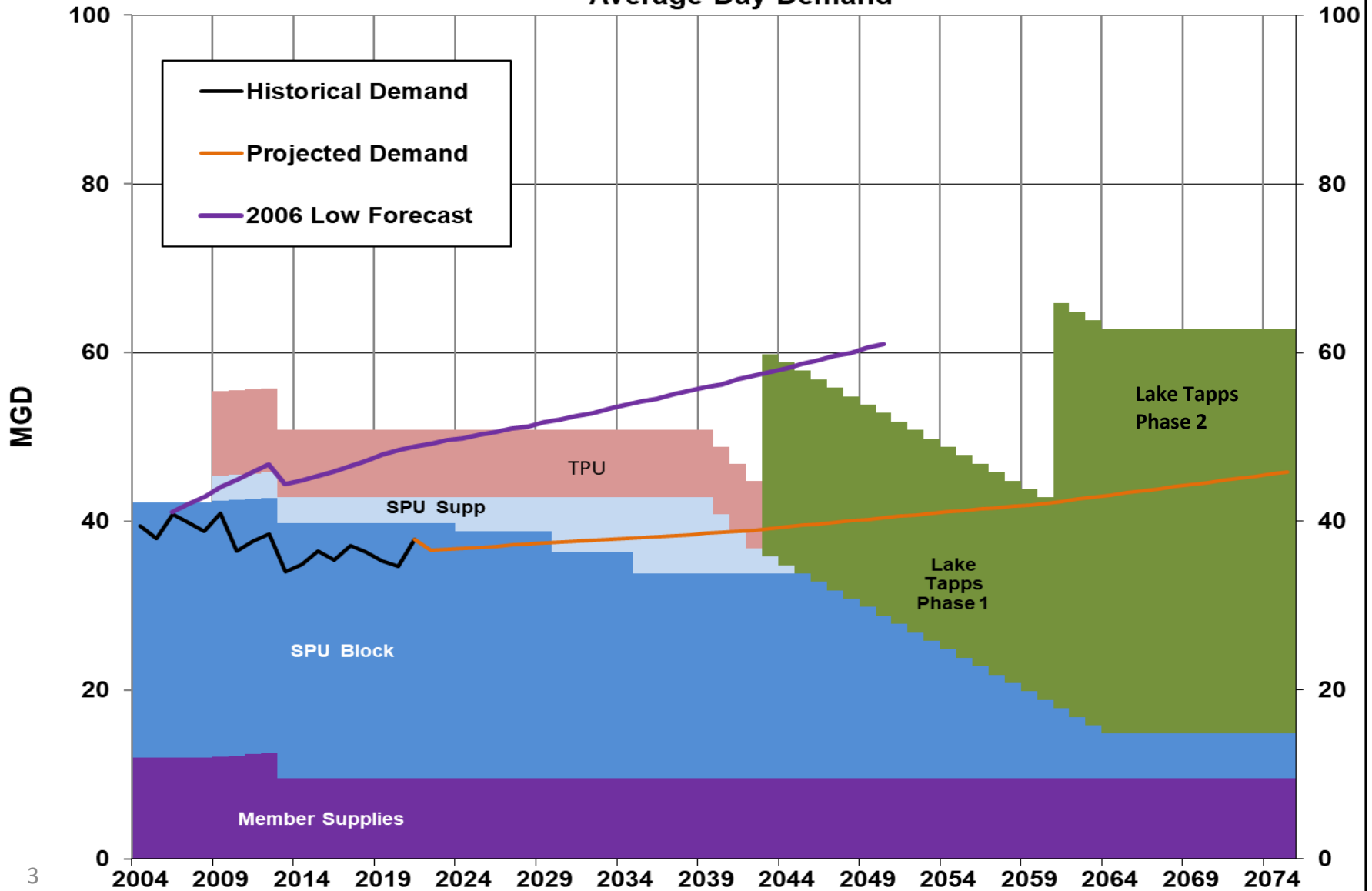
- 1. Detailed Review of Cascade Supply Strategy**
- 2. Updated Contract Proposals**
 - A. Seattle**
 - B. Tacoma**
- 3. Summary of Contract Options**
- 4. Evaluation of Supply Scenarios**
- 5. Preliminary Recommendations**



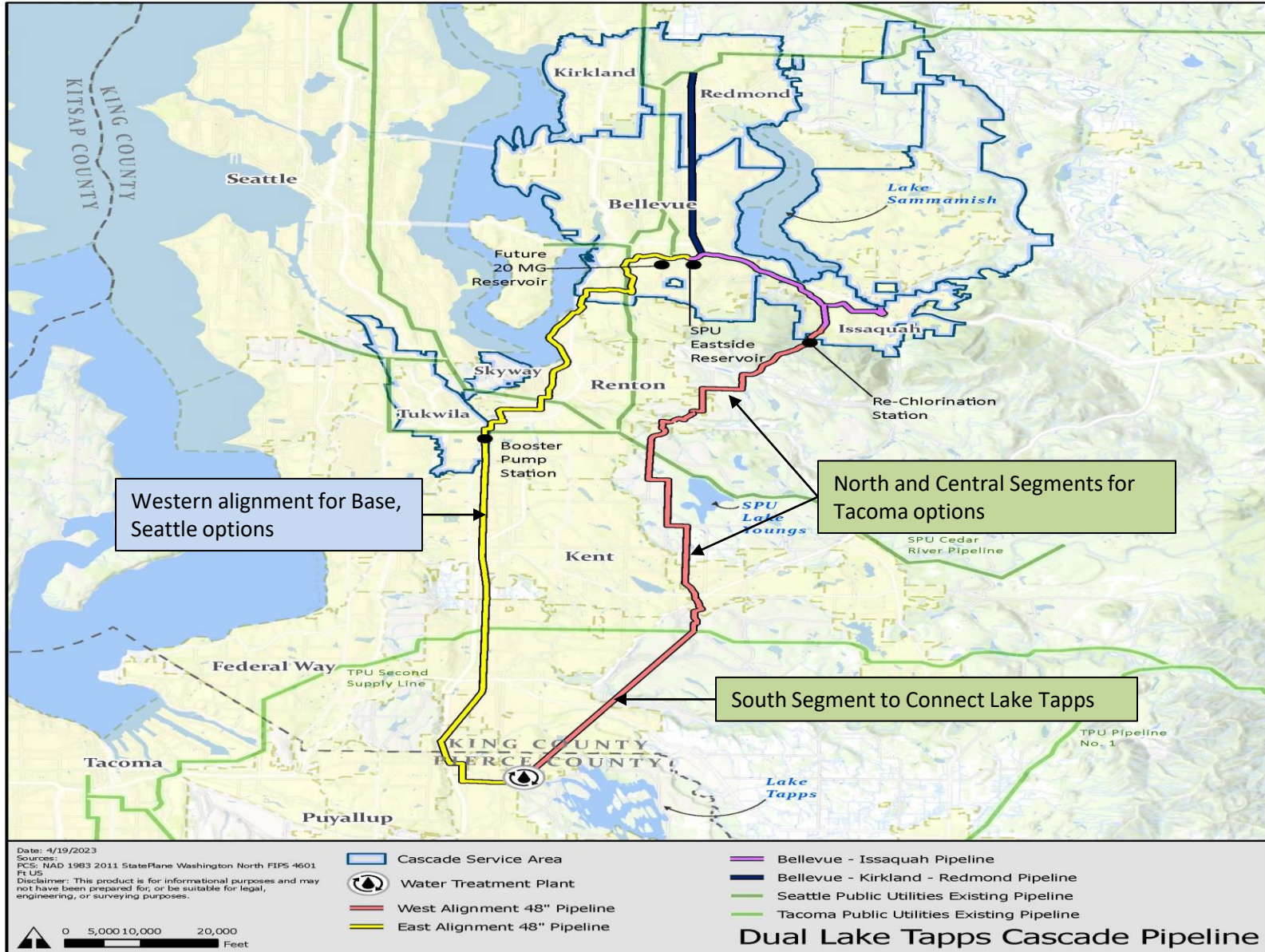
Cascade Supply & Demand Forecast

Base Scenario: Lake Tapps 2042

Average Day Demand



Potential Supply System





Summary of Prior Terms

	Current Contract	Seattle 10 Year Extension	Tacoma 20 Year Supply Contract
Term	Declining block through 2063	Declining block through 2063	Full capacity thru 2060, then 50% thru 2075
Capacity	33.3 MGD Average	33.3 MGD Average	20 MGD Average/30 MGD Peak
	63 MGD Peak	63 MGD Peak	
	Annual decline of 3 mgd 2040-2042 then 1 mgd	Annual decline of 3 mgd 2050-2055, 2 mgd 2056 then 1 mgd	2061-75 10/15 MGD
Rate / Financial Features	Slow transition to higher cost wholesale rates.	Rapid transition to higher cost wholesale rates.	Cost-Based rate defined; roughly 20% below Seattle
	Last “Transition payment” of \$5 million in 2024	Added transition payments of \$5 million in 2026, 2028, 2030 and 2033	Rate structure includes ready to serve and volume charge (25%/75%)

Seattle's Proposals



Summary of Seattle's Proposals

	Seattle 10 Year Extension (Prior)	Seattle 10 Year plus 2 5-Year Extensions	Seattle 10 plus 10 plus 40 years
Term	Declining block through 2063	Declining block through 2073 Requires 2 extensions Conditional extensions not assured; likelihood <50%?	Block through 2059 Requires 3 extensions Conditional extensions not assured; likelihood <50%
Capacity	33.3 MGD Average	33.3 MGD Average	33.3 MGD Average, 63 MGD Peak through 2059
	63 MGD Peak	63 MGD Peak	No limit after 2059
	Annual decline of 3 mgd 2050-2055, 2 mgd 2056 then 1 mgd	Annual decline of 1 mgd 2059-2061, then ~2.1 mgd through 2072	
Rate / Financial Features	Rapid transition to higher cost wholesale rates.	Rapid transition to higher cost wholesale rates.	Rapid transition to higher cost wholesale rates.
	Added transition payments of \$5 million in 2026, 2028, 2030 and 2033	Added transition payments of \$5 million in 2026, 2028, 2030 and 2033	Transition payments of \$5 million in 2026, 2028, 2030 and 2033 Assumed 30% rate premium after 2059 (new supply charge)

Details of the Latest Seattle Proposal

1. 10 Year Extension under terms already offered

A. Modest revision to declining block pattern

- i. Allows additional 2 year delay in LT development**

2. Introduces Conditional 5 Year Extensions

A. Trigger Dates in 2034, 2039 would extend to 2054 or 2059

B. Must meet supply adequacy threshold under a highly conservative estimate

- i. At each trigger date, projected supply/demand balance at the extended end date must exceed XX mgd or no extension**

- a) Supply is System Firm Yield at trigger date**

- b) Demand is 3 year average projected for PSRC growth at then-current demand per capita**

- c) Margin (XX) is yet to be determined**

- ii. Likelihood of extensions is moderate to low under this structure**

Details of the Latest Seattle Proposal

3. Introduces Conditional Conversion to Full & Partial Contracts

A. Offered only to individual members, not Cascade

B. Only available if:

- i. 2 prior extensions were exercised and;**
- ii. In 2043, projected supply/demand balance in 2063 exceeds YY mgd (tbd)**

C. Provides a 40 year contract through 2060-2099

D. Rate Premium (or equivalent lump sum payment) to offset new supply costs borne by Seattle

- i. Intended to offset (pay for) new supply costs to be incurred**
- ii. Premium tbd, but likely 25-35%**

E. Cascade obligations remain, buy-outs required if members leave

How Are We Evaluating Seattle's Updated Proposal?

Analyze 3 Seattle Scenarios

- 1. *Original 10 Year extension: no change***
- 2. *10 Years with Two 5 year Extensions (total 20 years thru 2059)***
 - a) Assumes the threshold conditions for extensions are met**
 - b) Cost of block remains equivalent to Seattle's wholesale rates (F&P)**
- 3. *10 + 10 plus 40 year wholesale contract***
 - a) Assume all members transfer to new contract**
 - i. Lake Tapps supply is not developed**
 - ii. For analysis, treat it as if Cascade pays wholesale costs**
 - b) Assume all members also remain in Cascade**
 - i. Other Cascade costs and obligations remain**
 - ii. If not, members would owe "make whole" buy-out charges to Cascade to leave**
 - c) Assume 30% rate premium beginning 2060**
 - i. Intended to compensate for costs of new Seattle supplies**
 - a. Lake Tapps is not a supply option**
 - d) Assume no new transition payments or facilities charges**

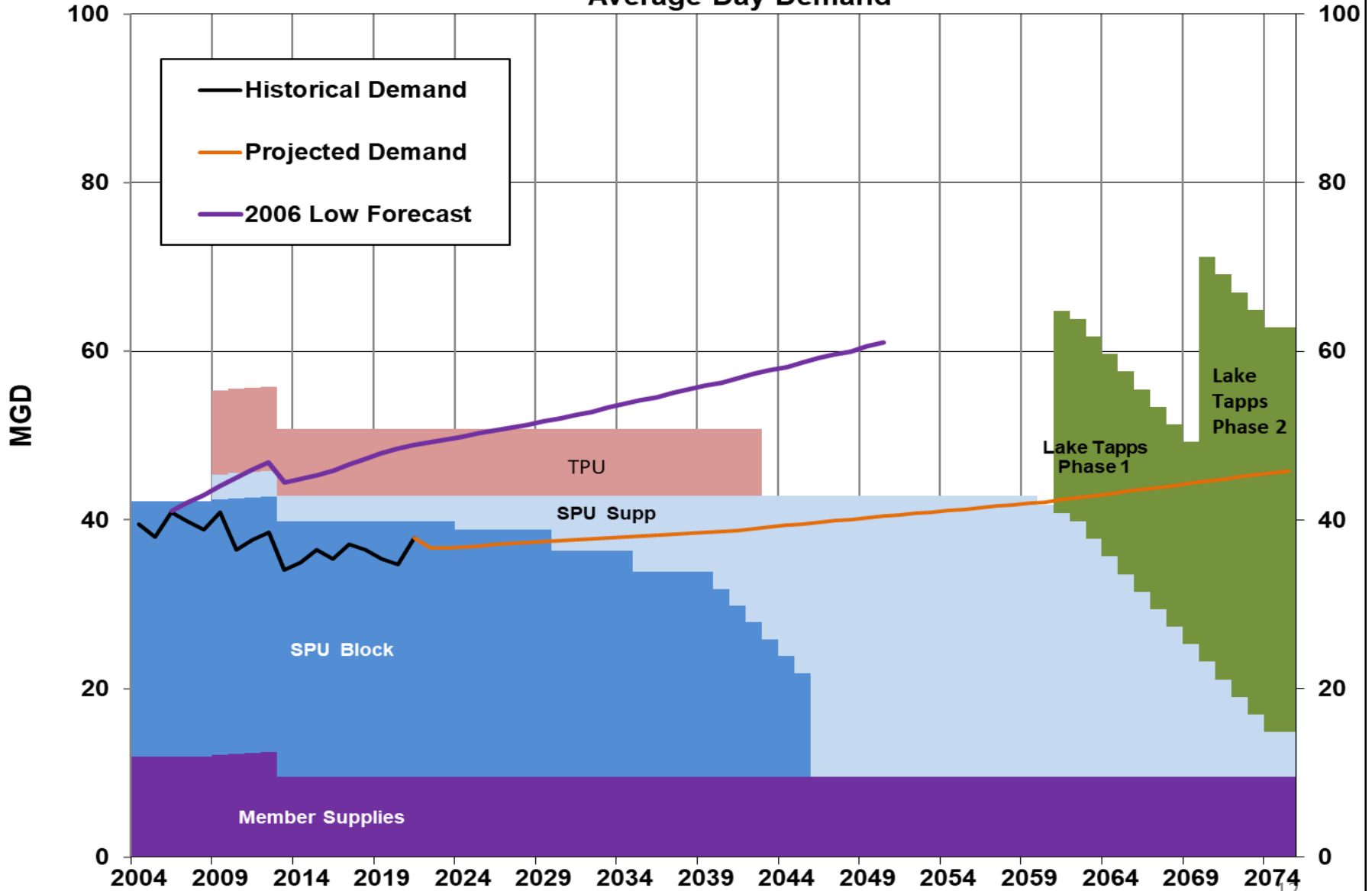
Key Analytical Assumptions for the Seattle Scenarios

- 1. Assume 3% annual wholesale rate escalation = inflation assumption**
 - a) Transition into higher cost block until roughly equal to F&P for actual volumes**
- 2. New lump sum transition payments = \$14m NPV: \$5m in 2026, 2028, 2030 & 2033**
- 3. No other payments or surcharges**
- 4. Revised RCFC forecast based on deferred or removed CIP**
 - a) RCFCs are lower due to delayed or removed CIP**
- 5. Modified declining block per SPU proposals**
- 6. Lake Tapps supply**
 - a) Deferred until needed in 10 year (2049), 10+5+5 (2061)**
 - b) Not constructed in 2099 scenario**
 - i. Assume permanent reliance on Seattle**
 - ii. If constructed for transition in 2100, adds ~\$500m NPV to scenario cost (virtually all in rates)**



Cascade Supply & Demand Forecast Seattle 20 Year Extension

Average Day Demand



Seattle Key Unknowns

1. Whether threshold criteria for 5 year extensions would be met
2. Whether threshold criterion for 40 year conversion would also be met
3. If additional lump sump transition payments would be due (*assume NO*)
4. If facilities charge payments would become applicable (*assume NO*)
5. What rate premium would apply after 2060 (ballpark estimate of 20-35%)
 - a) *Assume 30%*
6. How future capital projects/costs may impact wholesale rates
7. Potential impacts on supply yields due to climate change
8. Possible impacts of deferral on Lake Tapps supply development feasibility and cost if ultimately needed

Tacoma's Proposals



Summary of Tacoma's Proposals

	Tacoma 20 Year Supply Contract (Prior)	Tacoma 25 Year Supply Contract
Term	Full capacity thru 2060, then 50% thru 2075	Full capacity thru 2065, then 50% thru 2085 Requires added capacity for 5 or more years (multiple options, assumed at TPU pricing) Extension not assured but multiple options available; likelihood >80%
Capacity	20 MGD Average/30 MGD Peak	20 MGD Average/30 MGD Peak through 2065
	2061-75 10/15 MGD	2065-85 10/15 MGD
Rate / Financial Features	Cost-Based rate defined; roughly 20% below Seattle	Cost-Based rate defined; roughly 20% below Seattle
	Rate structure includes ready to serve and volume charge (25%/75%)	Rate structure includes ready to serve and volume charge (25%/75%)

What Has Changed from Tacoma?

Prior Terms:

- 1. 20 Year full capacity plus 15 years at 50%; supply available beginning in 2041**
- 2. Contract Capacity of 20 MGD average, 30 MGD peak through 2060**
- 3. 50% Capacity from 2060 to 2075 (10 MGD average, 15 MGD peak)**
- 4. Defined rate methodology and terms; about 20% below Seattle at present**

Latest Proposal:

- 1. Extends 20/30 MGD through 2065 or 2070; 10/15 MGD through 2085 (or longer)**
- 2. Same rate methodology**
- 3. Capacity reservation charge beginning around 2030**
 - a) Begins when current payments to Tacoma declines**
 - b) Pricing to be determined but should be on the order of \$500k per year**
 - c) Payments will credit against future water purchases**

What Has Changed from Tacoma?

- 4. Problem: Cascade needs more supply after 2060 as Seattle block continues to decline: roughly 5 MGD average and 10 MGD peak**
 - a) Tacoma SSP capacity is constrained as usage increases**
 - i. Adequate supply is still available, but**
 - ii. Peak transmission capacity is reached in SSL**
 - b) More supply may be available through:**
 - i. shares owned by Second Supply partners (Covington, Kent and Lakehaven)**
 - ii. upgrades to Tacoma system**
 - i. Pumping**
 - ii. In-system upgrades to enable alternate delivery to SSP partners**
 - iii. modified Seattle ramp down and/or extended term**
 - iv. other potential suppliers**

How Are We Evaluating Tacoma's Updated Proposal?

Analyze 2 Tacoma Scenarios

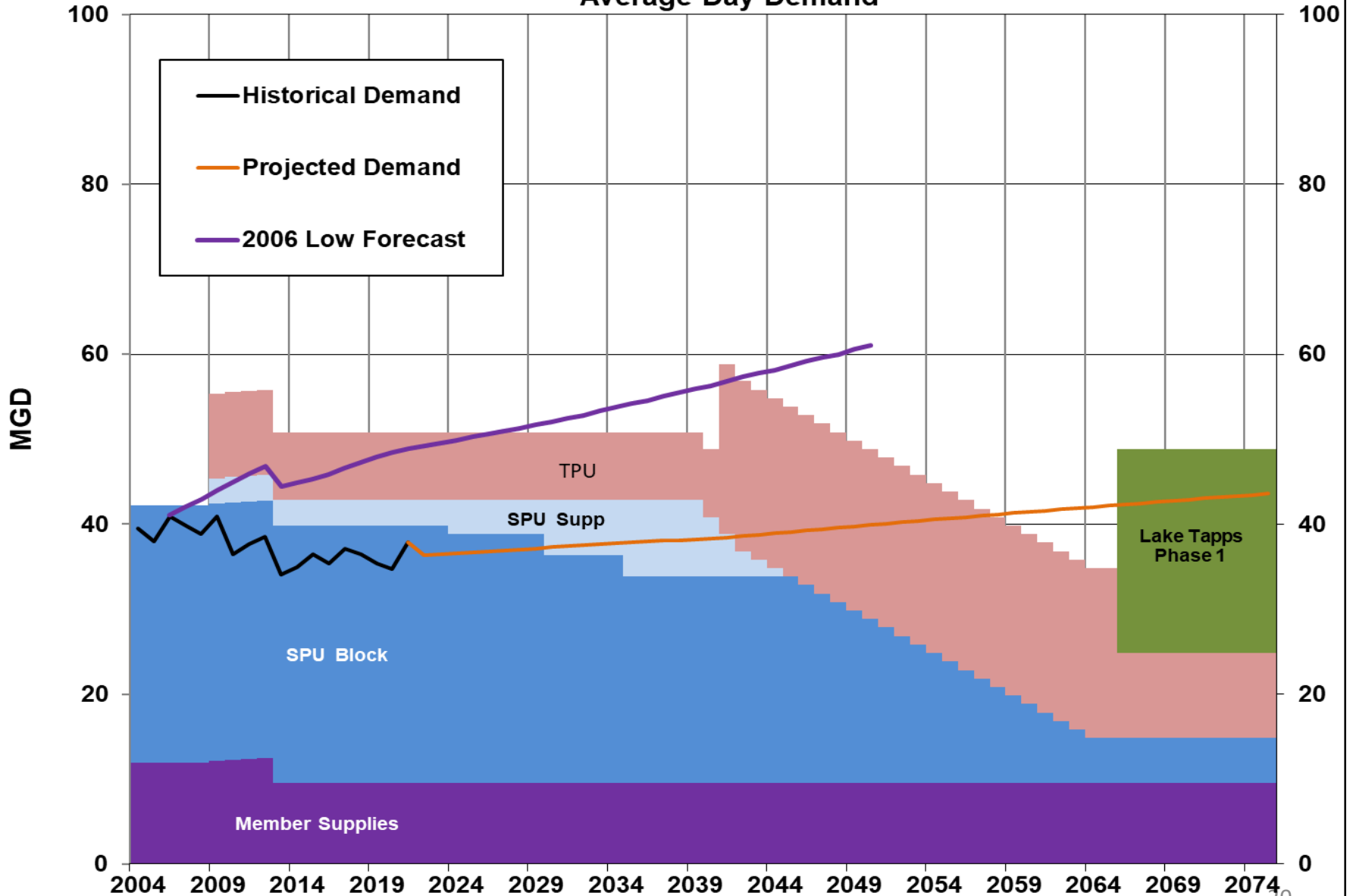
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- 2. 25 Year term at full capacity through 2065***
 - a) Factor in capacity reservation payments**
 - b) Assume expanded capacity after 2060 to meet Cascade demands**
 - i. Priced at Tacoma wholesale rate**
 - ii. No other added costs or investments to secure added supply**
 - c) Additional 20 year term at 50% capacity (through 2085)**
 - i. Allows Cascade to delay Phase 2 of Lake Tapps until 2085**
 - ii. Delivers both Tacoma and Lake Tapps water to Cascade members**

Key Analytical Elements for the Tacoma Scenarios

- 1. *Assume 3% annual wholesale rate escalation = inflation assumption***
 - a) *Starting rate (2023) of \$1.71 per CCF***
 - b) *Rate split between fixed (ready-to-serve) and variable (25%/75%)***
- 2. *Revised RCFC forecast based on deferred CIP***
 - a) *RCFCs are moderately lower due to delayed CIP***
- 3. **Two-Tier Supply Commitment****
 - a) **Full supply (20/30MGD) until 2060 or 2065****
 - b) **50% supply (10/15) until 2075 or 2085****
 - i. **Allows delay of LT phase 2 until expiration****
- 4. **Tacoma cannot expand beyond 20/30 MGD****
 - a) **Limited Tacoma share of Second Supply Line capacity****
 - b) **Limited hydraulic capacity in SSL****



Cascade Supply & Demand Forecast Tacoma Supply Agreement Average Day Demand



5. For 25 year scenario, Cascade needs additional supply after 2060

- a) Roughly 5/10 MGD for 5 years through 2065
- b) Assumed available at Tacoma wholesale rate
- c) Potential sources of added supply for limited term
 - i. Purchase from Tacoma partners if available (Covington, Kent, Lakehaven)
 - ii. Add pumping to increase SSL capacity
 - iii. Modify Tacoma delivery capacity to Lakehaven from south
 - iv. Modify Seattle declining block (buy water from Seattle)
 - v. Assume risk, pay Seattle penalties

6. Lake Tapps Supply

- a) Deferred until needed in 20 year (2059), 25 year (2065)
 - i. Phase 2 treatment in 2075 or 2085, respectively

Tacoma Key Unknowns

1. Where added capacity after 2060 would be found
 - a) *Best Case: Available from Tacoma and/or its partners*
 - b) *Worst case: back to the 20 year contract schedule for Lake Tapps development*
2. Terms for capacity reservation payment (***assume \$500k beg. 2030***)
3. Potential benefits/savings from regional interconnection (incl. financial) (***assume none***)
4. How future capital projects/costs may impact wholesale rates
5. Potential impacts on supply yields due to climate change
6. Possible impacts of deferral on Lake Tapps supply development

Comparison of Tacoma's and Seattle's Latest Proposals

Summary of Risk Assessment

Risk Factor	Description	Base Case	<i>Seattle 10 +5 +5 year</i>	<i>Seattle 10 +10 + 40 year</i>	<i>Tacoma 20 + 5 Year</i>
OVERALL	<i>Rough Composite of Risks Below</i>	HIGH RISK	HIGH TO MODERATE RISK	HIGH RISK	MODERATE RISK
SUPPLY ADEQUACY AND RELIABILITY	Quantity, Flexibility and Resiliency of Supply Portfolio	MODERATE RISK Increases supply diversity and available quantities.	HIGH TO MODERATE RISK Closer balance of supply and demand and reduced supply diversity.	HIGH TO MODERATE RISK Closer balance of supply and demand and reduced supply diversity.	MODERATE TO LOW RISK Increased supply surpluses and diversity and increased future options.
ABILITY TO COMPLETE THE PROJECT	Organizational, Financial and Regulatory Capacity	HIGH RISK Requires major construction projects in parallel with related organizational and financial expansion.	HIGH RISK Requires entire project at once with related organizational and financial expansion. Relaxes permitting schedule.	HIGH TO MODERATE RISK If extension is not provided, requires entire project at once with related organizational and financial expansion.	MODERATE TO HIGH RISK Separates projects into smaller phases, but still requires timely franchise and permitting.
ECONOMIC AND RATE IMPACTS	Overall Cost, Rate Impacts, Generational Equity, and Ability to Manage Financial Outcomes.	HIGH RISK Major construction on tight timeline limits flexibility, imposes high costs during construction period.	MODERATE TO HIGH RISK More flexible schedule, but uncertain extensions, increased front-end costs and reduced equity. Major construction still poses rate challenges.	MODERATE TO HIGH RISK More flexible schedule, but uncertain extensions and increased front-end costs and rate impacts. Major construction could pose rate and funding challenges.	MODERATE TO LOW RISK Separating project phases and stretching timeline improves economics, finances and equity.
LEGAL AND REGULATORY	Contract, Permitting and Legal Risks	LOW RISK No new contracts needed; water rights and diversions in place	MODERATE RISK New contract needed with complex terms for extensions; water rights and diversions in place	MODERATE RISK New contract needed with complex terms for extensions; water rights and diversions in place	MODERATE RISK A new contract needed, plus reliance on multiple watersheds and water rights.

Summary of Financial Results

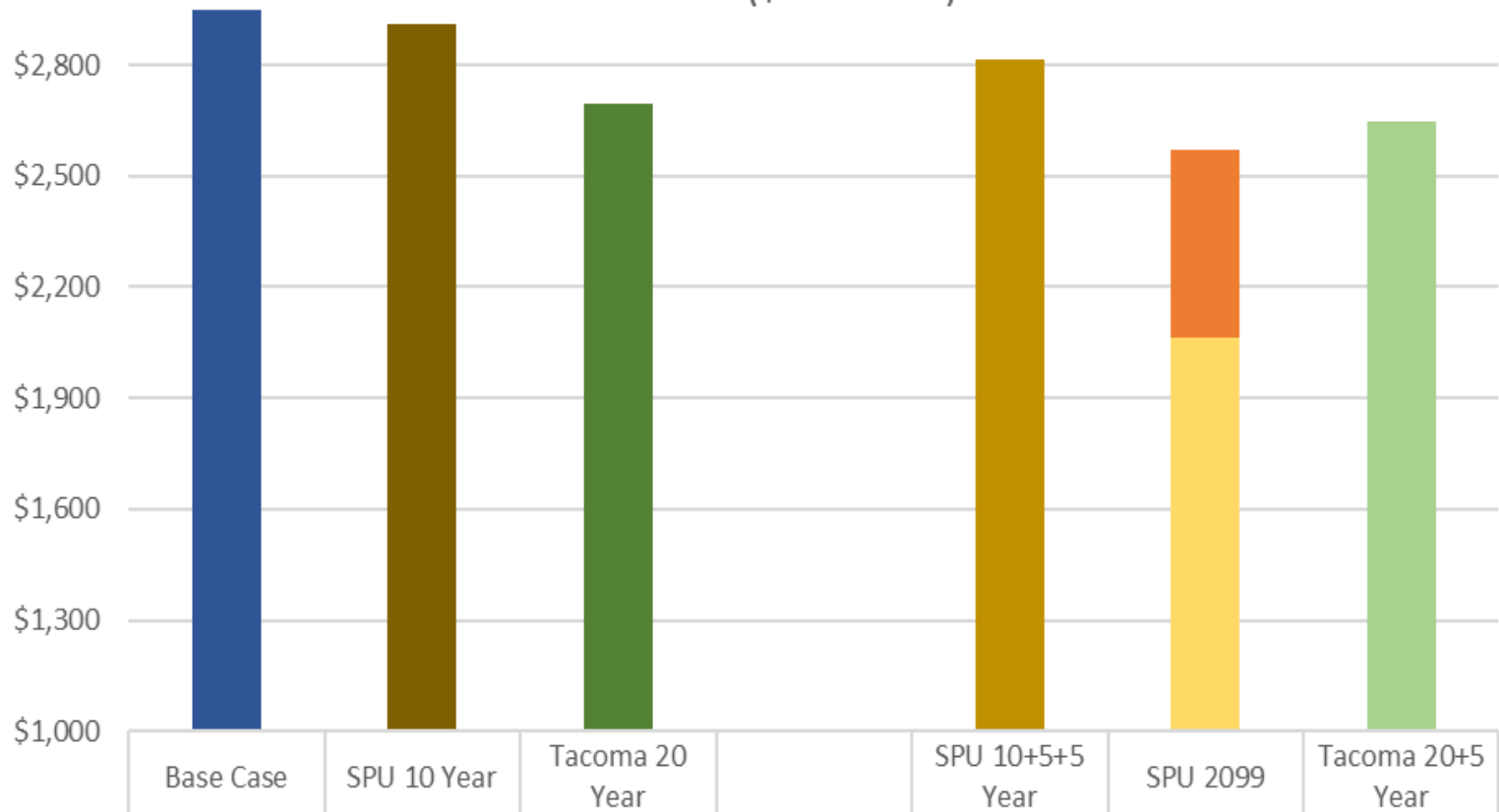
Economic Criterion	Base Case	Seattle 10 Year Extension	Tacoma 20 Year Contract
Total Cost (NPV 2023-2100)	\$2.947B	\$37M savings vs. Base	\$251M savings vs. Base
Unit Cost (Levelized \$/CCF 2023-2100)	\$9.18 per CCF	\$8.86 per CCF	\$8.03 per CCF
Rate Profile	Major rate spike in 2030s during LT construction	Defers but increases rate spike in the 2040's	Moderate rate trends spread out over more time
Financial Performance	80% debt Ph 1 69% total project Rate spike in 2030s	80% debt Ph 1 75% total project Dramatic rate spike in 2040s	73% debt Ph 1 72% total project Small rate spike in 2030s & moderate in 2050s
Stability of Results	In general, sensitivity analyses do not alter relative findings for either Seattle or Tacoma.		
Other	<ul style="list-style-type: none"> \$2.2B in new debt in 2030s WSDF can reduce debt and rate spike 	<ul style="list-style-type: none"> Increased Seattle payments of \$144M (NPV) Higher SPU payments reduces use of WSDF and increases rates 	<ul style="list-style-type: none"> Tacoma payments of \$117M (NPV) CIP spread out over longer period, reduced rate spikes and greater benefit from WSDF

Summary of Financial Results

Economic Criterion	Seattle 10+5+5	Seattle 2099	Tacoma 25 Year
Total Cost (NPV 2023-2100)	\$132M savings vs. Base	\$885M savings vs. Base	\$299M savings vs. Base
Unit Cost (Levelized \$/CCF 2023-2100)	\$8.37 per CCF	\$6.88 per CCF	\$7.90 per CCF
Rate Profile	Major rate spike in 2050s during LT construction	No major rate spikes but steady upward trend	Moderate rate increases spread out over more time
Financial Performance	78% debt Ph 1 77% total project Significant rate spike in 2050s	N/A; no major CIP No major rate spikes	77% debt Ph 1 64% total project Small rate spike in 2030s & moderate in 2050s
Stability of Results	In general, sensitivity analyses do not alter relative findings for either Seattle or Tacoma.		
Other	<ul style="list-style-type: none"> Increased Seattle payments of \$320M (NPV) Higher SPU payments reduces use of WSDF and increases rates 	<ul style="list-style-type: none"> Increased Seattle payments of \$754M (NPV) Avoids roughly \$2B in CIP (unless LT is needed in 2099) 	<ul style="list-style-type: none"> Tacoma payments of \$184M (NPV) CIP spread out over longer period, reduced rate spikes and greater benefit from WSDF

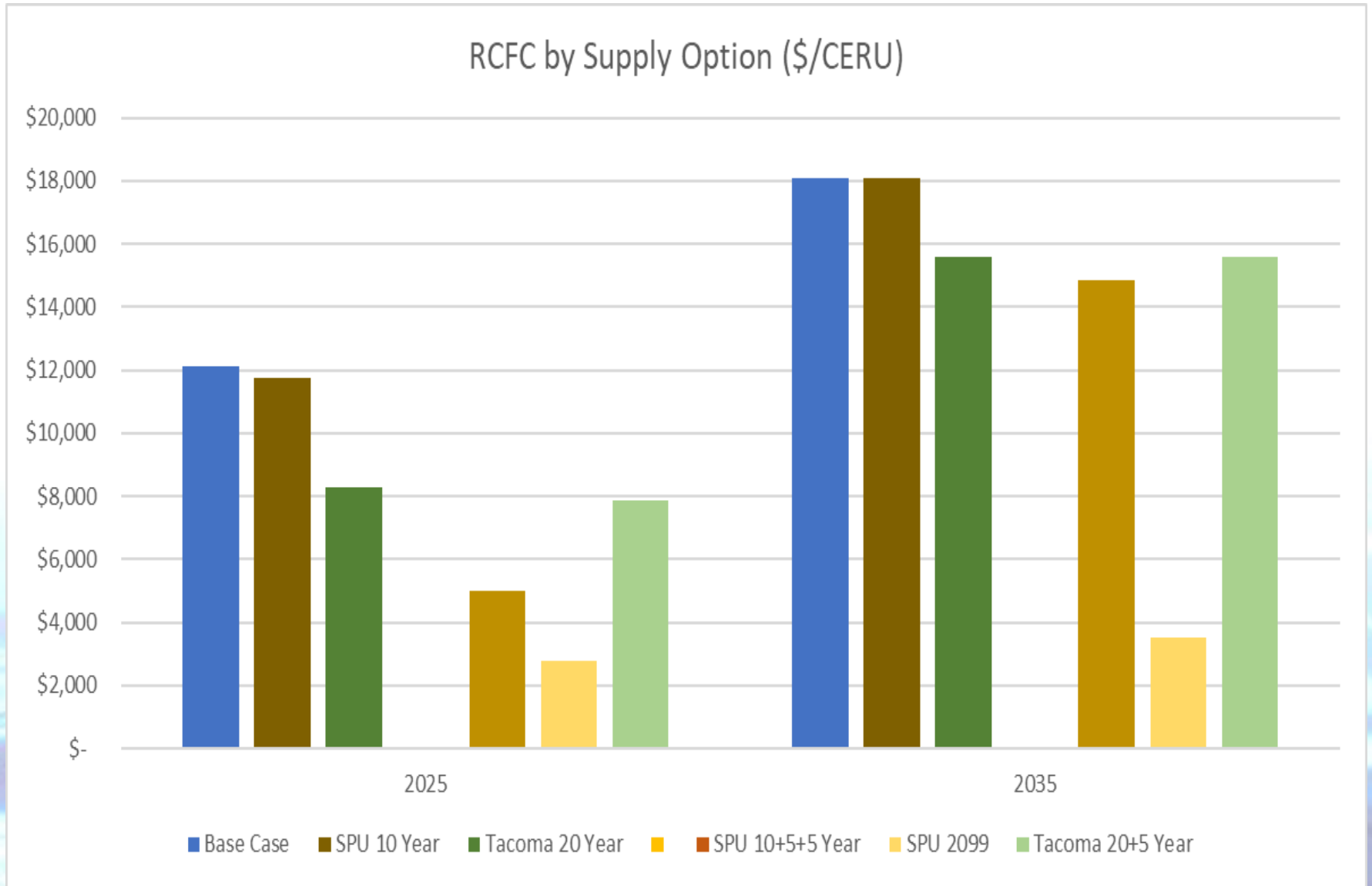
Net Present Value of Supply Scenarios

Comparison of Net Present Value by Supply Option
All Member Payments to Cascade
 2023-2100 (\$ millions)



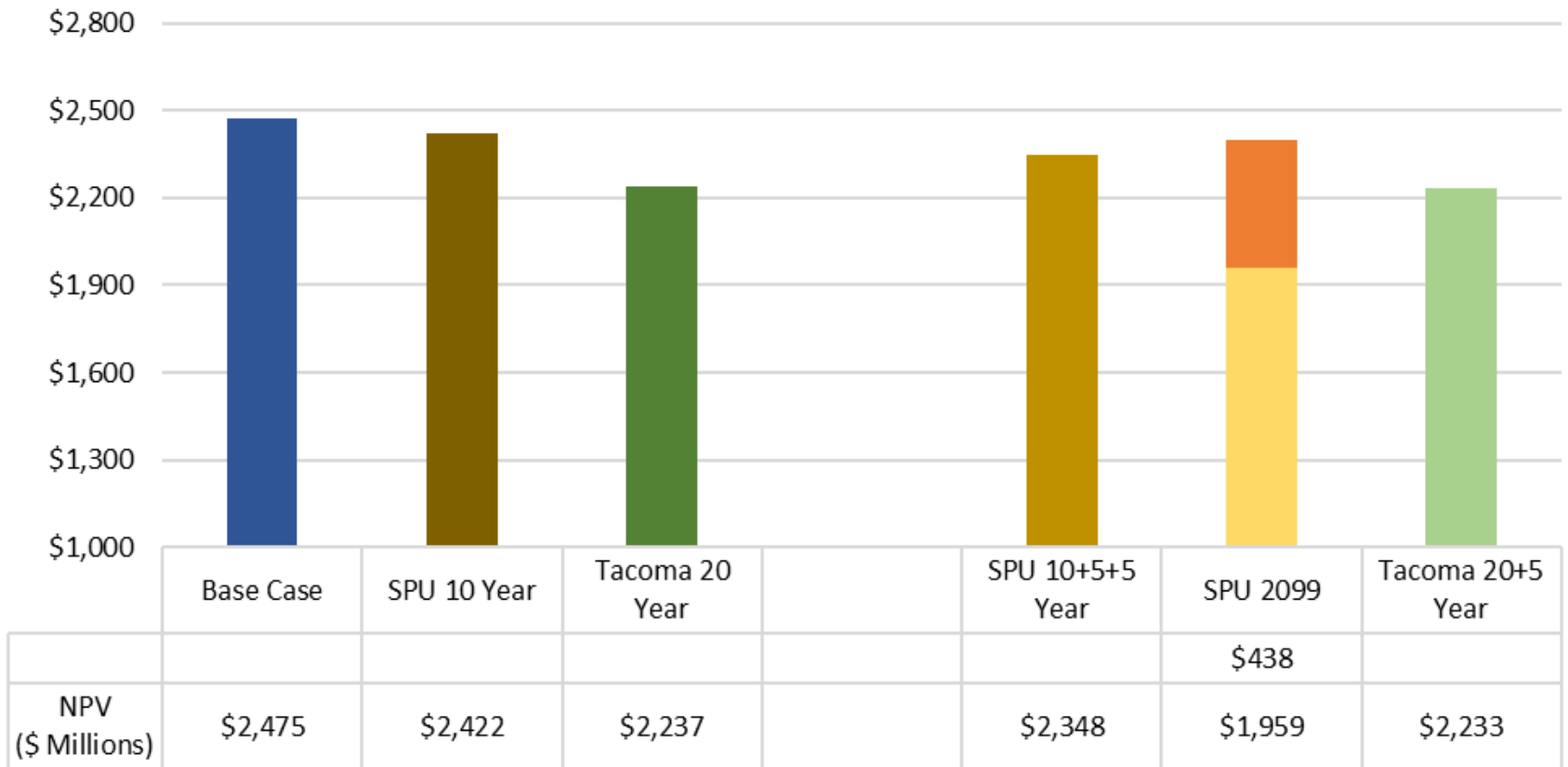
					\$507		
NPV (\$ Millions)	\$2,947	\$2,910	\$2,696		\$2,815	\$2,062	\$2,648

Projected RCFC



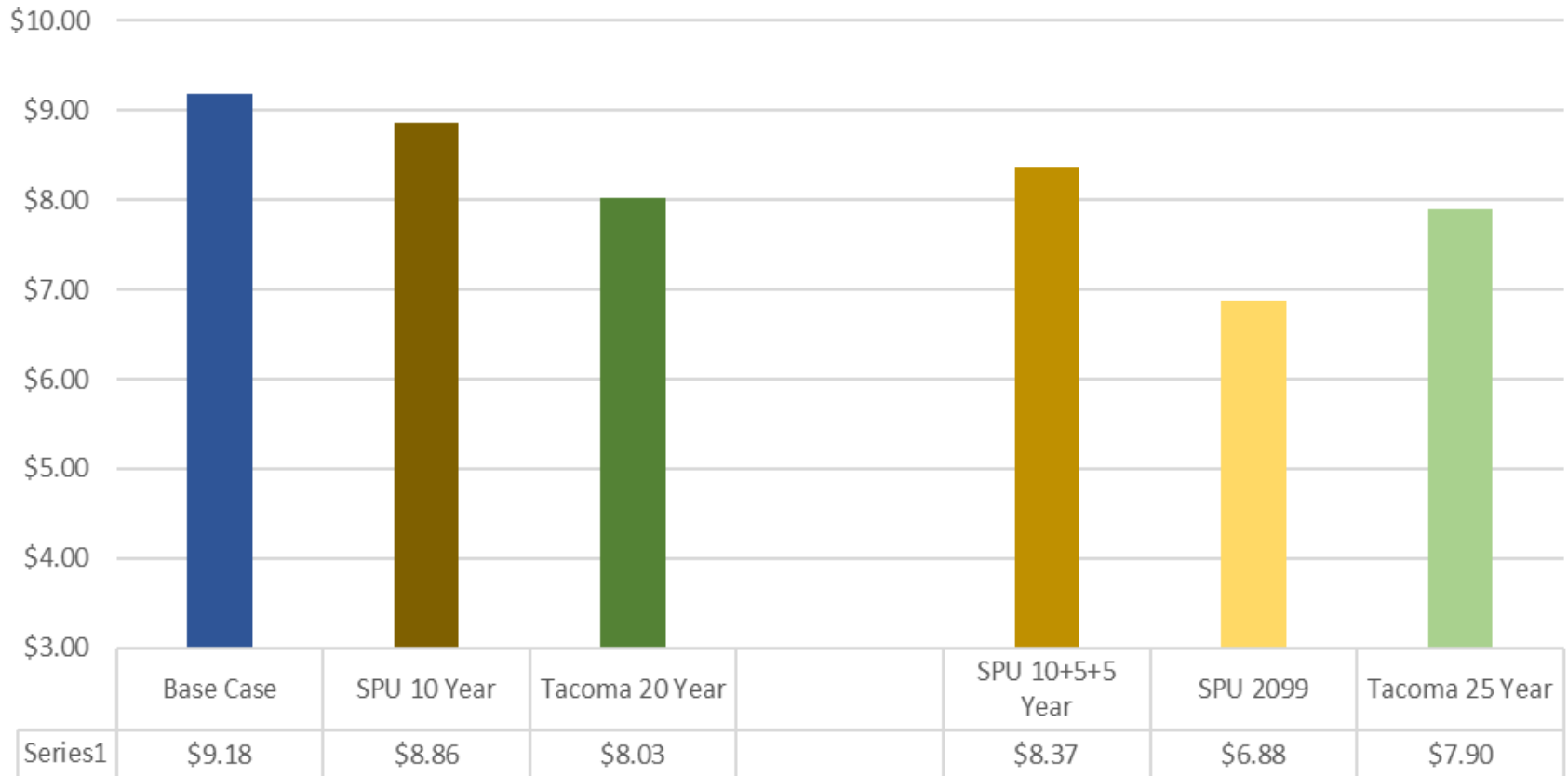
Net Present Value of Supply Scenarios

Comparison of Net Present Value by Supply Option
 Member Charges ***excluding RCFCs***
 2023-2100 (\$ millions)



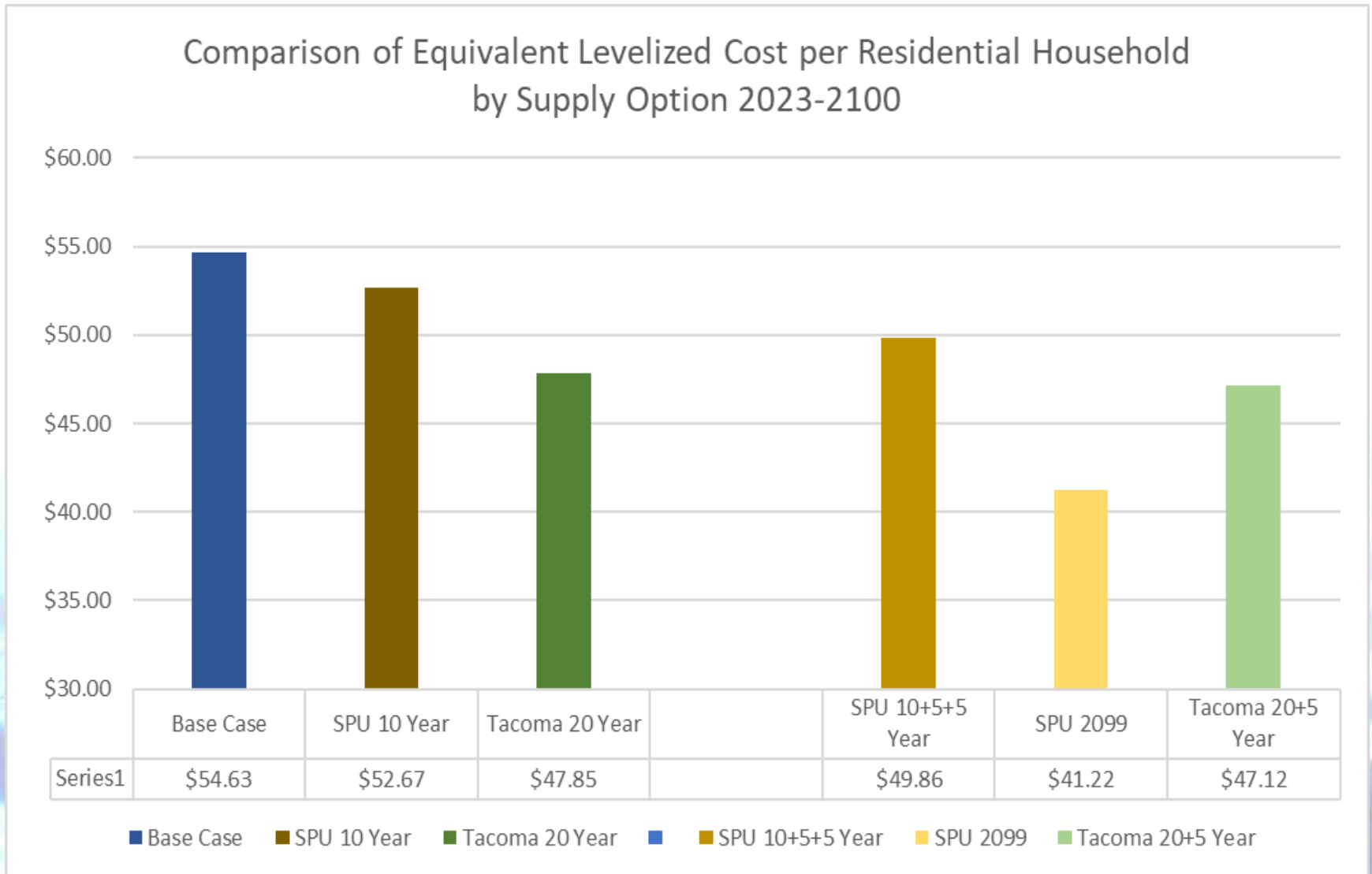
Cascade Present Value Unit Cost: Levelized \$/CCF

Comparison of Equivalent Levelized Cost per CCF
by Supply Option 2023-2100



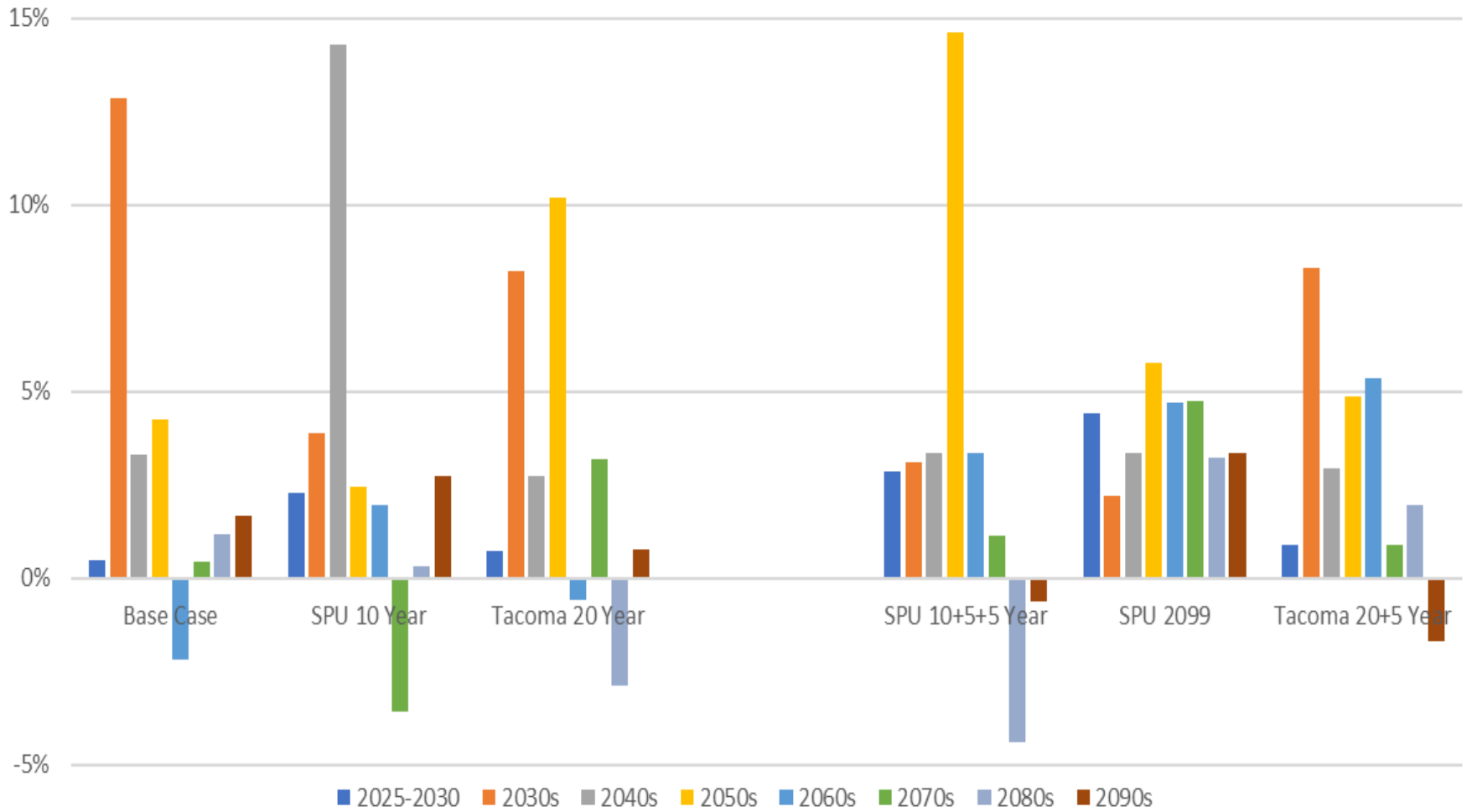
■ Base Case ■ SPU 10 Year ■ Tacoma 20 Year ■ SPU 10+5+5 Year ■ SPU 2099 ■ Tacoma 25 Year

Cascade Present Value Unit Cost: Levelized \$/Month/CERU

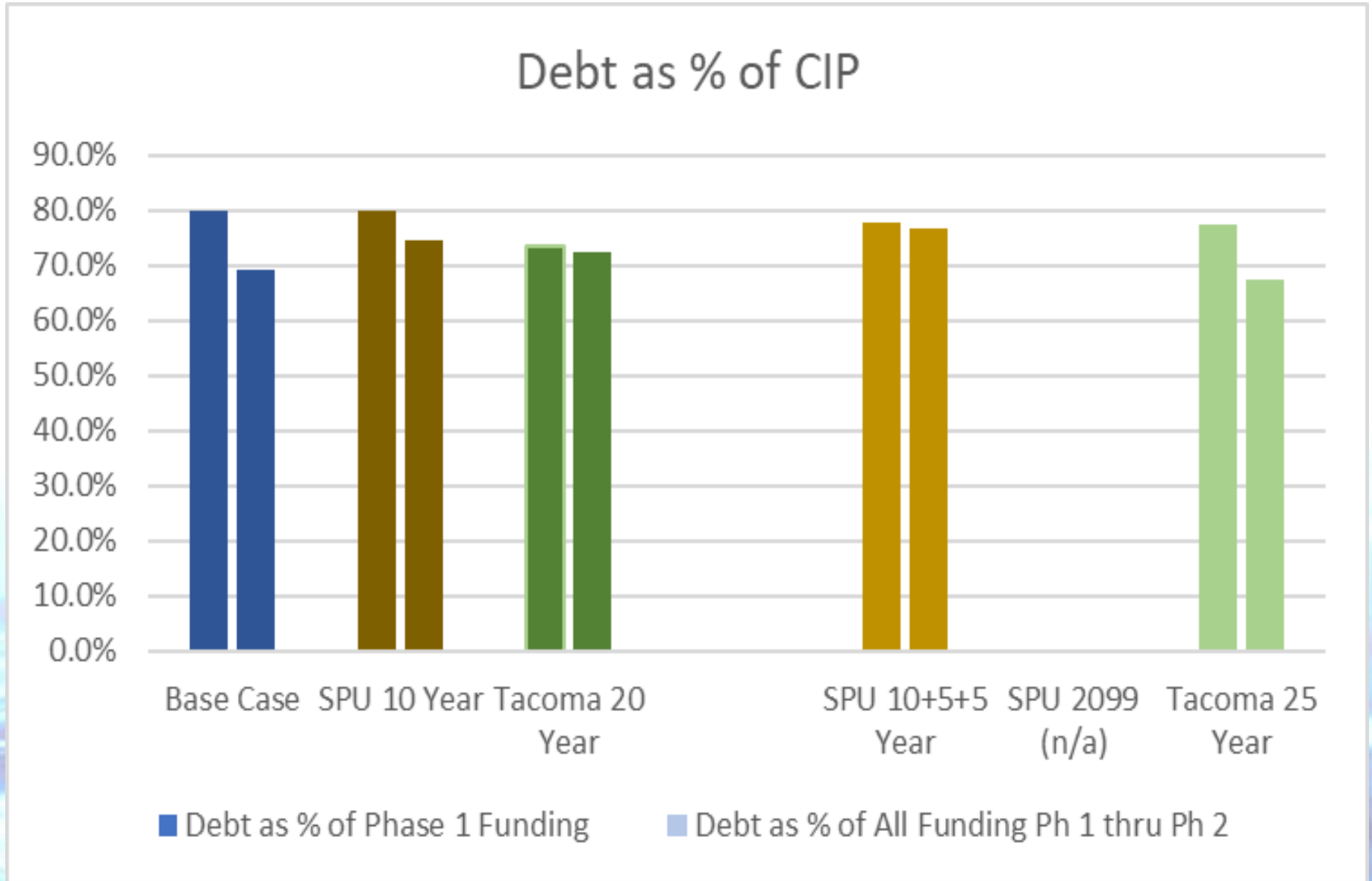


Cascade Rate Profile

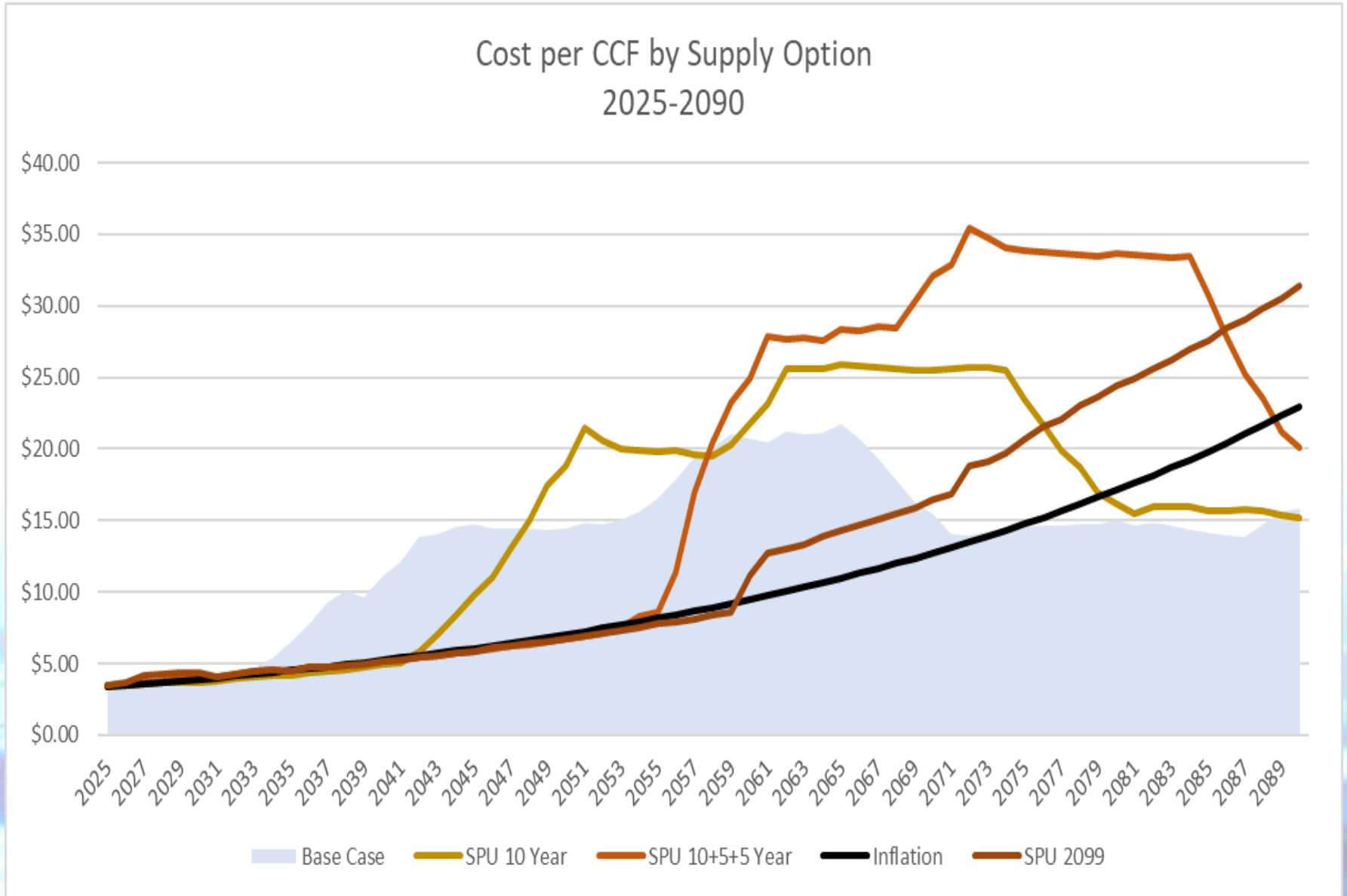
Average Annual Rate Increase by Supply Option
by Decade 2023-2090



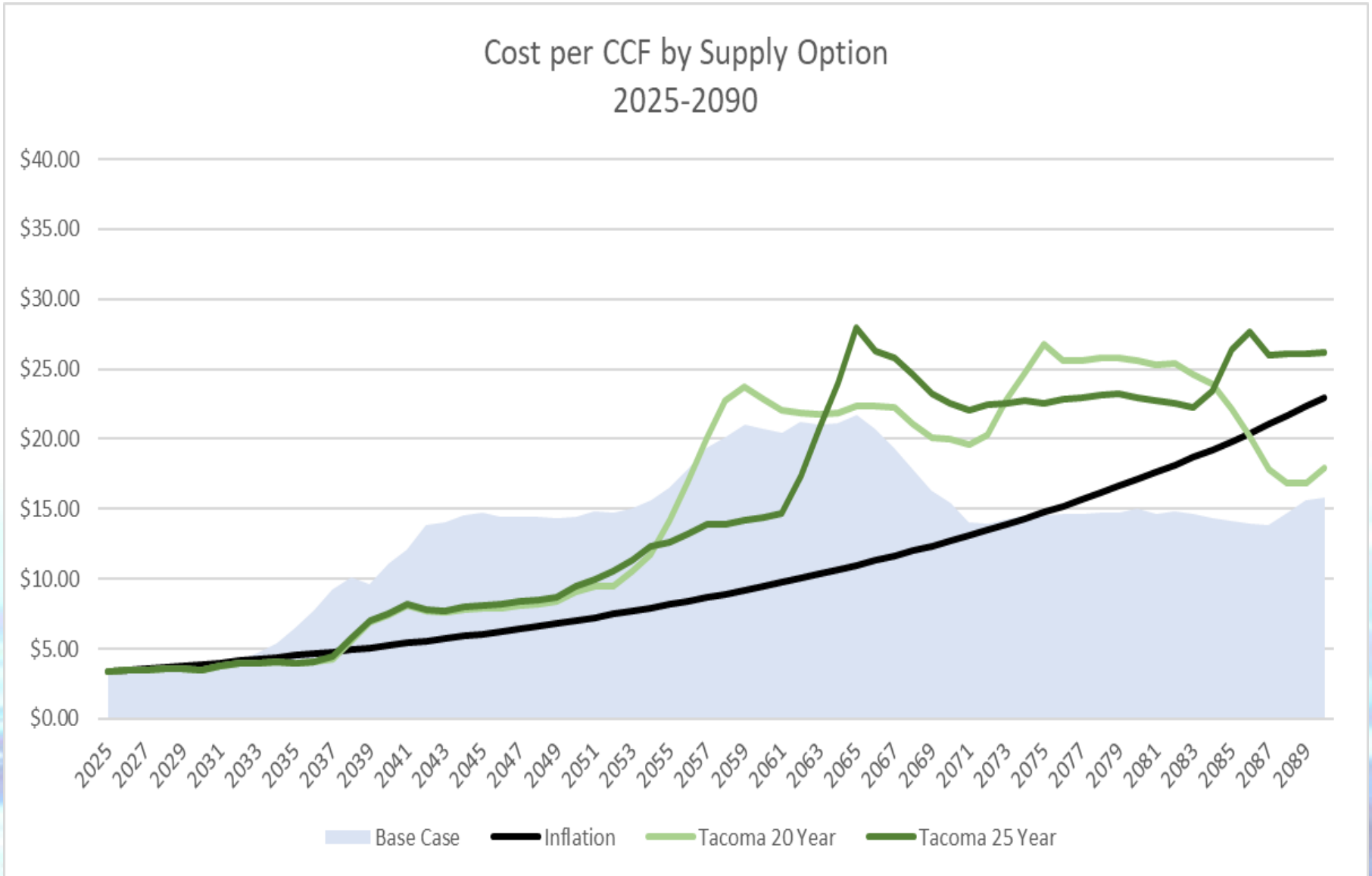
Cascade Debt Profile



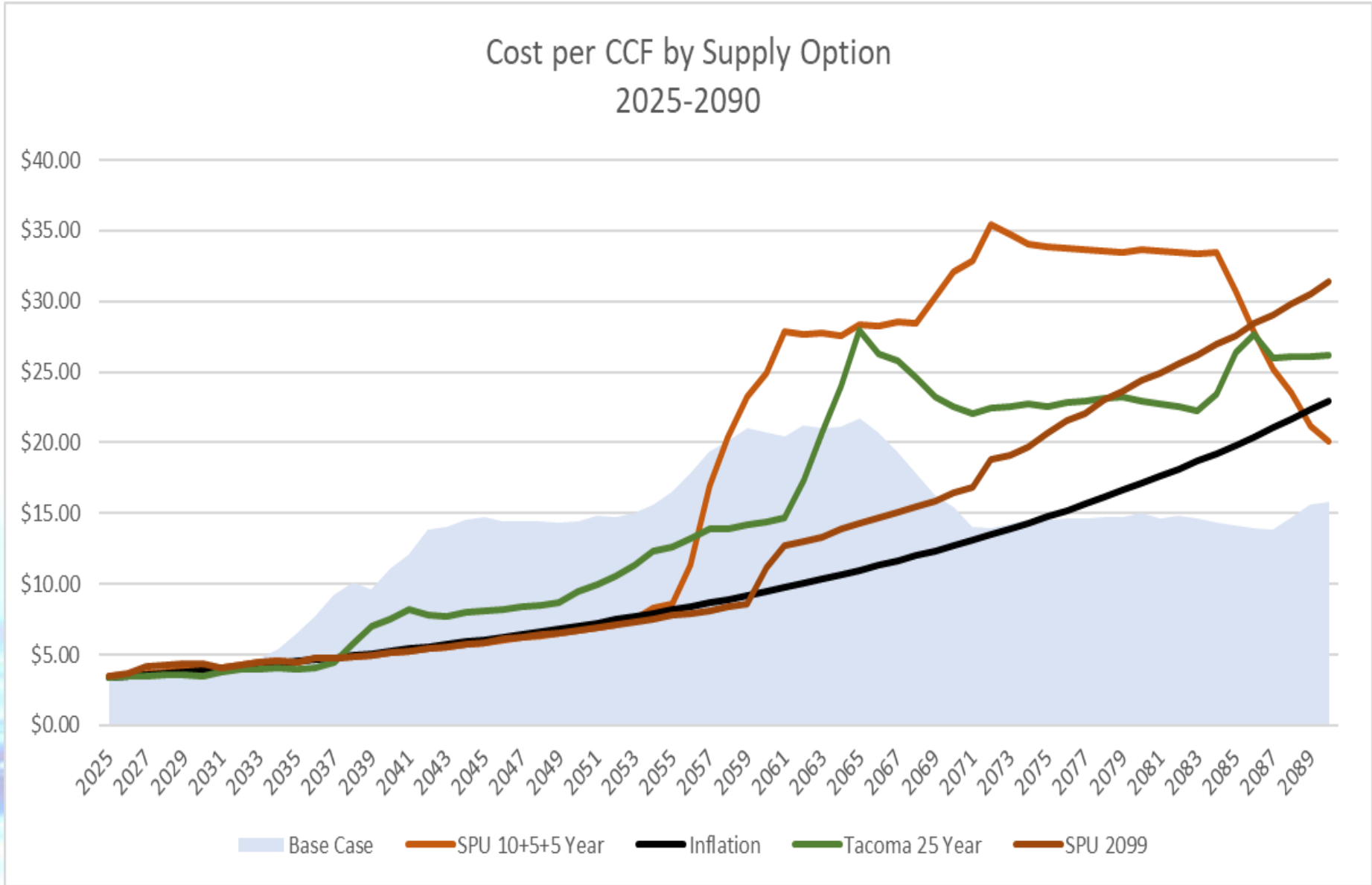
Cascade Rate Trends: SPU Scenarios



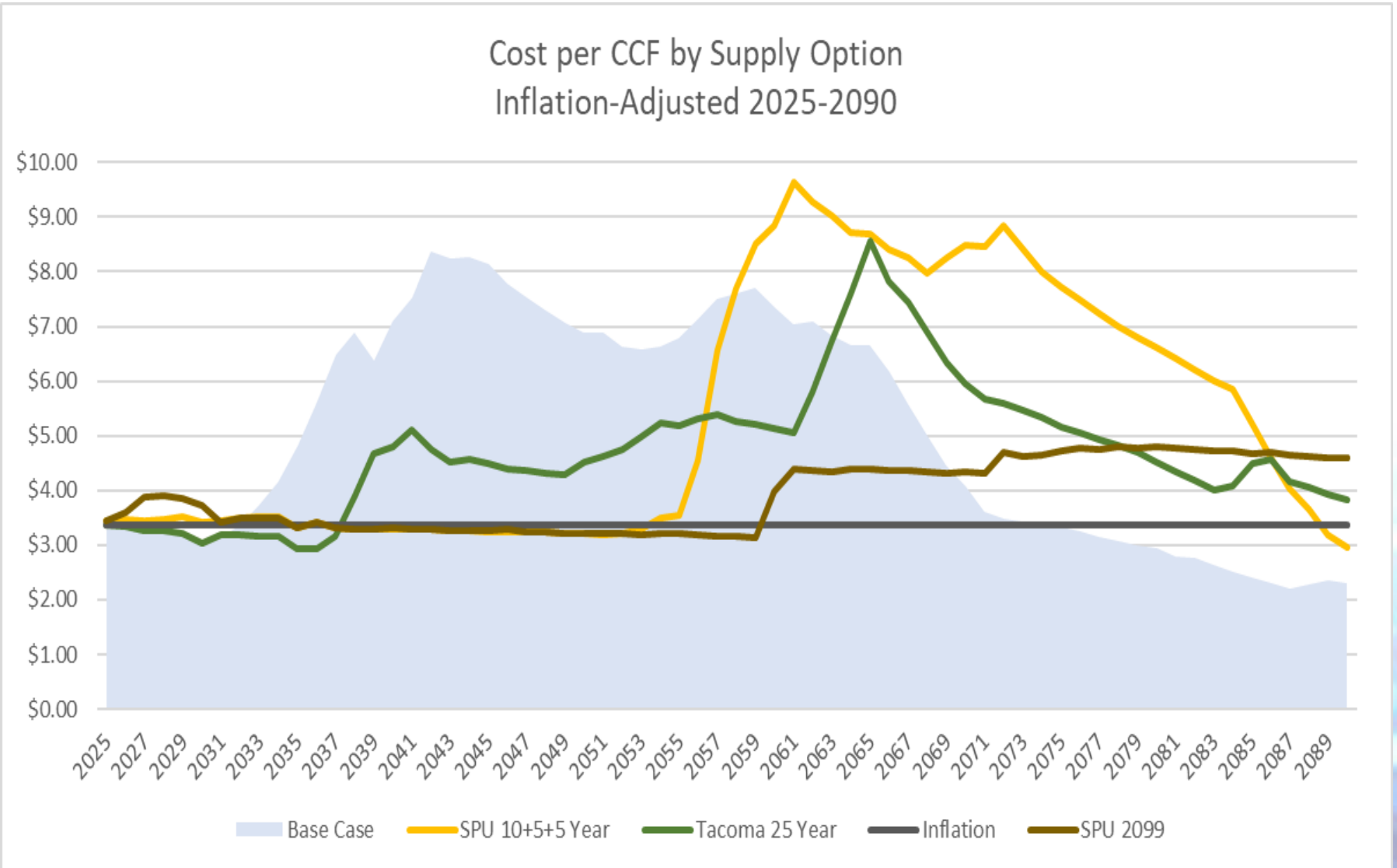
Cascade Rate Trends: TPU Scenarios



Cascade Rate Trends: SPU & TPU Compared



Inflation-Adjusted Rate Trends: SPU & TPU Compared



Findings Regarding New Proposals

A. Seattle extensions can provide significant savings

- Savings are dependent on *elimination* of Lake Tapps supply development
- Savings are entirely at risk due to conditional thresholds for extensions
 - Subject to conservative standard for supply availability
 - Much of savings is in RCFCs, not rates
 - Disrupts financial planning and RCFC basis
- **Transfer to wholesale contracts**
 - Only available to individual members
 - Revises Cascade vision and purpose
 - Added layers of new supply costs
- **If not extended, concentrates Lake Tapps development due to limited lead time on extension availability**
 - Inhibits WSDF and other financial tools
 - Adequate access to debt markets is unlikely
 - Adds \$500m to NPV results for scenario
- **Remain solely dependent on the Seattle system**
 - No connections to other systems
 - No competitive pressure
 - Supply options remain limited
 - No progress toward Lake Tapps supply development

Findings Regarding New Proposals

B. Tacoma extension can provide added savings and benefits

- **Requires increased contract supplies**
 - Not available from Tacoma via Second Supply pipeline
 - Numerous options for augmenting supply for limited term
- **Extension of reduced capacity allows further deferral of Lake Tapps expansion**
 - Moderate rate trends spread out over more time
- **Regionalization and improved resiliency & reliability**
- **Greater flexibility of supply and transmission options now and in the future**
 - Can consider 2 pipeline options with improved rate outcomes and system reliability
 - With transmission in place, multiple options for future supplies
- **Best financial performance of options examined**
 - When considering reliability of outcomes as well as financial results

Preliminary Staff Recommendations

We recommend that the Board direct staff to:

- 1) Develop a supply contract with Tacoma**
 - a) 25 year assured term and capacity
 - b) Options for further extensions if added capacity can be secured
 - c) Extended term through 2085 at reduced (50%) capacity
 - d) Defined and reliable terms for payment and performance
- 2) Conduct engineering planning, financial and rate planning studies of transmission and supply features**
 - a) Single vs. multiple pipelines
 - b) Single vs. multiple corridors
 - c) Phasing of treatment development
 - d) Storage and pumping elements
- 3) Develop an Organizational Plan for expansion of Cascade activities**
 - a) Establish staffing levels, positions needed and timing of additions
 - b) Estimate funding needed and cost/rate impacts
- 4) Initiate activities for Right-of-Way and franchise acquisition for Central and North segments**
- 5) Work with Tacoma and Seattle to optimize value of regional interconnection and explore cooperative approaches to regional supply delivery**
- 6) Integrate this strategy and these activities into the upcoming biennial budget**
 - a) Adapt the financial plan for the Tacoma supply scenario
 - i. Adjust the long-term CIP and RCFC to reflect this scenario
 - ii. Adjust rate planning and WSDF provisions to reflect this scenario
 - b) Incorporate study costs and initial staffing additions into the upcoming biennial budget