



# TVWD Water Supply Strategy Update

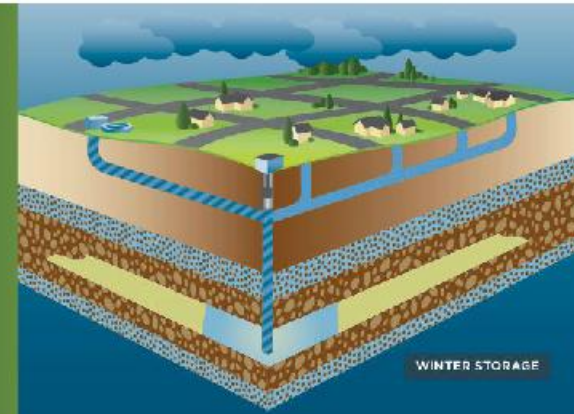


TVWD Board Work Session  
January 8, 2013

- 1 Sustainable
- 2 Preserves in-stream flow
- 3 Supports native groundwater system
- 4 Cost beneficial-Delays new infrastructure
- 5 Environmentally friendly
- 6 Emergency back-up

**WINTER STORAGE:** Water is pulled from the Tualatin River, treated to drinking water standards and then transported by pipe to the ASB site. There it is pumped into the aquifer and stored.

**SUMMER RECOVERY:** The treated water stored in the aquifer is now pumped out, re-chlorinated, and put into a pipe to be delivered to homes and businesses in Hillsboro, as well as areas served by Beaverton and Tualatin Valley Water District.



WINTER STORAGE



- Economic & Financial Evaluation – Update
- Non-Financial Evaluation & Framework for Decision Making – Proposal
- Public Communications Plan – Schedule
- Pipeline Alignment Evaluation – Opportunity
- Work Plan – Next Steps

The background of the slide features a central image of a water droplet hitting a surface, creating concentric ripples that spread outwards. The ripples are rendered in various shades of light blue and cyan, creating a soft, glowing effect. The text is centered over this background.

## **Economic & Financial Evaluation Updated Findings**



## Economic Analysis

- Present Value Analysis

## Risk Analysis

- Monte Carlo

## Rate Impacts

- Long-term Financial Forecast



## Tasks from Last Meeting

- Present Value Analysis of the providing water to the Metzger Service Area
- Bill Impacts of supply options



## TVWD Net Present Values of Options / Scenarios

(Millions of Dollars)

Supply Option / Scenario	Net Present Value (Million \$)
Portland / Hillsboro partner, no treatment	\$ 922
Portland / TVWD only, no treatment	\$ 1,160
Portland / TVWD only, with UV treatment	\$ 1,208
Mid-Willamette at Wilsonville, Metzger from PWB	\$ 964
Mid-Willamette at Wilsonville, Metzger from Willamette	\$ 739
TBWSP / With 85% federal cost sharing	\$ 961
TBWSP / No federal cost sharing	\$ 1,201
Northern Groundwater	\$ 1,177



# Rate and Financial Analyses

Consistent assumptions applied to all options

Non-supply CIP

Debt funding criteria

O&M assumptions

Not necessarily what we would implement

Expressed as monthly typical customer bill over *TBWSP 2007 Decision*

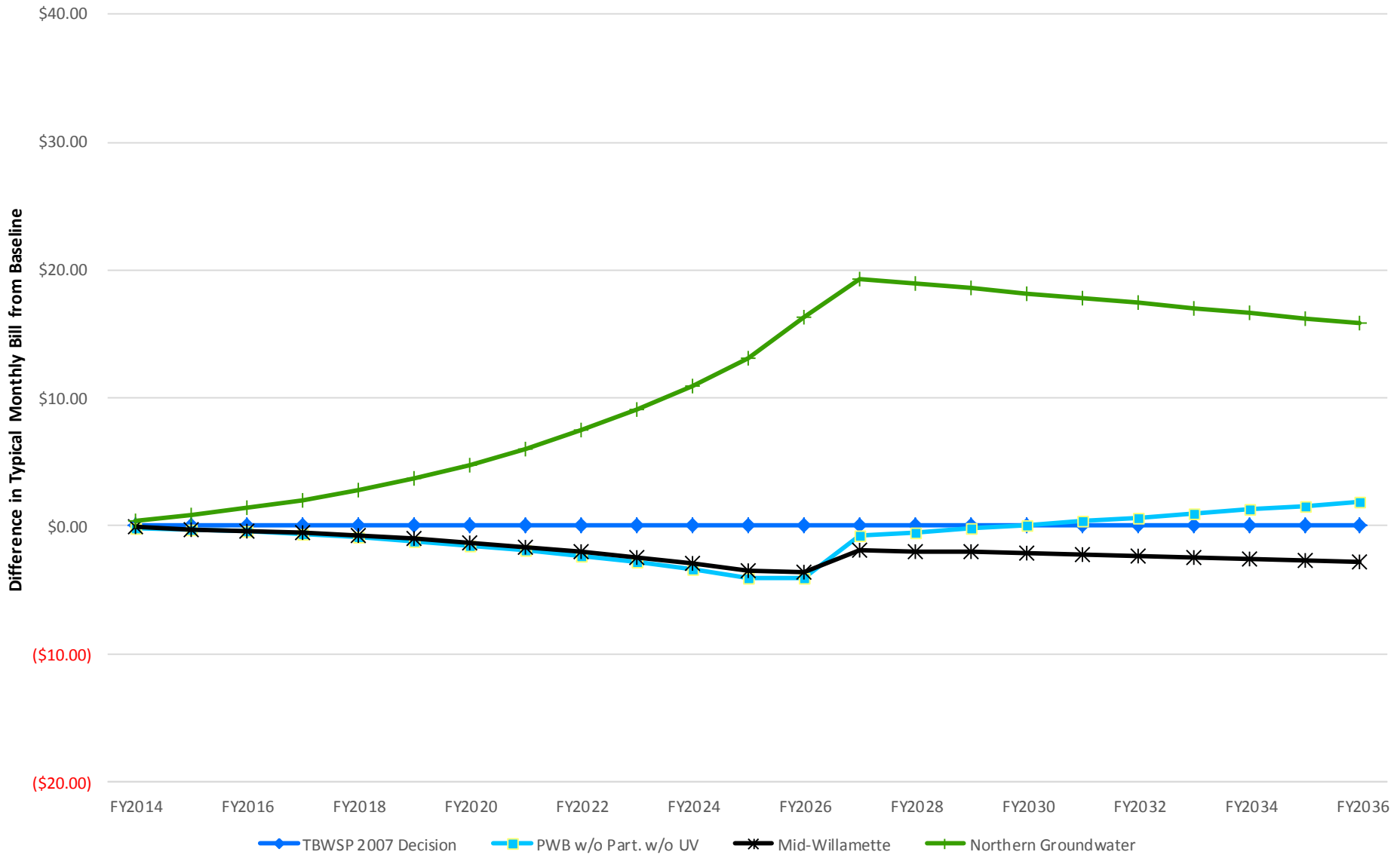
Provides relative financial impacts of supply options

Geared to provide decision-quality information

Presented graphically to provide context over time



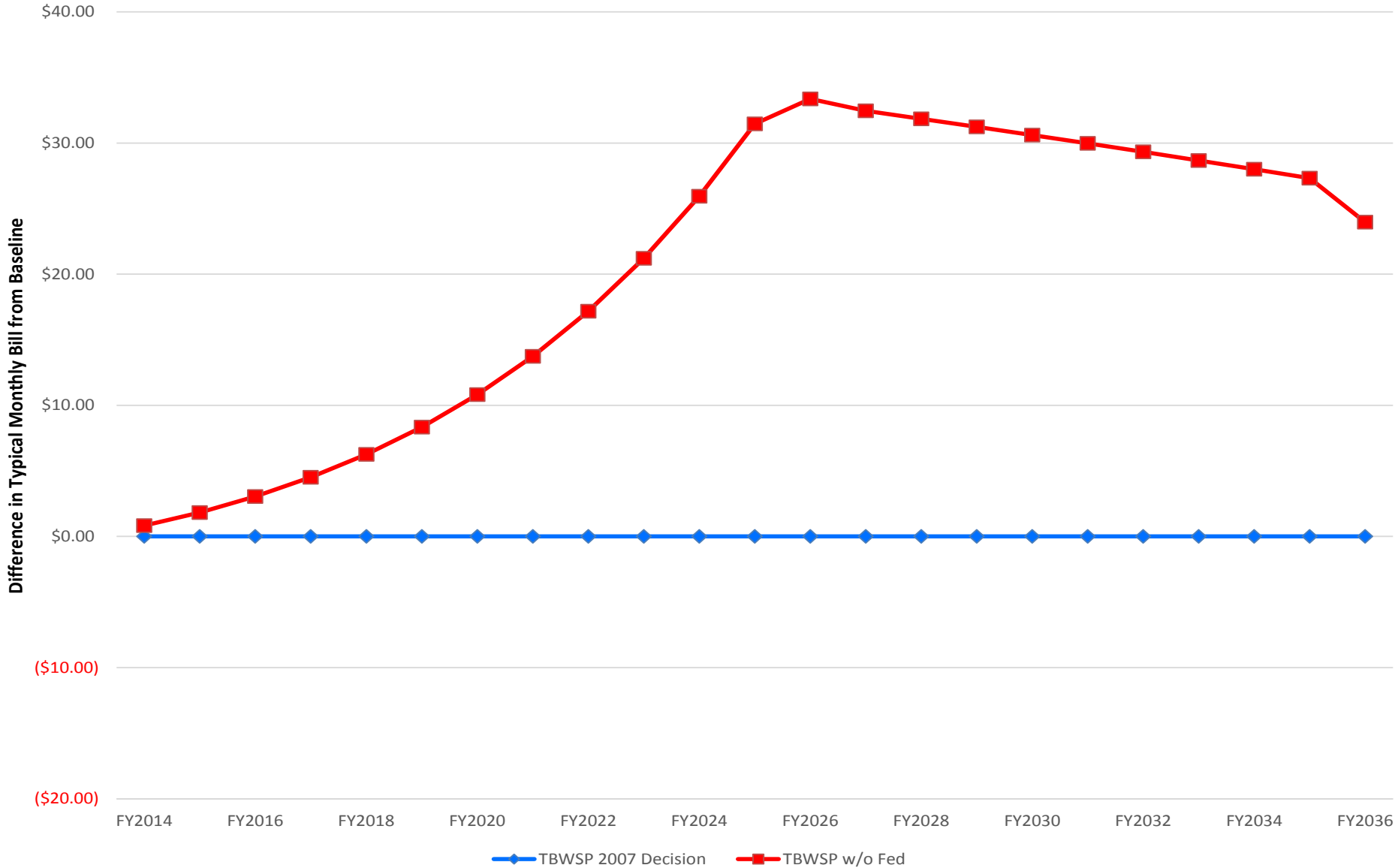
## Base Options





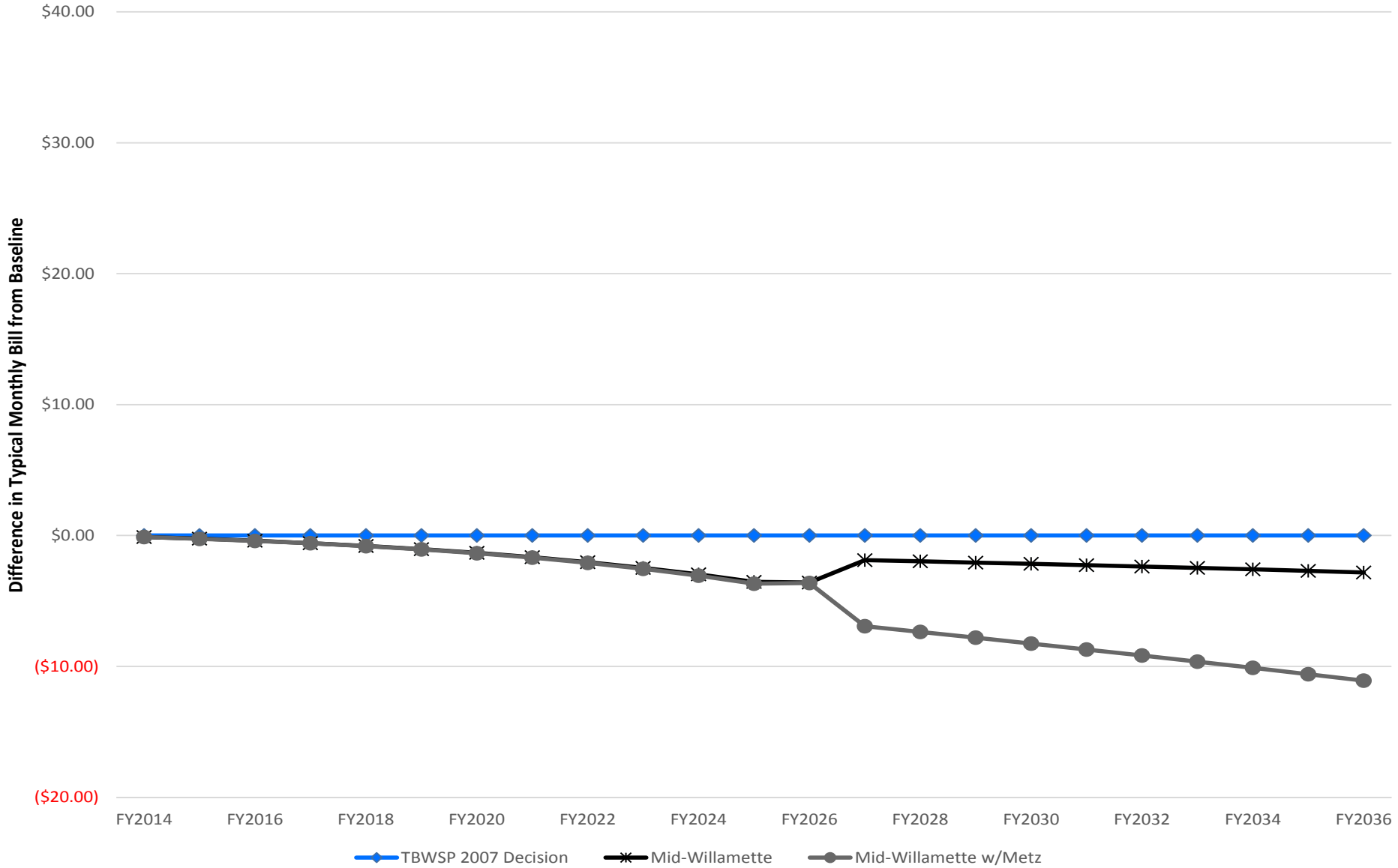


TBWSP without Federal Share



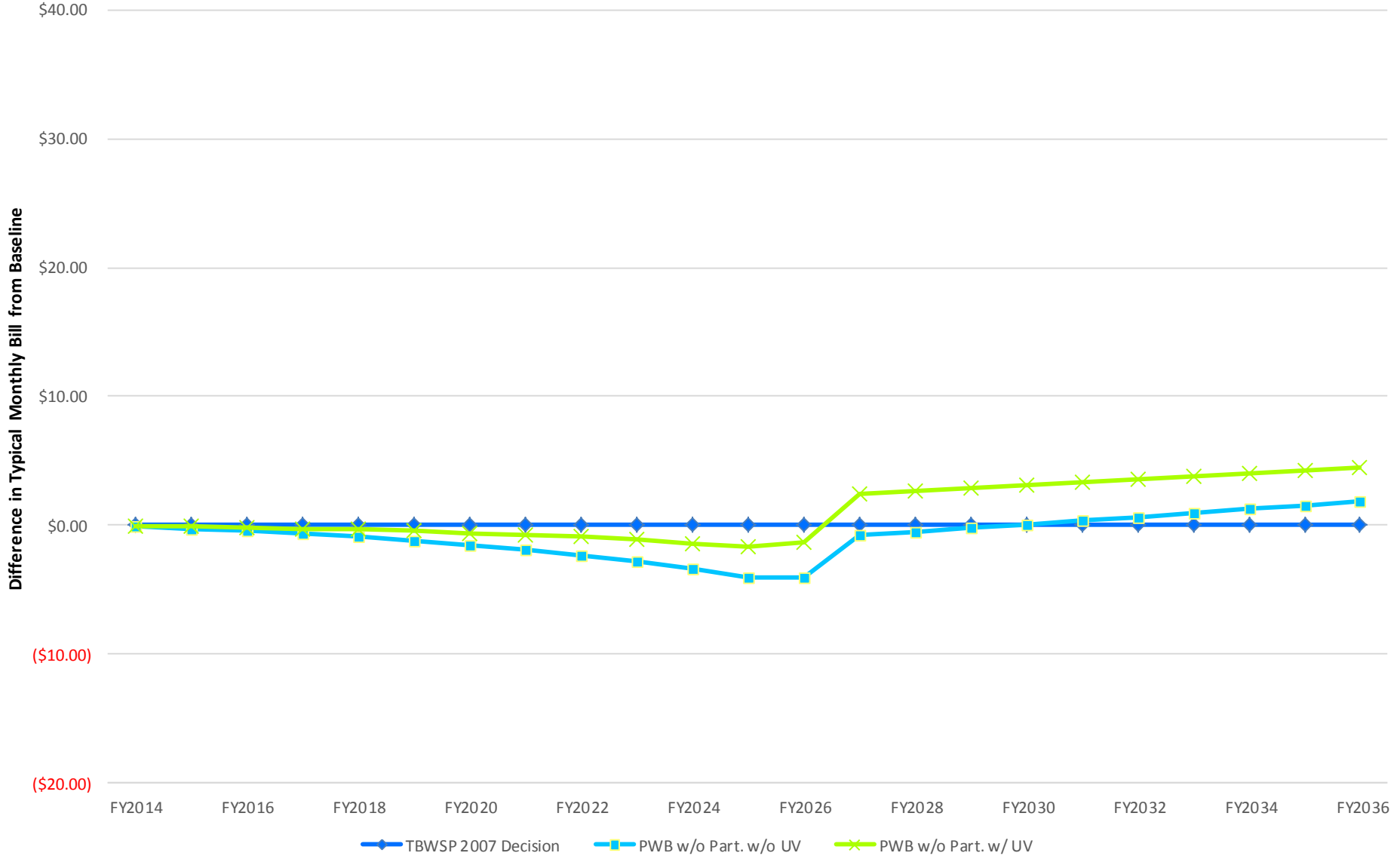


## Mid-Willamette Serving Metzger



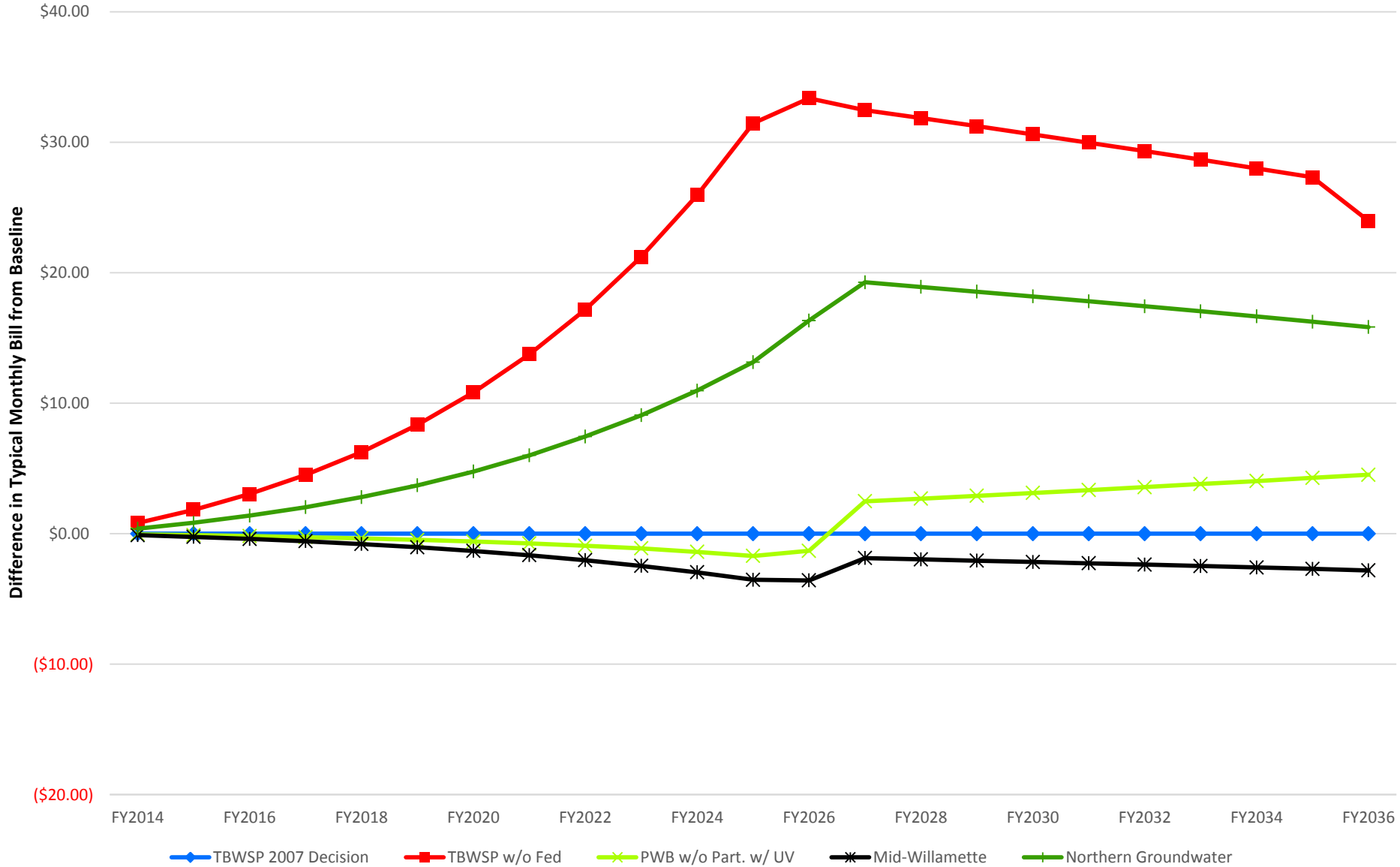


Portland Water Bureau UV Treatment Impact





## Summary of Options





# Findings from Economic and Rate Analyses

## Economic Analyses

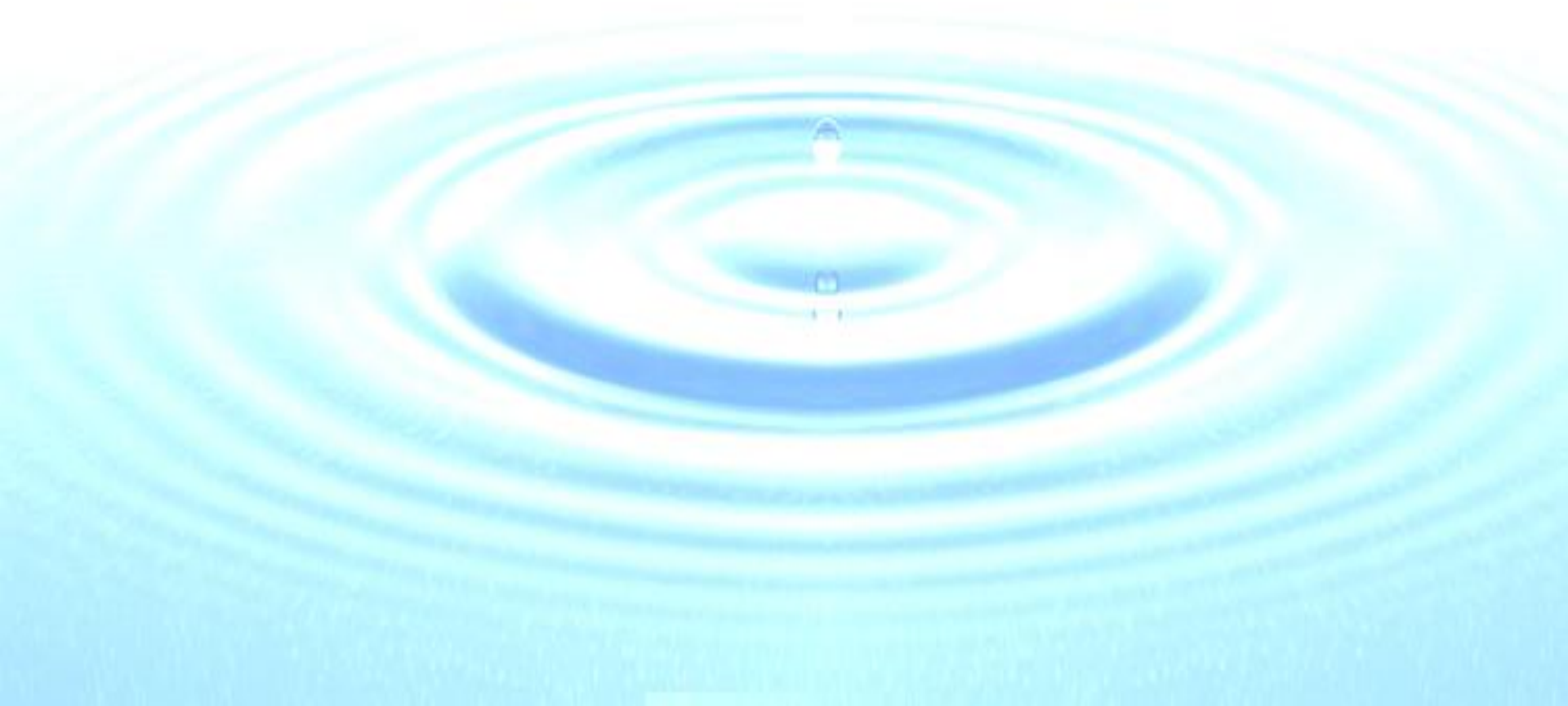
- Results dependent on non-economic assumptions
  - Availability of Federal funding for TBWSP
  - Continued availability of Portland supply
  - Certainty of costs for all options

## Rate Analyses

- Delaying improvements lowers the immediate rate requirements
- Implementation will require overall capital-funding strategy
- Metzger may be cheaper to serve from alternative supply

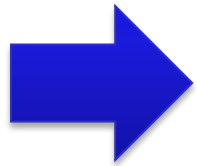


- Next Steps
  - Evaluation of timing of options

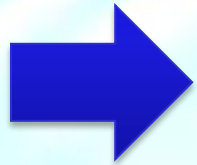


The background of the slide features a large, soft-focus image of concentric blue and white ripples, resembling a drop of water hitting a surface, centered behind the text.

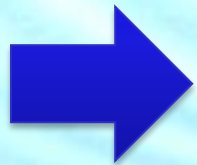
## **Non-Financial Evaluation & Decision Making Framework Proposal**



Step 1 – Identify appropriate criteria



Step 2 – Evaluate the options  
according to the criteria



Step 3 – Use evaluations to support  
decision making





## Summary of Non-Financial Evaluation

From 11-8-12 Work Session

Criteria	TBWSP	Portland	Willamette - Wilsonville	Northern Groundwater
1. Demand Uncertainty	-	+	0	0
2. Source Reliability	+	0	+	+
3. Source Redundancy	0	0	+	+
4. Implementation Risk	-	0	0	-
5. Public Acceptance	0	+	0	-
6. Community Impacts	0	0	0	0
7. Metzger Fluoride	0	0	0	0
8. Finished Wtr Quality	+	0	+	0
9. Sustainability	-	+	0	-
10. Governance	0	-	+	+



## Narrowing The Decision Space

Criteria	TBWSP	Portland	Willamette - Wilsonville	Northern Groundwater
1. Demand Uncertainty	-	+	0	0
2. Source Reliability	+	0	+	+
3. Source Redundancy	0	0	+	+
4. Implementation Risk	-	0	0	-
5. Public Acceptance	0	+	0	-
6. Community Impacts	0	0	0	0
7. Metzger Fluoride	0	0	0	0
8. Finished Wtr Quality	+	0	+	0
9. Sustainability	-	+	0	-
10. Governance	0	-	+	+



## Updated Decision Space

Criteria	TBWSP	Portland	Willamette - Wilsonville	Northern Groundwater
1. Demand Uncertainty	-	+	0	0
2. Source Reliability	+	0	+	+
3. Source Redundancy	0	0	+	+
4. Implementation Risk	-	0	0	-
5. Public Acceptance	0	+	0	-
8. Finished Wtr Quality	+	0	+	0
9. Sustainability	-	+	0	-
10. Governance	0	-	+	+



## Incorporating Economic & Financial Factors

Criteria	TBWSP	Portland	Willamette - Wilsonville	Northern Groundwater
1. Demand Uncertainty	-	+	0	0
2. Source Reliability	+	0	+	+
3. Source Redundancy	0	0	+	+
4. Implementation Risk	-	0	0	-
5. Public Acceptance	0	+	0	-
8. Finished Wtr Quality	+	0	+	0
9. Sustainability	-	+	0	-
10. Governance	0	-	+	+
Relative NPV	25% higher	25% higher	Least NPV	22% higher
2036 Rate Over Base	24% higher	5% higher	3% lower	16% higher



## Incorporating Customer Feedback

Criteria	TBWSP	Portland	Willamette - Wilsonville	Northern Groundwater
1. Demand Uncertainty	-	+	0	0
2. Source Reliability	+	0	+	+
3. Source Redundancy	0	0	+	+
4. Implementation Risk	-	0	0	-
5. Public Acceptance	0	+	0	-
8. Finished Wtr Quality	+	0	+	0
9. Sustainability	-	+	0	-
10. Governance	0	-	+	+
Relative NPV	25% higher	25% higher	Least NPV	22% higher
2036 Rate Over Base	24% higher	5% higher	3% lower	16% higher
Customer Feedback	comments	comments	comments	comments



## Updated Decision Space

Criteria	TBWSP	Portland	Willamette - Wilsonville	Northern Groundwater
1. Demand Uncertainty	-	+	0	0
2. Source Reliability	+	0	+	+
3. Source Redundancy	0	0	+	+
4. Implementation Risk	-	0	0	-
5. Public Acceptance	0	+	0	-
8. Finished Wtr Quality	+	0	+	0
9. Sustainability	-	+	0	-
10. Governance	0	-	+	+
Relative NPV	25% higher	25% higher	Least NPV	22% higher
2036 Rate Over Base	24% higher	5% higher	3% lower	16% higher
Customer Feedback	comments	comments	comments	comments



## Further Narrowing of Options

Criteria	TBWSP	Portland	Willamette - Wilsonville	Northern Groundwater
1. Demand Uncertainty	-	+	0	0
2. Source Reliability	+	0	+	+
3. Source Redundancy	0	0	+	+
4. Implementation Risk	-	0	0	-
5. Public Acceptance	0	+	0	-
8. Finished Wtr Quality	+	0	+	0
9. Sustainability	-	+	0	-
10. Governance	0	-	+	+
Relative NPV	25% higher	25% higher	Least NPV	22% higher
2036 Rate Over Base	24% higher	5% higher	3% lower	16% higher
Customer Feedback	comments	comments	comments	comments



## Further Narrowing of Options

Criteria	TBWSP	Portland	Willamette - Wilsonville	Northern Groundwater
1. Demand Uncertainty	-	+	0	0
2. Source Reliability	+	0	+	+
3. Source Redundancy	0	0	+	+
4. Implementation Risk	-	0	0	-
5. Public Acceptance	0	+	0	-
8. Finished Wtr Quality	+	0	+	0
9. Sustainability	-	+	0	-
10. Governance	0	-	+	+
Relative NPV	25% higher	25% higher	Least NPV	22% higher
2036 Rate Over Base	24% higher	5% higher	3% lower	16% higher
Customer Feedback	comments	comments	comments	comments





## Updated Decision Space

Criteria	TBWSP	Portland	Willamette - Wilsonville	Northern Groundwater
1. Demand Uncertainty	-	+	0	0
2. Source Reliability	+	0	+	+
3. Source Redundancy	0	0	+	+
4. Implementation Risk	-	0	0	-
5. Public Acceptance	0	+	0	-
8. Finished Wtr Quality	+	0	+	0
9. Sustainability	-	+	0	-
10. Governance	0	-	+	+
Relative NPV	25% higher	25% higher	Least NPV	22% higher
2036 Rate Over Base	24% higher	5% higher	3% lower	16% higher
Customer Feedback	comments	comments	comments	comments



## Further Narrowing of Decision Space

Criteria	TBWSP	Portland	Willamette - Wilsonville	Northern Groundwater
1. Demand Uncertainty	-	+	0	0
2. Source Reliability	+	0	+	+
3. Source Redundancy	0	0	+	+
4. Implementation Risk	-	0	0	-
5. Public Acceptance	0	+	0	-
8. Finished Wtr Quality	+	0	+	0
9. Sustainability	-	+	0	-
10. Governance	0	-	+	+
Relative NPV	25% higher	25% higher	Least NPV	22% higher
2036 Rate Over Base	24% higher	5% higher	3% lower	16% higher
Customer Feedback	comments	comments	comments	comments



## Finalizing The Decision

Criteria	TBWSP	Portland	Willamette - Wilsonville	Northern Groundwater
1. Demand Uncertainty	-	+	0	0
2. Source Reliability	+	0	+	+
3. Source Redundancy	0	0	+	+
5. Public Acceptance	0	+	0	-
8. Finished Wtr Quality	+	0	+	0
9. Sustainability	-	+	0	-
10. Governance	0	-	+	+
Relative NPV	25% higher	25% higher	Least NPV	22% higher
2036 Rate Over Base	24% higher	5% higher	3% lower	16% higher
Customer Feedback	comments	comments	comments	comments

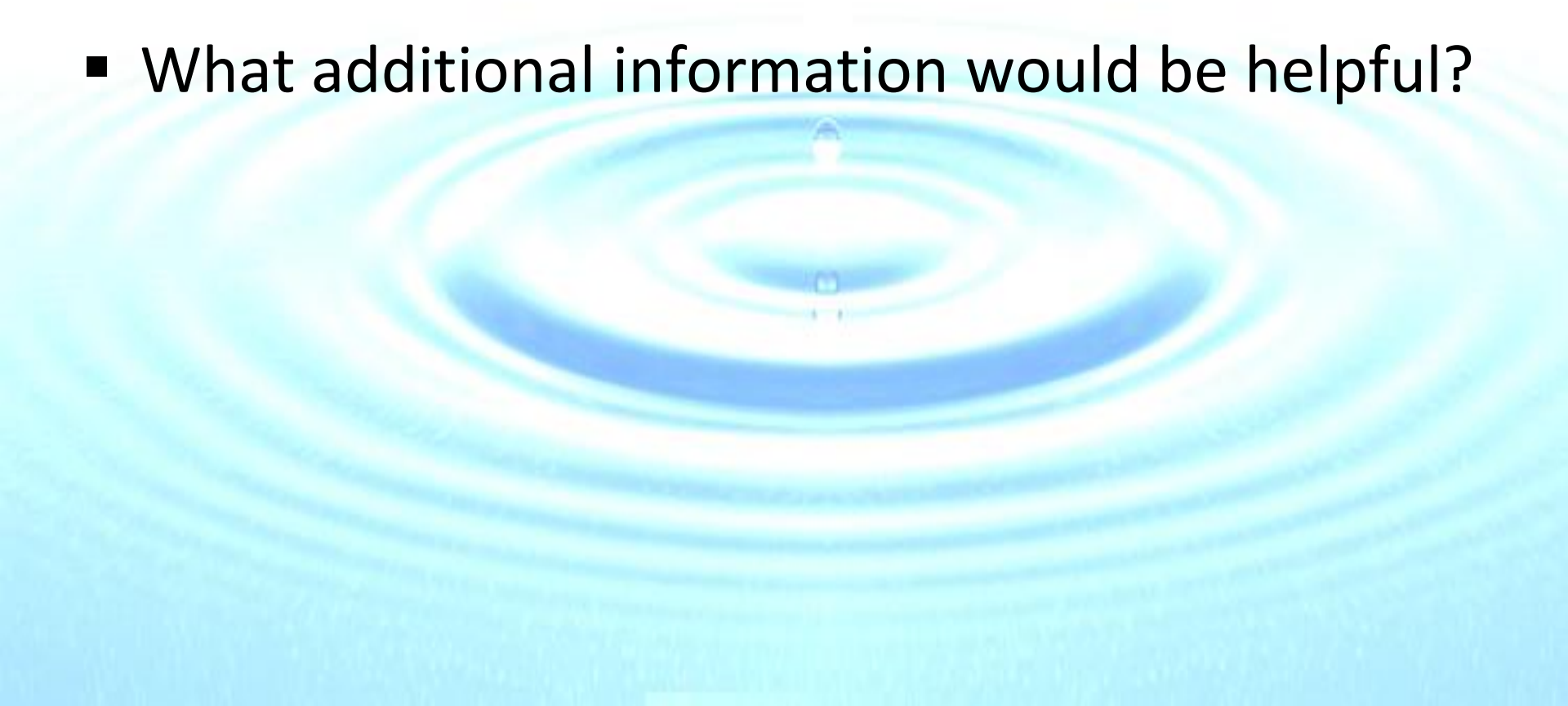


## Finalizing The Decision

Criteria	TBWSP	Portland	Willamette - Wilsonville	Northern Groundwater
1. Demand Uncertainty	-	+	0	0
2. Source Reliability	+	0	+	+
3. Source Redundancy	0	0	+	+
5. Public Acceptance	0	+	0	-
8. Finished Wtr Quality	+	0	+	0
9. Sustainability	-	+	0	-
10. Governance	0	-	+	+
Relative NPV	25% higher	25% higher	Least NPV	22% higher
2036 Rate Over Base	24% higher	5% higher	3% lower	16% higher
Customer Feedback	comments	comments	comments	comments



- Questions & suggestions regarding framework?
- What additional information would be helpful?



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## **Public Communications Plan**

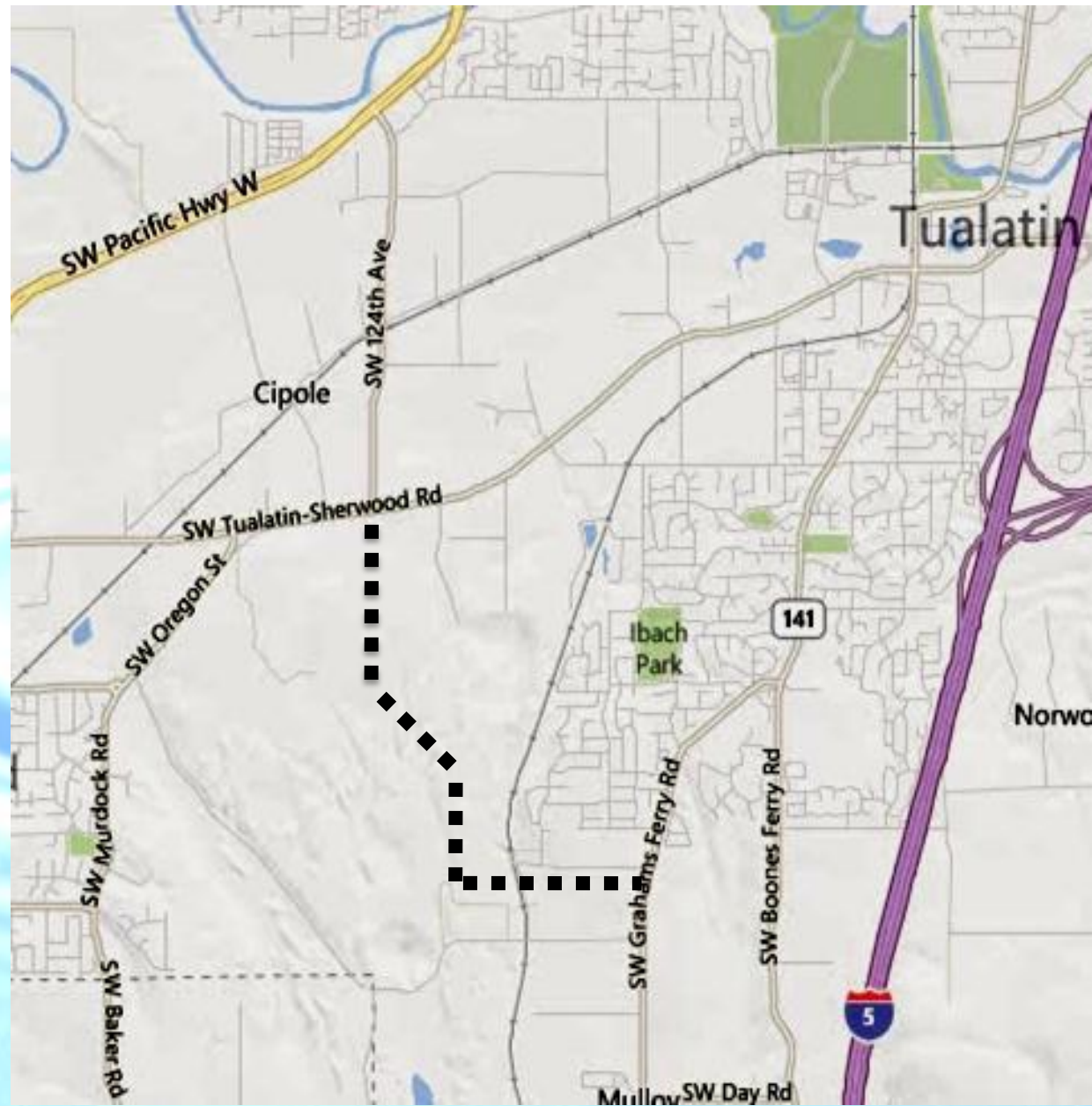
A large, faint background image of a water droplet falling into a pool of water, creating concentric ripples. The text is centered over this image.

## **Pipeline Alignment Evaluation Opportunity**



# Pipeline Alignment Evaluation

- Washington Co proposal for new SW 124<sup>th</sup> extension
- About 2.3 miles of road
- From southern city limits of Tualatin to northern city limits of Wilsonville







## Significant potential opportunity

- Provides better understanding of Willamette option and potential costs
- Timing is key – County wants decision in April
  - After long-term supply decision by TVWD Board
- Pipeline corridor ultimately needed to realize value of TVWD's existing investments in WTP



## Limitations of existing information

- Not considered in 2004 & 2006 Evaluations of Transmission System Alternative Alignments
- Significant potential costs for rock excavation
- First identified in 2011 Evaluation for WRWC
- Relationship to other pipeline challenge areas
- Changed conditions since prior studies



## Preliminary evaluation of 124<sup>th</sup> segment

- Conduct evaluation of 124<sup>th</sup> segment only
- Evaluate technical, geotechnical & cost factors
- Evaluate relationship to other challenge areas
- Funding by TVWD, coordinate with partners
- Complete initial investigation by mid-April
- Report back to TVWD Board
- Depending on findings & supply decision, conduct updated evaluation of full alignment

The background of the slide is a light blue gradient with a central focus on a water droplet that has just hit a surface, creating concentric ripples that spread outwards. The ripples are more pronounced in the center and fade towards the edges.

## **Work Plan - Next Steps**



Month	Meeting	Deliverable / Activity	Goal
Oct	Work Session	<ol style="list-style-type: none"> <li>1. Prelim economic eval</li> <li>2. Prelim non-financial</li> <li>3. Final outreach strategy</li> </ol>	<ol style="list-style-type: none"> <li>1. Input on options &amp; assumptions</li> <li>2. Input on non-financial ratings</li> <li>3. Review outreach next steps</li> </ol>
Nov	Work Session	<ol style="list-style-type: none"> <li>1. Update economic eval</li> <li>2. Comment on ratings</li> <li>3. Outreach material</li> </ol>	<ol style="list-style-type: none"> <li>1. Input on refined options &amp; risks</li> <li>2. Input on updated non-financial</li> <li>3. Communication training</li> </ol>
Dec	Staff Work – not on agenda	Outreach material & activities	Outreach events scheduled
Jan	Work Session	<ol style="list-style-type: none"> <li>1. Final economic eval</li> <li>2. Final non-financial</li> <li>3. Outreach update</li> </ol>	<ol style="list-style-type: none"> <li>1. Final economic &amp; risk eval</li> <li>2. Evaluation using non-financial</li> <li>3. Review outreach schedule</li> </ol>
Feb	Outreach Events	Outreach activities	Outreach activities
Mar	Work Session	Final draft evaluation	Input on draft evaluation
April	Board Mtg	Proposed Supply Strategy	Adopt Preferred Strategy



## Water Supply Calendar of Events

# 2013

Event	Sponsor	Date	Location	Contact	Misc. Info	Add To Web?
Long Term Water Supplies Open House	TVWD	January 23 5:30 – 7 p.m.	TVWD Headquarters	Jim Meierotto <a href="mailto:jimm@tvwd.org">jimm@tvwd.org</a> (503) 848-3036		Yes
Long Term Water Supplies Business Breakfast	TVWD	February 5 7 – 8:30 a.m.	TVWD Headquarters	Jim Meierotto <a href="mailto:jimm@tvwd.org">jimm@tvwd.org</a> (503) 848-3036	Invites will be sent to community business leaders. For a list of invitees or if you have a business you would like to invite, contact Jim. RSVP is requested.	No
Long Term Water Supplies Open House	TVWD	March 2 5:30 – 7 p.m.	TVWD Headquarters	Jim Meierotto <a href="mailto:jimm@tvwd.org">jimm@tvwd.org</a> (503) 848-3036		Yes