

Tapping into Community Participation to Address Water Quality Issues in a New Water Supply

Pacific Northwest Section AWWA Conference

Boise, Idaho

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Adrienne DeDona, JLA Public Involvement

Dale Jutila, CH2M



Acknowledgements

City of Longview

Amy Blain, Civil Engineer

Jeff Cameron, Public Works Director

Jeff Coleman, Water Operations Manager

Beacon Hill Water & Sewer District

Dell Hillger, General Manager

Longview is Partnered with Beacon Hill Water and Sewer District in Water Supply

Longview

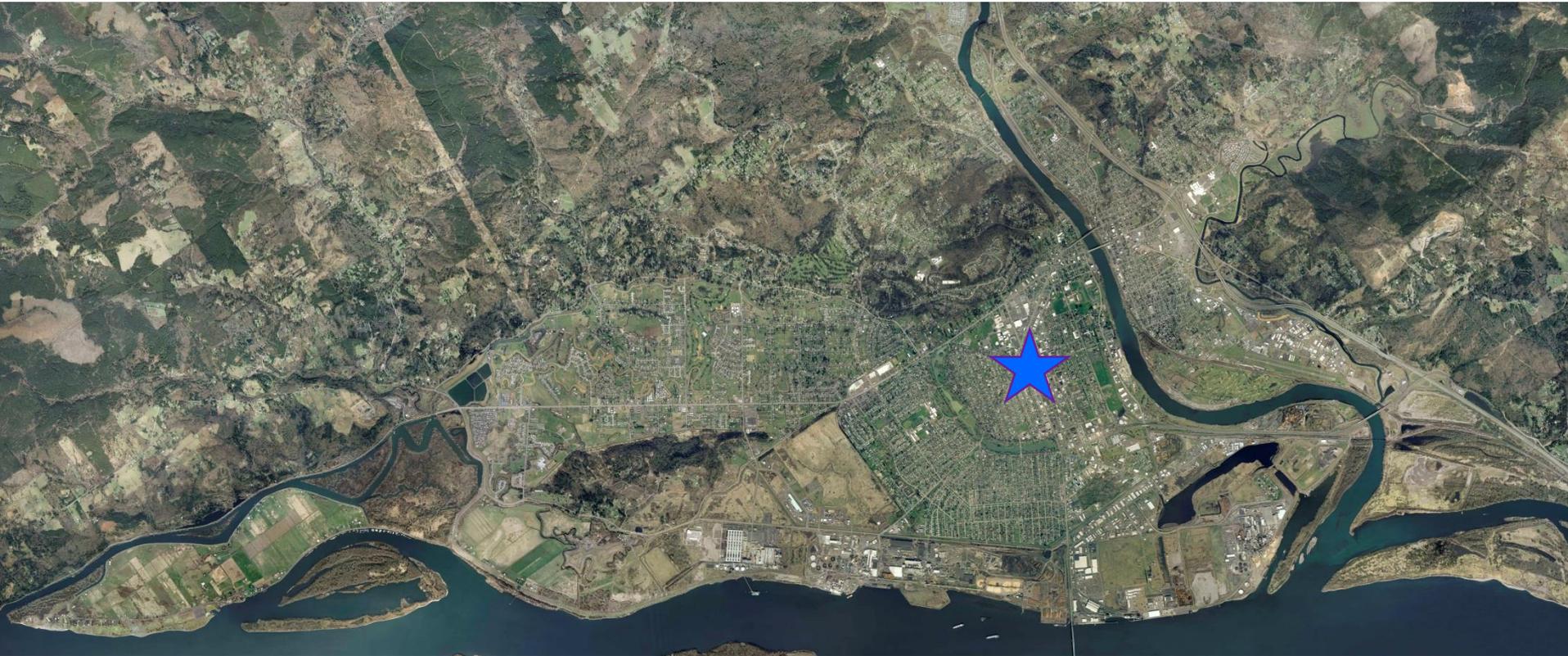
14,000 Customers

Beacon Hill Water
and Sewer District

4,000 Customers



Longview is located at the confluence of the Columbia River and Cowlitz River



History of Water Supply

- Sediment Retention Structure (SRS) was built by US Army Corps of Engineers to capture volcanic silt
- Structure reached capacity in 2006 and began overflowing
- SRS raised 7 feet in 2013 as a short term measure; No plans to raise the SRS or dredge upper Cowlitz River
- Unsuccessful attempt at sediment transport theory by dredging lower Cowlitz River



**Mt. St. Helens May 18, 1980
8:32 AM**

**Cowlitz River at
Longview Intake
May 19, 1980**



History of Water Supply

- USACE projection for sediment in 2039 was reached in 2008
- Plant impacted by winter turbidity, summer sandbars
- Summer demand regularly exceeded capacity
- High equipment wear and solids handling
- Failing treatment basins (constructed 1946)
- Multiple catastrophic emergency filter failures
- Non-compliant intake and potential listing for smelt



Whole Range of Solutions Considered

REHAB EXISTING PLANT	Develop Mint Farm aquifer	\$59 million
	Construct wells in same vicinity	Not feasible
	Construct Ranney collector intake	Not feasible
	Construct intake slightly upstream on Cowlitz River (Lexington)	\$56 million
	Construct intake upstream of confluence of Cowlitz and Toutle Rivers	\$66 million
	Construct intake on Columbia River	\$72 million
	<i>Expand to 20 MGD and rebuild existing intake</i>	<i>\$53 million</i>
BUILD NEW	Construct Columbia River intake and new surface water plant	\$52 million
	Construct 20 MGD groundwater supply and membrane plant	\$36 million
	<i>Construct 20 MGD groundwater supply and conventional plant</i>	<i>\$38 million</i>

Leading Water Supply Options

Fishers Lane Regional Water Treatment Plant



Mint Farm

Two primary choices

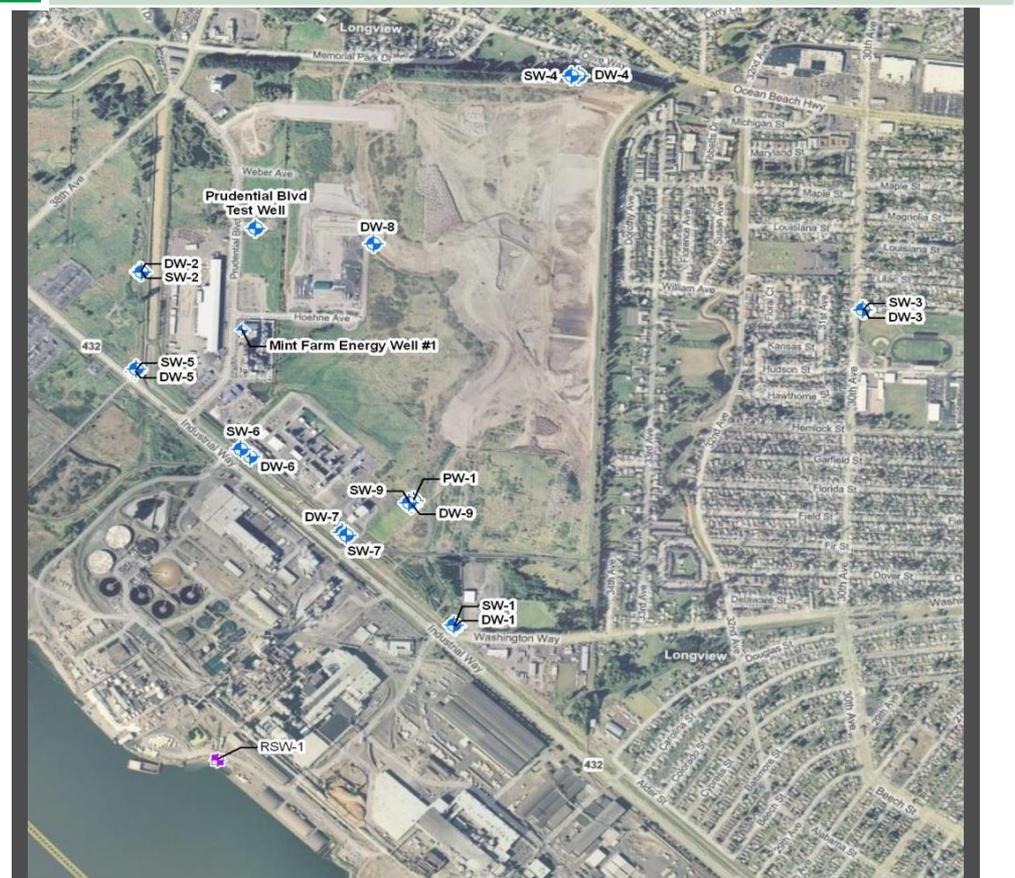
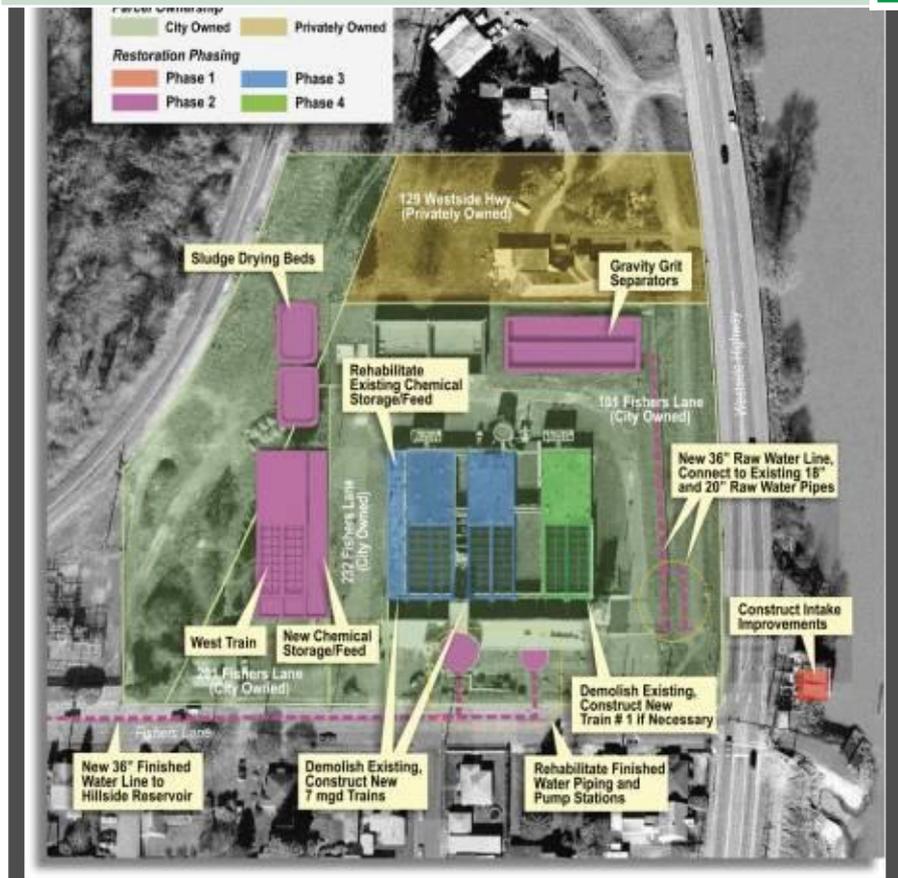
REHAB EXISTING.....\$53 M

9-year phased construction
 Permitting issues due to smelt
 Unpredictable river conditions

BUILD NEW.....\$38 M

18-month greenfield construction
 Needed groundwater rights
 Highly prolific artesian aquifer

**V
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R
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Plans for transition to a new source

Flow Reversal

Hydraulic water modeling

Advance bi-directional
flushing

Simulated flow-reversals

Pressure Increase

Water pressure monitoring

Hydraulic water modeling

Replaced vulnerable mains

Source Change

Rapid transition to limit
mixing

pH adjustment to match
waters

Water reservoirs cleaned

Extensive community
outreach

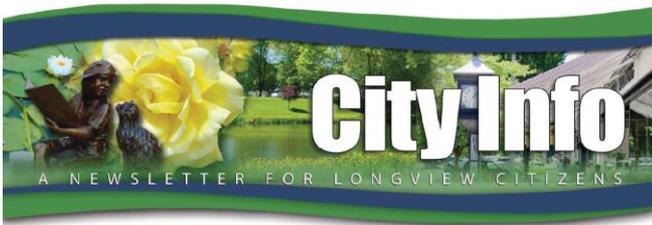
Citizen sentinels for
feedback

Water progression tracer
study



An “A” for effort in public outreach

- Newsletters
- Open houses
- Bill inserts
- Videos
- Public service announcements
- Newspaper articles
- Council meetings



City Info
A NEWSLETTER FOR LONGVIEW CITIZENS

Issue No. 2 WINTER 2009/10

Groundwater Supply Testing Concludes

In our fall newsletter, we shared with you some of what we are doing to evaluate obtaining our drinking water from a deep groundwater aquifer beneath the Mint Farm Industrial Park. Continuing with that evaluation, this fall we constructed and pumped a test production well continuously at a rate of 5.5 million gallons per day for 36 days. While it is typical to test pump a well for only a few days, we pumped for an extended period of time to capture any changes in groundwater quality caused by pumping and confirm the viability of the aquifer as our municipal water supply. Using our network of 17 monitoring wells in and around the Mint Farm, along with sampling from other water sources, we collected and analyzed water quality and flow data.

The comprehensive evaluation is nearly complete and we're confident from the extensive testing and analysis that there is an abundant supply of high quality groundwater which will ensure a safe and sustainable water supply for years to come. The final evaluation will be complete in February 2010, but meanwhile, we'll begin to answer your big questions:

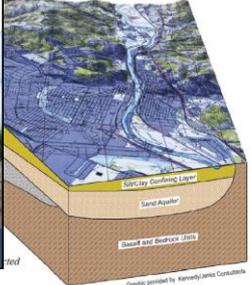
- Will the groundwater last?
- Where does the water come from?
- Is the groundwater safe and will it remain safe?

Please continue reading for more information and dates when you can meet our technical experts and discuss your concerns and questions with them.



Building our future today.

from the surface by a confining layer.



gravel layers.

Safe and will it remain safe? The deep aquifer is under natural shallow contamination from... to identify potential contaminants in the naturally occurring mineral also found in... at a level of concern. Drinking water that we treat for arsenic at the levels... or arsenic, along with iron and manganese, to... to our community.

to the Mint Farm Wellfield Groundwater Basin

Opportunities for Discussion and Input
If you would like to learn more and discuss your concerns and questions with our technical experts and City staff, you are invited to participate at the following events:

Key Milestones	Community Presentations	Council Presentation	Council Decision
Water Supply Open House January 7 from noon to 6 p.m. Cowlitz PUD Auditorium, 561 12 th Avenue	January 7 Open House	January 21 Council/PUD/ BHSD Workshop	January 28 Council Meeting
Joint City Council/Cowlitz PUD/Beacon Hill Sewer District Workshop January 21 at 7 p.m. Cowlitz PUD Auditorium, 561 12 th Avenue			

Building our future today.

Transition to a new source

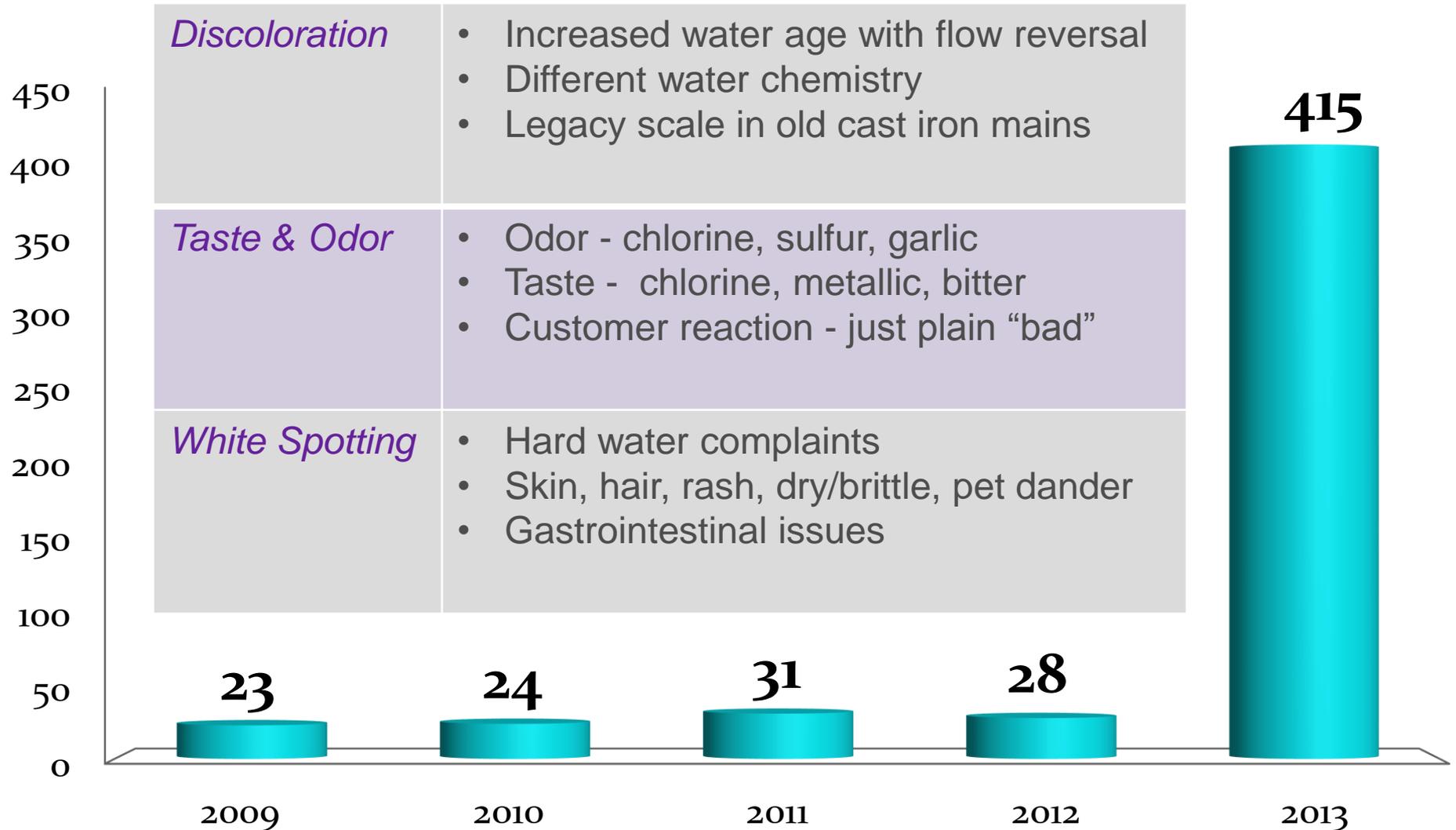
Valve Turning Ceremony January 31, 2013



- ▶ Waited (2) months before turning the old plant off
- ▶ Complaint calls began (3) months after start-up
- ▶ Area of town with old Cast Iron water mains
 - Zero chlorine residual
 - Spot flushing
 - Area flushing
 - Super-chlorinated
 - Coliform tests (all absent)
 - Ice pigging



Complaints from customers jumped after new water supply was activated



Community gets interested



Photo courtesy of Longview Daily News



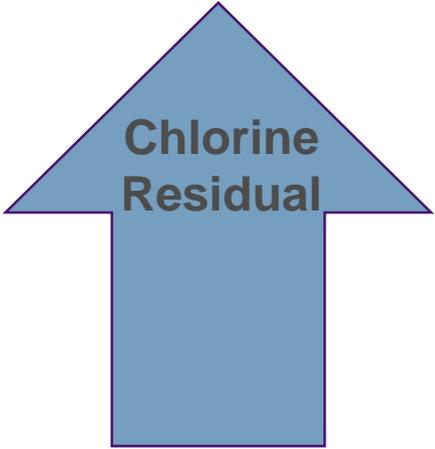
Longview's Tap Water Residue is Here to Stay

facebook

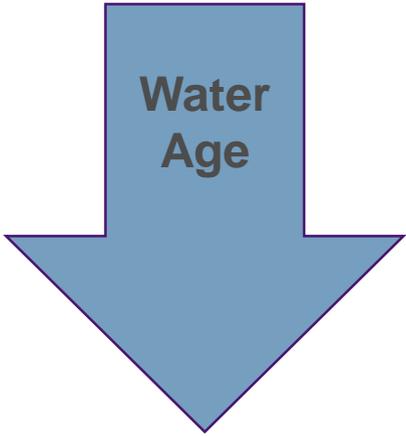
Citizens Against Longview's New Water Supply
1,562 likes

Is Longview Legally Liable for its Tapwater?

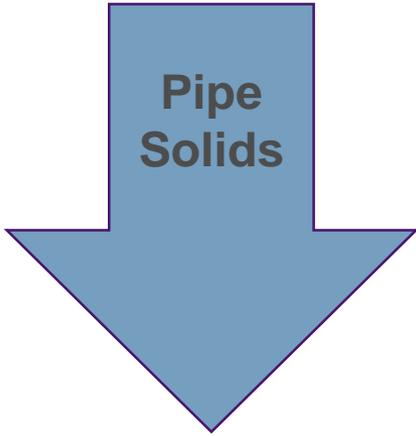
Actions to improve satisfaction



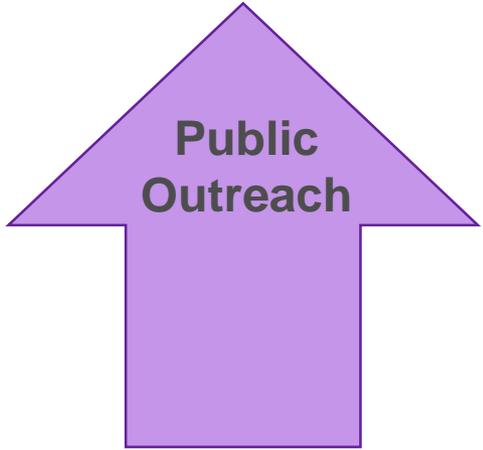
- ✓ Stabilize CL2 dose
- ▶ Add post-CL2
- ✓ Plant optimization
- ✓ Operator training
- ✓ Investigate DO
- ▶ CL2 booster stations



- ✓ Auto-flushing
- ✓ Semi-annual UDF
- ▶ Update water model to verify flow paths
- ▶ Pipeline re-routing



- ✓ Continue UDF
- ✓ Ice-pigging
- ✓ Main replacements
- ✓ Hydro-jet cleaning
- ▶ Swab or line cast iron water mains



- ✓ Retained CH2M for independent evaluation
- ▶ Re-evaluate water supply alternatives
- ▶ Involve community in decision-making process

City Council decides to look into water supply options

- July 2014
- Selected CH2M
 - Brought in JLA Public Involvement
- Heavy emphasis on community engagement
- Community reservations about the contract

Water Supply Alternatives

- *Task 1: Community outreach*
 - *Develop detailed public communications plan*
 - *Identify key stakeholders*
 - *Recruit and recommend City Council-appointed Customer Advisory Committee*
 - *Other activities*
 - *Custom website and online polling*
 - *Virtual open house*
 - *Fact sheets and FAQ's*
 - *Media releases and Public Service Announcements*
 - *Community survey*
 - *Stakeholder interviews*
 - *Public open house*

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 - ***Conduct Statistically valid community survey***

Water Supply Alternatives

- Water Supply Review elements
 - *Task 2: Develop Water Supply Alternatives*
 - *Conduct concurrent technical evaluation*
 - *Review existing documents*
 - *Confirm water supply needs*
 - *Develop alternatives*
 - *Identify fatal flaws*
 - *Assess cost to restart and rehab old WTP*
 - *Evaluate water supply options (desktop evaluation)*
 - *Develop preferred option(s)*
 - *Document recommendations*

Customers Surveyed to measure extent of the problem

Council question:

Is this problem wide-spread?

Or are we hearing from a few vocal, dissatisfied customers?

WATER QUALITY CUSTOMER SURVEY

City of Longview
Beacon Hill Water and Sewer District

Preliminary Survey Results
October 21, 2014



Riley Research Associates

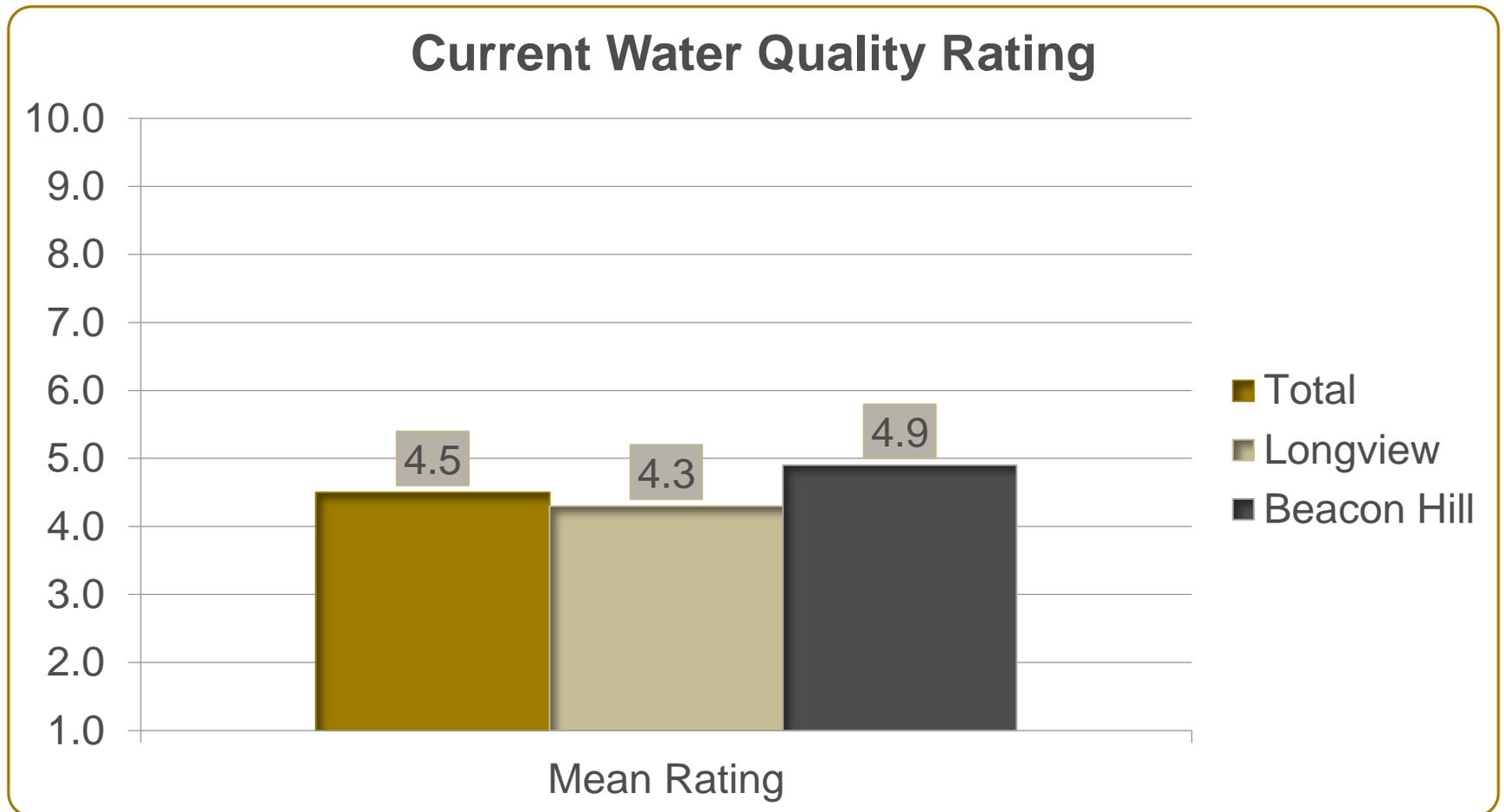
Scientifically valid survey of the community

- 461 residential customers interviewed
 - 304 City of Longview customers
 - Margin of Error of +/-4.5%
 - 157 BHWSD customers
 - Margin of Error of +/-7.8%

- Exploratory survey of 44 high-use Business customers

WATER QUALITY RATING

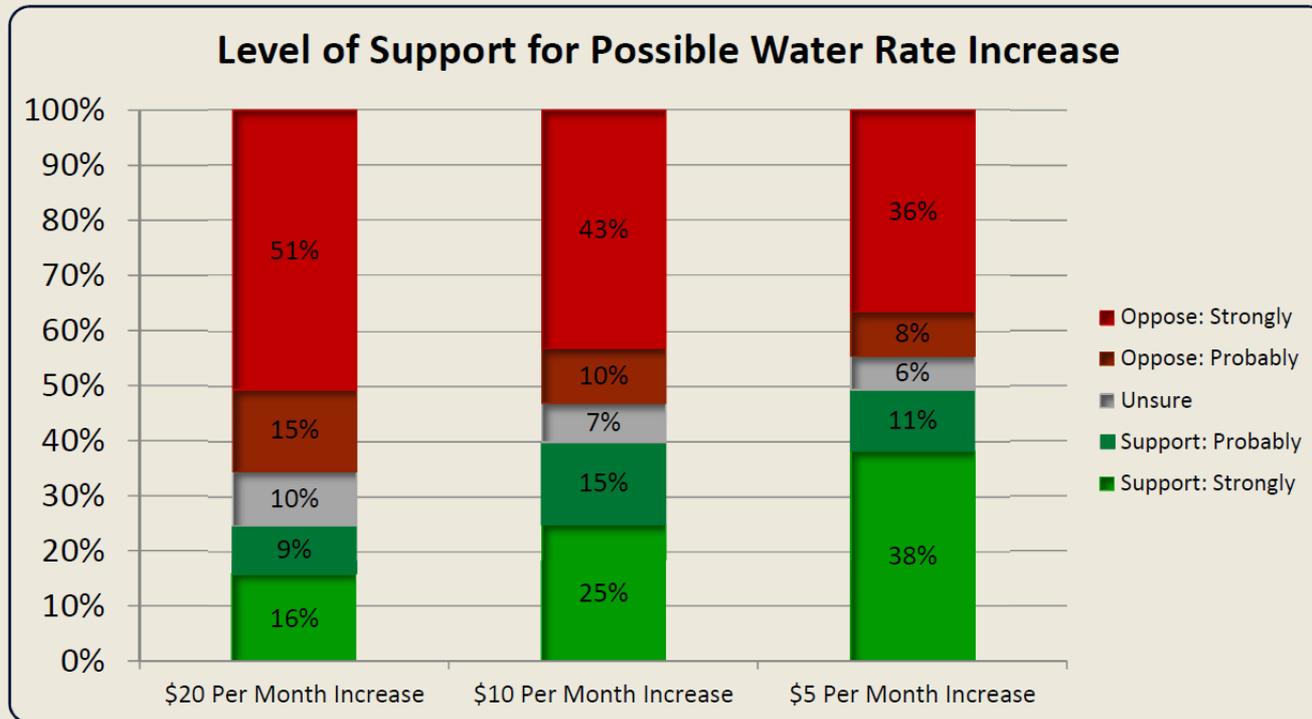
TEN-POINT SCALE WHERE “10” IS “VERY GOOD”



Significant support for water rate increase

LEVEL OF SUPPORT FOR WATER RATE INCREASE

AIDED QUESTION



Selection of Customer Advisory Committee (CAC)

- Formal application
- Recruitment widely publicized
 - Council meetings
 - City website
 - Reader boards
- 100 applications received
- Defined evaluation process – by consultant staff
 - Applicants anonymous
- Recommendations reviewed and endorsed by Council
 - Total of 14
- Diverse membership

Are you interested in serving on the Community Advisory Committee for the Longview Water Supply Study?

The Longview City Council and Beacon Hill Sewer and Water District are forming a Community Advisory Committee (CAC) that will meet regularly over the course of the next seven months about the Longview water supply system, consider options to improve our drinking water, and make a recommendation to the City Council.

If you are interested in serving on this committee, please complete and return the application questionnaire by December 10, 2014 or e-mail it to adrienne@jla.us

Selection Guidelines **Longview Drinking Water Supply Project** **Community Advisory Committee (CAC)**

The following criteria will guide selection of members for the Longview Drinking Water Improvement CAC. These guidelines are intended to ensure that the committee represents a cross-section of Longview and Beacon Hill water users. The City Council will have final decision-making authority and will determine membership to best serve the needs of all water users.

CAC Member Qualification Guidelines

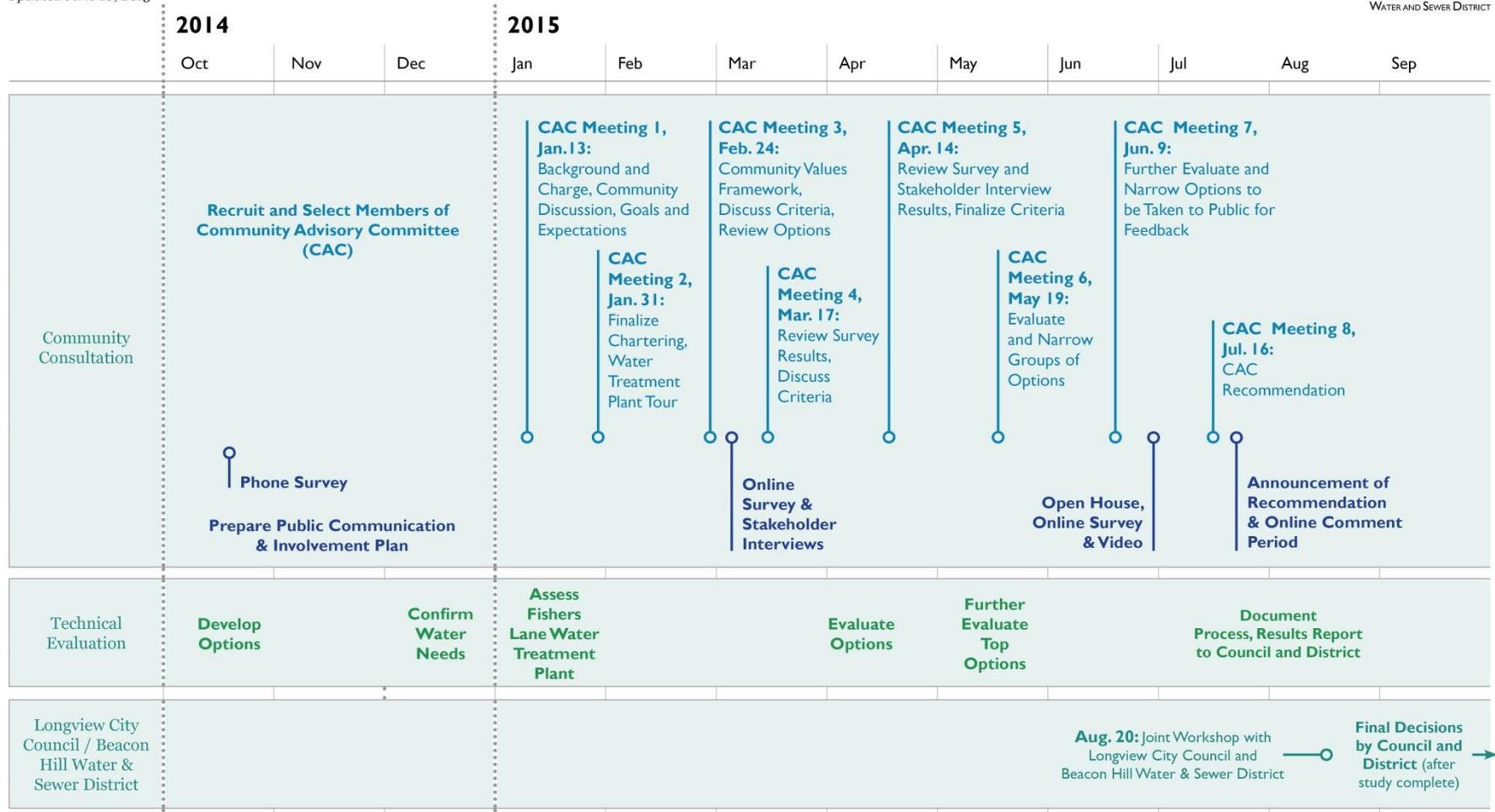
1. Longview water or Beacon Hill Water & Sewer District customer.
2. Experience, interest or skills as a water customer (not necessarily professional experience).
3. Ability to work with others in a committee setting, willingness to listen to others, ability to

Problem-Solving Role of the **Citizens' Advisory Committee**

- Create an environment conducive to multiple and diverse opinions and ideas.
- Review and comment on technical data and materials prepared by staff and consultants.
- Discuss community concerns and balance interests in order to establish evaluation criteria that will help to narrow possible solutions to improving Longview's water supply.
- Ensure the preferred alternative for improving Longview's Water Supply is consistent with and supportive of the project purpose and need as well as the evaluation criteria established by the CAC, with input from the community.
- Promote public understanding of the Longview Water Supply Alternatives.

Longview Drinking Water Improvement Study – Schedule

Updated June 18, 2015

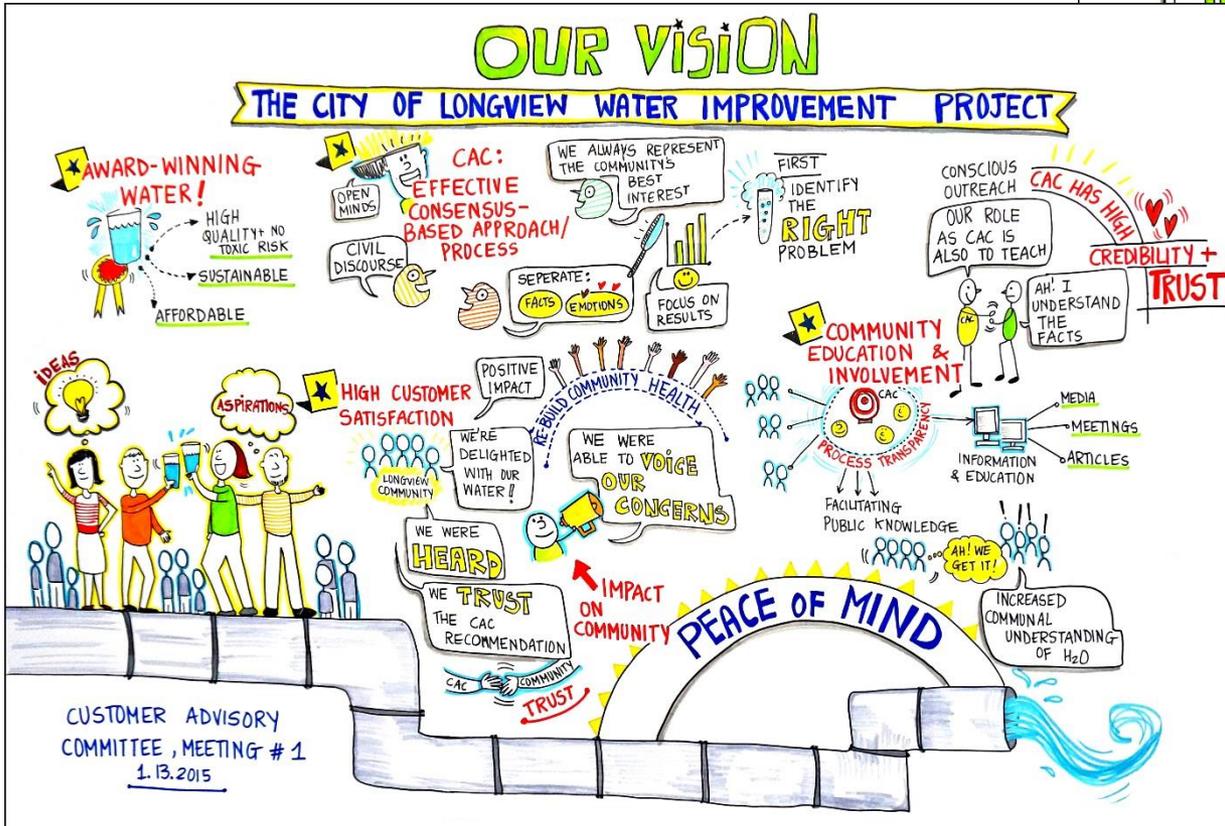


For more information: Adrienne DeDona, Public Involvement Project Lead, 360-993-0025, info@longviewwater.org

Web: www.longviewwater.org

Chartering the CAC

Included Graphic Recording of Background and Visioning

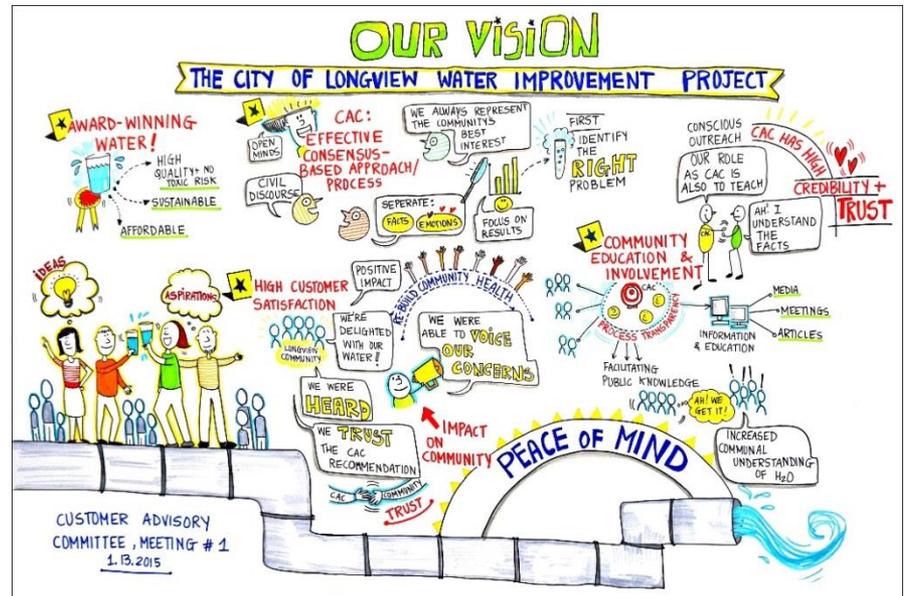


CAC Toured former Fisher's Lane Water Treatment Plant and new Mint Farm Treatment Plant



Values identified to guide evaluation criteria - Reflected customer survey

- Customer Perspectives (High Quality, No Toxic Risk)
 - Aesthetic concerns – Spotting/Residue, Taste, Color, Smell
 - General Health concerns – Purity, Cleanliness
 - Impressions of safety – Source water quality, vulnerability to contamination
- Technical (Sustainable)
 - Long-term capacity
 - Reliability
 - Environmental
- Cost (Affordable)
 - Rate impacts
 - Indirect costs to customers



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 - Environmental
- Cost (Affordable)
 - Rate impacts
 - Indirect costs to customers
- Solicited community comment through online polling

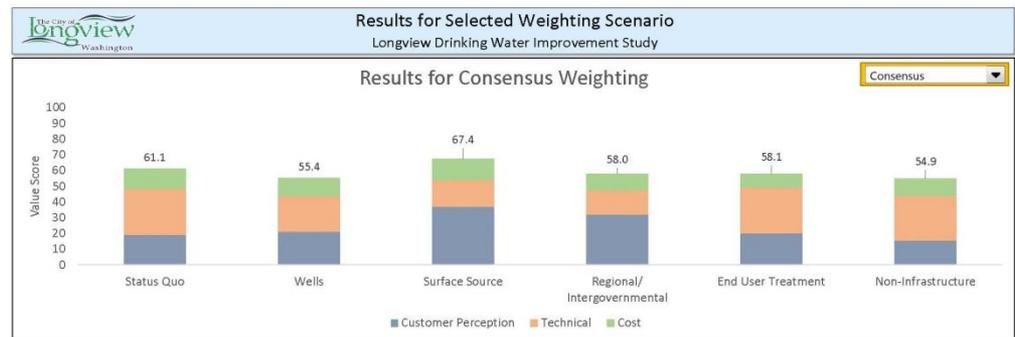
Long list of options created and sorted into groups

- More than 50 individual options
- Status quo
- Additional treatment to new supply
- Reinstitute former surface supply
- New surface supply
- Ranney collectors
- De-centralized treatment – each service
- Non-infrastructure – Public education

Category	Source	Option ID	Description
Status Quo	Mint Farm Wellfield	A	No Additional Treatment; Optimize Existing Mint Farm Water Treatment Plant (WTP)
Wells	Mint Farm Wellfield	B	Add Dissolved Oxygen to Mint Farm WTP
		C	Add Post Chlorination to Mint Farm WTP
		D	Add Softening to Mint Farm WTP
		E	Add Silica Removal to Mint Farm WTP
		Unspecified Location	F
Distribution/Transmission System Changes	Mint Farm Wellfield	G	Add Chlorine Booster Stations to Distribution System
		H	Add Dissolved Oxygen Injection to Distribution System
		I	Replace Pipes in Distribution System
		J	Mint Farm WTP Finished Water Conveyed to Fishers Lane for Connection to Distribution System
Surface Source	Cowitz River	K	Rehabilitate Fishers Lane WTP and Existing Intake
		L	Rehabilitate Fishers Lane WTP with New Cowitz River Intake Near Existing (within 5 miles +/-)
		M	Rehabilitate Fishers Lane WTP with New Cowitz River Intake above Toulke River
		N	Replace Fishers Lane WTP with New Cowitz River Intake Near Existing (within 5 miles +/-)
		O	Replace Fishers Lane WTP with New Cowitz River Intake above Toulke River
		P	Rehabilitate Cowitz River Intake; Treat at Mint Farm WTP
		Q	New Cowitz River Intake (within 5 miles +/-); Treat at Mint Farm WTP
		R	Rehabilitate Cowitz River Intake; Clarification at Fishers Lane and Filtration at Mint Farm WTP
		S	New Cowitz River Intake (within 5 mi +/-); Clarification at Fishers Lane and Filtration at Mint Farm WTP
	Columbia River	T	Columbia River Intake with New WTP
		U	Columbia River Intake; Treat Water at Mint Farm WTP
		V	Columbia River Intake; Treat Water at New/Rehabilitated Fishers Lane WTP
	Unspecified Location	W	New Upland Water Source with Surface Dam and Treatment
Ranney Collector	Cowitz River	X	Ranney Collectors on Cowitz River Downstream; Treat at Fishers Lane WTP
		Y	Ranney Collectors on Cowitz River Downstream; Treat at Mint Farm WTP
		Z	Ranney Collectors on Cowitz River Downstream with new WTP at New Location
		AA	Ranney Collectors near Fishers Lane; Treat at Fishers Lane WTP
		AB	Ranney Collectors near Fishers Lane; Treat at Mint Farm WTP
		AC	Ranney Collectors near Lexington; Treat at Fishers Lane WTP
	Columbia River	AD	Ranney Collectors near Lexington; Treat at Mint Farm WTP
		AE	Ranney Collectors and new WTP near Lexington
		AF	Ranney Collectors on Columbia River; Treat at Mint Farm WTP
	Kalamia River	AG	Ranney Collectors on Columbia River; Treat at Fishers Lane WTP
		AH	Ranney Collector on Columbia River with WTP at New Location
AI	Ranney Collector on Kalamia River		
Aquifer Storage & Recovery (ASR)	Cowitz River	AI	ASR at Mint Farm WTP; Rehabilitate Fishers Lane WTP and Intake
	Cowitz River	AK	ASR at Mint Farm with New Cowitz River Intake and WTP
	Cowitz River	AL	ASR at Mint Farm with Cowitz River Ranney Collector
	Columbia River	AM	ASR at Mint Farm with Columbia River Ranney Collector
	Columbia River	AN	ASR at Mint Farm with Columbia River Intake and Treatment
Blending	Cowitz River and Mint Farm	AO	Cowitz River Blending with Mint Farm WTP; Surface Intake or Ranney Collectors
	Columbia River and Mint Farm	AP	Columbia River Blending with Mint Farm WTP; Surface Intake or Ranney Collectors
Regional/Intergovernmental	Cowitz River	AQ	Connect to City of Kebo System
	Columbia River	AR	Joint Expansion with City of Kebo; Ranney Collectors and Treatment
	Kalamia River	AS	Connect to Port of Kalamia Ranney Collector
Private/Public Partnership	Columbia River	AT	Connect to City of Kalamia Ranney Collector
		AU	Utilize Weyerhaeuser or Kapstone Surface Water System
End User Treatment	Mint Farm Wellfield	AV	Customer Treatment Systems - Whole house, City-owned
		AW	Customer Treatment Systems - Whole house, Resident-owned
		AX	Customer Treatment System at the Faucet, Resident-owned
Non-infrastructure	Mint Farm Wellfield	AY	Conduct Public Education about Water Purity, Safety, Aesthetics, Comparisons with Other Cities
		AZ	Conduct Public Education about Using Hand Water, Preventing and Removing Water Spots
		BA	Provide Products for Preventing and Removing Water Spots

Employed a decision-support framework to aid the Committee

- Used evaluation criteria developed earlier
- Helped discussion about options, differences, preferences
- Costs based on information readily available, sufficient for comparison, but not concise



- Eliminated a few options
 - Buy water from or Collaborate with Another Entity
 - End user treatment
 - Non-infrastructure (education)
- Still had 45 options!

Options were grouped into “Clusters” to facilitate comparison

- Options within each cluster had similarities
- Allowed CAC to evaluate them
- CAC ranked the clusters, guided by criteria
- Identified top 6 options
 1. Ranney Collector on Cowlitz River
 2. Ranney Collector on Columbia River
 3. Modified Treatment of Mint Farm Water (tie)
 3. Ranney Collector on Kalama River (tie)
 5. Surface Water on Cowlitz
 6. Blending Cowlitz River Water with Mint Farm Water

CAC reviewed remaining groups

- Dropped Columbia River and Mint Farm Wells groups due to concern about potential contamination
- Dropped Kalama River group due to distance and questions about amount of available water
- Identified 2 preferred groups
 - **New Surface Water Source – Cowlitz River**
 - **Ranney Collector – Cowlitz River**

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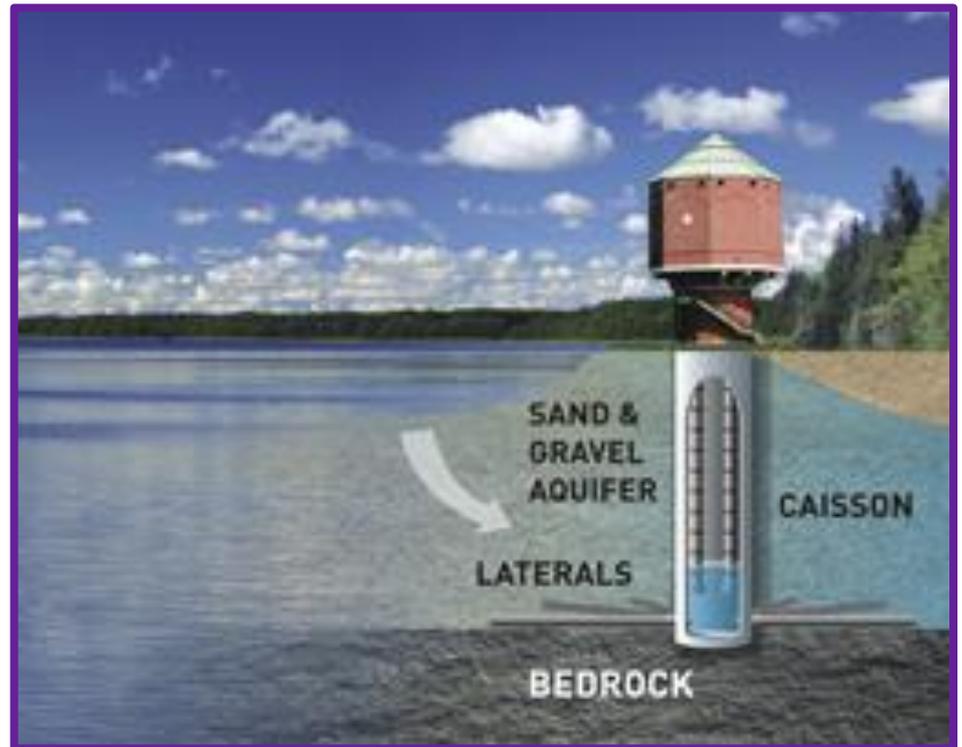
Significant Public Outreach Activities Included

- Statistically valid telephone survey
- Project Website www.longviewwater.org
- Stakeholder contact database and email distribution list
- CAC Survey Number 1 – community feedback on evaluation criteria
- Stakeholder interviews
- Project fact sheet
- Explanatory videos
- Public Open House
- Virtual Open House and CAC Survey Number 2 – community feedback on primary water supply improvement options
- Media outreach – media releases, newspaper and radio coverage



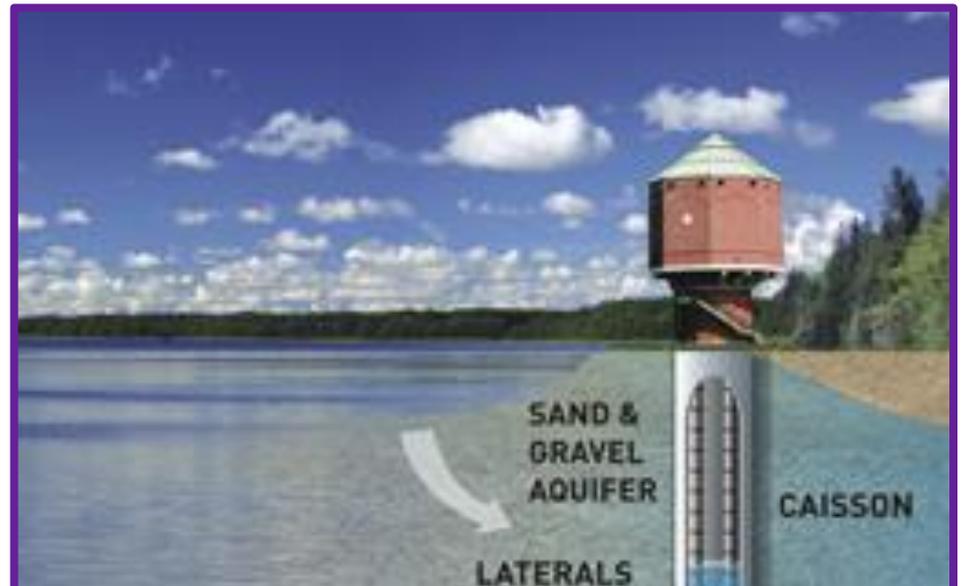
CAC Recommendation

- Recommended **Ranney Collector on the Cowlitz River**
- Concerns about Surface Water Source on the Cowlitz River
 - Complex permitting
 - Regulatory requirements
 - Sediment



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Where are we now?

- City Council authorized additional investigation into Ranney Collector
- Drilled exploratory test holes at 3 potential locations along the Cowlitz River
 - Water quality tests conducted
 - Technical report underway



- Planning for next phase – further investigation in most promising areas
- Expect implementation will take 4 to 7 years

Observations

- Hard to attract public interest in absence of crisis
 - Easy when customers become dissatisfied
- 2015 process was transparent, accessible to public
- Integration of public information and technical team enhances progress
- Highly-skilled facilitation promotes group commitment
- Flexibility is essential

Questions?

Thank You

Adrienne DeDona, JLA Public Involvement

adrienne@jla.us.com

Dale Jutila

dale.jutila@ch2m.com

