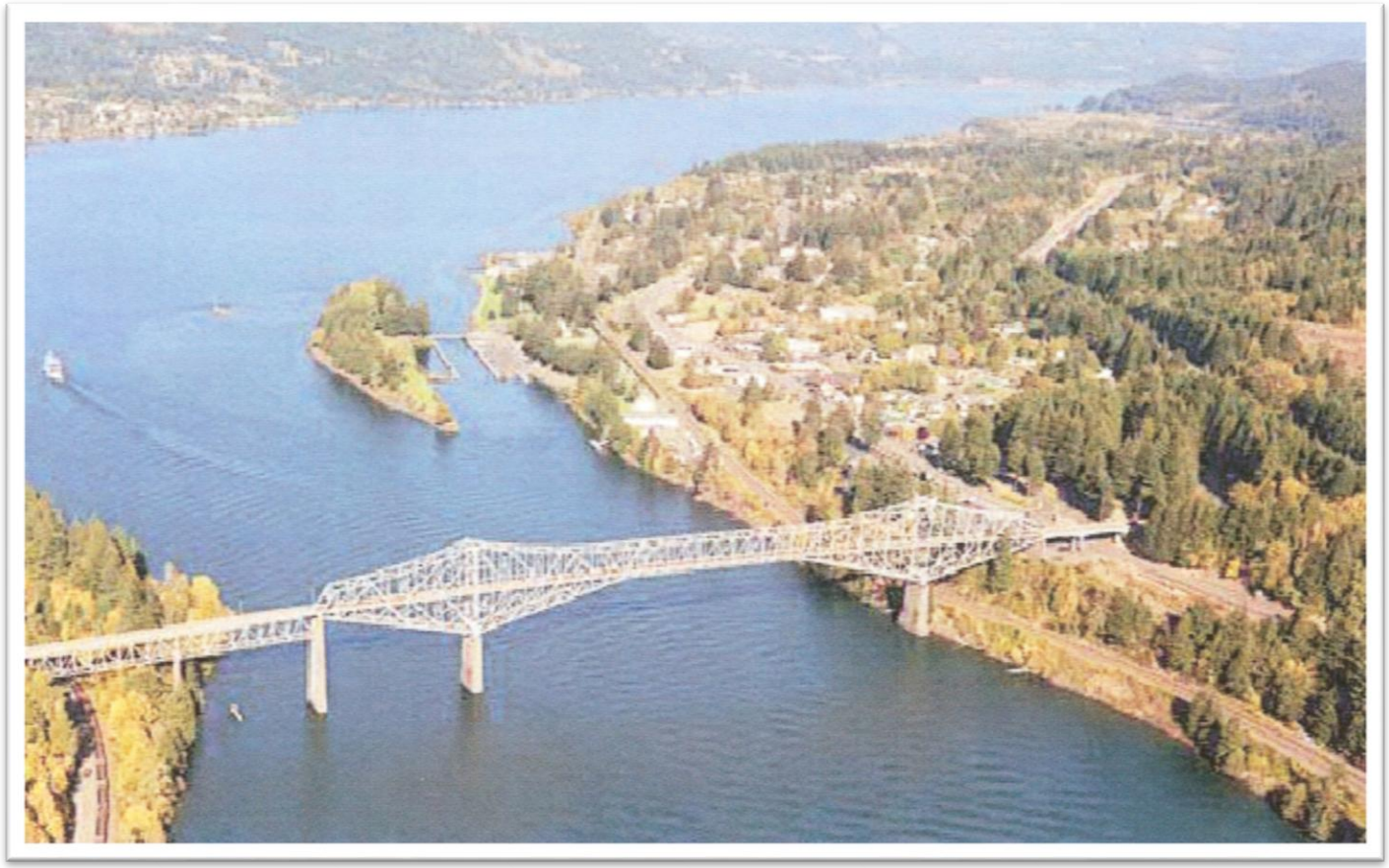
Water System Needs
for the
City of Cascade Locks



What's the Problem?

Aging Infrastructure

Tenneson Engineering Corp.

Dry Creek Reservoir

- Built 1890s; 250,000 gallon capacity
- Below grade concrete, wood-frame roof
- Includes apr. 6000 ft. of asbestos concrete pipe that MUST be decommissioned

Tenneson Engineering Corp.

Oxbow Steel Tank

- Built 1969
- 350,000 gallon capacity
- Welded steel, field-coated

What's the Problem?

Aging Infrastructure

Poor Quality Materials

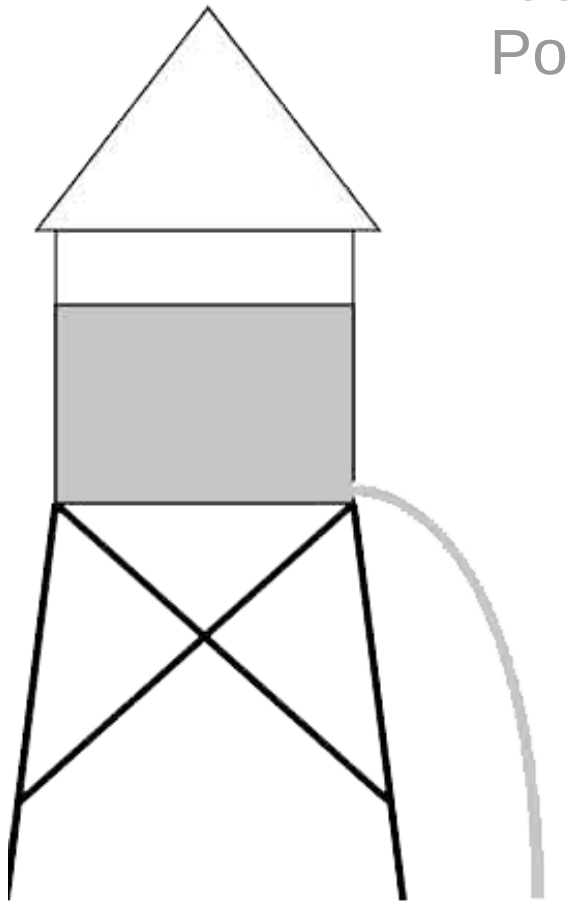
Substandard quality materials were used in both the 1890s and 1969. In addition to the asbestos concrete pipes that need to be replaced, low quality materials has led to huge amounts of leakage throughout the system. The pipes also require more repairs as each year goes by.

How much water are we losing?

What's the Problem?

Aging Infrastructure
Poor Quality Materials

Leakage



Water pumped per month
7.3 million gallons

Water billed per month
4.4 million gallons

Water lost due to leakage each month

2.9 million gallons!

Literally money down the drain

What's the Problem?

Aging Infrastructure
Poor Quality Materials
Leakage

Fire Flow

- Fire flow events cause low service pressure and dangerous velocities in smaller-sized pipes
- Increased probability of water line rupture and backflow contamination

Maximum Safe Fire Flow (currently)

Port Industrial Park = 1000 GPM, two-hour duration; **need 2500**
Downtown Corridor = 1000 GPM, two-hour duration; **need 2000**
Forest Lane = 2000 GPM, two-hour duration; 1500 minimum

What's the Problem?

Aging Infrastructure
Poor Quality Materials
Leakage
Fire Flow

Expanding Need

- Future industrial water users will be limited by current well capacity
- Projected increases in residential population
- No redundancy or backup
- Increase storage to 800,000 gallons
- Install 12” minimum water mains

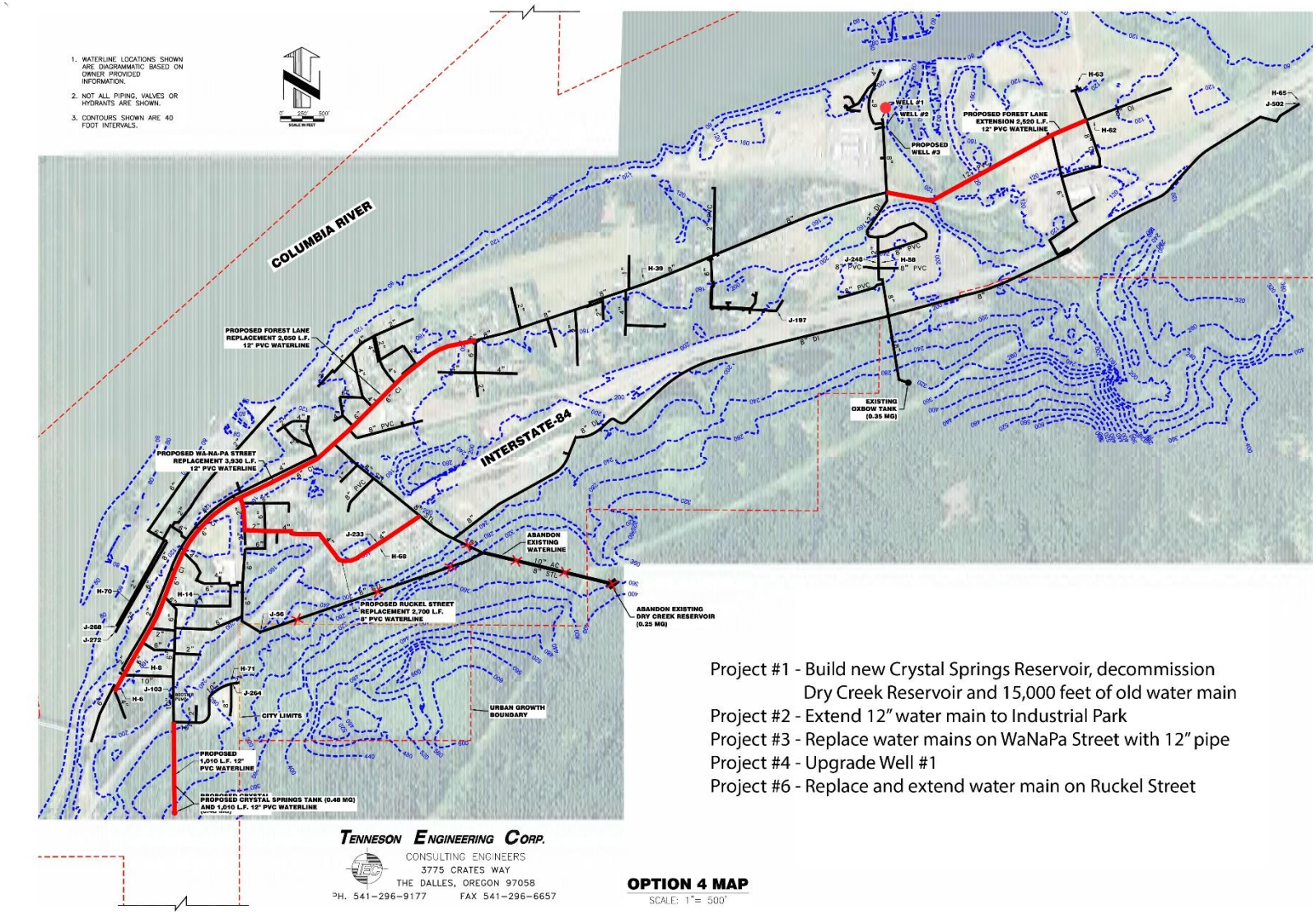
What Needs to Be Done?

2012-2014 Water System Master Plan
Tenneson Engineering Corp.

- Looked at entire system
- Growth Potential
- Industrial and Residential

What did they tell us?

What Needs to Be Done?



Project #1 - Build new Crystal Springs Reservoir, decommission Dry Creek Reservoir and 15,000 feet of old water main
Project #2 - Extend 12" water main to Industrial Park
Project #3 - Replace water mains on WaNaPa Street with 12" pipe
Project #4 - Upgrade Well #1
Project #6 - Replace and extend water main on Ruckel Street

TENNESON ENGINEERING CORP.
CONSULTING ENGINEERS
3775 CRATES WAY
THE DALLES, OREGON 97058
PH. 541-296-9177 FAX 541-296-6657

OPTION 4 MAP
SCALE: 1"= 500'

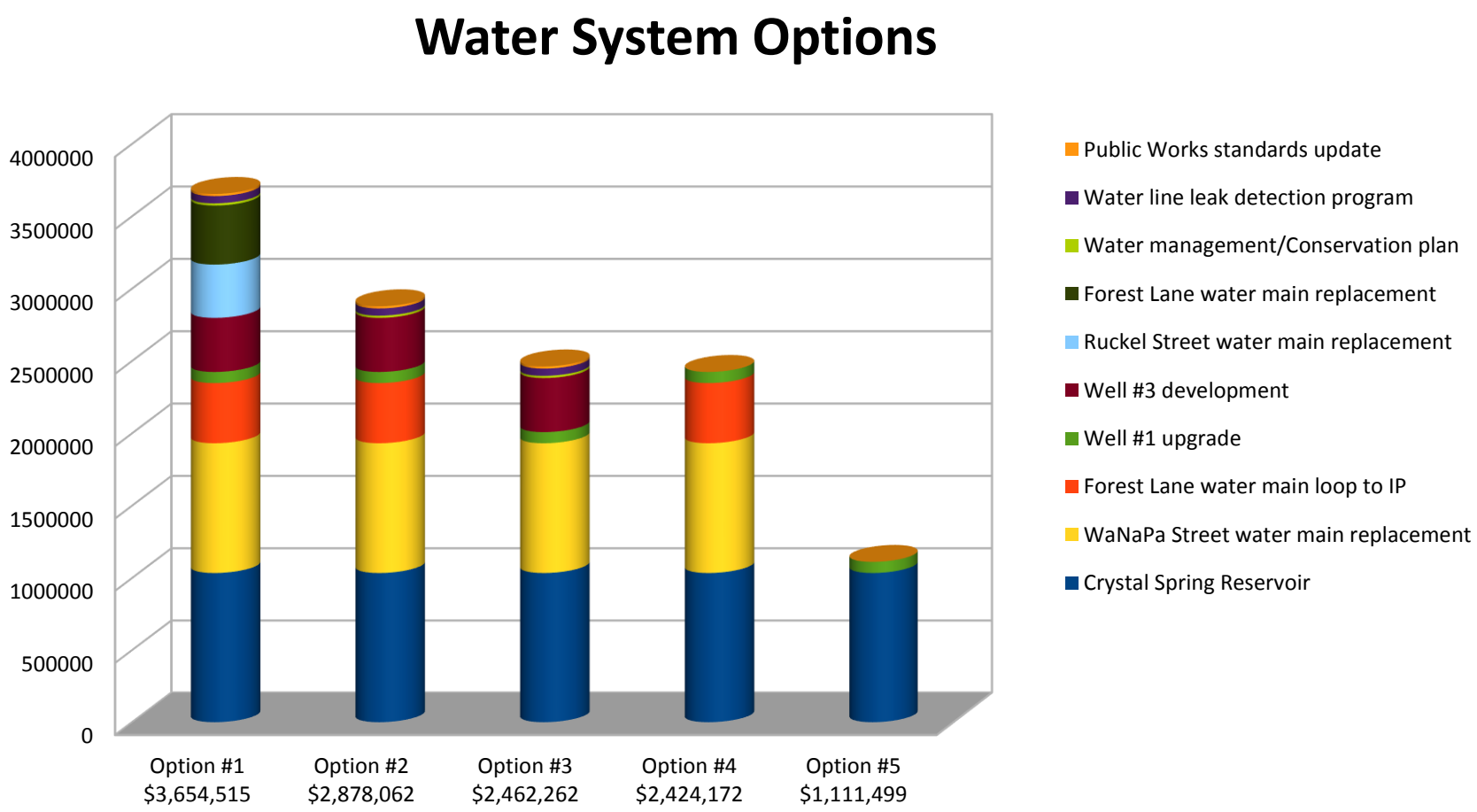
What Needs to Be Done?

Ten Projects in Five Years

1. **Build new reservoir to replace Dry Creek Reservoir and 15,000 feet of old water main** ($1,034,543)
2. **Extend 12” water main into the Industrial Park** ($415,800)
3. **Replace water mains on WaNaPa Street** ($896,873)
4. **Upgrade well #1** ($76,956)
5. **Develop a third well for the city** ($373,890)
6. **Replace and extend water main on Ruckel Street** ($368,890)
7. **Replace water main on Forest Lane** ($408,375)
8. **Develop a water management and conservation plan** ($15,000)
9. **Develop a leak detection program** ($50,000)
10. **Update Public Works Standards** ($15,000)

What Needs to Be Done?

Ten Projects in Five Years



Where will the money come from?

Funding Options

US Department of Agriculture
Rural Utility Services

- Longest term (40 years)
- Low interest (3.25%)
- Possibility of up to $500,000 in loan forgiveness

BUT *… there is a catch*

Funding Options

US Department of Agriculture
Rural Utility Services

Affordability Index

- The Federal Government uses a standard to measure if a rate is affordable
- Based on US Census data and other statistical measures
- Derived from median household income (MHI)
- Defined as less than 1.25% of the average MHI for a month

The MHI for Cascade Locks is $41,019

Funding Options

US Department of Agriculture
Rural Utility Services

Affordability Index

$ 9.50	Base Charge
$ .88	Meter Fee
$ 1.00	Hydrant Maintenance Fee (fire flow)
$11.38	Total fixed cost
$10.00	4,000 gallons at $2.50/1000 gal.
$21.38	**Total average water bill**

Funding Options

US Department of Agriculture
Rural Utility Services

With an MHI of $41,019, the Affordability Index for Cascade Locks is $42.70

$42.70 **Affordability Index**
$21.38 **Current average water bill**

The average water bill will need to double!

What other options do we have?

Funding Options

Private Banks

US Bank • Columbia State Bank
Centrepointe Bank

- Shorter terms (5-15 years)
- Lower interest (2.41% - 3.25%)
- Larger payments

How much larger?

Funding Options

Private Banks

US Bank • Columbia State Bank
Centrepointe Bank

Potential Financing					
	Interest	**Term**	**Amortized**	**Annual Payment**	**Monthly Bill Increase**
US Bank	2.41%	5	15	$192,739.37	$33.81
US Bank	2.53%	7	20	$154,574.60	$27.12
Columbia State Bank	2.95%	10	10	$280,224.92	$49.16
Columbia State Bank	3.30%	15	15	$205,114.45	$35.98
Centrepointe Bank	3.25%	5	5	$534,212.43	$92.27

No matter what funding we choose, your bill WILL increase

How much will this cost me as a residential customer?

USDA Financing

Current Average Bill	$21.38
Projected Average Bill	$42.70
Difference	99.7%

Private Bank Financing

Current Average Bill	$21.38
Projected Average Bill	$55.19 - $113.65
Difference	258% - 531%

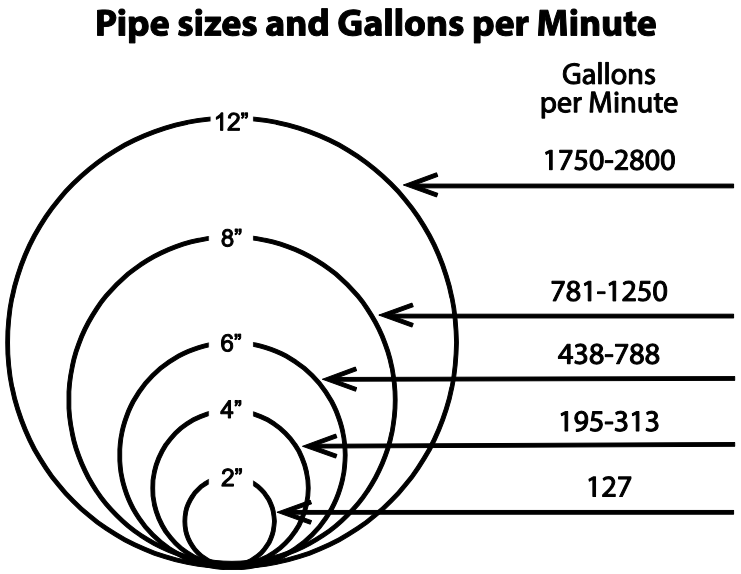
Reminder:

Qualifying for USDA financing within the affordability index also potentially qualifies us for up to $500,000 in loan forgiveness, which lowers the total cost to the city as well.

ONE MORE THING

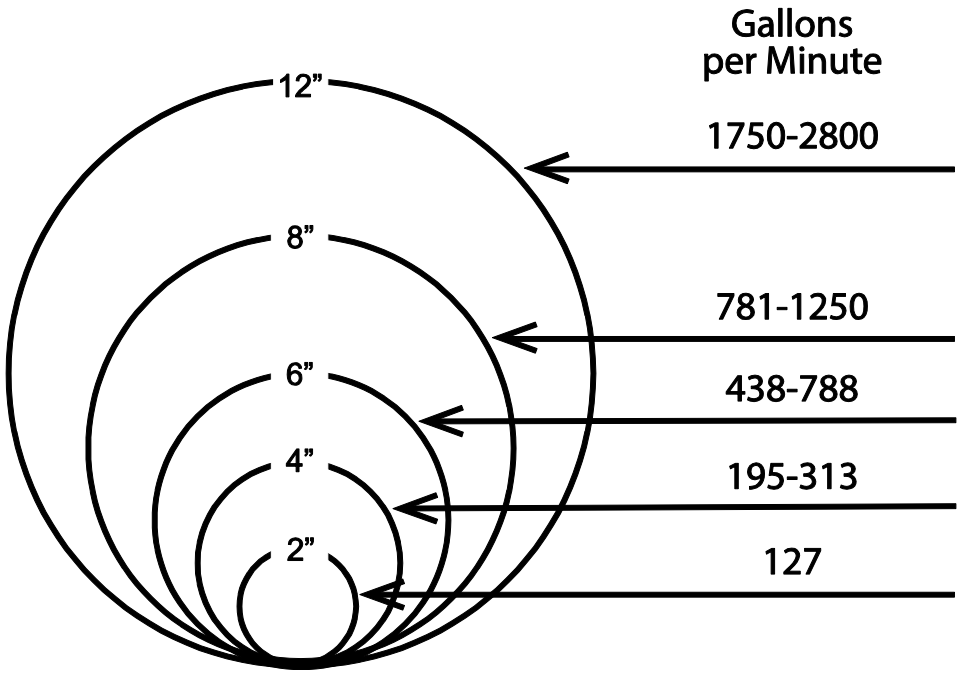
Timing

This work is a high priority for the city not only because of leakage and safety, but ANY Industrial Park development will REQUIRE it. Our infrastructure is currently incapable of providing the needed water flow. The downtown Wa Na Pa water main currently uses 6” and 2” pipes, not sufficient for safe fire flow.



Flow Rates

Pipe sizes and Gallons per Minute



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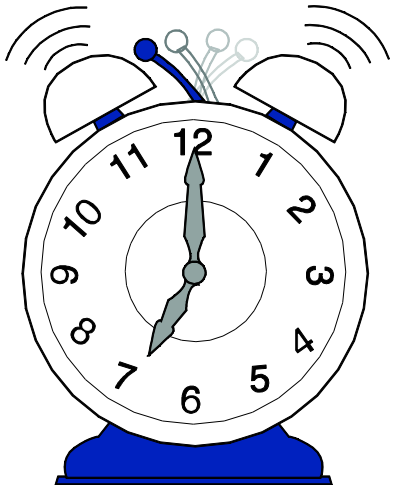
Timing

Upcoming Deadlines



2 months to funding availability

5 months for plans and bids

6 months construction

TOTAL **13** months ⟶ September 2015

Occupancy permits for Industrial Park development required by September 2015

In Review

Water System Problems

Aging Infrastructure
Poor Quality Materials
Leakage
Fire Flow
Expanding Need

In Review

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In Review ~ Funding

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Private Banks

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Any Questions?