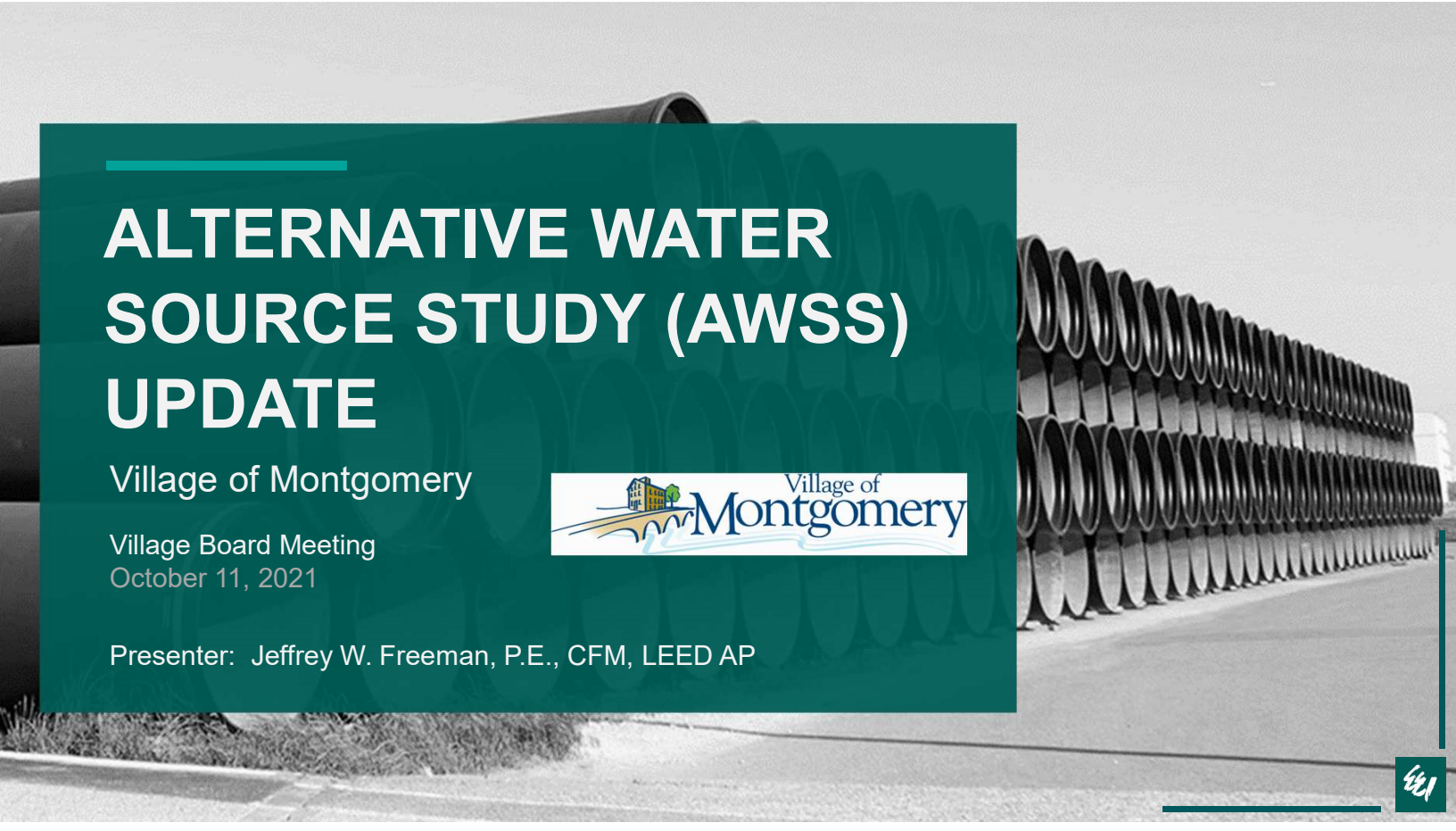


ALTERNATIVE WATER SOURCE STUDY (AWSS) UPDATE

Village of Montgomery

Village Board Meeting
October 11, 2021

Presenter: Jeffrey W. Freeman, P.E., CFM, LEED AP

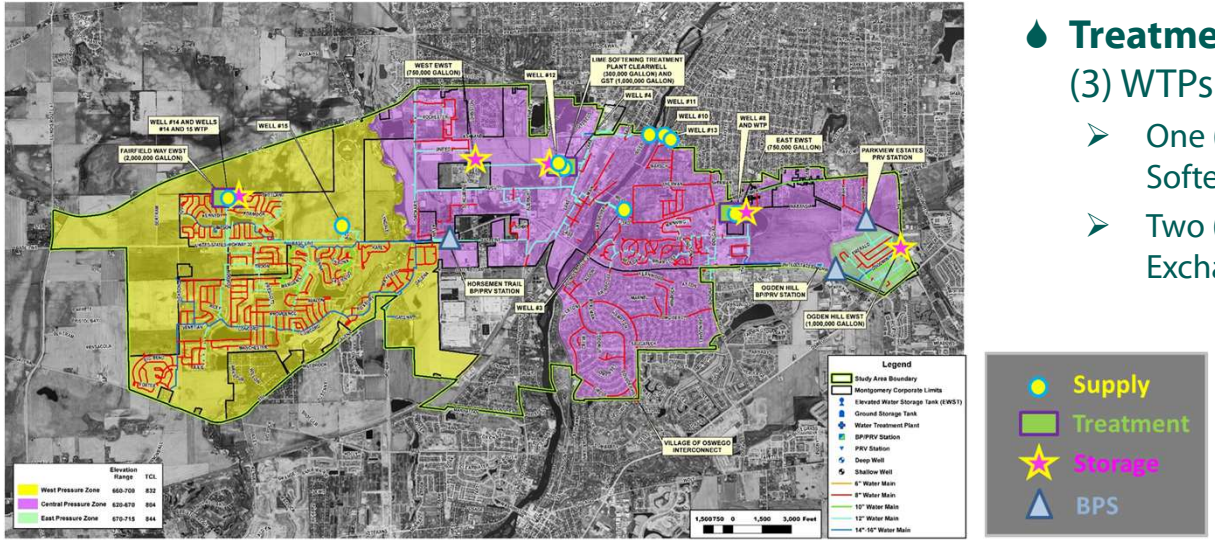
Agenda

1. Existing Water Works System (WWS) Overview
2. Water Source Sustainability and Alternatives
3. Summary of Previous Studies
4. Montgomery and Waterlink Background Information
5. Key Considerations Introduction
6. Supply Alternatives Overview
7. Cost Estimates Summary & Financial Analysis
8. Alternatives Implementation Schedule
9. Key Considerations Summary
10. Next Steps
11. Q&A

EXISTING WATER WORKS SYSTEM (WWS) OVERVIEW

Existing Water Works System

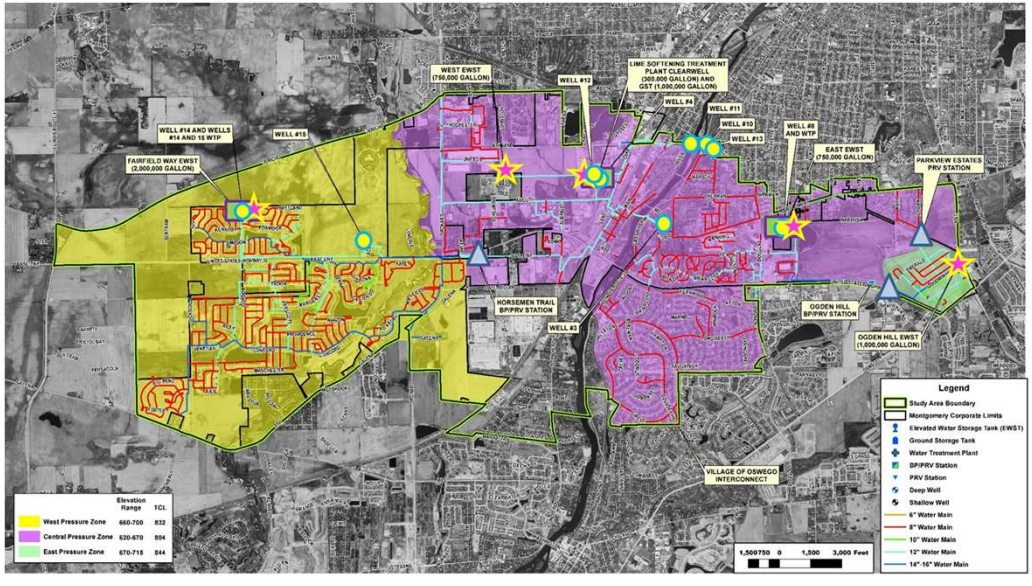
- **Supply:** Nine (9) Active Water Wells [Nos. 3, 4, 8, 10-15]
  - Four (4) Shallow: 2-Sand & Gravel and 2-Limestone
  - Five (5) Deep: 3-St. Peter (Ancell) & Ironton-Galesville, and 2-Ironton-Galesville Only
  - Flow Rate: 200-1,160 gpm
  - Exceed Radium Standard



- **Treatment:** Three (3) WTPs
  - One (1) Lime Softening WTP
  - Two (2) Cation Exchange WTPs

Existing Water Works System

- **Storage:**
  - Two (2) Underground/Ground Water Storage Tanks [300,000 – 1,000,000 gal]
  - Four (4) Elevated Water Storage Tanks (EWST) [750,000 – 2,000,000 gal]
- **Controls:** SCADA System

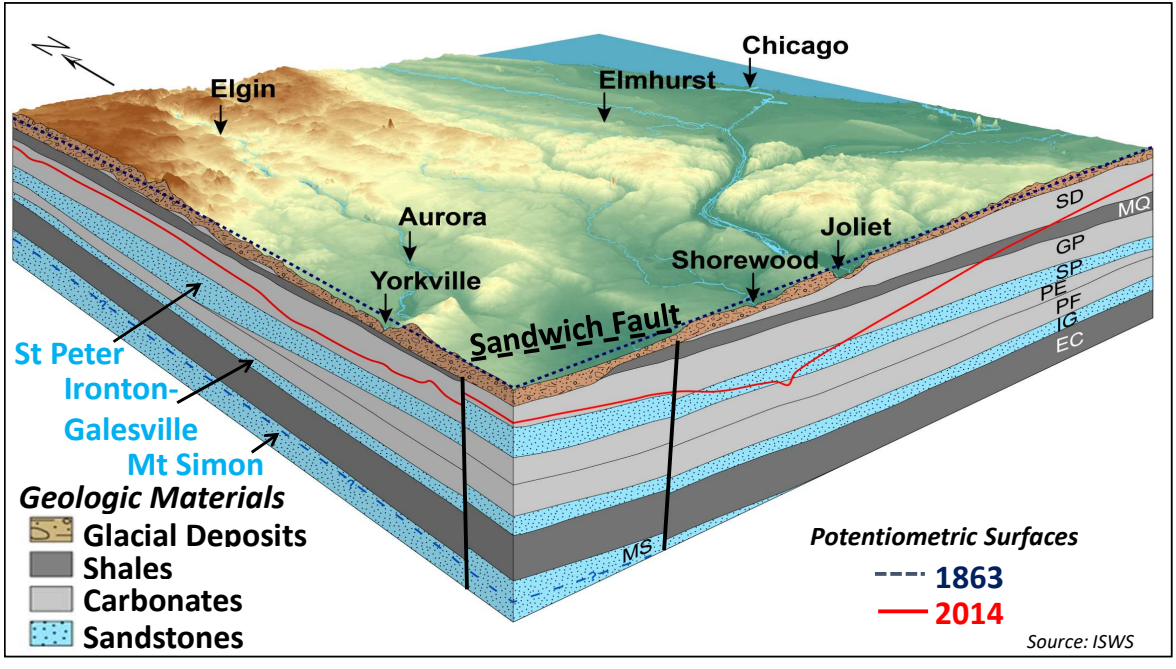


- **Distribution**
  - 4"-16" Water Main
  - Three (3) Pressure Zones
  - Two (2) Distribution System Booster Pump Stations
  - One (1) Pressure Reducing Valve Vault

WATER SOURCE SUSTAINABILITY AND ALTERNATIVES

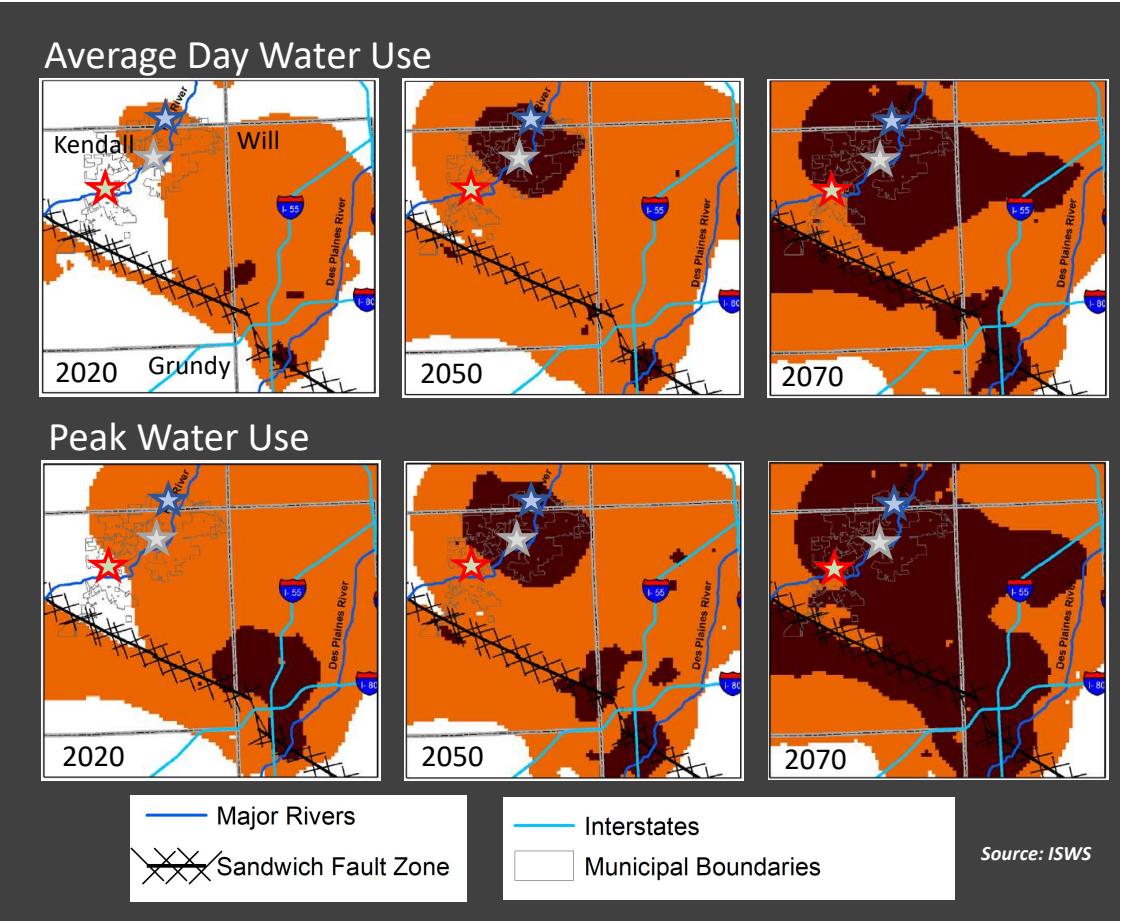
Deep Aquifer System Overview in Northeastern IL

- Naturally Occurring Radium 226 & 228
- Illinois State Water Survey (ISWS) projects the Aquifer is pumped beyond its sustainable yield and water levels are declining
- A number of communities within the region are planning to move to an alternative water source



EXISTING DEEP WELLS GROUNDWATER MODELING

Illinois State Water Survey projects that Montgomery, Yorkville, and Oswego will be at "severe risk" of being able to meet demands and of well inoperability by 2050.



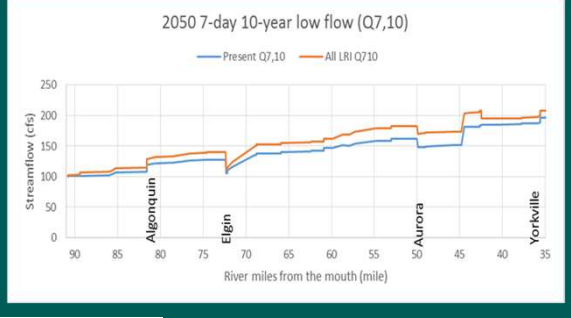
Risk Zones

- Risk of declining well performance
- Risk of well inoperability

- Village of Montgomery
- Village of Oswego
- United City of Yorkville

FOX RIVER

- Water Source for Cities of Elgin and Aurora
- Modeling Conducted by the ISWS: River Baseflow Projected To Increase In the Future
- Most Sustainable Supply Source Currently Within Sub-Region
- Water Withdrawal May be Restricted by IDNR Due to Low Flows – Communities Required to Maintain Some Back-Up Wells
- Withdrawal Permitting Sooner Rather Than Later Likely Better

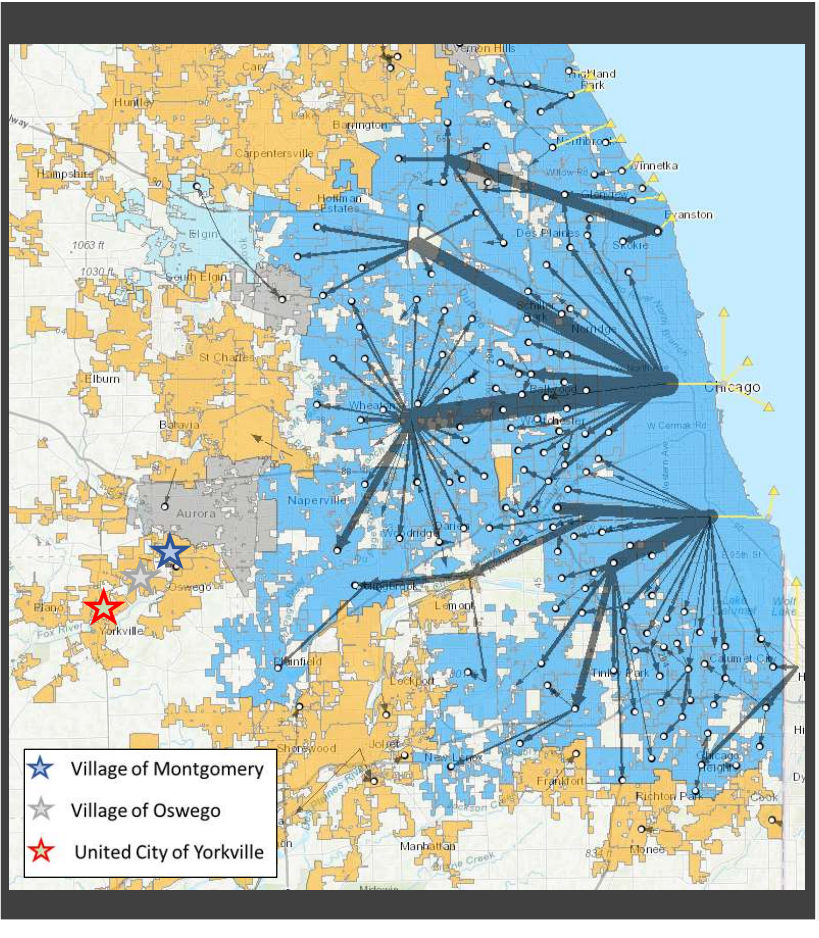


Projected Change In Monthly Risk Of River Flow Being Below Current Q7,10 Flow

Month	Current Conditions (%)	2050 Projected Conditions (%)
May	0.4	<0.1
June	0.3	<0.1
July	1.7	<0.1
August	3.6	0.5
September	4.7	0.9
October	2.4	0.7
November	0.4	0.2

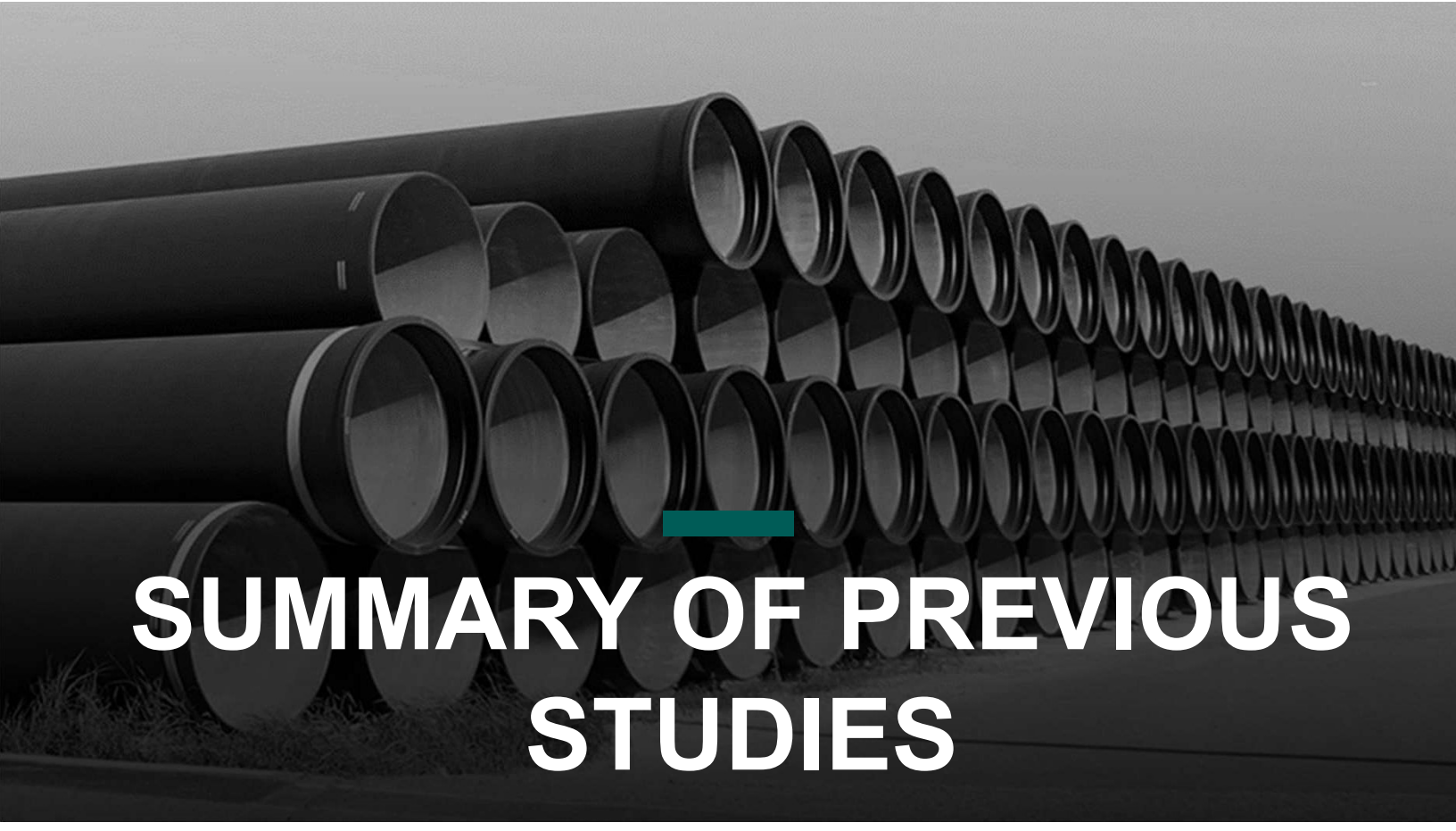
Historical & Projected Q7,10 Deficit Days In Four Worst Drought Years

Year	Total # Of Actual Deficit Days	2050 Projected # Of Deficit Days
1934	98	1
2005	50	22
1956	43	24
1946	38	15



LAKE MICHIGAN

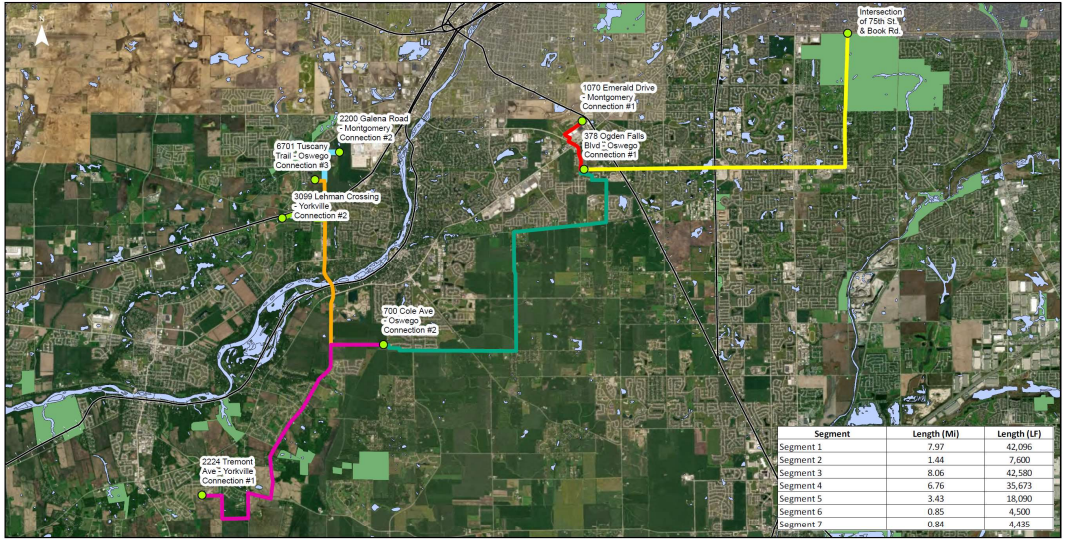
- Total Illinois Diversion Limit Set at 3,200 cfs (2,068 MGD) by Supreme Court Decree
- Illinois Department of Natural Resources (IDNR) Manages Lake Michigan Allocation Process
- IDNR Has Recently Stated They Believe There is Sufficient Allocation to Serve Joliet and the Communities Currently Considering Connection
- Not required to maintain backup wells but can keep for emergency



SUMMARY OF PREVIOUS STUDIES

2016 Village of Montgomery Water Works System Master Plan

In 2016, the Village analyzed the sustainability of the Village's wells, continued use of the wells, utilizing the Fox River as an independent supply source or with the Village of Oswego and United City of Yorkville.



Segment	Length (Mi)	Length (LF)
Segment 1	7.97	42,096
Segment 2	1.44	7,600
Segment 3	8.06	42,580
Segment 4	6.76	35,673
Segment 5	3.43	18,090
Segment 6	0.85	4,500
Segment 7	0.84	4,435

ROUTE MAP WITH KEY FEATURES

September 2018 Figure 5

VILLAGE OF OSWEGO, VILLAGE OF MONTGOMERY, AND UNITED CITY OF YORKVILLE FEASIBILITY STUDY TO RECEIVE LAKE MICHIGAN WATER VIA THE DUPAGE WATER COMMISSION

AECOM

2017 & 2018 DuPage Water Commission Connection Analysis

In 2017 & 2018, AECOM developed capital cost estimates for a DuPage Water Commission Connection to the Villages of Oswego and Montgomery and United City of Yorkville.

2020/2021 Alternative Water Source Project

The Village of Oswego initiated an Alternative Water Source Project where they are evaluating a number of water source options for the region. They have asked Montgomery and Yorkville to provide cost-sharing for the elements of the study that apply to the three communities.

Requested Inputs From VOM & COY

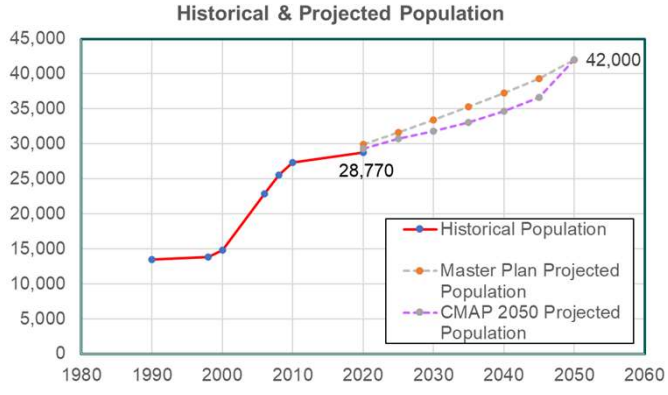
Outputs To Be Utilized In VOM AWSS

2020-2021 AWSS Update (Current Study)

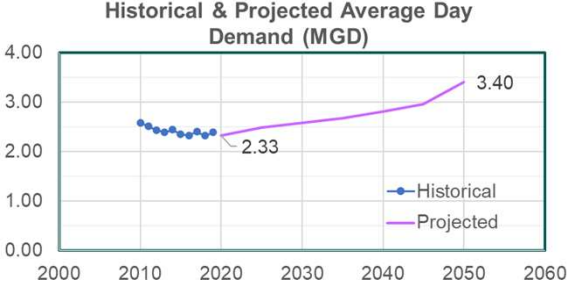
- Review/Obtain Information from Oswego Water Study
  - Summarize Cost Analysis for Waterlink Sub-Regional Fox River System and Lake Michigan Alternatives (DWC, Joliet, and Illinois American)
- Water Distribution System Modeling and Analysis
  - Modeling Scenarios Analysis for Each Alternative, Including Review of Pressures, Available Fire Flows, Pipe Velocities, and Distribution System Improvements Necessary for Implementation
- Supply, Treatment, Storage, and Distribution Improvements Updated Cost Estimates and Analysis for Fox River: Montgomery Alone Option and Cost Analysis Summary of All Alternatives

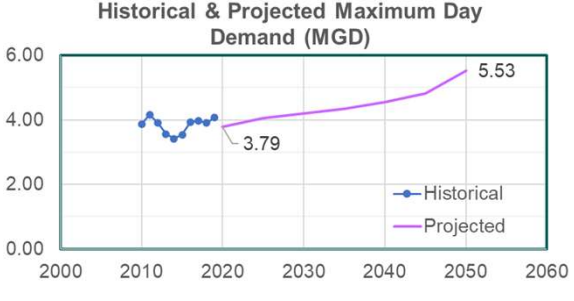
MONTGOMERY & WATERLINK BACKGROUND INFORMATION

Montgomery Historical and Projected Population and Water Demands

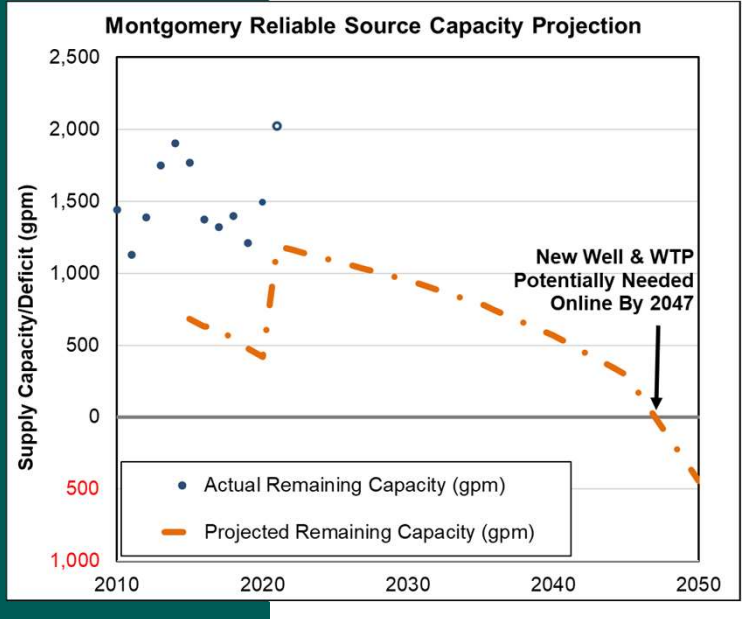


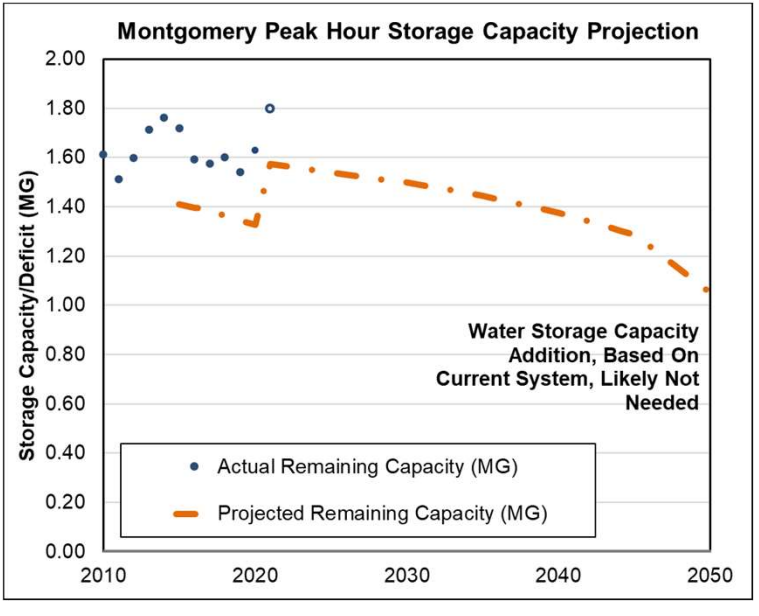
Estimated Montgomery Buildout Population: 42,000



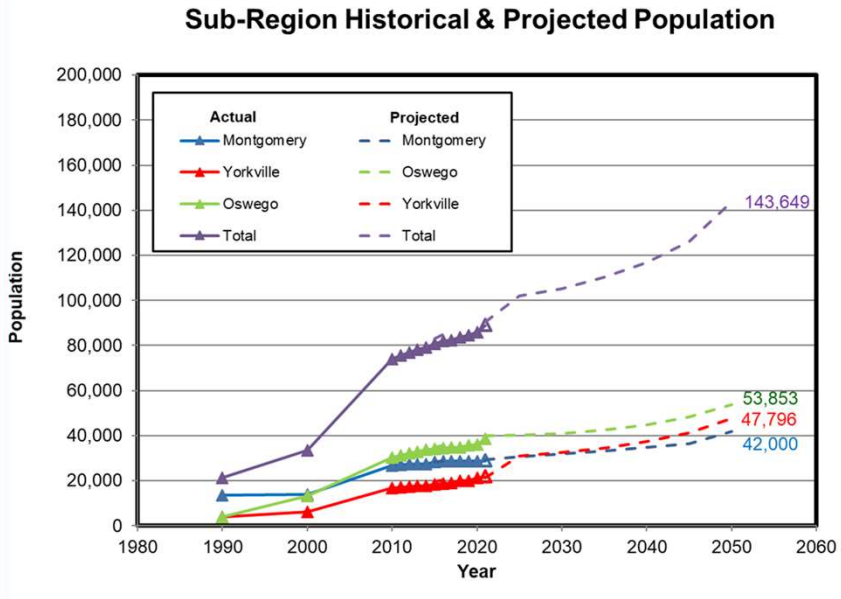


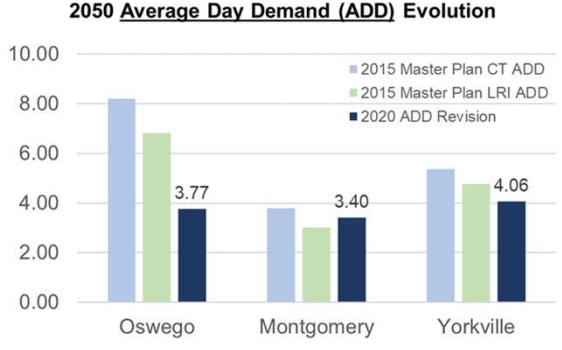
Montgomery Water Supply, Treatment, and Storage Capacity Status – Current System

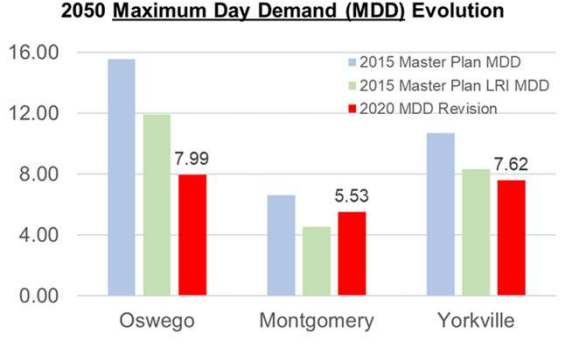




Waterlink Population and Demand Projections



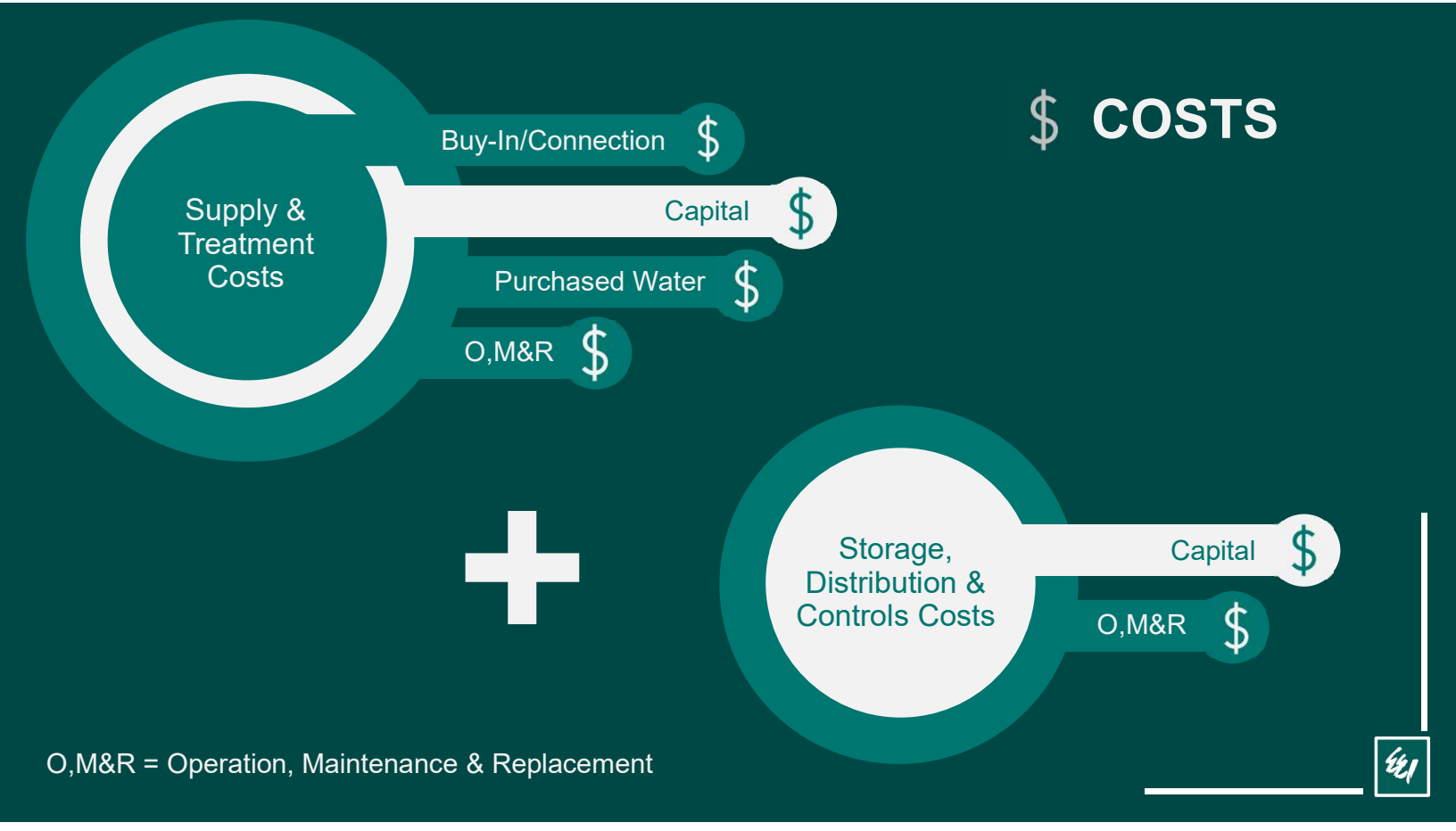




KEY CONSIDERATIONS INTRODUCTION

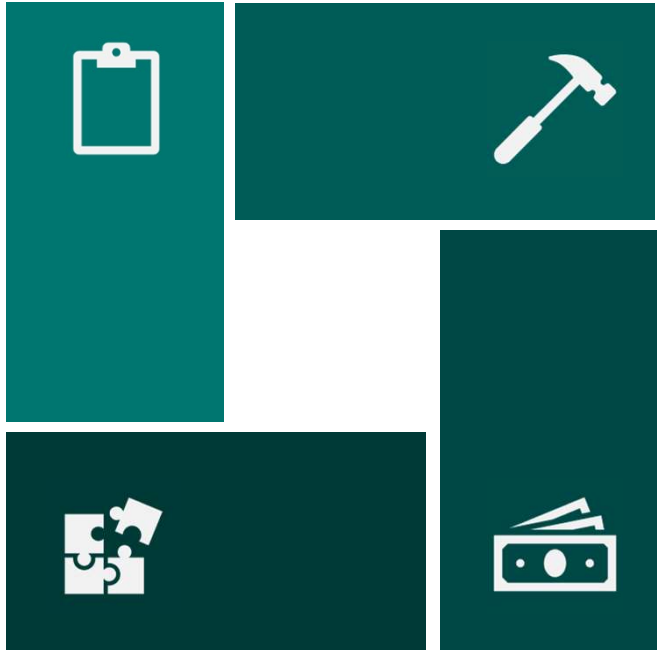
DECISION CONSIDERATIONS

- COST
- RISK
- WATER QUALITY
- MANAGEMENT/ STAFFING
- CONTROL/ GOVERNANCE
- SUSTAINABILITY/ QUANTITY


$ COSTS
Supply & Treatment Costs
Buy-In/Connection $
Capital $
Purchased Water $
O,M&R $
+
Storage, Distribution & Controls Costs
Capital $
O,M&R $
O,M&R = Operation, Maintenance & Replacement

RISK

DESIGN/
PERMITTING



CONSTRUCTION

CAPACITY
EXPANSION

FINANCIAL

WATER QUALITY

TREATMENT SYSTEM

Surface water treatment plant vs. chlorine addition

WATER INTAKE LOCATION

Riverine bank versus offshore Lake Michigan

SEASONAL QUALITY

Seasonal water quality changes in a river versus Great Lake

REGULATORY COMPLIANCE RESPONSIBILITY

Responsibility for regulatory compliance on community or water supplier

MANAGEMENT / STAFFING

- Individual community hires/manages all staff for supply, treatment, transmission, storage and distribution facilities
- Water supplier and water commission hires/manages supply, treatment and transmission staff; Community hires/manages storage and distribution facility staff

CONTROL / GOVERNANCE

SUSTAINABILITY / QUANTITY

SEASONAL FLOW RESTRICTIONS

BACK-UP SUPPLY NEEDS

SUPPLY REDUNDANCY

SUPPLY ALTERNATIVES OVERVIEW

APPLES TO APPLES COST COMPARISON

UNIT PRICES

- Updated All Costs to 2021 $$
- Utilized Same Unit Prices Across Alternatives

CONTINGENCY

- Class 5 Cost Estimates = 30% Contingency

LEGAL & ENGINEERING

- 20% Legal & Engineering For All Alternatives

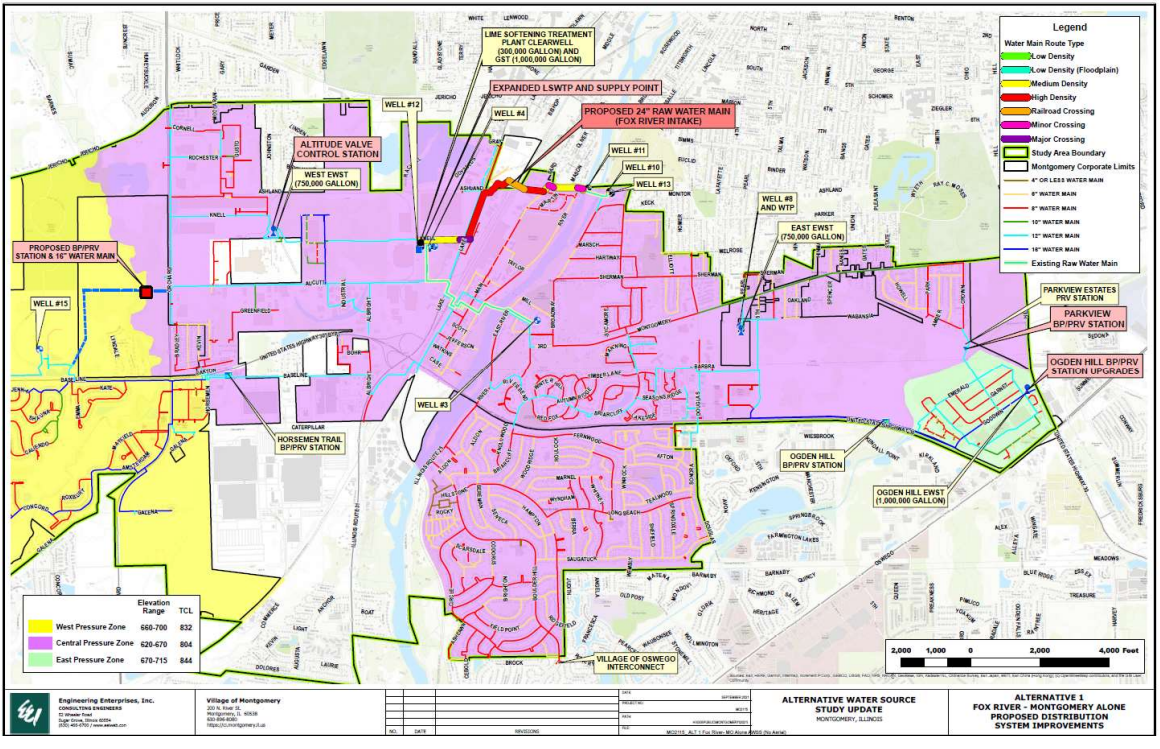
FOX RIVER SUPPLY OPTIONS

VILLAGE OF MONTGOMERY

WATERLINK SUB-REGIONAL SYSTEM WITH OSWEGO & MONTGOMERY

CITY OF AURORA

Fox River: Montgomery Alone



Fox River: Montgomery Alone – Summary of Improvements

Supply & Treatment

- Fox River Intake & Pump Station
- Fox River Transmission Main
- Lime Softening Water Treatment Plant Expansion/Upgrades
- New Backup Well (Well No. 16)
- New Backup Wells (14, 15, & 16) Transmission Main

Distribution*

- High Service Pump Modifications at Central Ground Storage Tank
- New Altitude/Control Valve Station for West EWST
- New Orchard/Aucutt Booster Pump/Pressure Reducing Valve Station
- New Parkview Booster Pump/Pressure Reducing Valve Station at Ogden Hill
- Ogden Hill Booster Pump/Pressure Reducing Valve Station Upgrades and SCADA Modifications

**Note: No Storage Improvements Required for this Alternative*

Fox River: Montgomery Alone

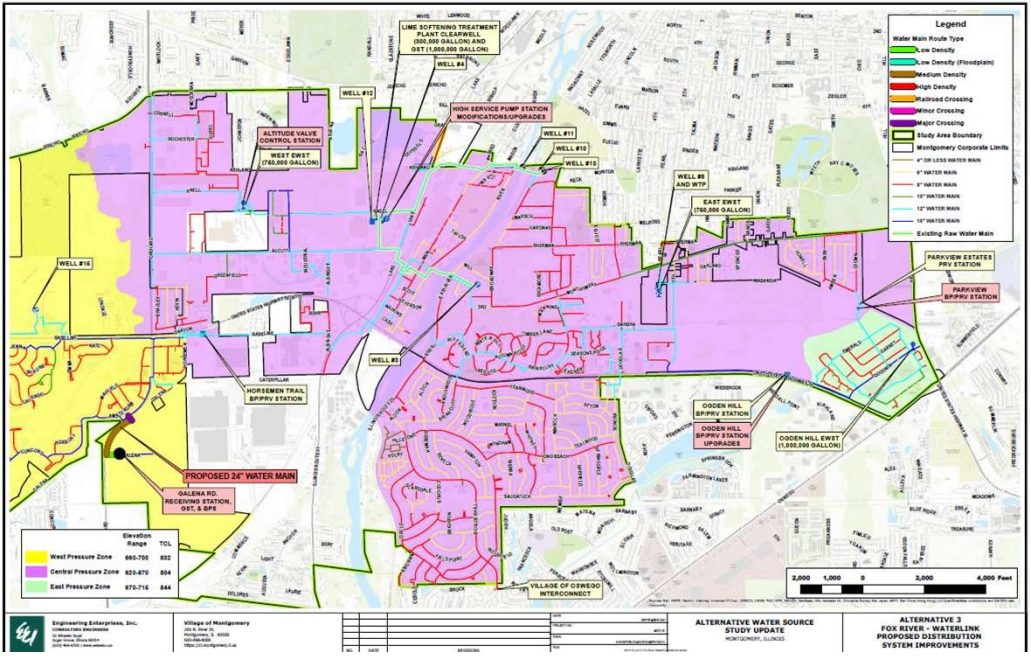
Total Capital Cost Estimate: $60,970,000

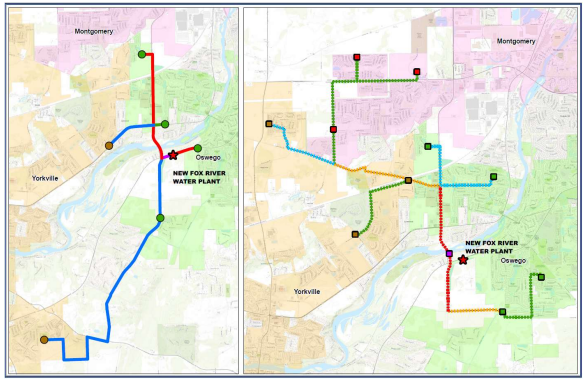
Decision Considerations Summary

- Sustainability and Water Quality/Permitting of Source:
  - Low Flow/Seasonal Water Quality Restrictions
  - Proposed Intake Upstream of Fox Metro Water Reclamation Facility
  - Backup Well Network Required
- Governance, Management/Operational Responsibility, and Risk:
  - Sole Ownership/Control & Sole Assumption of Risk
- Internal System Improvements: Village Risk Tolerance/Redundancy with Single Supply Source
- Estimated Timeline: 5-7 years

Fox River: Waterlink Sub-Regional System

Internal Distribution System Improvements





Treated Water (left) & Back-Up Well Raw Water (right) Transmission Main Networks

Fox River: Waterlink – Summary of Improvements

Sub-Regional Supply & Treatment

- Fox River Intake & Pump Station
- Fox River Raw Water Transmission Main
- Backup Well Raw Water Transmission Main (Total Length = 13.5 mi; Montgomery Share = 30.3%)
- Lime Softening Water Treatment Plant
- New Backup Well (Well No. SR-1)
- Treated Water Transmission Mains (Total Length = 18.0 mi; MO Share = 16.8%)

Internal Distribution System*

- High Service Pump Modifications at Central Ground Storage Tank
- Galena Road Receiving Station and Booster Pump Station
- New Altitude/Control Valve Station for West EWST
- Water Main Improvements: Hydraulics
- New Parkview Booster Pump/Pressure Reducing Valve Station at Ogden Hill
- Ogden Hill Booster Pump/Pressure Reducing Valve Station Upgrades and SCADA Modifications

**Note: No Storage Improvements Required for this Alternative*

Fox River: Waterlink Sub-Regional System

Total Capital Cost Estimate*: $76,060,000

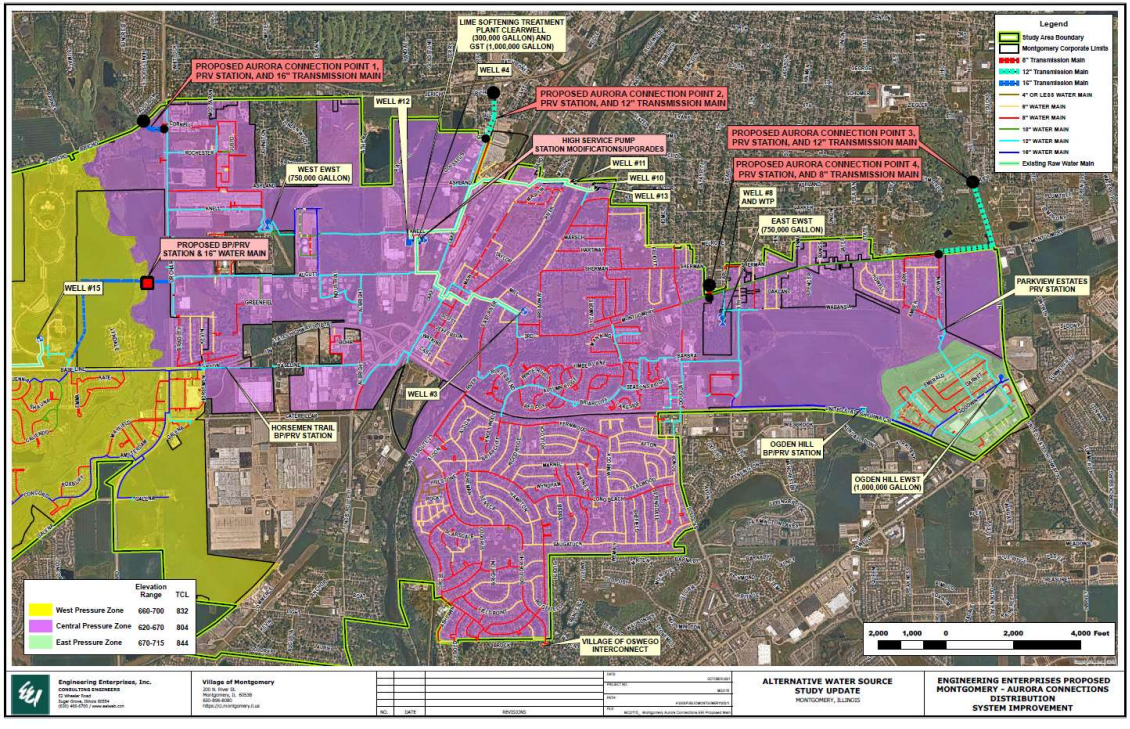
**Includes Montgomery's portion of total shared sub-regional costs*

Decision Considerations Summary

- Sustainability and Water Quality/Permitting of Source:
  - Low Flow/Seasonal Water Quality Restrictions
  - Several Miles Downstream of Fox Metro Water Reclamation Facility
  - Backup Well Network Required
- Governance, Management/Operational Responsibility, and Risk:
  - Intergovernmental Agreement/New Governmental Unit Required
  - Shared Ownership/Control & Diversification of Risk, Staffing
- Internal System Improvements:
  - Reduction in Internal Improvements Due to Dual Supply Sources
- Estimated Timeline: 9-11 years

Fox River: Aurora

Internal Distribution System Improvements



Fox River: Aurora – Summary of Improvements

Supply

- Aurora Supply Connection Points (x4) in Montgomery's Central Pressure Zone
- Pressure Reducing Valve/Flow Metering Receiving Station Vaults (x4)
- Treated Water Transmission Mains

Distribution*

- New Orchard/Aucutt Booster Pump/Pressure Reducing Valve Station
- High Service Pump Modifications at Existing Lime Softening WTP (Central Ground Storage Tank)

**Note: No Storage Improvements Required for this Alternative*

Fox River: Aurora

Total Capital Cost Estimate: $43,850,000

**Note: Cost shown includes Monthly Charges from Aurora for Connecting to their system and charge per MO user for 20-year estimated term of initial agreement*

Decision Considerations Summary

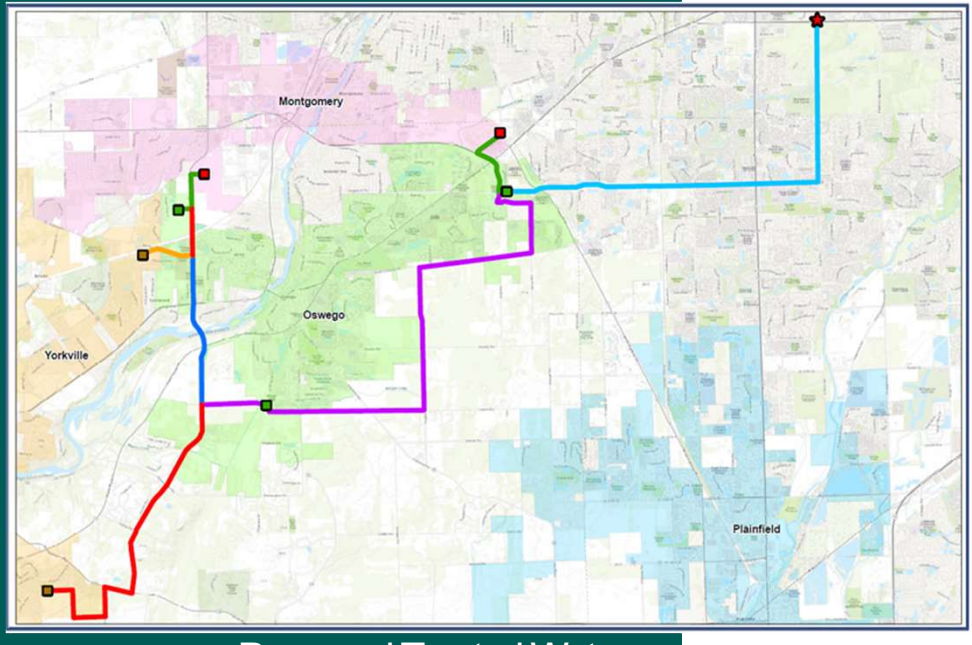
- Sustainability and Water Quality/Permitting of Source:
  - Aurora Blends Fox River and Well Water – Low Flow/Seasonal Water Quality Restrictions May Require Heavier Well Usage At Times
  - Aurora Responsible for Treatment/Transmission Mains
  - Existing Wells Maintained for Emergency Only
- Governance, Management/Operational Responsibility, and Risk:
  - No Direct Ownership/Control of Source Water or Transmission Mains
- Internal System Improvements:
  - New Receiving/PRV Stations Required at Each Connection Point
  - All Flow Supplied to Central Pressure Zone – Must Be Pumped to West and East Zones
  - Non-Revenue Water (NRW) Reduction Required (summarized later in presentation)
- Buy-In Costs*
- Estimated Timeline: 4-5 years

LAKE MICHIGAN SUPPLY OPTIONS

DuPAGE WATER COMMISSION

JOLIET AREA WATER COMMISSION

ILLINOIS LAKE WATER COMPANY/ PLAINFIELD



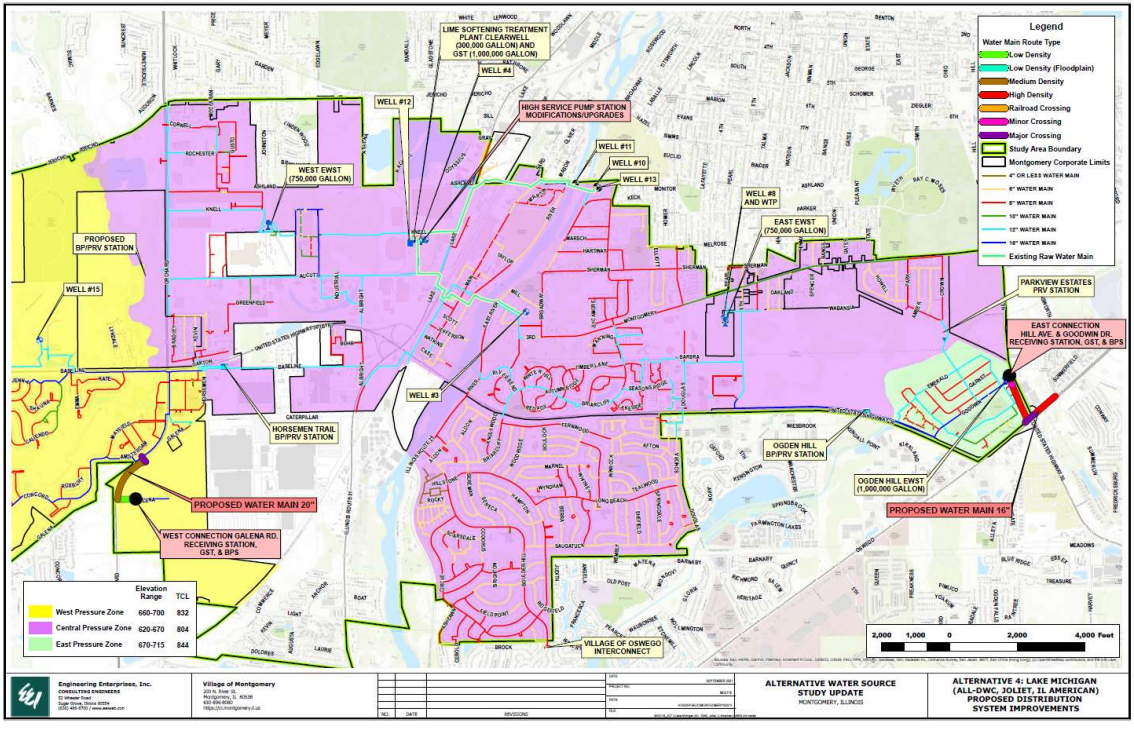
Proposed Treated Water Transmission Main Network

DUPAGE WATER COMMISSION

- 23 Charter Communities & Six (6) Subsequent Communities
- 40 Year Water Supply Contracts With City of Chicago & All Commission Members Expires In 2024
- 13 Member Water Commission Board (Six – Municipalities; Seven – County & Board Chair)

Lake Michigan: DuPage Water Commission

Internal Distribution System Improvements



DuPage Water Commission – Summary of Improvements

Supply

- Treated Water Transmission Mains

Internal Distribution System & Storage*

- West Receiving Station, Including:
  - 0.5 MG Ground Storage Tank
  - Booster Pump Station
- East Receiving Station, Including:
  - 0.5 MG Ground Storage Tank
  - Booster Pump Station
- High Service Pump Modifications/Upgrades at Existing Lime Softening WTP Site (Central Ground Storage Tank)
- Water Main Improvements: Hydraulics

**Note: Total Storage Required for Lake Michigan Suppliers is two times Average Day Demand*

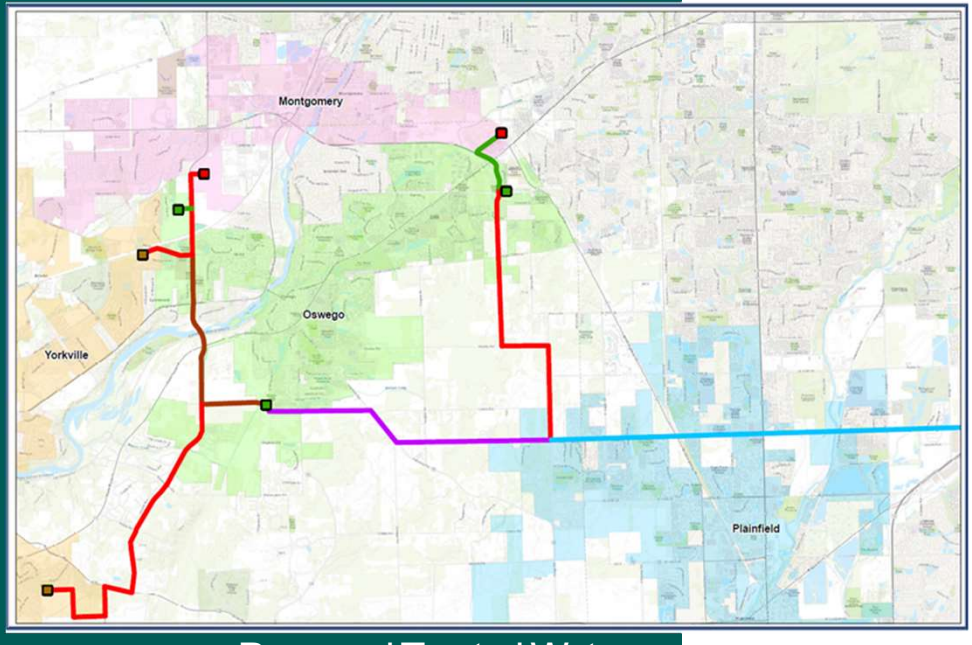
Lake Michigan: DuPage Water Commission

Total Capital Cost Estimate*: $65,900,000

**Includes Montgomery's portion of total shared sub-regional costs*

Decision Considerations Summary

- Sustainability and Water Quality/Permitting of Source:
  - No Seasonal Restrictions & Seasonally Consistent WQ
  - Chicago/DWC Responsible for Treatment/Transmission Mains
  - Existing Wells Maintained for Emergency Only
- Governance, Management/Operational Responsibility, and Risk:
  - No Direct Ownership/Control of Source Water or Transmission Mains
- Internal System Improvements:
  - New Receiving Stations Required Including Additional Storage/BPS
  - NRW Reduction Required (summarized later in presentation)
- Buy-In Costs
- Estimated Timeline: 4-5 years



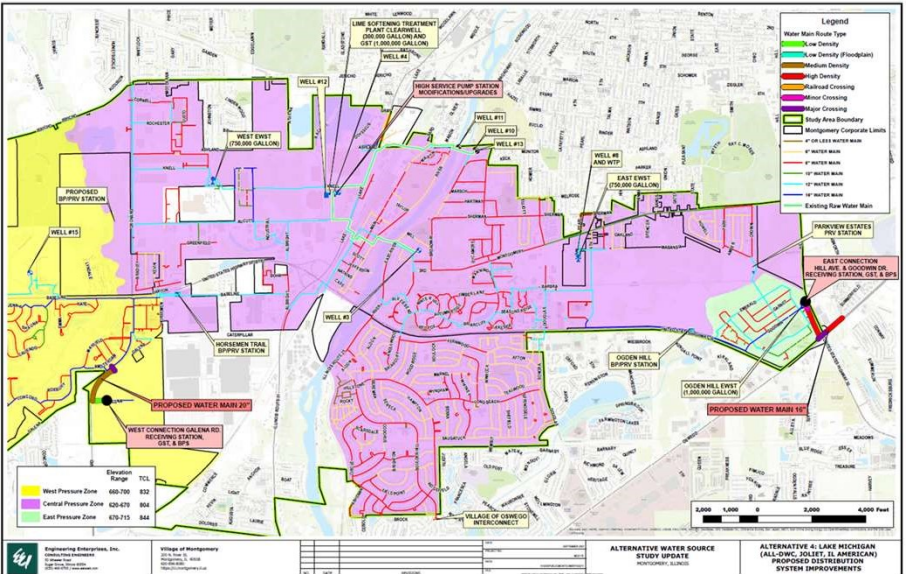
Proposed Treated Water Transmission Main Network

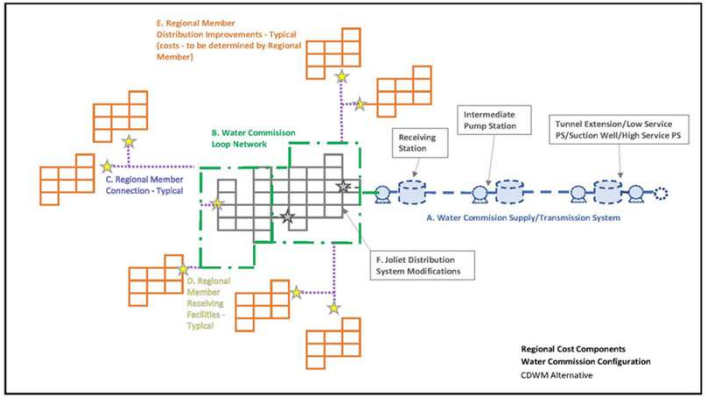
JOLIET AREA WATER COMMISSION

- New System With Twelve (12) Communities Currently Considering Joining
- Purchase Water From City of Chicago
- Opportunity To Be Charter Member

Lake Michigan: Joliet Water Commission

Internal Distribution System Improvements





Joliet Water Commission Schematic

Joliet Water Commission – Summary of Improvements

Supply

- Treated Water Transmission Mains

Internal Distribution System & Storage*

- West Receiving Station, Including:
  - 0.5 MG Ground Storage Tank
  - Booster Pump Station
- East Receiving Station, Including:
  - 0.5 MG Ground Storage Tank
  - Booster Pump Station
- High Service Pump Modifications/Upgrades at Existing Lime Softening WTP Site (Central Ground Storage Tank)
- Water Main Improvements: Hydraulics

**Note: Total Storage Required for Lake Michigan Suppliers is two times Average Day Demand*

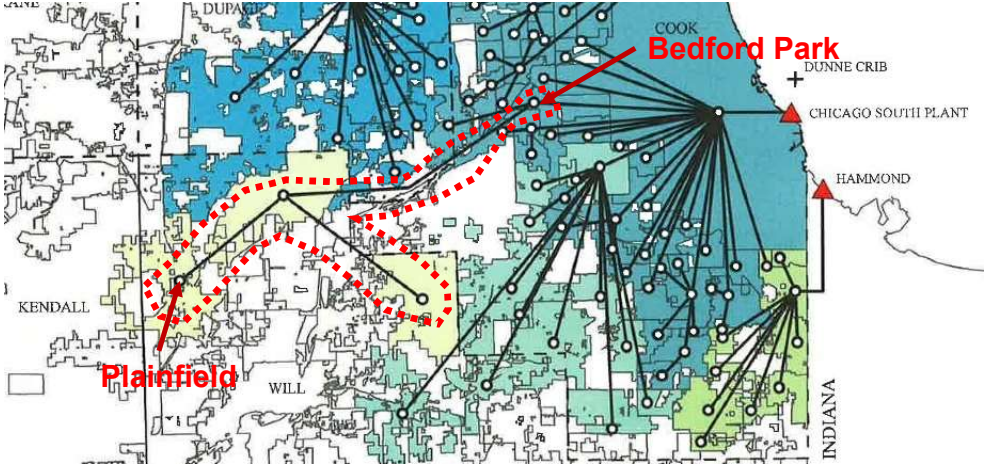
Lake Michigan: Joliet Water Commission

Total Capital Cost Estimate*: $85,440,000

**Includes Montgomery's portion of total shared sub-regional costs*

Decision Considerations Summary

- Sustainability and Water Quality/Permitting of Source:
  - No Seasonal Restrictions & Seasonally Consistent WQ
  - Joliet/Water Commission Responsible for Treatment/Transmission Mains
  - Existing Wells Maintained for Emergency Only
- Governance, Management/Operational Responsibility, and Risk:
  - No Direct Ownership/Control of Source Water or Transmission Mains
- Internal System Improvements:
  - Joliet Water Commission Still Being Formed
  - New Receiving Stations Required Including Additional Storage/BPS
  - NRW Reduction Required (summarized later in presentation)
- Buy-In Costs
- Estimated Timeline: 9 years (No Earlier Than 2030)

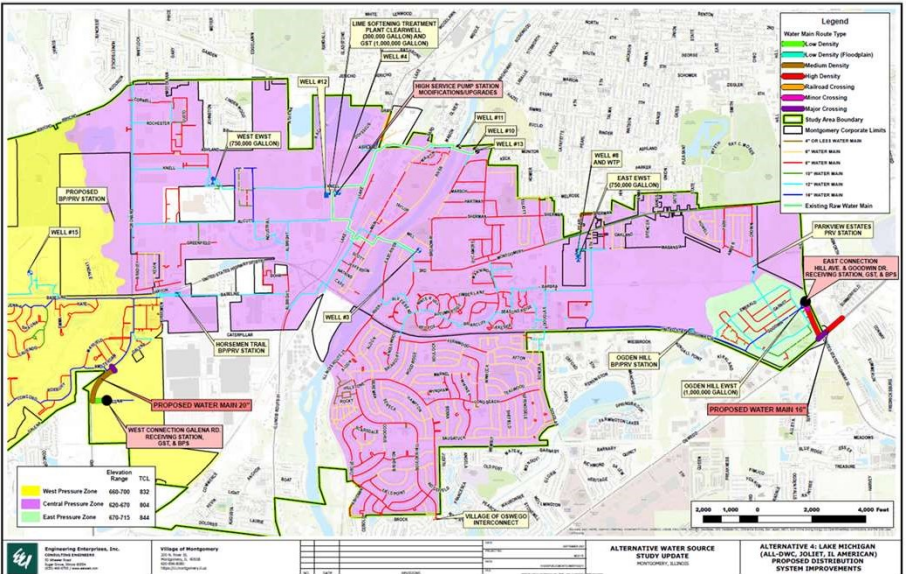


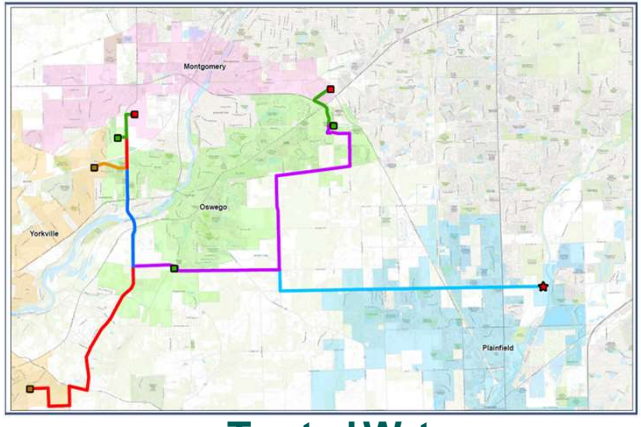
ILLINOIS LAKE WATER/ PLAINFIELD

- Private Utility
- Receive Water From Bedford Park Who Receives Water From Chicago
- Currently Serving Bolingbrook, Homer Glen, Plainfield & Small Portions of Romeoville and Lemont

Lake Michigan: Illinois Lake Water Option

Internal Distribution System Improvements





Treated Water Transmission Main Network

Illinois Lake Water – Summary of Improvements

Supply

- Treated Water Transmission Mains

Internal Distribution System & Storage*

- West Receiving Station, Including:
  - 0.5 MG Ground Storage Tank
  - Booster Pump Station
- East Receiving Station, Including:
  - 0.5 MG Ground Storage Tank
  - Booster Pump Station
- High Service Pump Modifications/Upgrades at Existing Lime Softening WTP Site (Central Ground Storage Tank)
- Water Main Improvements: Hydraulics

**Note: Total Storage Required for Lake Michigan Suppliers is two times Average Day Demand*

Lake Michigan: Illinois Lake Water

Total Capital Cost Estimate*: TBD

**Includes Montgomery's portion of total shared sub-regional costs*

Decision Considerations Summary

- Sustainability and Water Quality/Permitting of Source:
  - No Seasonal Restrictions & Seasonally Consistent WQ
  - IL American Water Responsible for Treatment/Transmission Mains
  - Existing Wells Maintained for Emergency Only
- Governance, Management/Operational Responsibility, and Risk:
  - Illinois American Water is a Private Utility
  - No Direct Ownership/Control of Source Water or Transmission Mains
- Internal System Improvements:
  - New Receiving Stations Required Including Additional Storage/BPS
  - NRW Reduction Required (summarized later in presentation)
- Estimated Timeline: 4-5 Years

Non-Revenue Water Reduction Plan

Non-Revenue Water (NRW) is the difference between system input volume (water produced or purchased) and billed authorized consumption[1]. NRW includes the following:

Unbilled Authorized Consumption

- Examples: Fire hydrant flushing, water treatment plant process water, municipal buildings whose water is not metered, etc.

Apparent Losses

- Non-physical losses such as unauthorized consumption (water theft), meter inaccuracies, systematic data handling errors, etc.

Real Losses

- Physical losses from the distribution system and storage tanks up to the point of connection to the customer meter

[1]From AWWA Manual M36: Water Audits and Loss Control, 4th Edition (2016)

Non-Revenue Water Reduction Plan

- Water Audits can be used to identify, manage, and minimize sources of water loss. A Water Audit was completed for the 2020 Water Year (October 1, 2019 – September 30, 2020).
- Maximum NRW (water loss) required for Lake Michigan-supplied systems is 10%.
  - 2016 – 2020 NRW average is approximately 27.5%.
- NRW Reduction Plan for Montgomery includes:
  - Completion of Annual Water Loss Audit
  - Leak Detection
  - Water Main Replacement
  - Water Meter Replacement

Total NRW Reduction Plan Cost Estimate*: **$34,170,000**

COST ESTIMATES SUMMARY & FINANCIAL ANALYSIS

AWSS Alternatives Capital Cost Summary

Fox River: MO Alone……..	$72,360,000*
Fox River: Waterlink Sub-Regional System.....	$87,450,000*
Fox River: Aurora……..	$78,020,000**
Lake Michigan: DuPage Water Commission.....	$100,070,000**
Lake Michigan: Joliet Area Water Commission...	$119,600,000**
Lake Michigan: Illinois American Water……	TBD**

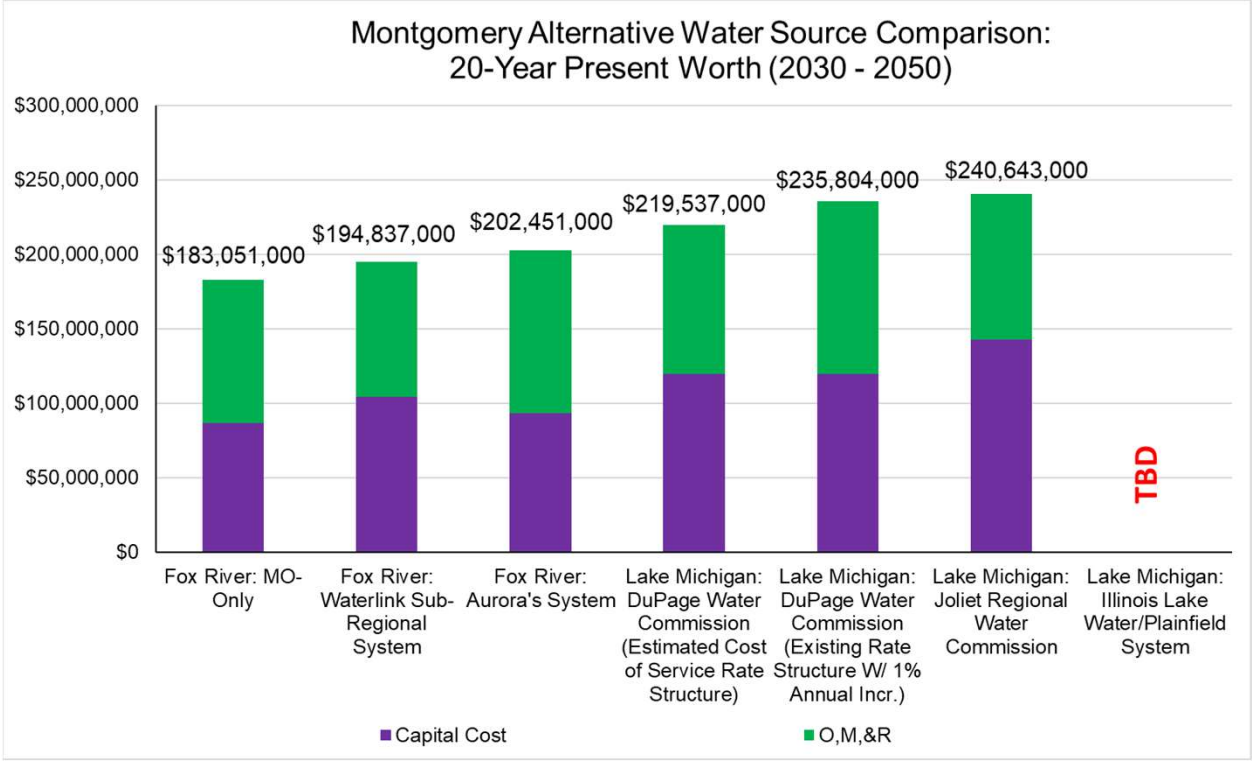
** Includes 1/3 of NRW Reduction Costs*

*** Includes 100% of NRW Reduction Costs*

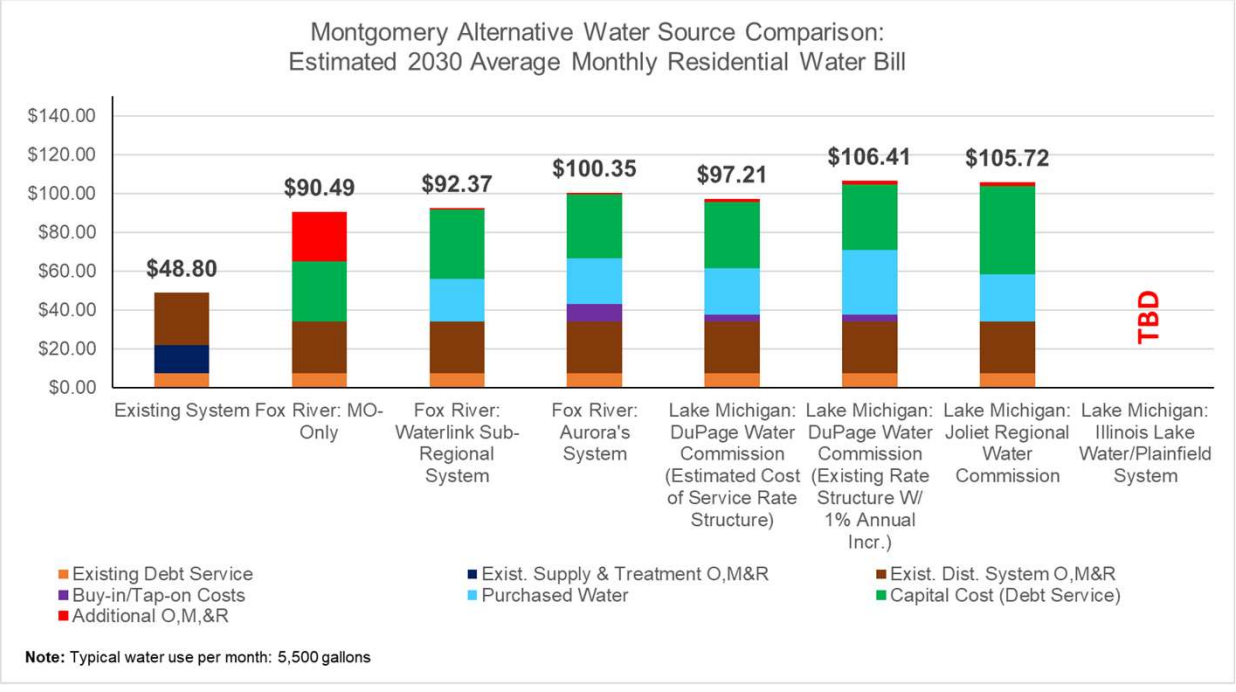
Funding Summary for Each Alternative

Alternative	Estimated Construction Year	2021 Estimated Costs				Total Costs Inflated To Construction Year
		IEPA SRF	EPA WIFIA	Bonds/Other	DWC - Buy In	
Loan Period (Years):		20	35	20	20	
Annual Interest Rate:		2.0%	2.0%	3.5%	0.0%	
Fox River: MO-Only	2027	$62,500,000	$23,892,961	$0	$0	**$86,392,961**
Fox River: Waterlink Sub-Regional System	2027	$62,500,000	$41,909,548	$0	$0	**$104,409,548**
Fox River: Aurora	2027	$62,500,000	$30,654,501	-	-	**$93,154,501**
Lake Michigan: DuPage Water Commission	2024	$62,500,000	$35,602,588	$0	$10,283,000	**$108,385,588**
Lake Michigan: Joliet Regional Water Commission	2027	$62,500,000	$80,304,792	$0	$0	**$142,804,792**
Lake Michigan: Illinois Lake Water/Plainfield System	2024	TBD				

AWSS Alternatives Net Present Value Summary



Estimated 2030 Residential Water Bill Comparison



Note: In the graph above, the Existing System 2030 bill assumes a 3% annual increase in water rate per year; The current policy is a 5.5% annual increase; At 5.5% per year to 2030, the typical residential water bill in 2030 would be $60.55.

Annual Cost Savings for Delay in Implementation of Alternative Water Source Program

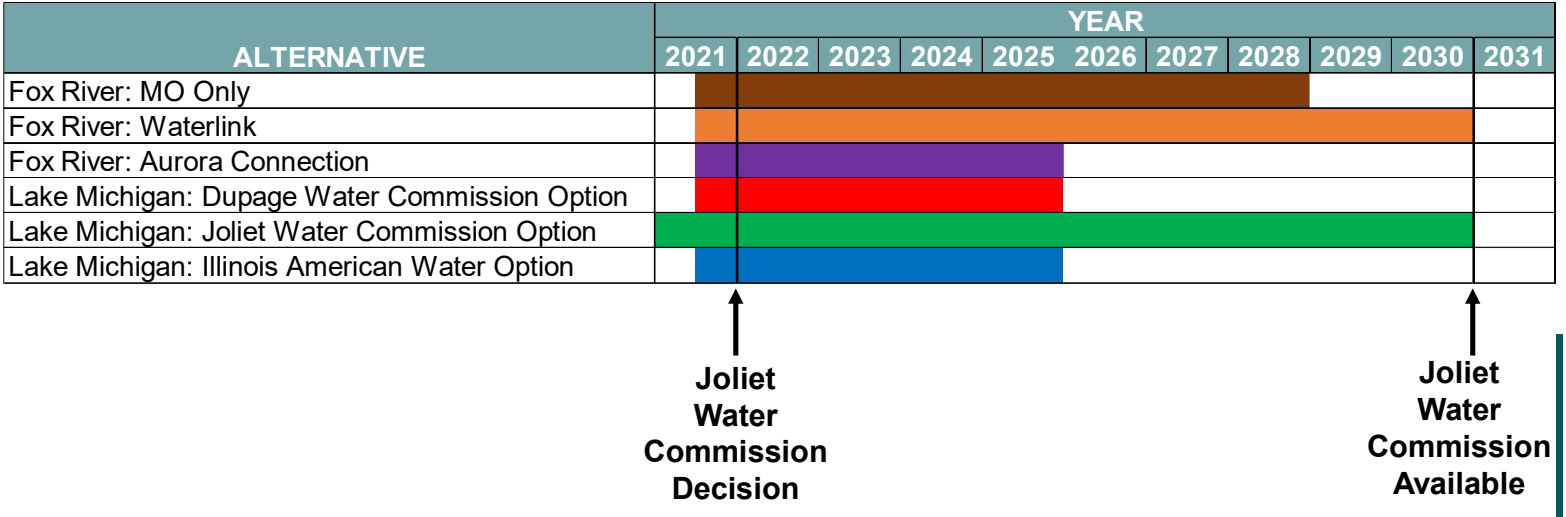
- Projected 2030 Cost To Run Existing System $6,920,000
- Projected 2030 Cost For Least Cost Alt. Water Source System $13,180,000

Savings Per Year: $6,260,000

Every year the Village delays the implementation of the Alternative Water Source Program results in cost savings due to reduced cost for operating and maintaining the existing system.

ALTERNATIVES IMPLEMENTATION SCHEDULE

AWSS Alternatives Estimated Implementation Schedule Comparison



KEY CONSIDERATIONS SUMMARY

Alternatives Summary

Fox River

- Village of Montgomery
- Waterlink Sub-Regional System with Oswego & Yorkville
- Aurora Supply Connections

Lake Michigan

- DuPage Water Commission
- Joliet Area Water Commission
- Illinois Lake Water Company/Plainfield

Fox River – Montgomery Alone

Cost

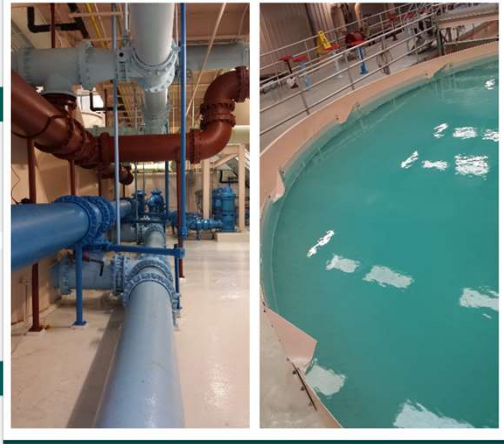
Lowest cost alternative due to reutilizing existing infrastructure (Existing Lime Softening WTP)

Control/Governance

The Village will maintain 100% control of the system

Water Quality

Potential seasonal raw water quality considerations, although advanced water treatment process assumed for the alternative



Sustainability/Quantity

The Fox River is a sustainable source of supply, although backup wells will be needed for water quantity and quality purposes at times

Risk

The Village will be 100% responsible for the implementation of all of the improvements and long-term operation of the system

Management/Staffing

Village Staff will own, operate, and maintain the entire system

Fox River – Waterlink Sub-Regional System

Cost

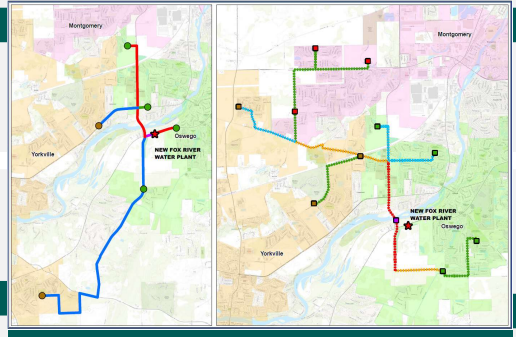
Higher cost than Fox River – Montgomery Alone alternative, although comparable to the other alternatives

Water Quality

Potential seasonal raw water quality considerations, although advanced water treatment process assumed for the alternative

Risk

The Village, along with the Village of Oswego and United City of Yorkville, will be responsible for implementation of all of the improvements and long-term operation of the system



Control/Governance

The system will be governed through an IGA or a new unit of local government (Commission or JAWA)

Sustainability/Quantity

The Fox River is a sustainable source of supply, although backup wells will be needed for water quantity and quality purposes at times

Management/Staffing

The Waterlink communities, or the new unit of local government, will own, operate, and maintain the entire system

Fox River – Aurora

AURORA ILLINOIS

Cost

Lower up-front costs than other alternatives, although comparable to the Waterlink and Lake Michigan alternatives including annual expenses and cost of service

Water Quality

City of Aurora utilizes its wells more heavily during times when potential seasonal raw water quality considerations may limit river withdrawal

Risk

The Village will be responsible for implementation of all of the improvements and long- term operation of the system

Control/Governance

The Village will enter into a water supply agreement, presumed to be a long-term agreement, with the City of Aurora

Sustainability/Quantity

The Fox River is a sustainable source of supply, although backup wells will be needed for water quantity and quality purposes at times

Management/Staffing

The City of Aurora will be responsible for staffing the water supply and treatment facilities; The Village would own, operate and maintain the distribution system

Lake Michigan – DuPage Water Commission

Cost

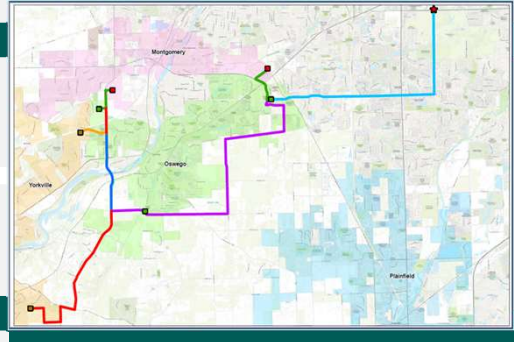
Costs will be dependent on the DWC rate, although costs likely comparable to the other alternatives

Water Quality

City of Chicago treated water that is consistently of high quality

Risk

DWC to construct the transmission main to the Village; The Village would construct the internal distribution system improvements



Control/Governance

The Village of Montgomery would become a member of the DWC; Potentially a new District for the Waterlink Communities could be formed for Board Rep

Sustainability/Quantity

An allocation for Lake Michigan water would be needed; The Village's existing wells will be kept on-line for emergencies

Management/Staffing

The DWC would own, operate and maintain the transmission main through the delivery structure; The Village would own, operate and maintain the distribution system

Lake Michigan – Joliet Regional Water Commission

Cost

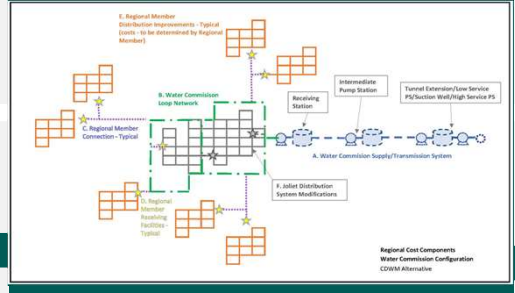
Costs comparable to the other alternatives

Water Quality

City of Chicago treated water that is consistently of high quality

Risk

Commission to construct the transmission main to the Village; The Village would construct the internal distribution system improvements



Control/Governance

The Village of Montgomery would become a voting member of the new Commission

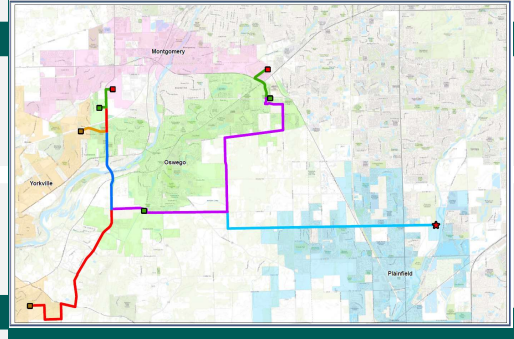
Sustainability/Quantity

An allocation for Lake Michigan water would be needed; The Village's existing wells will be kept on-line for emergencies

Management/Staffing

The Commission would own, operate and maintain the transmission main through the delivery structure; The Village would own, operate and maintain the distribution system

Lake Michigan – Illinois Lake Water System



Cost

Costs are undetermined at this time

Water Quality

City of Chicago treated water that is consistently of high quality

Risk

Illinois Lake Water to construct the transmission main to the Village; The Village would construct the internal distribution system improvements

Control/Governance

The Village of Montgomery would purchase water from the Illinois Lake Water System, which is operated by a private water utility

Sustainability/Quantity

An allocation for Lake Michigan water would be needed; The City's existing wells will be kept on-line for emergencies

Management/Staffing

Illinois Lake Water would own, operate and maintain the transmission main through the delivery structure; The Village would own, operate and maintain the distribution system

Weighted Decision Matrix

Ranking Criteria	Cost		Water Quality		Risk		Control / Governance		Sustainability/Quantity		Management/Staffing		
	Capital (implementation) Costs?		What is quality and variability of the finished water for this alternative?		Does the alternative provide for the most reliable, long term solution.		For this alternative, does the Village maintain complete control of their water source?		Does the alternative provide a long-term sustainable solution?		Will the City, or another entity, be responsible for managing and staffing the system?		
Highest	1 - Highest Cost		1 - Finished water quality is variable and/or reduced from present standard.		1 - This alternative is only a short term solution with potential long term risk and consequences.		1 - The City does not retain significant control of the water supply system.		1 - This alternative has long term sustainability concerns.		1 - The City will need to manage and staff the entire system.		
Lowest	5 - Lowest Cost		5 - Finished water quality is more consistent and/higher than present standard.		5 - This alternative provides for a long term (exceeding 50 year) solution with manageable long term risks.		5 - The City maintains complete control of the water supply system.		5 - This alternative provides for a long term (exceeding 50 year) sustainable solution.		5 - Another entity is contractually responsible to manage and staff the water supply system.		
	Weight	0%	Weight	0%	Weight	0%	Weight	0%	Weight	0%	Weight	0%	
Alternative	**Value**	**Weighted Value**	**Value**	**Weighted Value**	**Value**	**Weighted Value**	**Value**	**Weighted Value**	**Value**	**Weighted Value**	**Value**	**Weighted Value**	**Weighted Total Value**
Fox River - MO Alone	0	0	0	0	0	0	0	0	0	0	0	0	#REF!
Fox River - Waterlink Sub-Regional System	0	0	0	0	0	0	0	0	0	0	0	0	#REF!
Lake Michigan - DuPage Water Commission	0	0	0	0	0	0	0	0	0	0	0	0	#REF!
Lake Michigan - Joliet Regional Water Commission	0	0	0	0	0	0	0	0	0	0	0	0	#REF!
Lake Michigan - Illinois Lake Water System	0	0	0	0	0	0	0	0	0	0	0	0	#REF!

Blue Columns To Be Completed By Project Team

NEXT STEPS

NEXT STEPS

- Open House on Wednesday, November 3rd
- Board Workshop on November 13th
- Further Board Discussion and Joliet Decision in November / December

Questions or Comments?

Jeffrey W. Freeman, P.E., CFM, LEED AP
Chief Executive Officer
jfreeman@eeiweb.com
(630) 466-6718