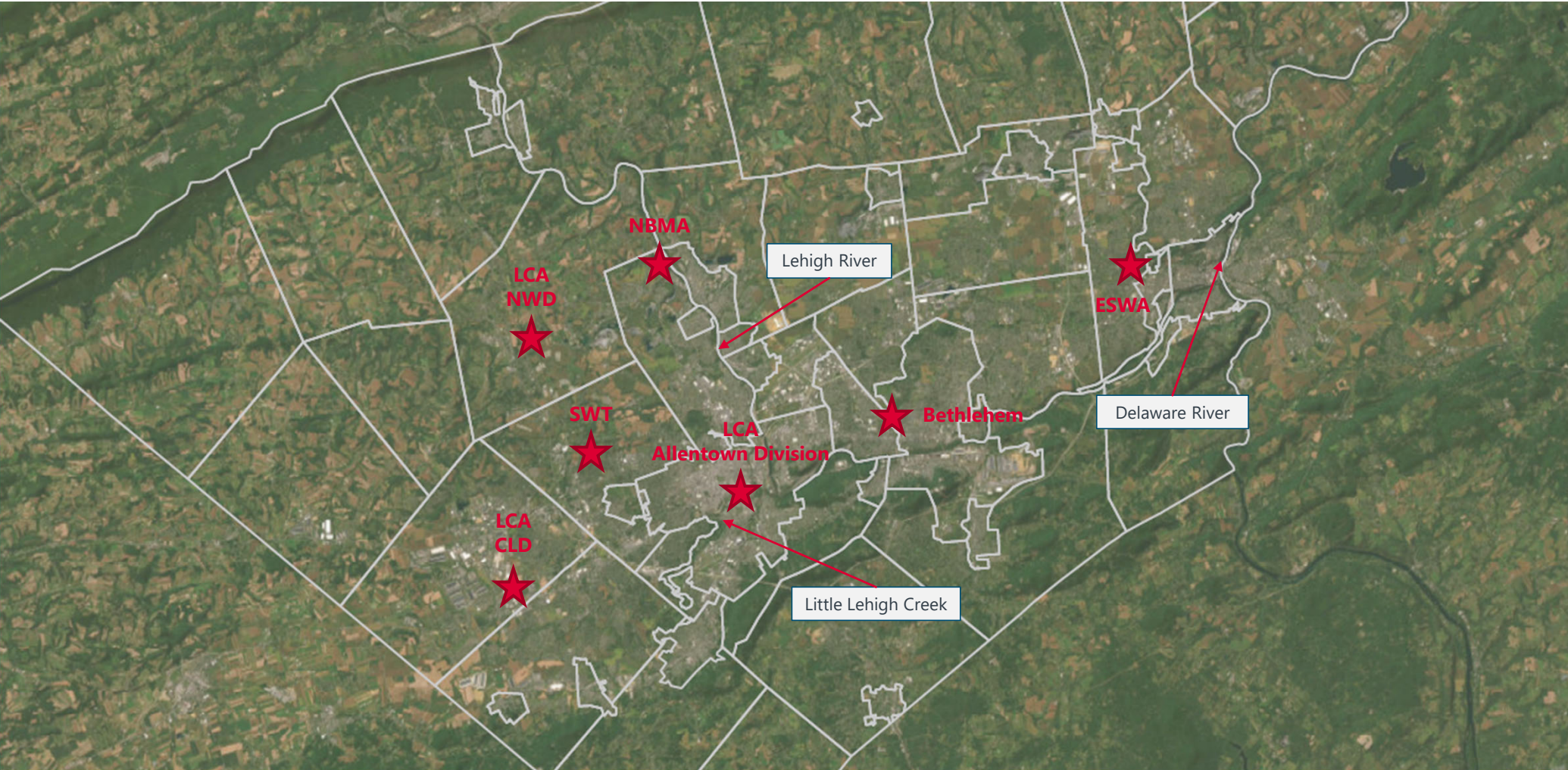




SOURCE WATER ASSESSMENT: CENTRAL LEHIGH AND NORTH WHITEHALL DIVISIONS

Presented by:
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Source Water Assessment: Central Lehigh and North Whitehall Divisions



Central Lehigh Division

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Review of May 2023 Board Meeting



CLD Demand Projections

Average Day demand is projected to increase by 2 mgd to 13.5 million gallons per day by 2045.



CLD Projected Supply Needs

The CLD System is vulnerable to emergencies and needs additional emergency supply to maintain system reliability.



CLD Current Supply Capacity

Current supply of all active CLD sources is 17.7 mgd.



CLD Existing Water Supply

Various interconnections with neighboring water suppliers and temporary sources help provide redundancy in the Central Lehigh Division.



CLD Existing Water Supply

Both CLD Lower and Upper Systems have sufficient water (and storage) under normal operations.

CLD System Needs Additional Emergency Supply to Enhance Reliability

Current Supply Capacity: 17.7 mgd

2045 Supply Capacity: 17.7 mgd

Current Demand: ADD – 11.5 mgd
MDD – 15.1 mgd

2045 Demand: ADD – 13.5 mgd
MDD – 17.6 mgd

Emergency Condition: 1.0 mgd deficit

Emergency Condition: 3.0 mgd deficit

MDD Condition: 2.6 mgd excess

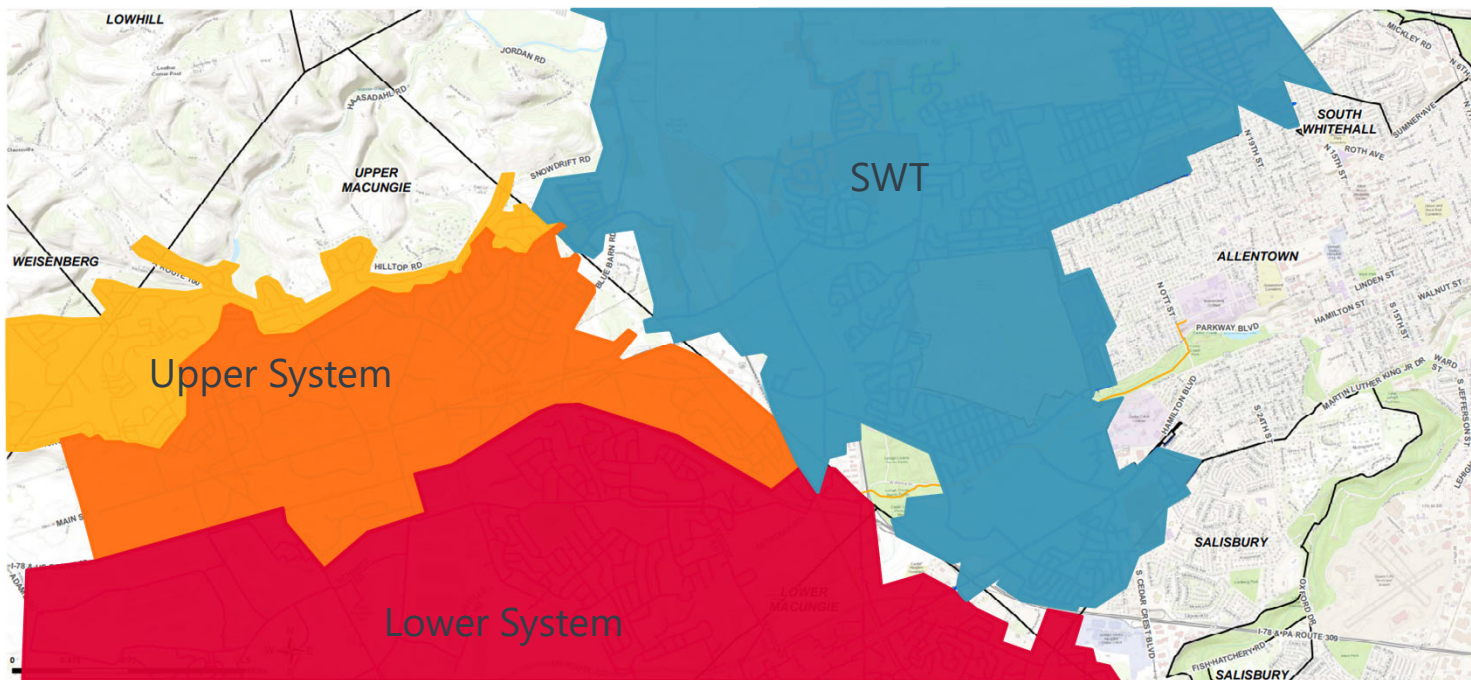
MDD Condition: 0.1 mgd excess

Key Takeaways:

1. There is sufficient supply for projected everyday use.
2. Additional supply development projects should focus on providing redundancy for:
 - loss of a large source due to a raw water quality issue
 - water main break on key transmission main
 - new unplanned large user

High Priority Alternatives to Address Emergency Supply Need

Address current and anticipated reliable supply needs in CLD



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1. Re-establish the Bortz Emergency Interconnection with SWT
2. Re-establish the Interim Schantz Spring Booster Station
3. Establish the Schantz Spring Transmission Main Emergency Interconnection with SWT

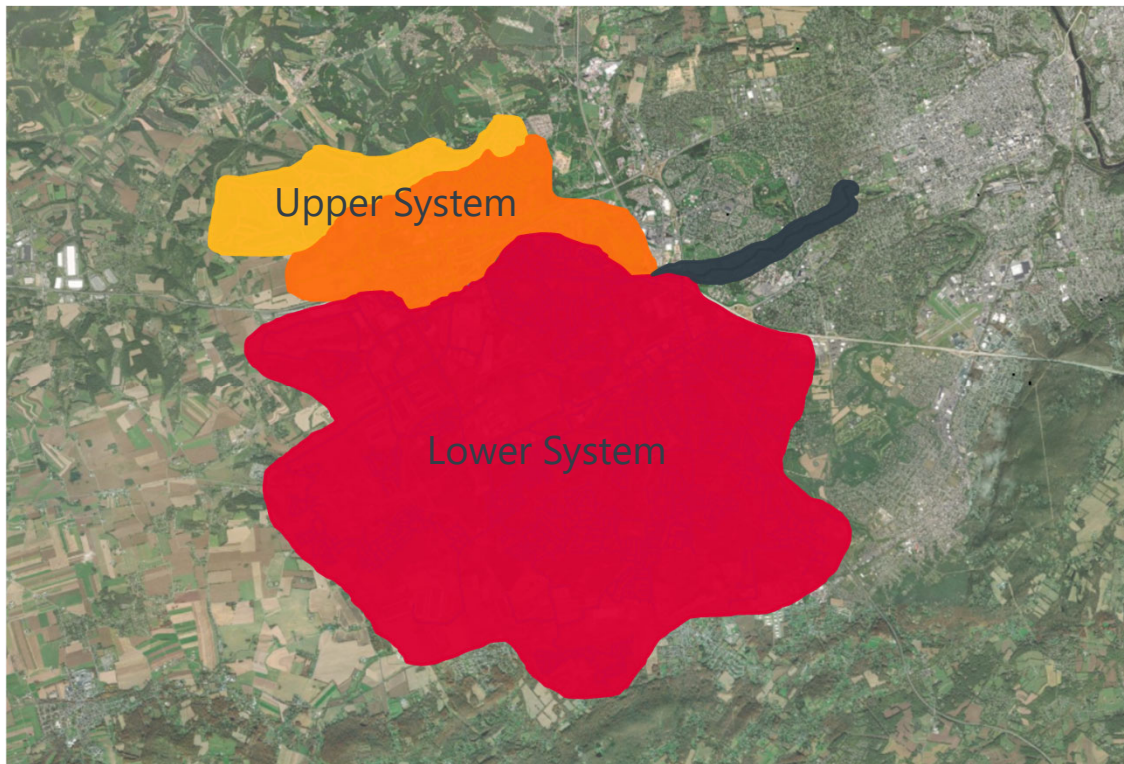
High Priority Alternatives to Address Emergency Supply Need

Address current and anticipated reliable supply needs in CLD

Supply Alternative	Additional Supply Gained by Improvement	Rough Opinion of Probable Cost
Bortz Interconnection	2.16 mgd	\$100,000
Interim Schantz Spring Booster Station	2.0 mgd	\$200,000
Schantz Spring Transmission Main Interconnection	3.6 mgd	\$200,000

Medium Priority Alternatives to Address Longer-Term Supply Needs

Viable improvements that can be implemented in the future as-needed



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4. Modify Agreement with Allentown to Increase Supply Capacity at Schantz Spring Interconnection
5. Re-establish the Hamilton Blvd. Interconnection with SWT
6. Rehabilitation/upgrades to Wells 8R, 11, 12, 20, and 23
7. Upgrades to Well 1
8. Redevelop Well 2
9. Applewood Interconnection Piping Enhancements

Medium Priority Alternatives to Address Longer-Term Supply Needs

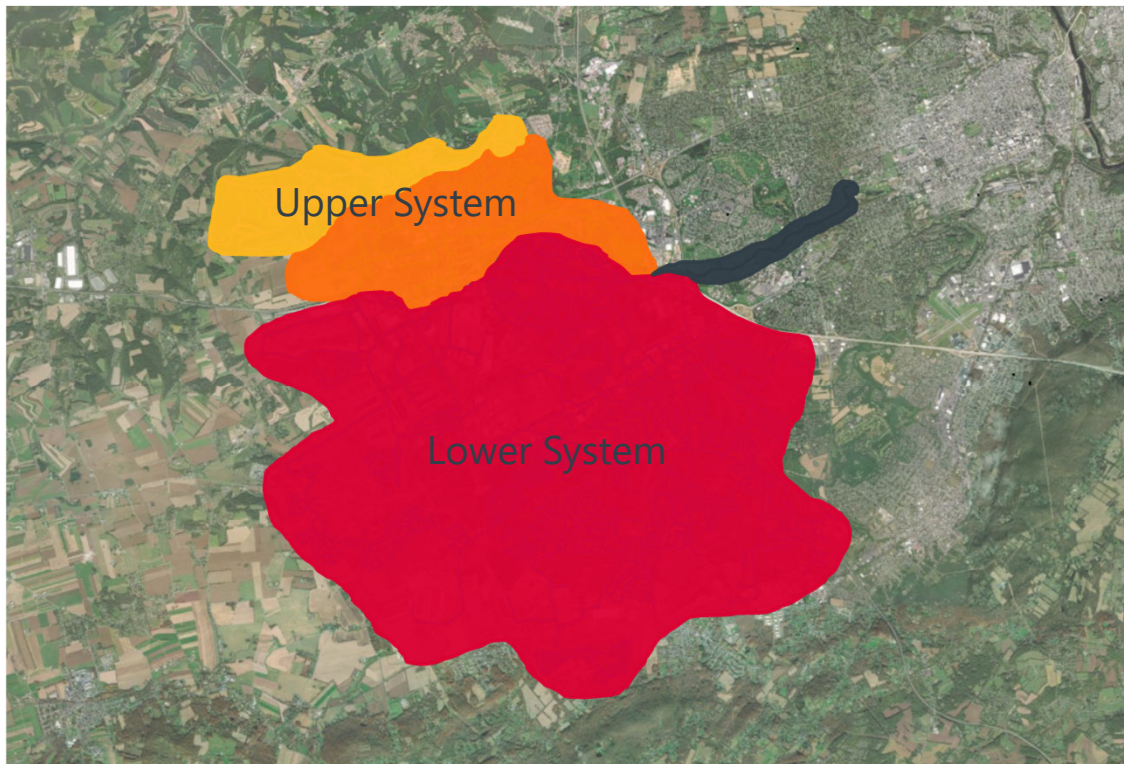
Viable improvements that can be implemented in the future as-needed

Supply Alternative	Additional Supply Gained by Improvement	Rough Opinion of Probable Cost
Increase Supply Agreement with Allentown	3.5 mgd	N/A
Hamilton Blvd. Interconnection	1.37 mgd	\$250,000
Rehabilitate/Upgrade Wells 8R, 11, 13, 20, and 23	0.33 mgd	\$375,000
Upgrades to Well 1	0.72 mgd	\$400,000
Redevelopment of Well 2	0.36 mgd	\$500,000
Applewood Interconnection Enhancements	0.49 mgd	\$1,600,000

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Low Priority Improvements



10. Well 17 Treatment Upgrades
11. Well 16 Upgrades
12. Well 6 Treatment Upgrades
13. Well 12R Treatment Upgrades
14. Development of New Wells
15. Redevelopment of Well 3

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Low Priority Improvements

Supply Alternative	Additional Supply Gained by Improvement	Rough Opinion of Probable Cost
Upgrades to Well 17	0.36 mgd	\$600,000
Upgrades to Well 16	0.35 mgd	\$400,000
Upgrades to Well 6	0.56 mgd	\$2,500,000
Upgrades to Well 12R	0.37 mgd	\$1,800,000
Development of New Wells	Variable	\$250,000 per well for exploration/testing/ permitting \$750,000 per well for development of permanent facilities
Redevelopment of Well 3	1.73 mgd	\$10,500,000

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North Whitehall Division

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NWD Demand Projections

Average Day demand is projected to increase to 1.41 million gallons per day by 2045.



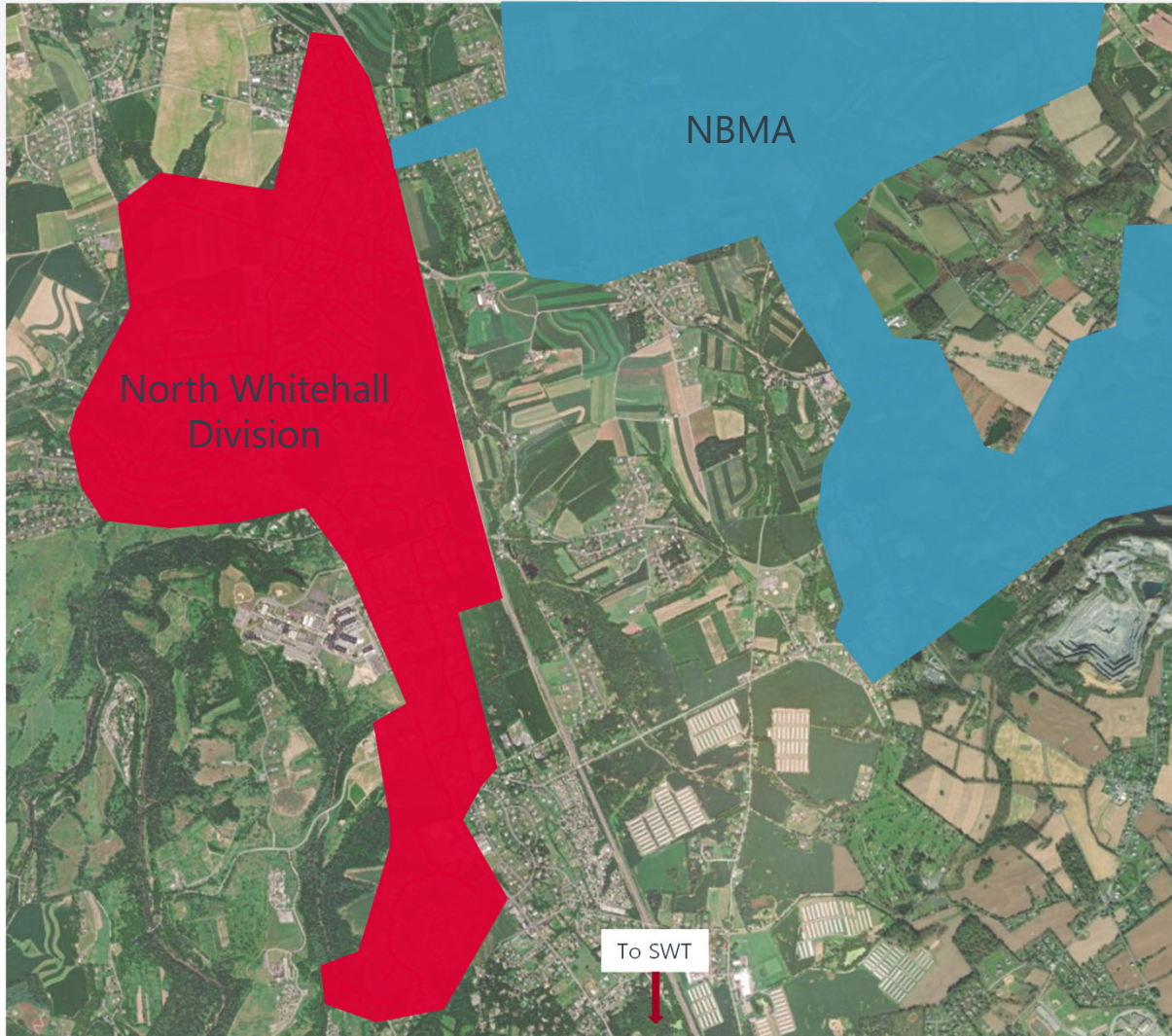
NWD Current Supply Capacity

NWD exclusively relies on an interconnection with NBMA for their supply. Per the Agreement, NBMA can supply up to 1.0 mgd to NWD.



NWD Projected Supply Needs

North Whitehall Division needs an additional interconnect with NBMA.



Source Water Assessment: Central Lehigh and North Whitehall Divisions

Next Steps...

- Implementation of High Priority Alternative(s) to Enhance Reliable Supply Capacity
 - Interconnection Agreements
 - Field Investigations
 - Basis of Design
- Continuation of Master Plan
 - Pipeline Capacity Assessment (focus on distribution and transmission)
 - Fire flow
 - Unaccounted for water
 - Comprehensive Storage Assessment
- Continuous Review of Supply Needs
 - Update Demand Projections based on Service Requests
 - Assess Demands vs Supply
 - Proactive Implementation of Supply Improvements to meet Need

Any Questions?

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THANK YOU!
