



## WATER SOURCE ADVISORY COUNCIL MEETING #3

**September 20, 2022** 

# WELCOME!





# INTRODUCTIONS





## **RULES FOR ENGAGEMENT**

- The deliberation process will be collaborative
- Everyone's perspective is valued and respected
- Listen to understand, not to debate
- Be concise
- Be hard on the issues soft on the people
- Avoid right-wrong paradigms





### **RULES FOR ENGAGEMENT**

- Everyone should have an equal opportunity to participate
- Respect start and finish times
- Provide your full attention
- Full participation is critical
- Ask questions don't wait
- Avoid sidebar conversations





### **THE LEVELS OF CONSENSUS ARE:**

- 1. I can say an <u>unqualified 'yes'</u> to the decision. I am satisfied that the decision is an expression of the wisdom of the group.
- 2. I find the decision perfectly acceptable.
- 3. I can live with the decision; I'm not especially enthusiastic about it.
- I do not fully agree with the decision and need to register my view about it. However, I do not choose to block the decision. I am <u>willing to support</u> the decision because I trust the wisdom of the group.
- 5. I do not agree with the decision and feel the need to stand in the way of this decision being accepted.
- 6. I feel that we have no clear sense of direction of unity in the group. We need to <u>do more work</u> before consensus can be reached.

Kelsey 1991

# AGENDA





### **SCHEDULE GOING FORWARD**

	SEPTEMBER							
	Discuss Criteria	Score Alternatives						
Governance	$\checkmark$							$\checkmark$
Environmental Stewardship	$\checkmark$	✓						
Operations			~	~				
Implementation			$\checkmark$	✓				
Reliability					$\checkmark$	✓		
Stakeholder Impacts					$\checkmark$	$\checkmark$		
Life Cycle Costs							$\checkmark$	$\checkmark$





## EDUCATION: ALLUVIAL WELLS







### **PLATTE RIVER FLOW PAST WELLFIELD**



### **REMAINING OPERATIONAL VOLUME**



MORE AVAILABLE DRAWDOWN NEAR COLLECTOR WELL

#### FLOW IN THE RIVER VS WELLFIELD

- Based on a calibrated groundwater flow model
- During low river flows, an additional 80 cubic feet per second (cfs) flowing past the wellfield only adds 1 - 4 million gallons per day (MGD) of water supply from wellfield



### CRITERIA EDUCATION: WATER RIGHTS





### **WATER RIGHTS - OVERVIEW**

- Nebraska's Groundwater and Surface Water Authorities
- Lincoln's Induced Groundwater Recharge Permit
- Groundwater and Surface Water Permitting Considerations for Feasible Alternatives





#### WATER RIGHTS -GROUNDWATER AND SURFACE WATER AUTHORITIES

- Surface Water Department of Natural Resources (State)
  - Administers surface water (first in time first in right)
- Groundwater Natural Resources Districts (Local)
  - Regulate groundwater (modified correlative rights, sharing in the shortage between like users)







### WATER RIGHTS -GROUNDWATER

- Typical NRD Groundwater
  Permitting Process
  - Impact analysis by applicant
  - Review of impacts to state obligations
  - Availability of alternatives

#### WATER RIGHTS – SURFACE WATER

- Surface water appropriations (permits) are granted through the Department of Natural Resources
- Appropriations are granted for the beneficial uses of surface water including domestic uses, irrigation, hydropower, industrial uses, municipal uses, and instream uses such as induced groundwater recharge





WATER RIGHTS - INTEGRATED MANAGEMENT PLANS AND THEIR IMPACTS ON WATER PERMITTING

- Key goals of an IMP are to:
  - Maintain the balance between basin water supplies and water uses
  - Sustain the economic viability and environmental and social health, safety and welfare of the basin for both the near and long term
- IMP's are developed jointly by Natural Resources Districts and the Department of Natural Resources

#### WATER RIGHTS – LINCOLN'S PERMIT RIGHTS

- Induced Groundwater Recharge Permit Specifics
  - City holds 5 induced groundwater recharge appropriation permits for the Ashland wellfield
  - Appropriation 704 cubic feet per second (cfs) in summer season and 200 cfs in all other seasons
  - Priority dates for particular well series range in dates from January 21,1964 to January 1, 1993
- There are approximately 1,100 junior surface water diversion rights (mostly for surface water irrigation) upstream of the Ashland wellfield
- Municipal Groundwater Transfer Permit
  - City holds 2 municipal groundwater transfer permits
  - The permits total 110 million gallons per day



#### Permits Junior to City of Lincoln's Water Right



### WATER RIGHTS

- Surface Water and Groundwater Permitting Considerations to:
  - Fully Develop Existing Wellfield
  - Expand Existing Wellfield South of I-80
  - Off-Channel Reservoir
  - Omaha MUD Interconnect
  - Missouri River Surface Water Intake to Ashland
  - Missouri River Wellfield to Ashland
  - Missouri River Surface Water Intake to Lincoln
  - Missouri River Wellfield to Lincoln

## CRITERIA EDUCATION: GOVERNANCE





#### GOVERNANCE OPTIONS FOR MUD

- Wholesale Agreement
- Wholesale Agreement with Infrastructure Investment
- Joint Public Agency Supplier
- LWS/MUD Combined Utility







### WHOLESALE AGREEMENT

- LWS would be another customer of MUD
- No obligation for LWS to construct or pay for additional infrastructure (other than as a wholesale ratepayer)
- Higher wholesale rate
- Little autonomy or control other than agreement for firm capacity availability
- No change in laws needed

#### WHOLESALE AGREEMENT

- Term length capped at 25 years
- Three year written termination by either party
- Rates and charges may be amended from time to time

#### AGREEMENT FOR THE SALE OF WATER BETWEEN METROPOLITAN UTILITIES DISTRICT OF OMAHA AND THE VILLAGE OF WATERLOO, NEBRASKA

Signed copy

THIS AGREEMENT, entered into this  $\mathcal{S}^{\mathcal{H}}_{day}$  of <u>February</u>, 2000, between Metropolitan Utilities District of Omaha, a municipal corporation and political subdivision of the State of Nebraska, ("District") and the Village of Waterloo, Douglas County, Nebraska, a municipal corporation and political subdivision of the State of Nebraska, ("Village").

WITNESS:

WHEREAS, Village operates a water distribution system serving the Village and its surrounding areas and Village finds it necessary and desirable to purchase wholesale water from the District, for resale to its customers for the same domestic, commercial, public and fire purposes for which the District sells water; and

WHEREAS, the District has water available for sale to the Village and is willing to sell such water at wholesale under the terms and conditions of this agreement.

NOW, THEREFORE, in consideration of the mutual promises of the District and the Village contained in this agreement, pursuant to the authority contained in resolutions of their respective governing bodies, and under the authority of Neb. Rev. Stat. § 14-2101 through § 14-2157, it is agreed as follows:

 TERM OF CONTRACT: For the purpose of delivery of wholesale water, the term of this contract shall be from the date upon which District water is first delivered to the Village and shall continue in effect for a period of twenty-five (25) years. The contract may continue thereafter subject to termination by a three-year written notice given by either party to the other. telemeter daily water readings to the District and must meet the District's specifications.

2 CAPITAL FACILITIES CHARGES (CFC): The NRD shall pay to the District a Capital Facilities Charge (CFC) computed and paid quarterly for new connections and meters to the NRD water distribution system during such quarter, which charges shall be equal to the CFC applicable to new connections and meters to the District's water distribution system under District Rules and Regulations. The NRD shall report all such new connections and meters in writing to the District guarterly and make a remittance of the appropriate CFC therefor on the date payment is due for water for such guarter. Such report shall include the street address, size of meters, and names of additional customers. Charges shall be computed in conformity with the District's Rules and Regulations relating to CFCs and District procedures for assessment. The NRD's obligation to remit charges to the District shall not be dependent upon payment of such charges by the customer(s) to the NRD. The NRD's records shall be subject to an audit by the District for purposes of verifying the additional customer connections and meters and charges applicable.

3. REBATE: One year from the date of this Agreement, and annually thereafter, the NRD may submit to the District a statement of the capital expenditures made on the NRD's water distribution system for extension of mains and appurtenances and installations of reinforcing mains installed during the immediate past year for which the NRD has paid and which 1) will not be reimbursed or paid for by others, and 2) are not main extensions for the purpose

#### WHOLESALE AGREEMENT

- Facilities charges apply to all new connections
- Reporting required for all new connections including customer names
- LWS records subject to audit for verification of new customers

#### WHOLESALE AGREEMENT

- Water Conservation Emergency Restrictions
  - LWS required to enact conservation restrictions if MUD declares emergency
  - Restrictions must equal or exceed MUD levels
  - Water supply during emergency will be "best effort" with no guarantees

XI. WATER RESTRICTIONS: The District has adopted and enforces a Water Conservation Emergency Operations Plan, a copy of which is attached. The District shall have sole discretion regarding the initiation of water emergency levels under the plan. At any time that the District initiates a water emergency level in accordance with the plan, Village shall initiate water conservation requirements upon its customers which shall equal or exceed the requirements of the water emergency level initiated by the District. Notwithstanding the quantities of water for delivery identified in Paragraphs III and XVII, upon the initiation of a water emergency at any level, District shall not be obligated to deliver any specific minimum amount of water to Village but shall be required to make its best efforts to deliver water in accordance with this agreement.



#### WHOLESALE AGREEMENT WITH INFRASTRUCTURE INVESTMENT

- LWS would be another customer of MUD
- Requires LWS up-front investment in infrastructure to connect
- Lower wholesale rate
- Little autonomy or control other than -
  - Agreement for firm capacity availability
  - Ownership, control and use of infrastructure/assets owned or purchased by LWS
- No change in laws needed

### JOINT PUBLIC AGENCY SUPPLIER

- Potential interlocal entity made up of LWS and MUD
- Serve as a wholesale supplier to LWS, MUD and other customers
- Interlocal entity could own assets and infrastructure
- LWS and MUD would appoint voting members to interlocal entity
- Both LWS and MUD retain autonomy for treatment and distribution



#### JOINT PUBLIC AGENCY SUPPLIER (CONTINUED)

- Interlocal entity would set wholesale rates and fees
- Interlocal entity would establish policies and procedures governing ownership, operations and maintenance of infrastructure
- More complex than wholesale agreements
- Political buy-in required
- No change in laws needed





### LWS/MUD COMBINED UTILITY

- Most complex option
- Requires merger of LWS and MUD systems
- Creates a new utility
- Most likely to require statutory changes

#### MISSOURI RIVER INTAKE OR WELLFIELD

#### FULLY DEVELOP OR EXPAND EXISTING WELLFIELD

#### OFF-CHANNEL RESERVOIR

- May require change in governance
- Options to serve other customers could be explored



### CONSENSUS CHECK: GOVERNANCE





## CRITERIA EDUCATION: ENVIRONMENTAL STEWARDSHIP







- Criteria Definition
- Environmental Impacts
- Cultural Impacts

#### **Environmental Impacts**

- Bald and Golden Eagle Protection Act
- Endangered Species Act
- Threatened and Endangered Species Act
  - Pallid and Lake Sturgeons
  - Sturgeon Chub
  - Interior Least Tern
  - Piping Plover
  - Western Prairie Fringed Orchid
  - Northern Long-Eared Bat







#### **Environmental Impacts**

- Permitting
  - USACE Section 404 Permitting
  - Stream Channel Impacts
  - Wetland Impacts
- Other Permits Related to the Environment
  - Floodplain Development
  - Department of Natural Resources Well
    Permitting
  - Discharge Permitting
- Platte River Flow Depletion
- Goal to minimize permitting time and mitigation costs

#### **Cultural Impacts**

- National Historic Preservation Act
- Historic Properties
- Historic Cultural Sites
- Structures Over 50 Years Old (Eligible for NRHP)
- Archeological Sites



## ALTERNATIVE SCORING: ENVIRONMENTAL STEWARDSHIP





#### ALTERNATIVE SCORING – ENVIRONMENTAL STEWARDSHIP



#### A. Fully Develop Existing Wellfield

**Environmental Impacts Overview and Facts** Notes Stream Crossing How many National Hydrography Dataset 1 channel crossing (NHD) Streams does the alignment cross? Wetland and Open Waters <0.1 acre of permanent wetland impacts Habitat What Biologically Unique Landscape (BULs), Nebraska Game & Parks Lower Platte River (Riverine BUL) Commission (NGPC) lands, Wildlife Management Areas (WMAs) does the alignment extend through? Estimated Range of: Western prairie fringed Threatened & Endangered (T&E) orchid, northern long-eared bat, Interior What T&E Species Habitat does the least tern, lake sturgeon, pallid sturgeon, alignment extend through? sturgeon chub, Piping plover Floodplain Development How many floodplains does the alignment 1 extend through? US Army Corps of Engineers (USACE) Nationwide Permit (NWP) (4-6 month 404 review) **Cultural Impacts** Historical / Cultural Does the buffer go through any historic or None cultural areas?

SCORING KEY

5-<u>Fully</u> meets the criteria definition 4-Meets <u>most</u> of the criteria definition, 3-Meets <u>some</u> of the criteria definition, 2-Meets <u>little</u> of the criteria definition, 1-Meets <u>none</u> of the criteria definition



Score (1-5)

#### FULLY DEVELOP EXISTING WELLFIELD

- Wells, river crossing, pipeline, and plant expansion
- Currently evaluating ultimate 90-day seasonal capacity for existing wellfield property
  - Will be less than 145 million gallons per day
- Likely the lowest cost alternative, but does not change risk profile
- Concern with arsenic levels

Photo Redacted

#### Photo Redacted

#### EXPAND EXISTING WELLFIELD SOUTH OF I-80

- Full development of existing wellfield property
  - Plus crossing I-80 crossing and additional wells south of I-80
- Some increase in reliability by expanding the footprint of the wellfield
- Does not improve redundancy
- Economical means to obtain more capacity

### C. OFF-CHANNEL RESERVOIR

- Maximize existing wellfield, pipelines, reservoir
- Pump excess water during high flows in Platte River and store in reservoir
- This reservoir would cover several hundred acres
- Significant public impacts
- Water rights implications
- Requires plant modifications to treat surface water
- Refer to Environmental Stewardship facts on scoring sheet





Ashlar

Ashland

6



Cloister

Existing Wellfield

Lincoln Water Treatement Plants

Eugene T. Mahoney State Park

**New Reservoir** 

#### **D. MUD INTERCONNECT**

- Connect to MUD and pump water to Ashland
- Work underway with MUD to understand available capacity and costs
- Blending of water will be required
- Refer to Environmental Stewardship facts on scoring sheet



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#### SURFACE WATER INTAKE TO ASHLAND TREATMENT PLANT

- Susceptible to chemical spill, algal toxins, PFAS, and taste & odor
- Pre-treatment at the Missouri River, finish treatment at Ashland
- Pump water to Ashland
- Refer to Environmental Stewardship facts on scoring sheet





#### F. MISSOURI RIVER WELLFIELD TO ASHLAND TREATMENT PLANT

- Multiple wellfield locations to be considered
- Some treatment at wellfield
  - Remove oxidized particulates such as iron, manganese, arsenic
- Pump water to Ashland
- Filtration and disinfection at Ashland WTP's
- Refer to Environmental Stewardship facts on scoring sheet





#### H. MISSOURI RIVER WELLFIELD TREATMENT PLANT, POTABLE WATER SUPPLY TO LINCOLN

 Identical to previous alternative but supplying well water vs. surface water

incoln

**ALTERNATIVE H** 

**ale** Earth

**Connection to** 

Lincoln



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# **COMBINATION OF ALTERNATIVES**





### ALTERNATIVE SCORING: ENVIRONMENTAL STEWARDSHIP







# QUESTIONS





# **CLOSING THOUGHTS**



