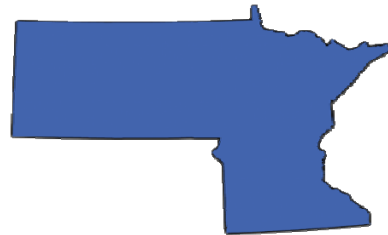


Level of Protection

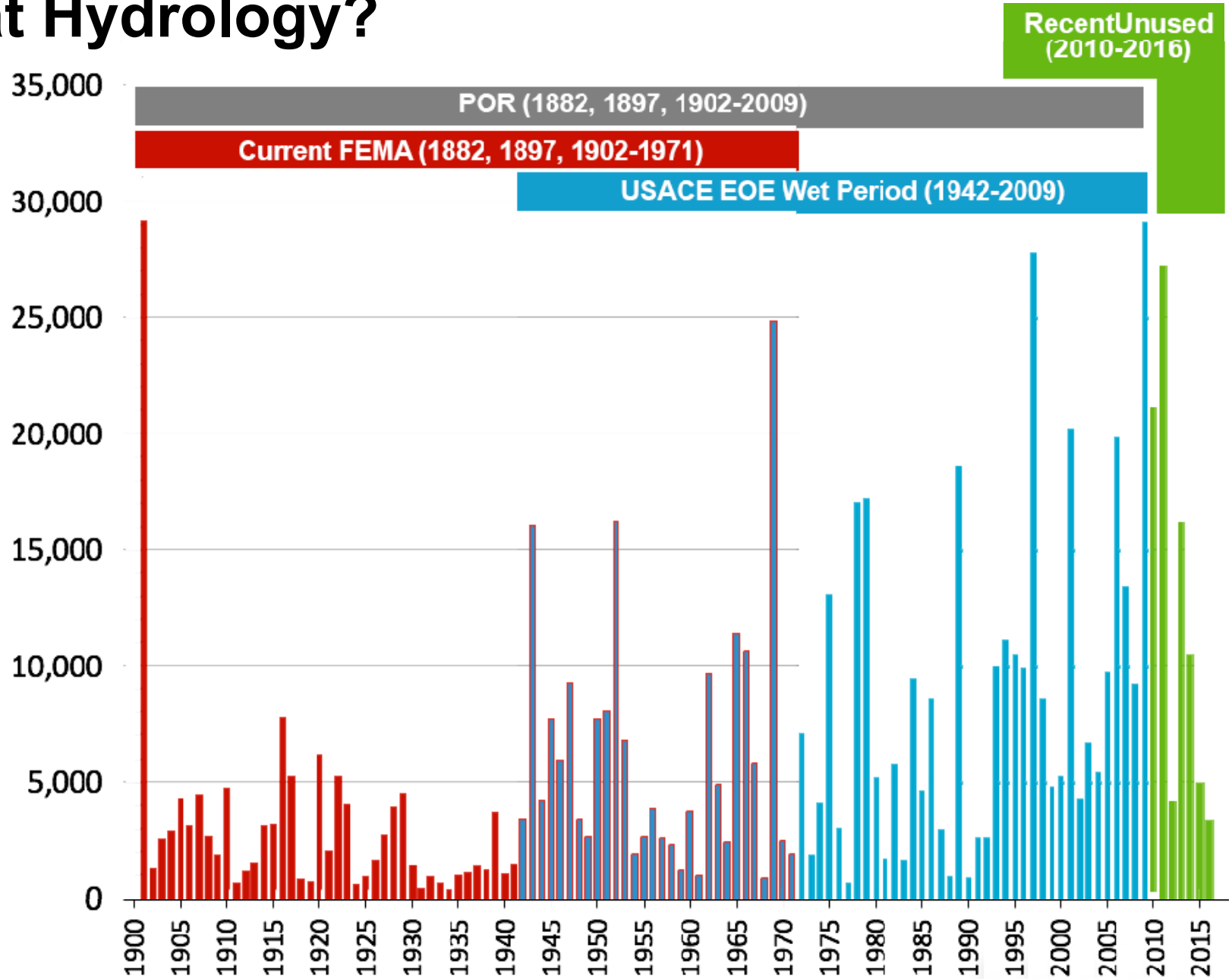
Presentation to:
Fargo-Moorhead Area Flood Diversion Task Force

November 1, 2017



What Hydrology?

Maximum Daily Flow Rate at Fargo Gauge
(Cubic Feet Per Second)



Summary of Hydrology in Fargo-Moorhead (Source: MN EIS)

	Source	Data Used (years)	Flow Rate (CFS)
1	Current 100-Year FEMA	1882, 1897, 1902-1971	29,300
2	100-Year USACE EOE Wet Period	1942-2009	34,700
3	100-Year USACE POR	1882, 1897, 1902-2009	33,000
4	Current 500-Year FEMA	1882, 1897, 1902-1971	50,000
5	500-Year USACE EOE Wet Period	1942-2009	61,700
6	500-Year USACE POR	1882, 1897, 1902-2009	66,000

River stage is influenced by the flow rate & project-specific configuration

Summary of Hydrology in Fargo-Moorhead (Source: MN EIS)

	Source	Data Used (years)	Flow Rate (CFS)
1	Current 100-Year FEMA	1882, 1897, 1902-1971	29,300
2	100-Year USACE EOE Wet Period	1942-2009	34,700
3	100-Year USACE POR	1882, 1897, 1902-2009	33,000
4	Cu		50,000
5	500-Year USACE EOE wet Period	1942-2009	61,700
6	500-Year USACE POR	1882, 1897, 1902-2009	66,000

Both are acceptable

River stage is influenced by the flow rate & project-specific configuration

Update the Period of Record Analysis?

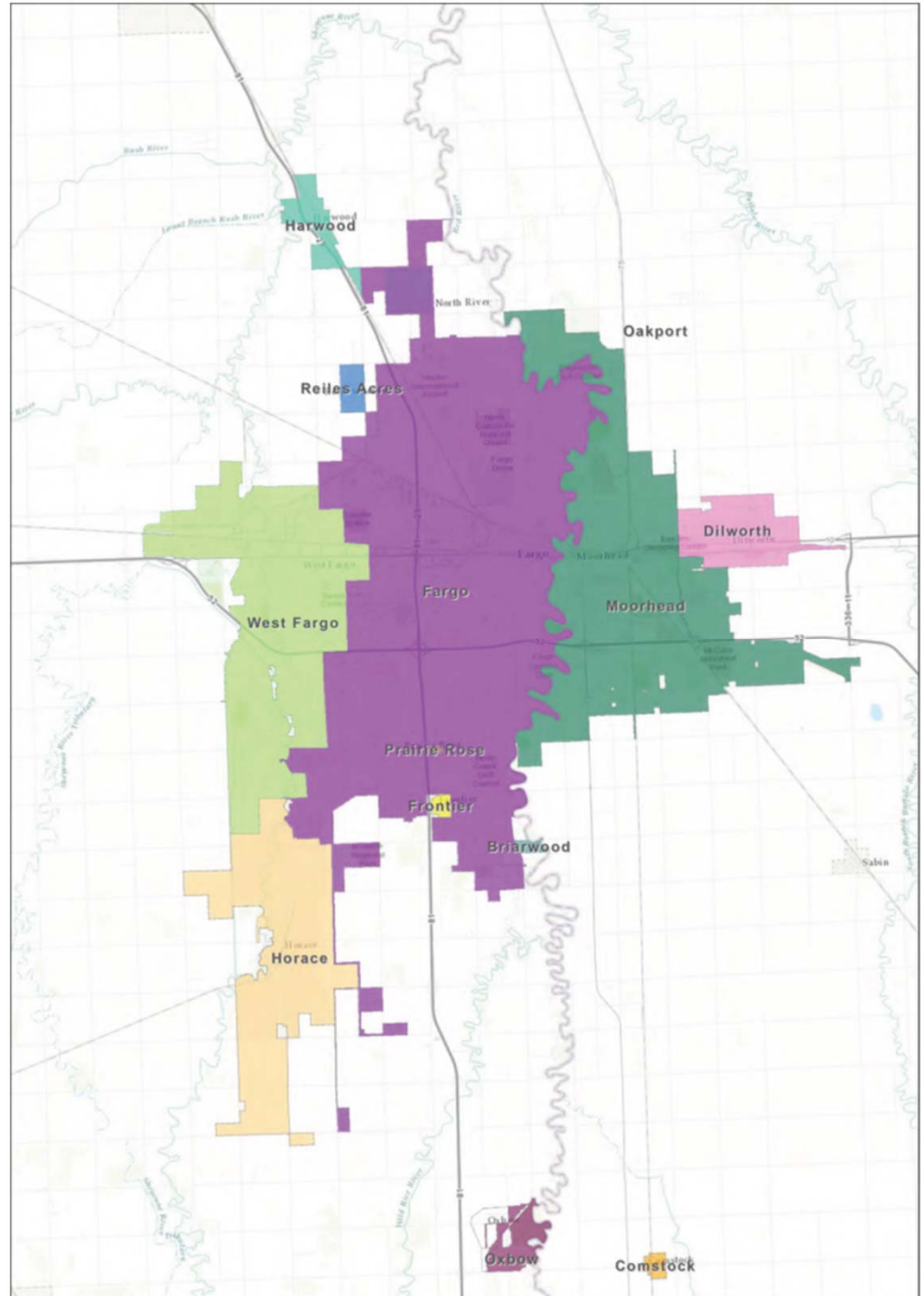
- Current hydrology does not include flow data after the 2009 flood
- Two of the six largest flows on record have occurred since 2009
- Unlikely that the 100-year flood flow would be reduced by adding data after 2009
- Hydrology must be updated at completion of the project for FEMA accreditation
- Acceptable, but would it change the design of Plan B?
 - Only if Plan B design parameters are at or very near accreditation minimums (e.g. minimum levee freeboard)

What is the Local Level of Protection Goal?

- Achieve, and maintain, 100-year FEMA accredited flood protection with the ability to fight larger events
 - Project design must be to be robust enough to accommodate future hydrology updates
 - Floods greater than 100-year have occurred in the region
- Existing & previously proposed levees cannot be accredited to a future 100-year flood flow (EOE or POR)
 - Insufficient height (freeboard)
 - Limited ability to raise at their current location
- A solution likely requires a combination of:
 - Upstream retention, Levees, Dam, Diversion channel

What Spatial Area Needs Protection?

- Protection for existing Fargo, ND and Moorhead, MN
- Consider community-wide flood protection



What Spatial Area Needs Protection?

- Protection for existing Fargo, ND and Moorhead, MN
- Consider community-wide flood protection
- “...to achieve balanced flood risk management for the Fargo-Moorhead region, including up- and downstream communities and properties”
-Task Force Charter

