LARGESCALE RIVER CORRIDOR RESTORATION: A CASE STUDY OF THE SHEEP RIVER WATERSHED IN SOUTHERN ALBERTA

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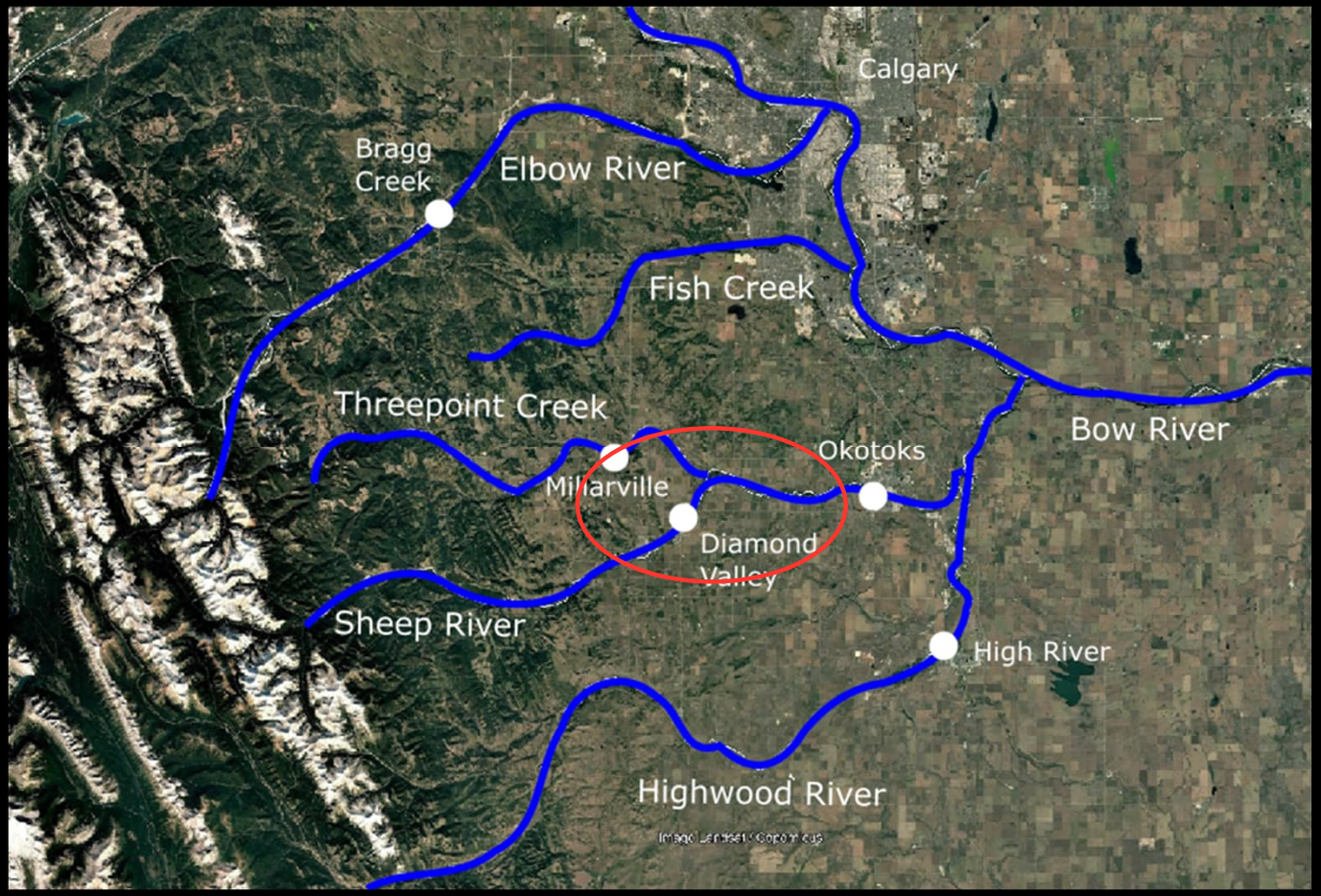
2013 Southern Alberta Flood

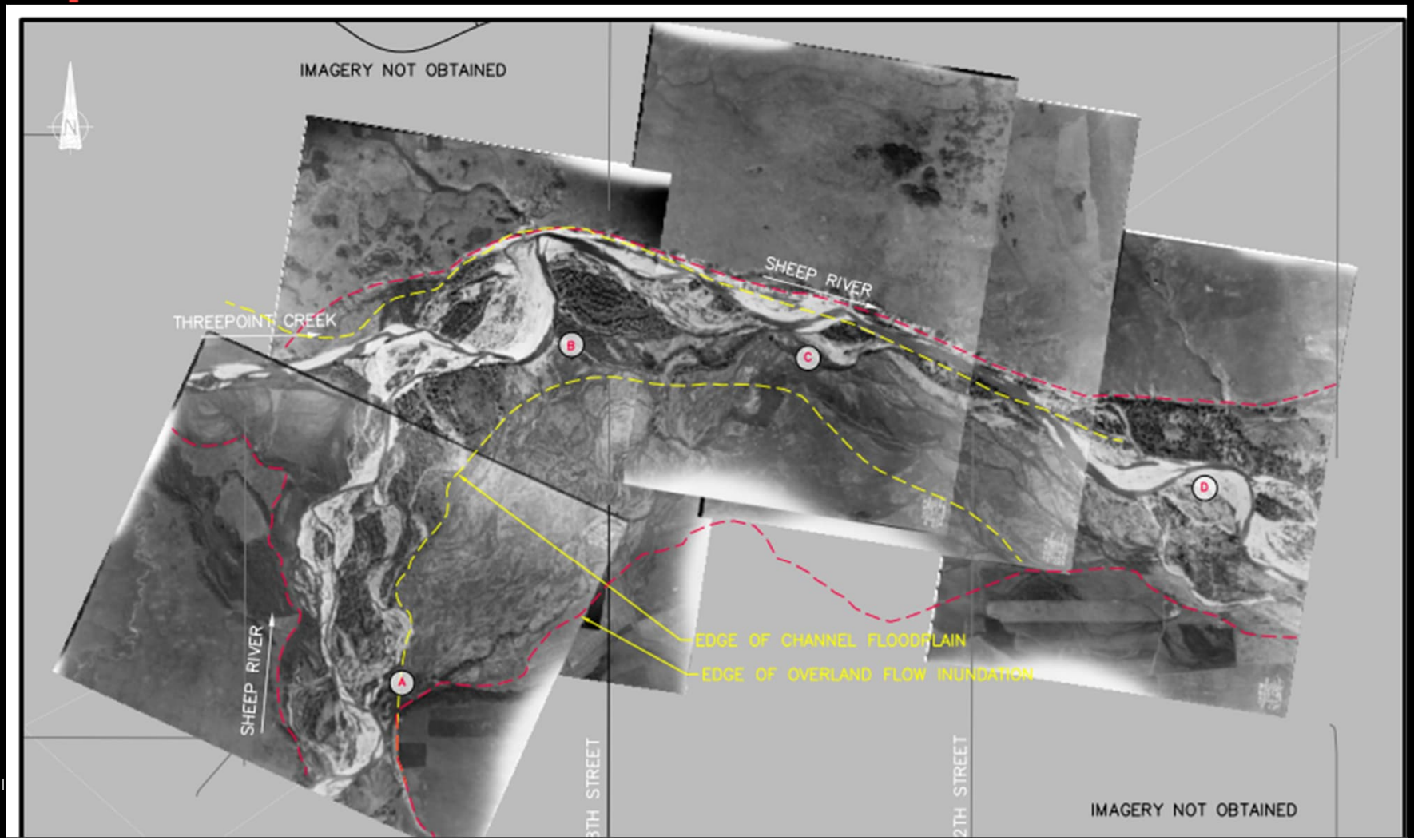
Bioengineering stream stabilization at Previous Site



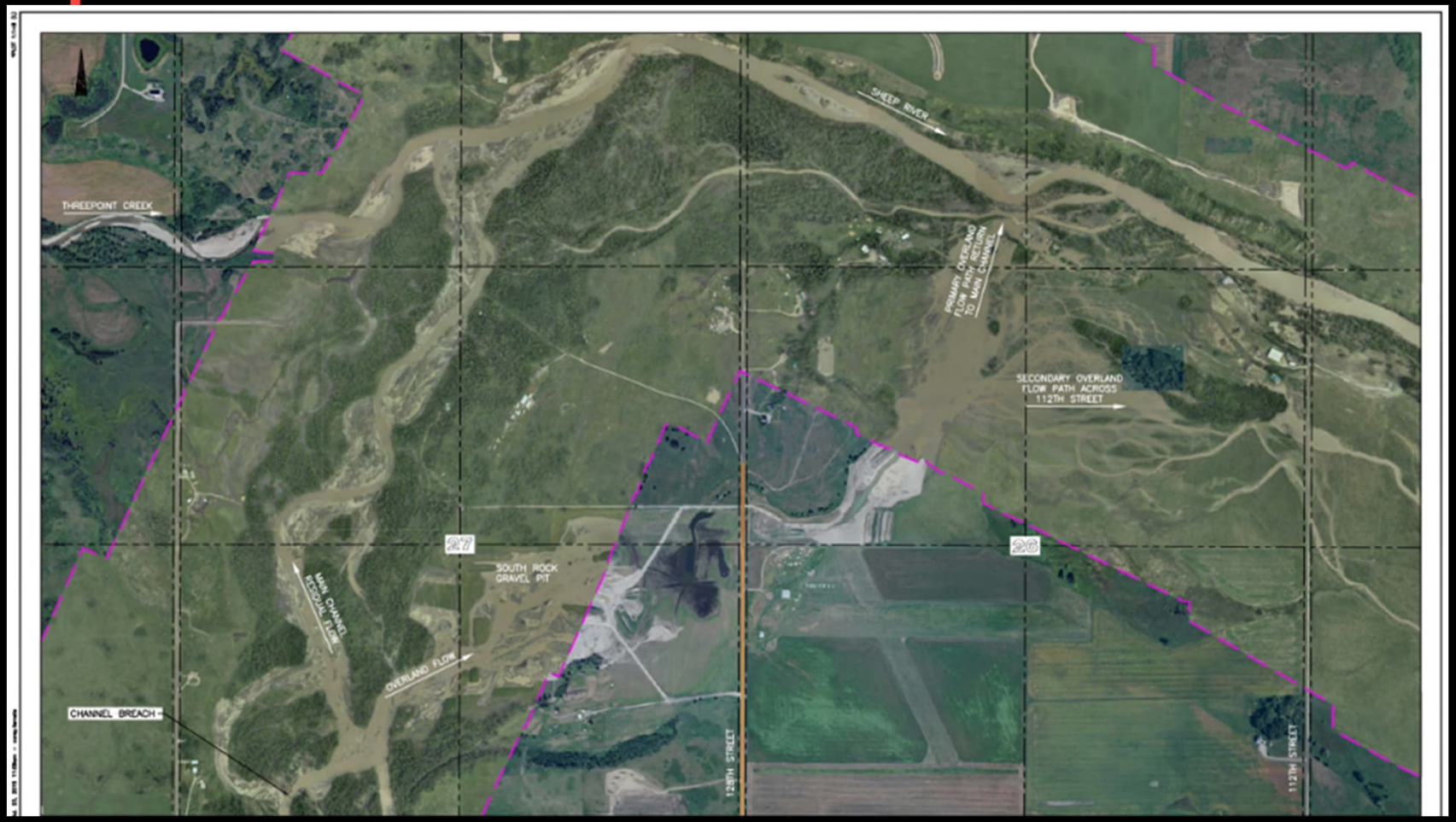
Bow River Watershed, Southern Alberta

Sheep River and Threepoint Creek Upstream of Okotoks

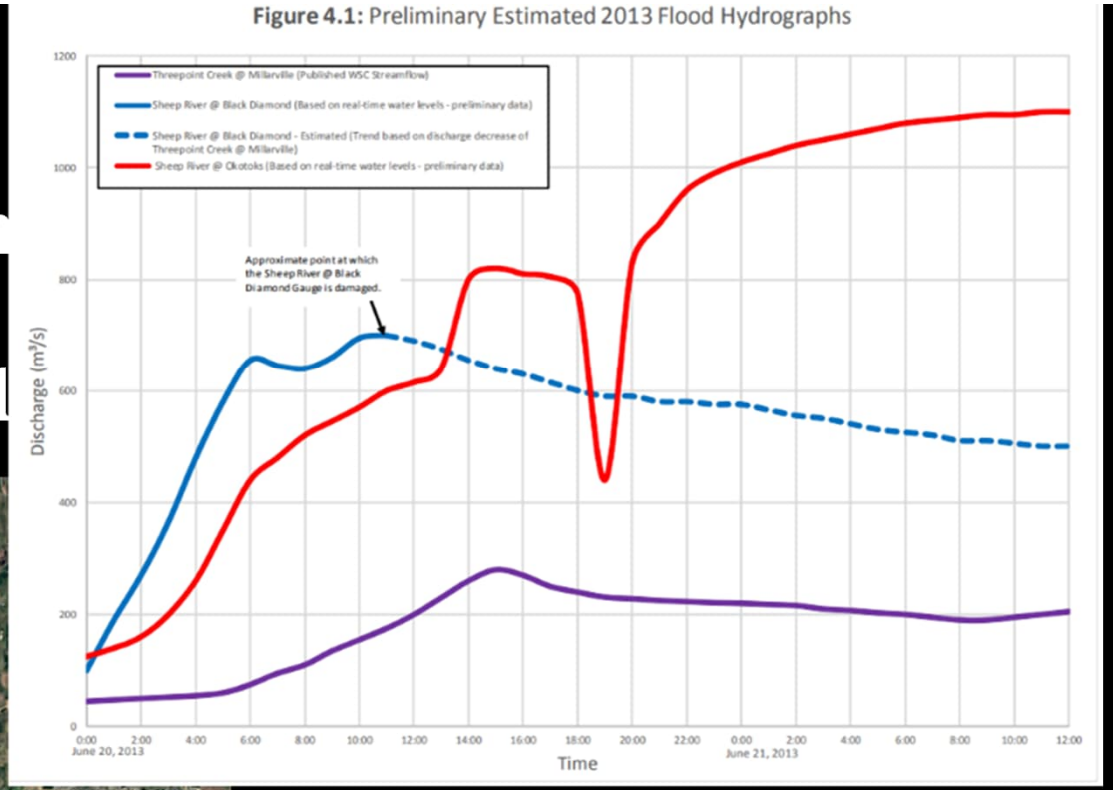
Sheep River and Threepoint Creek 1920's



Major Avulsion – Sheep River, June 20-21 2013



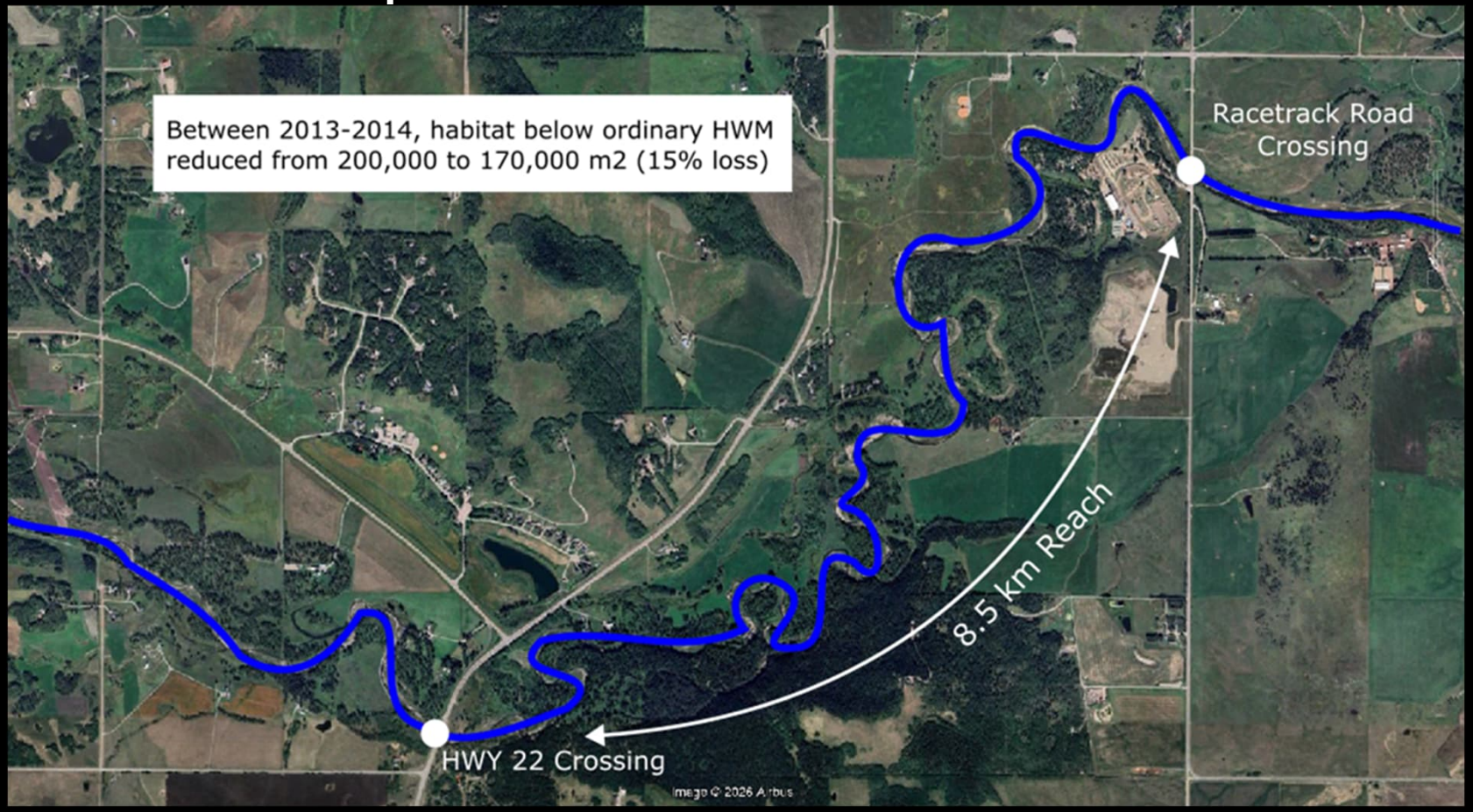
Major Avulsion Sheep River, June 20-21 201



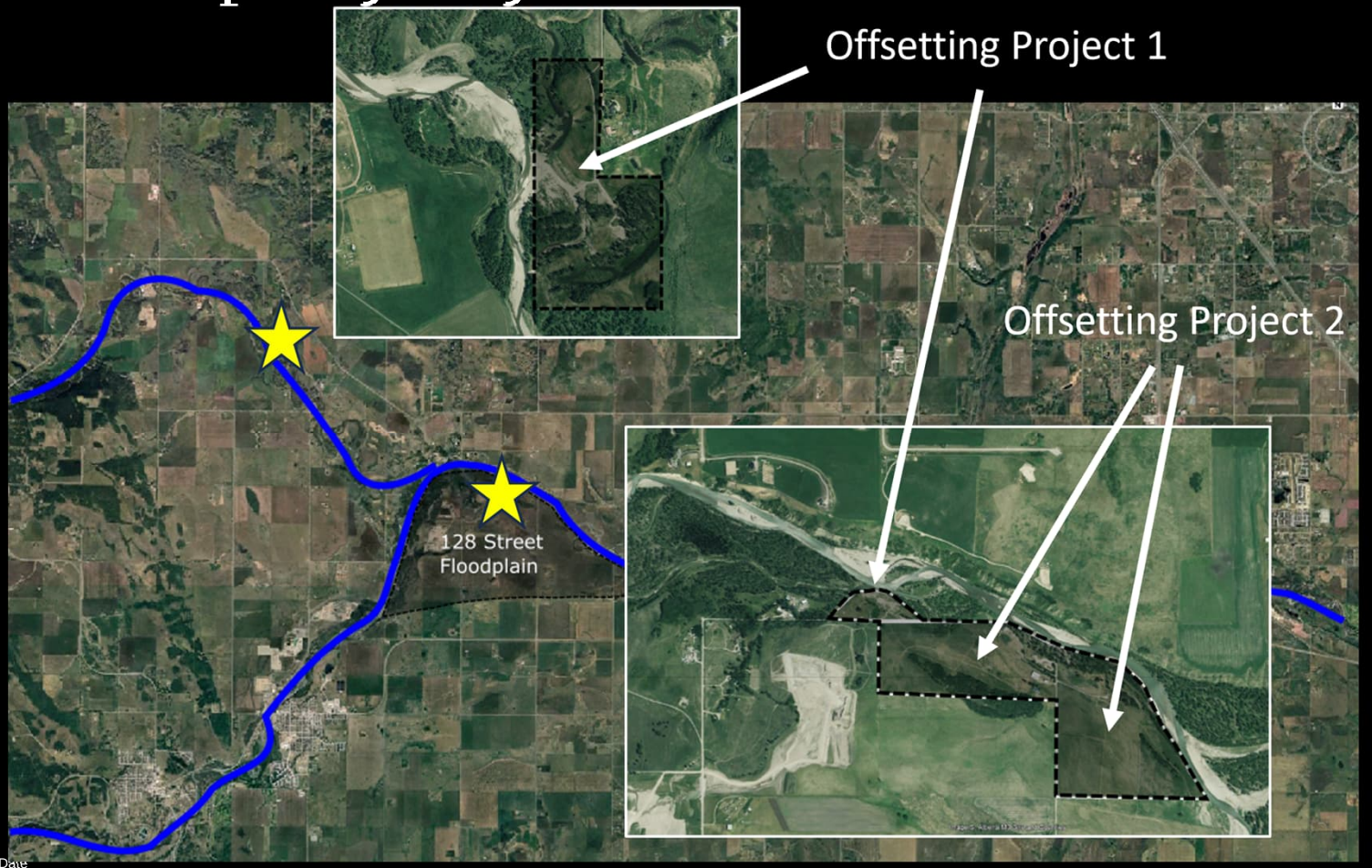
- Reduced peak flood intensity on Sheep River resulted in less infrastructure damage and a reduction in ecosystem impacts related to channel dynamics
- Maintaining or improving the riparian corridor can help to enhance these benefits

Threepoint Creek Avulsion Event

Threepoint Creek Avulsion Event



Offsetting Opportunities: Flood Recovery Property Buyouts



Offsetting Project 1 Sheep River 128th Street






Offsetting Project 2 Sheep River 112th Street

Offsetting Project 2 Threepoint Creek

Offsetting Project 2 Threepoint Creek Offset Works Flood Damage

Offsetting Project 2 Threepoint Creek Offset Monitoring Success



Adaptive Management Building on Lessons Learned

Potential channel area loss
>10,000 m^2

Adaptive Management Building on Lessons Learned

Building on Adaptive Management, Channel-Floodplain Characteristics and Understanding Relevant Scales

- We accomplished large quantities of offsetting value through an understanding of channel-floodplain processes
- The scale of responses/impacts can be much greater than the scale of treatment
- Time scales for restoration activities are often longer than the frequency of hydrological cycles that may impact vegetation

THANK YOU