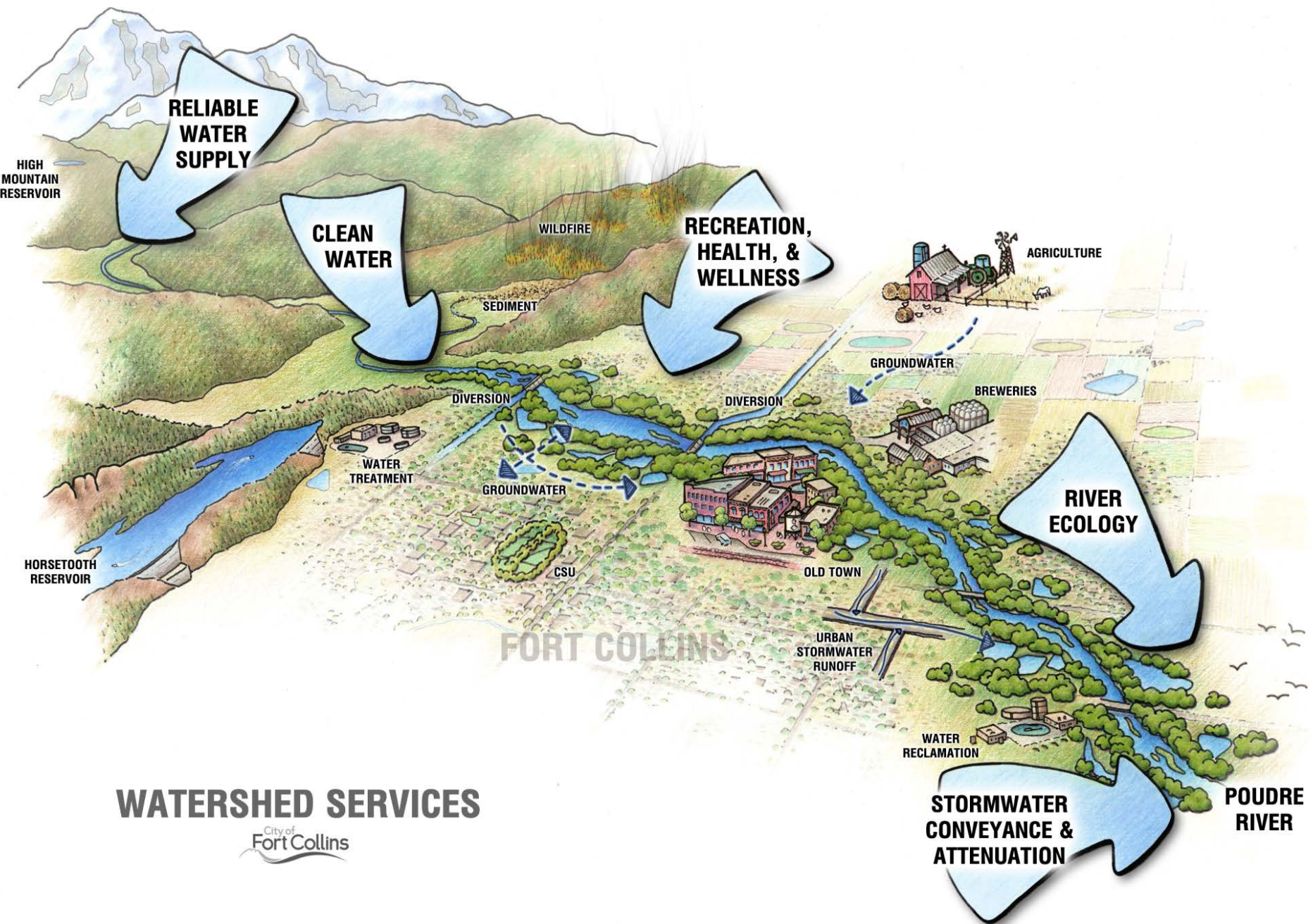
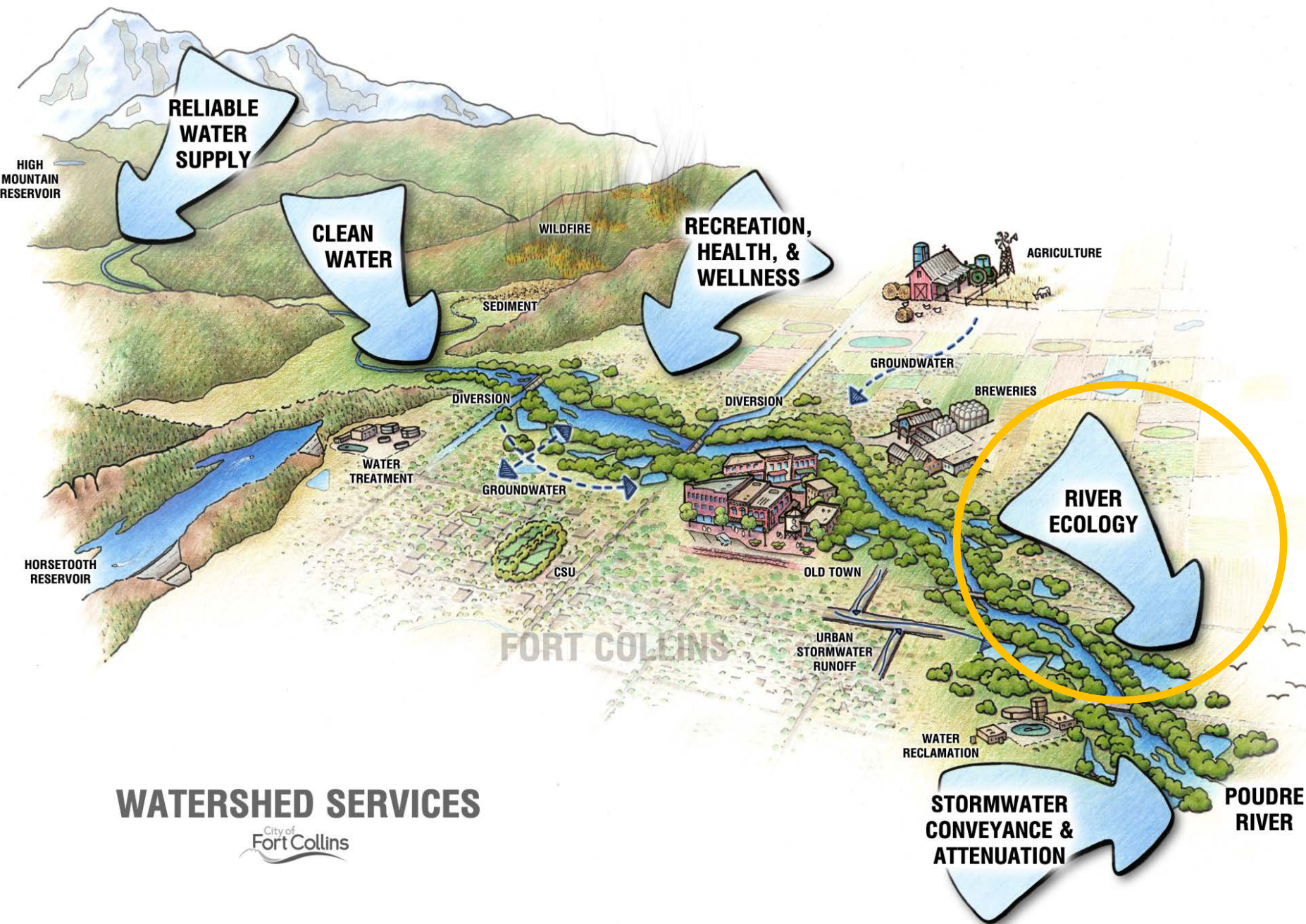


State of the Poudre

A River Health Assessment

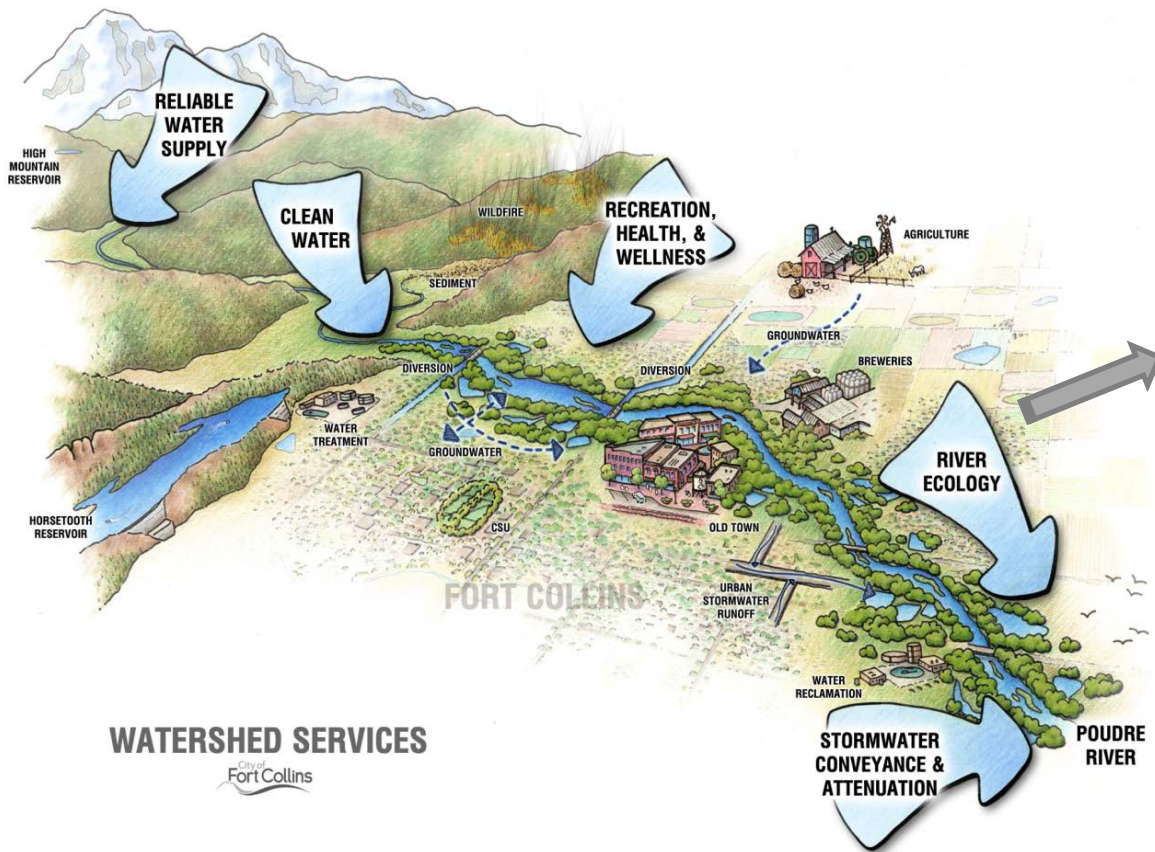
Jen Shanahan, Watershed Planner
City of Fort Collins, Natural Areas Department





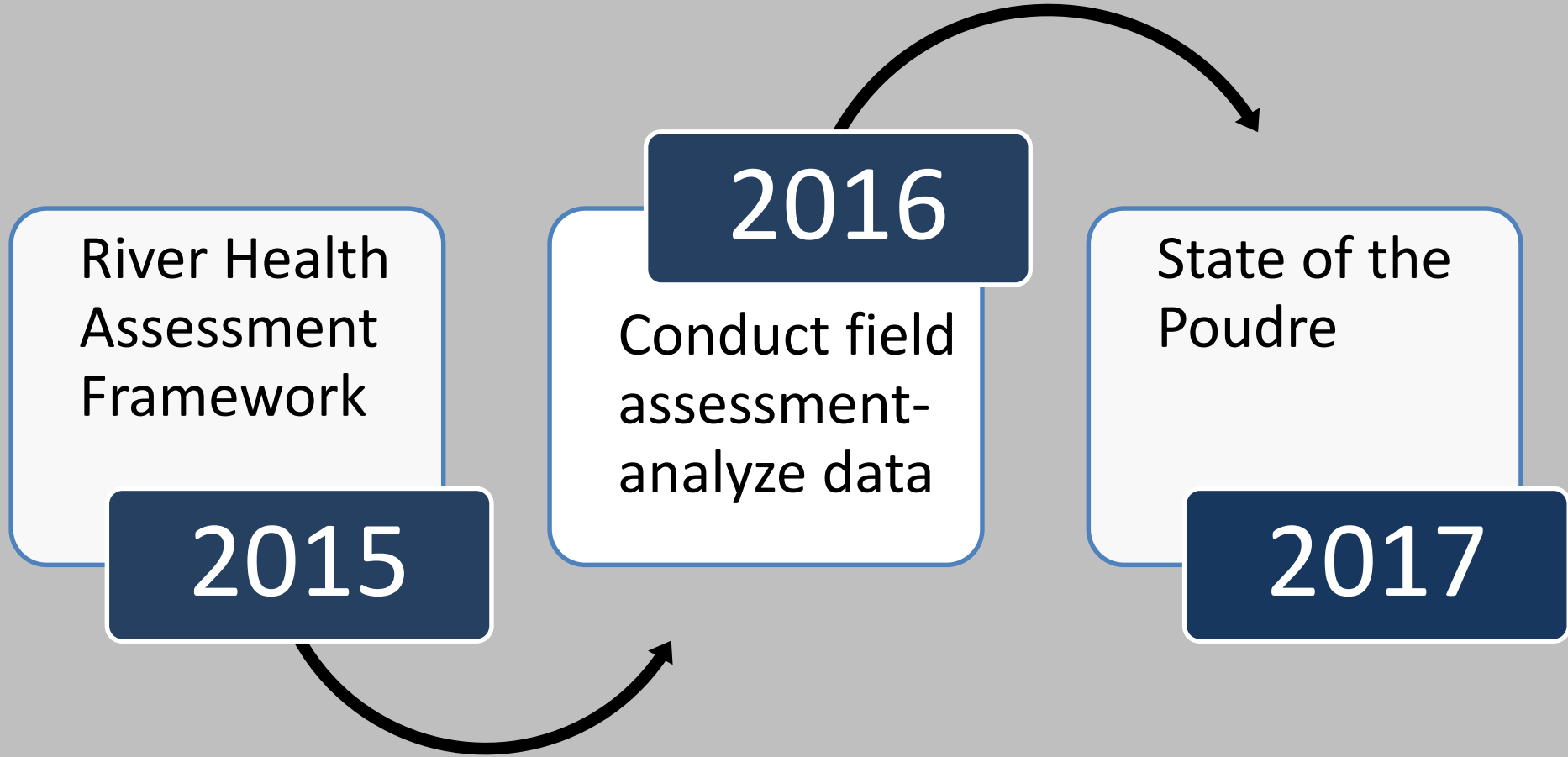
WATERSHED SERVICES





River is the nexus

How healthy is our river?



Public release end of March 2017 - Open house

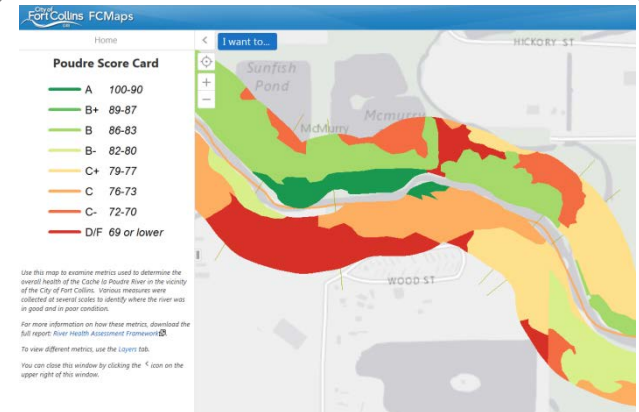
To reach various audiences the State of the Poudre results will be available in three formats



River Health Assessment
(full report)

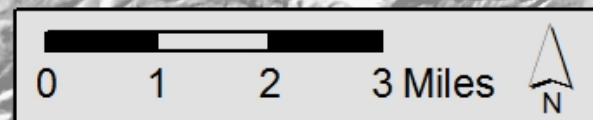
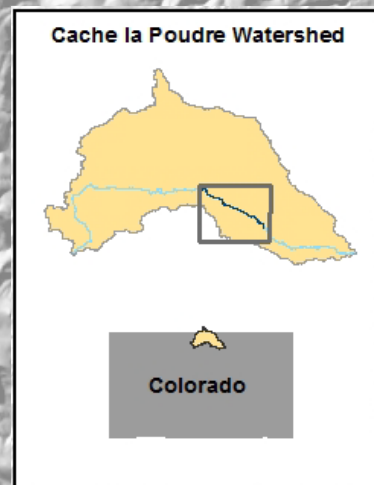


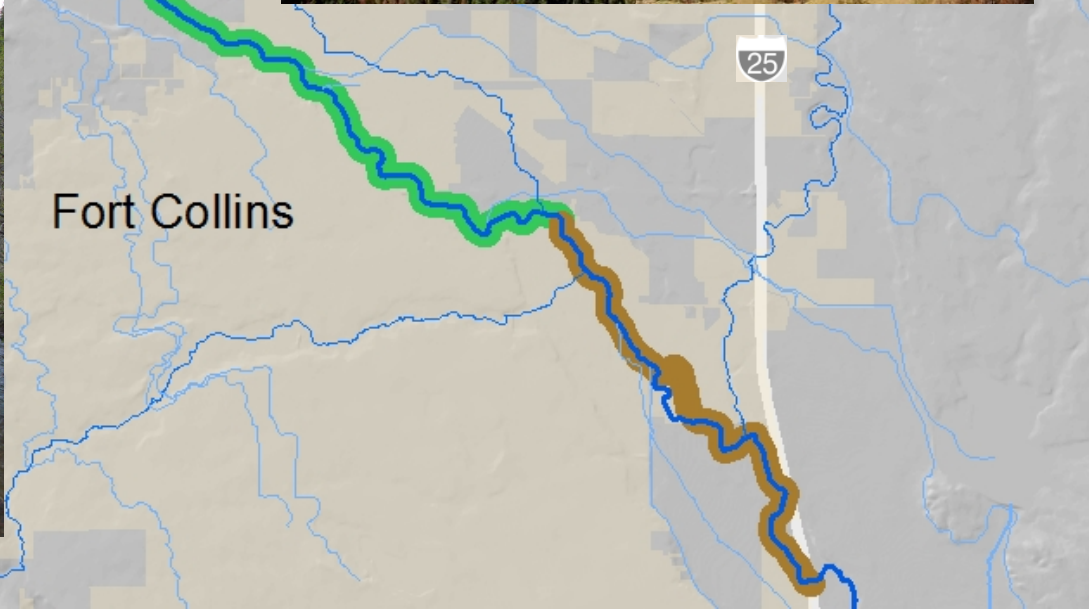
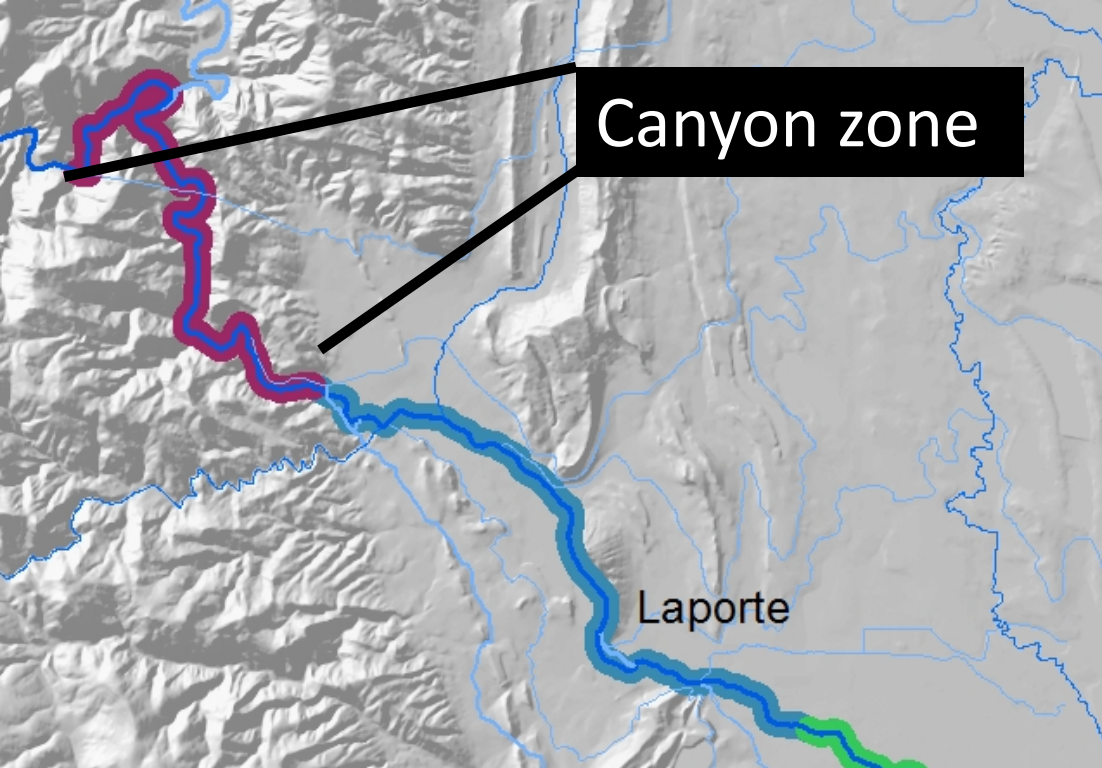
Report Card



Online Mapping Tool

The project area is divided into four zones based on distinct geography and land use





Rural zone

Laporte

Fort Collins

25



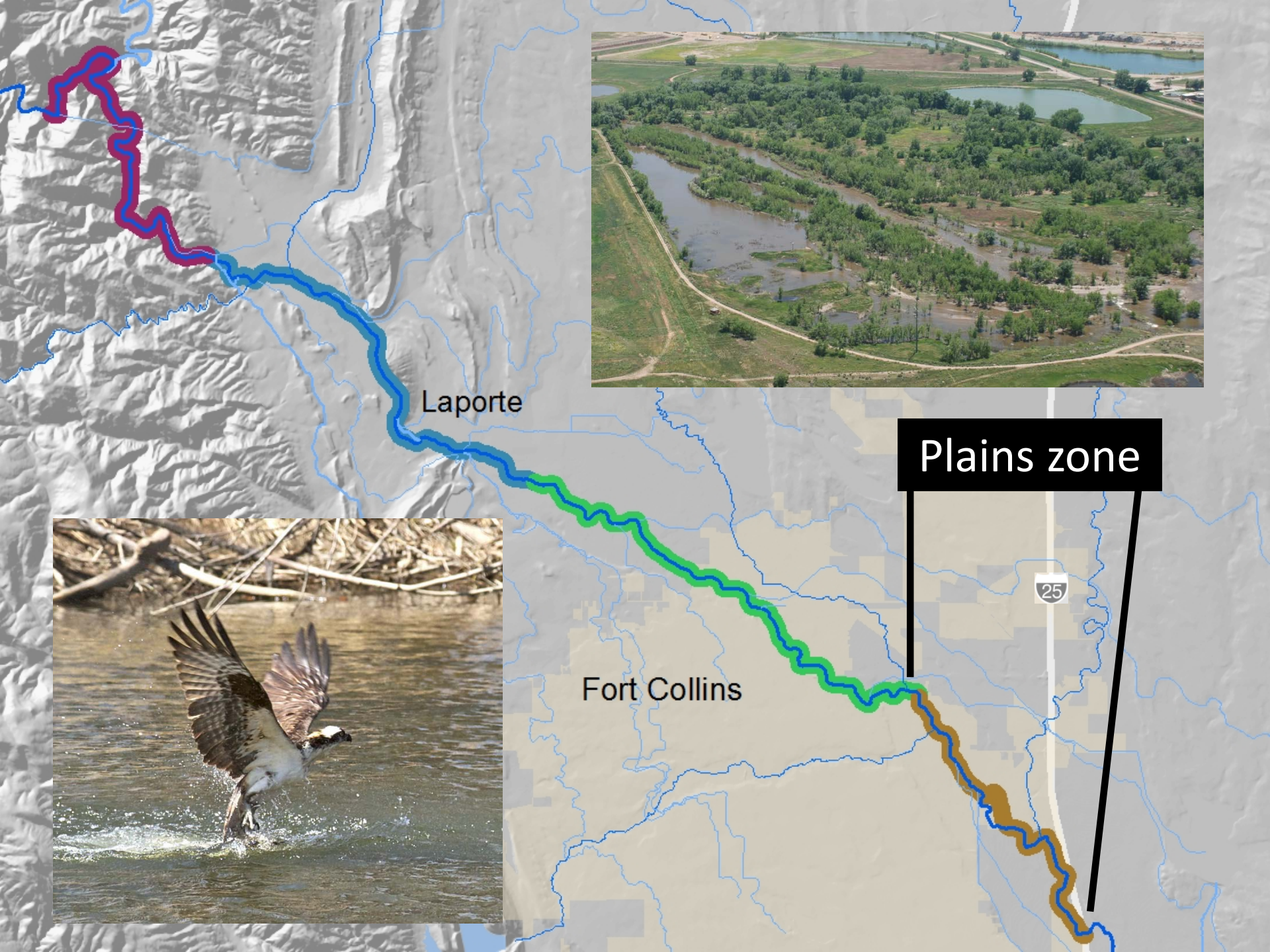


Laporte

Urban zone

Fort Collins

25



Laporte

Plains zone

25

Fort Collins



River Health Indicators

Physical

Chemical

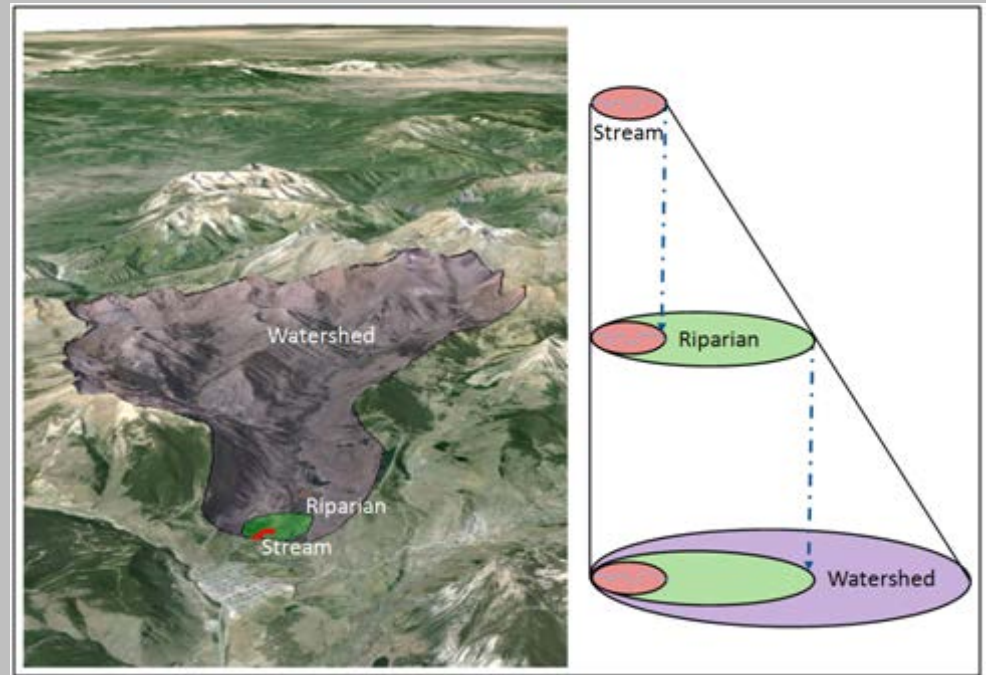
Biological



Plains Topminnow (*Fundulus sciadicus*)

Konrad P. Schmidt

Variables within river ecosystems function at various scales





<u>Indicators</u>	<u>Metrics</u>
Flow regime	Peak flows, base flows, rate of change
Sediment	Land erosion, channel erosion, transport
Water quality	Temperature, nutrients, pH, dissolved oxygen
Floodplain connectivity	Floodplain extent
Riparian condition	Veg. structure, habitat connectivity, contributing area
River form	Planform, dimension, profile
Resilience	Dynamic equilibrium, recovery potential
Physical structure	Coarse scale, fine scale
Aquatic life	Aquatic insects, native fish, trout, habitat connectivity

Multi-pronged approach allows for holistic stem to stern reporting

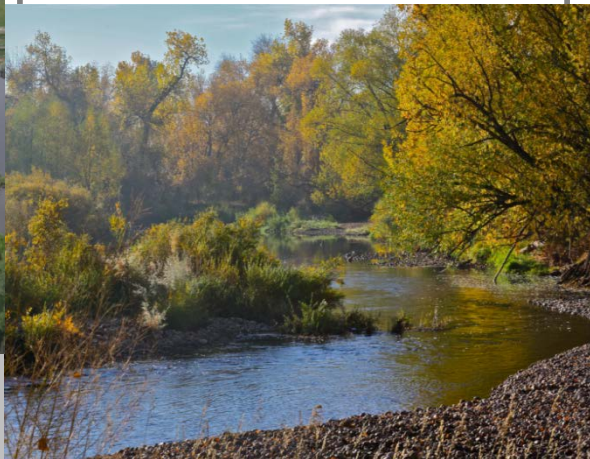
Level 1

GIS-desktop



Level 2

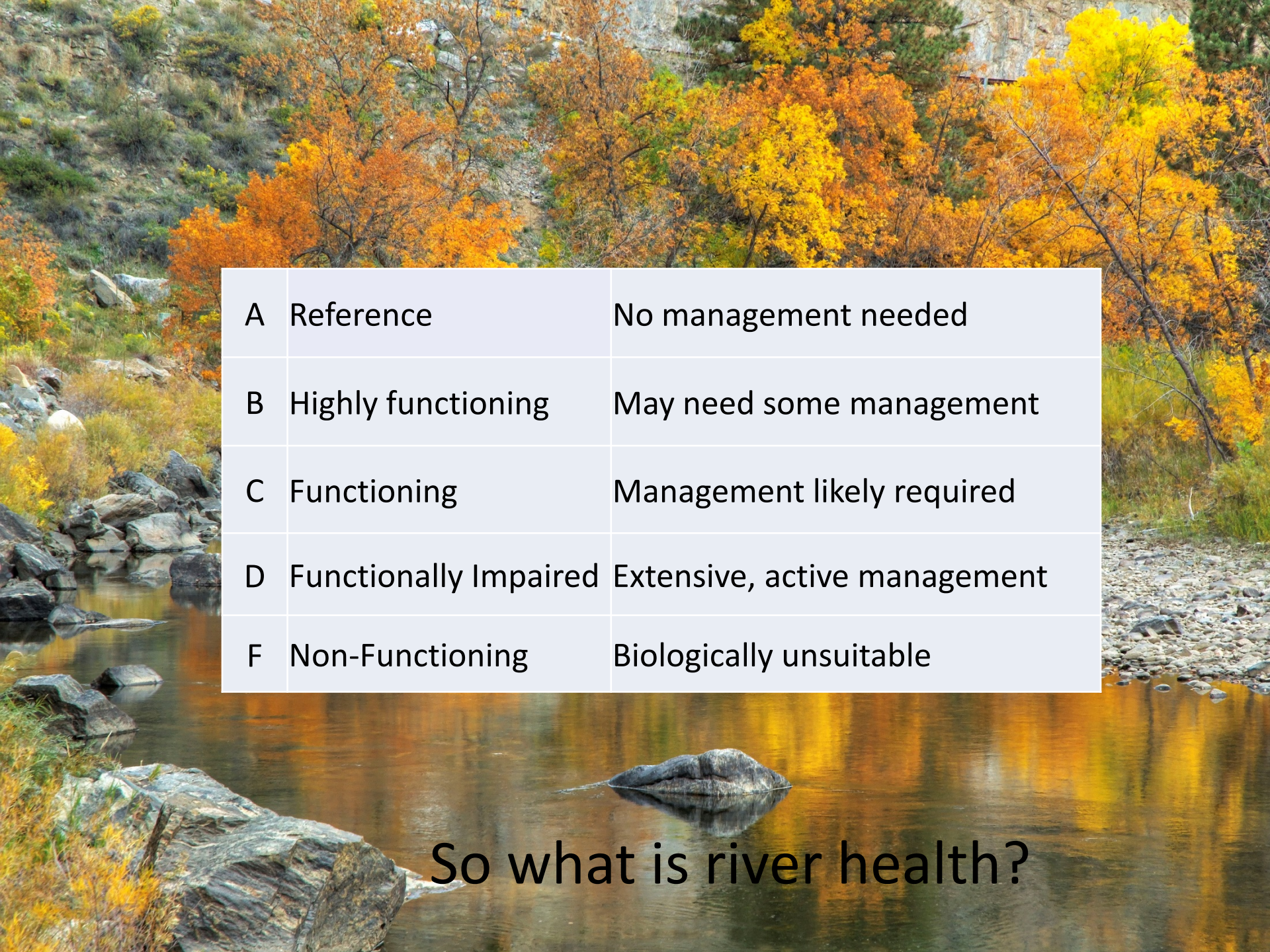
Field- rapid



Level 3

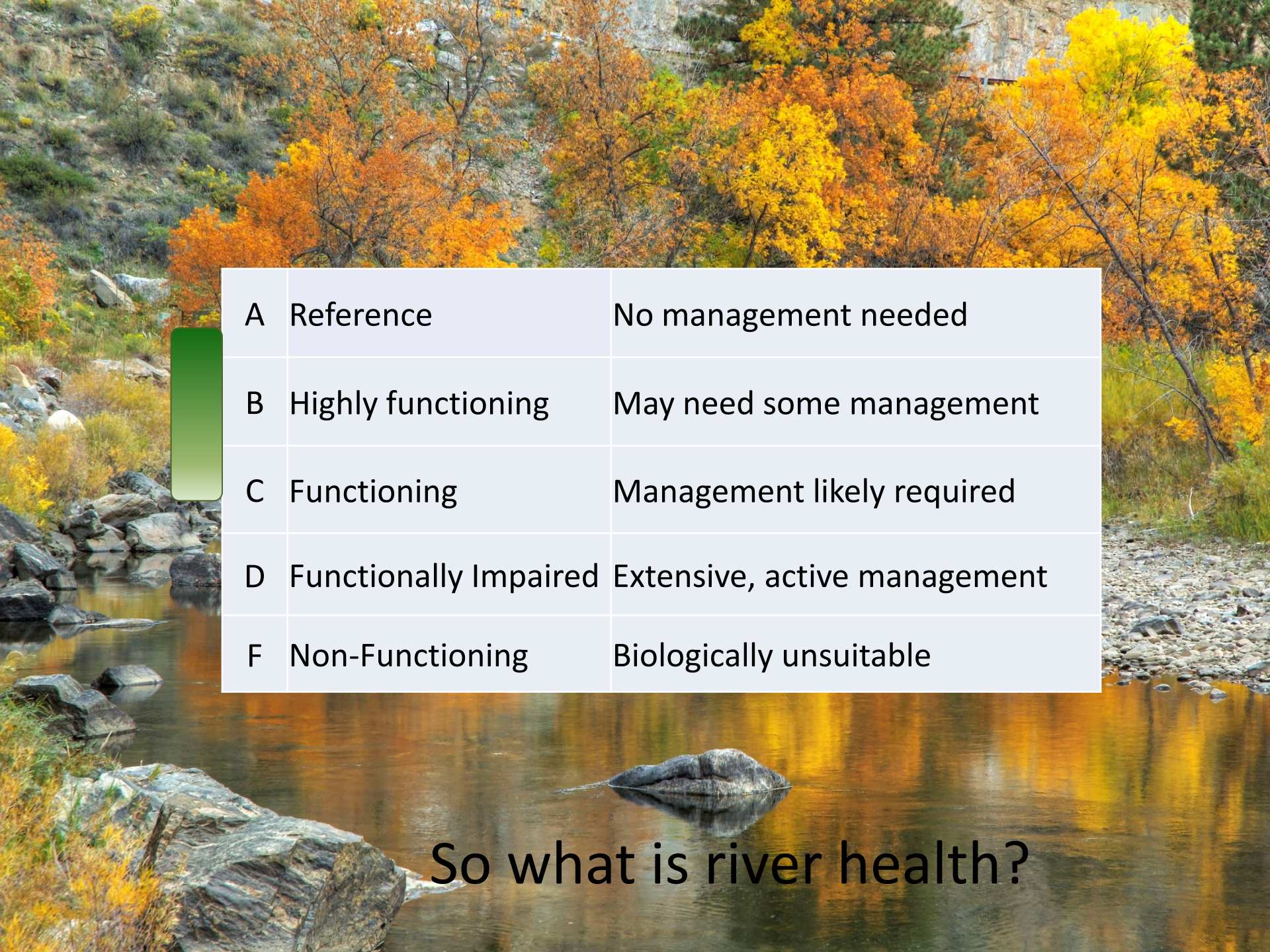
Field- data



A scenic river landscape with autumn foliage reflected in the water. The river flows through a rocky bed, surrounded by trees with vibrant orange and yellow leaves. The water is calm, creating clear reflections of the surrounding trees and rocks. A large rock is visible in the foreground on the left, and another rock is partially submerged in the water in the center.

A	Reference	No management needed
B	Highly functioning	May need some management
C	Functioning	Management likely required
D	Functionally Impaired	Extensive, active management
F	Non-Functioning	Biologically unsuitable

So what is river health?



A	Reference	No management needed
B	Highly functioning	May need some management
C	Functioning	Management likely required
D	Functionally Impaired	Extensive, active management
F	Non-Functioning	Biologically unsuitable

So what is river health?

Results?



Overall- Poudre is functional but not highly functional

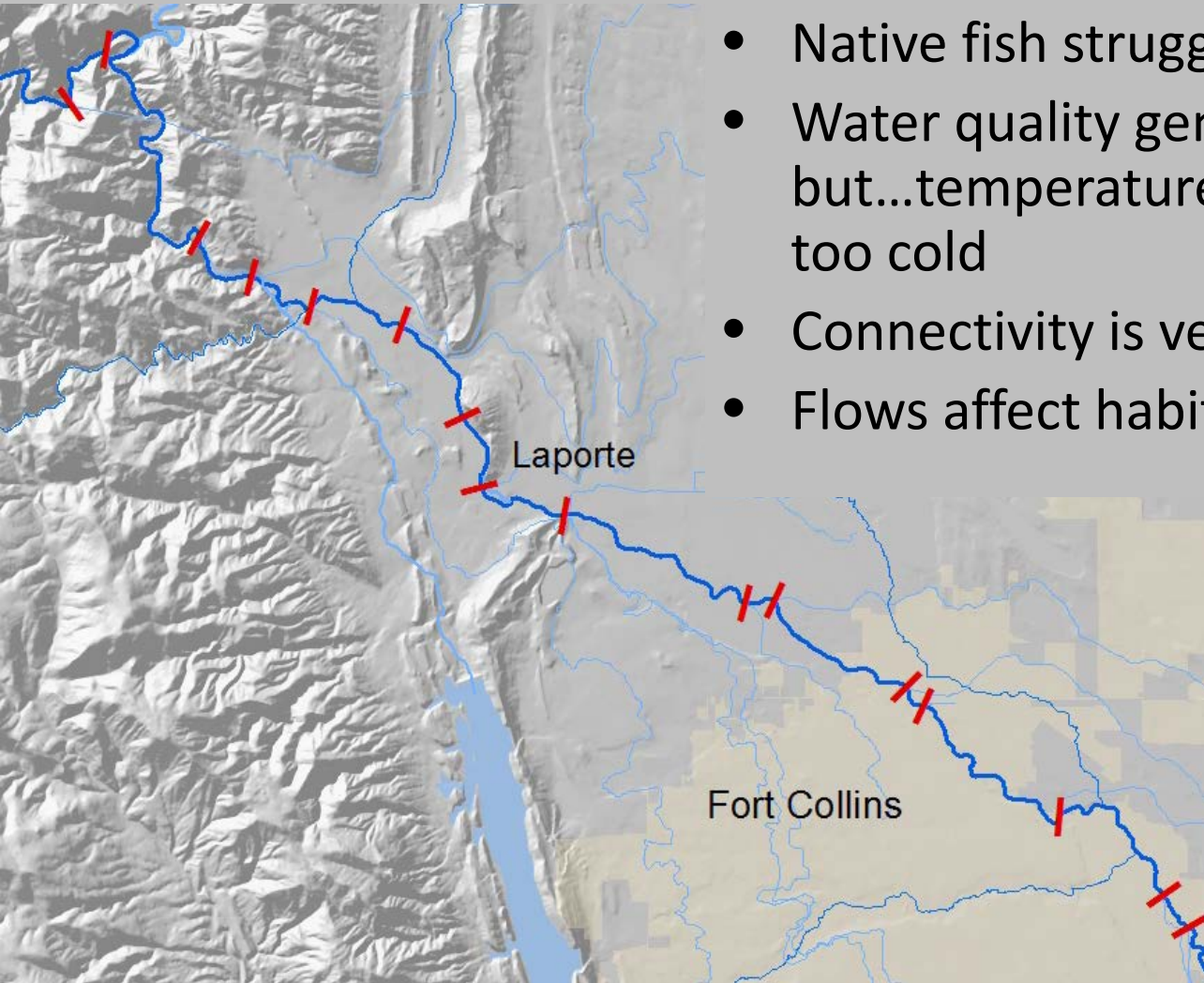
Results for metrics/reaches range from good to poor (impaired) function

Results are reaffirming themes we already know while also revealing new lessons

- Highly altered river, physical conditions change frequently
- Riverside forests are reliant on connection to river
- Management actions make a difference
- Time!!! Restoration, resilience, recovery

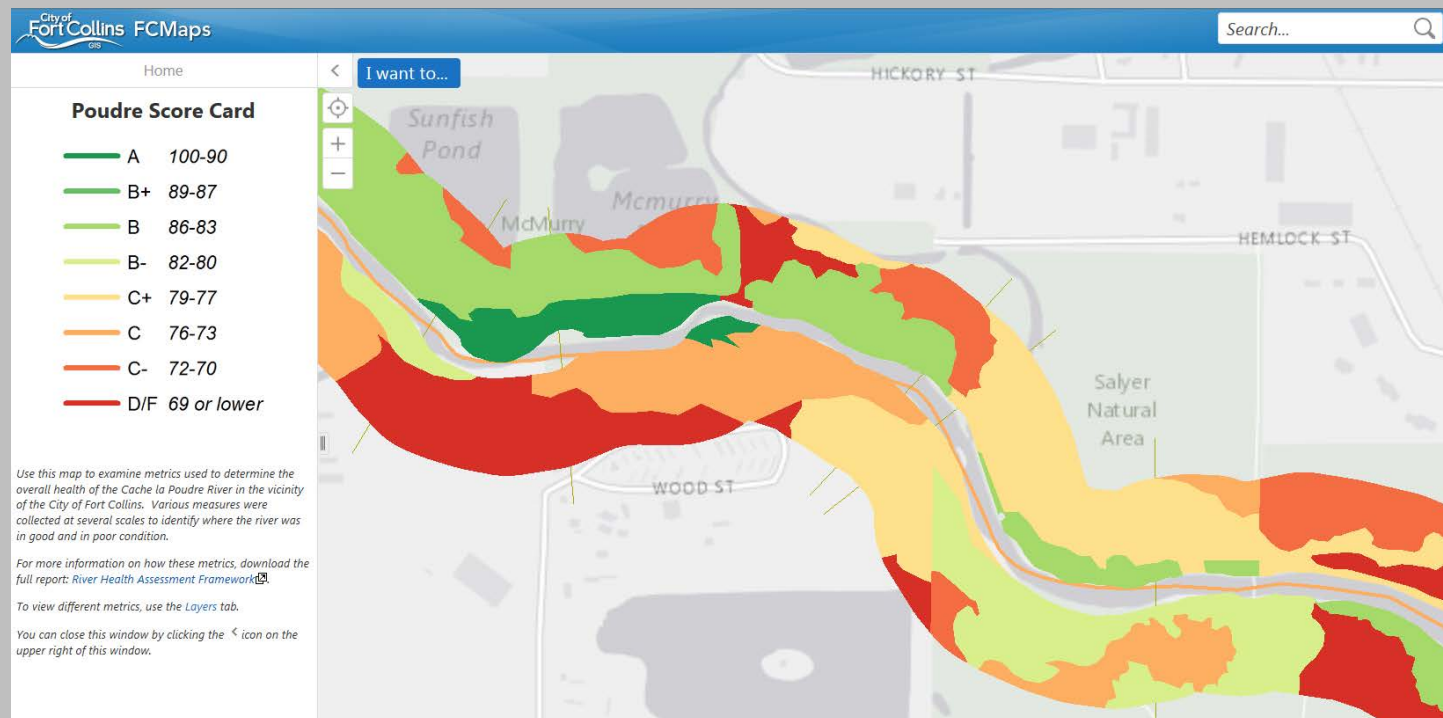


Results are reaffirming themes we already know while also revealing new lessons



- Native fish struggling
- Water quality generally fine but...temperatures can be too hot and too cold
- Connectivity is very poor
- Flows affect habitat, food chain

For some metrics there is a lot of local variability
Reach averages often don't always tell the whole story





Upstream to downstream



The Poudre changes character



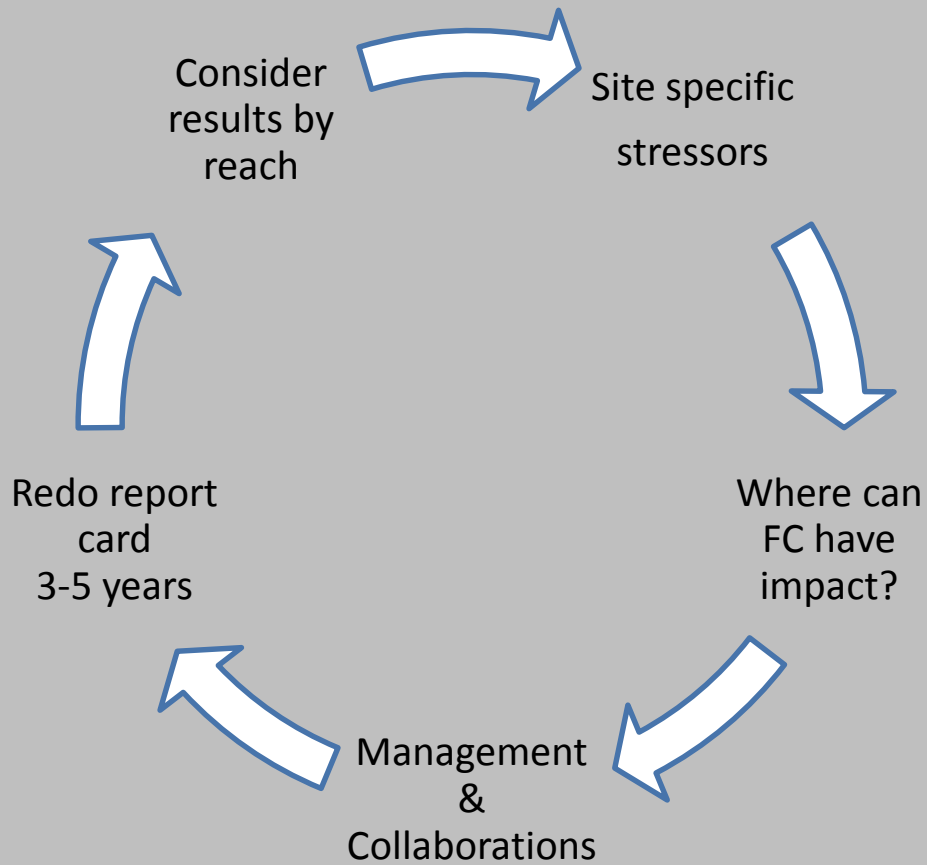
Possible Applications



- Meet internal goals for supporting watershed services
- Communication platform-common perspective
- Inform management a benchmark - tradeoffs
- Linking data to conversations
- Local and regional collaborations

What's next?

What's next?



Internal evaluation:
Does this help us meet our goals?
Long term funding options?

State of the Poudre

How healthy is your river?



Thank you!

Please come find us with questions

