

# BIG THOMPSON

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## RIVER CORRIDOR MASTER PLAN

For more information  
please visit us at:  
[www.abetterbigt.com](http://www.abetterbigt.com)

December 2017

# Water & The Environment

## A Starting Point

What is a healthy river system?

- Is diverse & natural
- Resilient – takes care of itself
- Supports life, health, & safety
- Beautiful & essential
- A public amenity
- Promotes economic vitality
- Saves money



# Are we resilient?



# Why a Big Thompson River Master Plan?



# River Master Plan's Purpose:



VISION



FLOOD HAZARD REDUCTION AND MITIGATION



RESILIENCE - THE RIVER AND INFRASTRUCTURE



ECOLOGICAL RESTORATION



RECREATION AND PUBLIC-NATURE INTERACTION



CORRIDOR MANAGEMENT



# River Master Planning Approach: “Science Based, Community Driven”



Science + Engineering +  
Planning + Outreach  
=

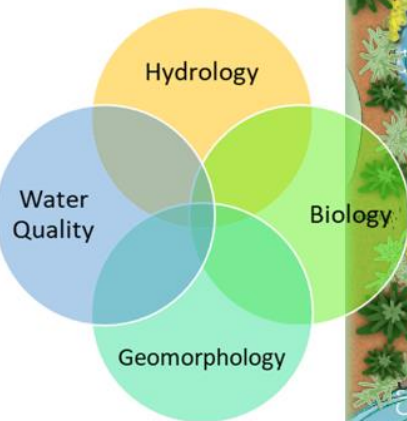
**VISION**



# River Health Assessment

Average grade through central Loveland = D+  
We have work to do!

## River Health Assessment



## REACH 34 | Fairgrounds Park

Railroad Avenue to Lincoln Avenue (Hwy 287)



	Stressor	Impact
Watershed to Stream-Segment Scale Stressors	Unknown/Alternative Source(s)	
	Surface Water Diversions	
	Dam/reservoir operations	
	Inflows and return flows	
Segment to Reach Scale Stressors: River, Floodplain, Riparian Corridor	Watershed scale landuse	
	Riparian landcover conversion	
	Urbanization and Development	
	Aggregate Mining	
	Roads and Bridges	
	In-Channel structures	
	Levees/Channelization	
	Bank and/or channel armoring	
	Hillslope/Bank/Channel erosion	
	Woody material removal	
invasive plant species/weeds		
invasive aquatic species		

### Community Identified Values & Improvement Needs: Reach 24

#### Top 3 Identified Values

- 1) Access and Recreation
- 2) Quality of Life, Beauty, or Inherent Value
- 3) Wildlife and/or Ecological Function, Economic Benefits, Other Uses, Sufficient Clean Water

The table above shows current stressors to overall river health in this reach. Increased impact from a stressor is depicted by darker grey.

Parameter	Indicator	Scoring Weight	Grade
Hydrology	Flow Regime	20%	D
	Sediment Regime	5%	C-
Geomorphology	Floodplain Connectivity	15%	F
	Channel Morphology	10%	C
	Stability	10%	D-
Biology	Riparian Condition	15%	D
	Structural Complexity	10%	C+
	Trophic Structure	5%	C
Water Quality	Water Quality	10%	C

#### Top 3 Identified Improvement Needs

- 1) Address Litter and Medical Waste
- 2) Improve Human Safety
- 3) High Flow or Flood Capacity

**Final Weighted River Health Grade: D+**

The table above shows current weighted grades for river health in this reach at the indicator scale. Each indicator is weighted according to the impact it has on the overall health of the system.





# River Maintenance & Safety

Concrete Rubble & Debris Lined Banks



Bank Erosion & Downed Trees



Concrete Rubble & Debris Lined Banks



Trees Blocking Bridge Opening



Bridge Opening Plugged With Sediment & Trees



# Hwy. 287 Flood Mitigation Project



River's Edge Natural Area

Big Thompson River

Lincoln Avenue (U.S. Highway 287)

Farmer's Ditch

Railroad Avenue

100-Year Floodplain

Hwy. 287 Bridge

1/2-Foot Floodway

Loveland Fire & Rescue Authority Fire Training Grounds

MAJORITY OF FLOW

Highway 402

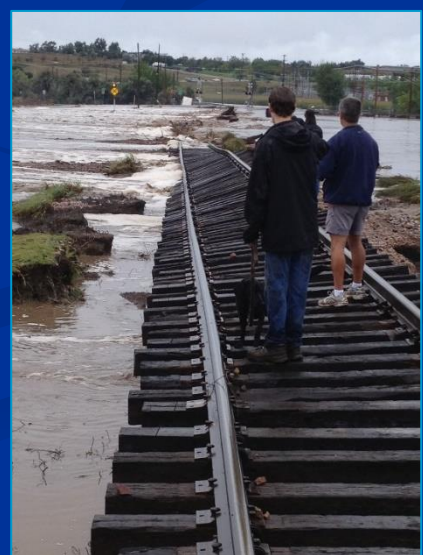
Businesses Flooded on  
S. Lincoln Avenue



Lincoln Avenue (Hwy. 287) Bridge



Failed BNSF Railroad Embankment



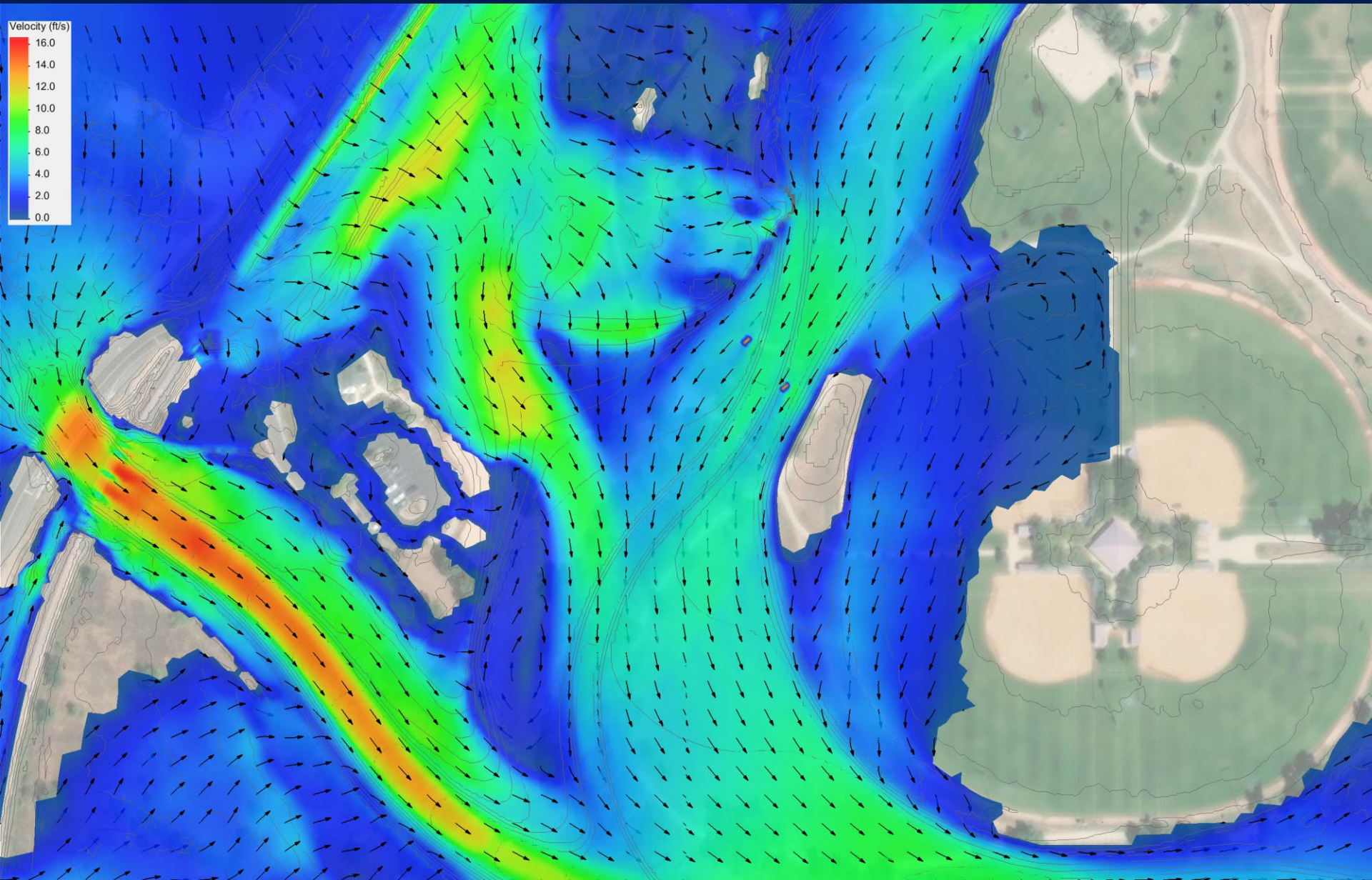


# A Better Big T

## US 287 Flood Mitigation



# 2-Dimensional Hydraulic Modeling



# Nature Based Solutions



Incorporating cost effective nature-based solutions:

- Restore channel-floodplain connectivity
- Restore riparian vegetation
- Instream channel variability
- Sediment transport & erosion
- Stormwater quality treatment
- Wetlands
- Linking habitats

# Hwy. 287 Project Benefits



## 1. Resilience

- Reduce flood hazard risk
- Protect infrastructure & businesses

## 2. Economic

- Reduce future flood impacts & recovery costs
- Opportunities for new or redevelopment
- Aesthetic gateway into Loveland
- Safer, multi-modal transportation

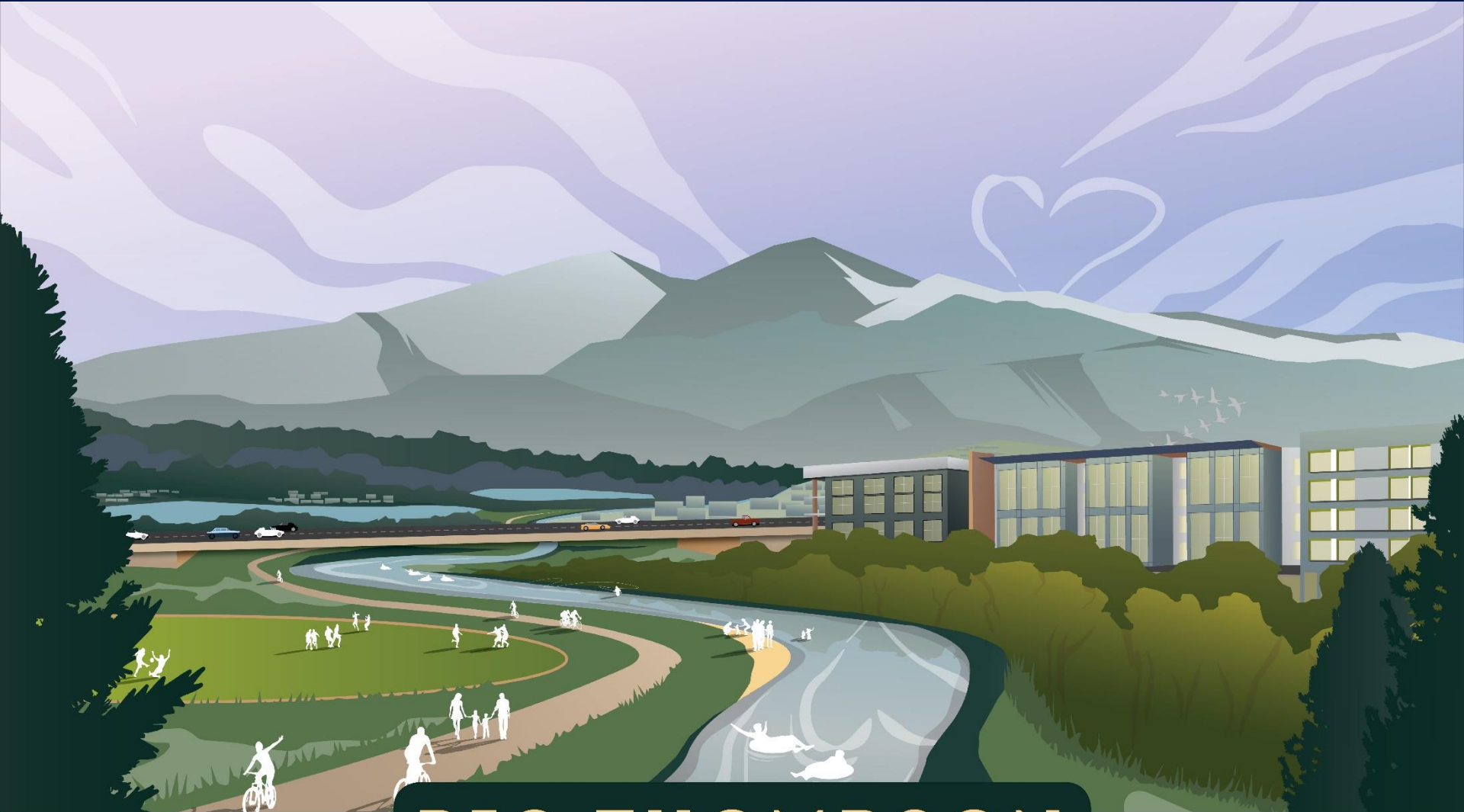
## 3. Environmental

- Natural floodplain functions
- Improve water quality & fishery
- River & riparian health
- Diversify corridor
- Quality of life

## 4. Recreation

- Trails, water recreation, public safety

# Questions and Discussion



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