Fish Passage on the Big Thompson

low priorities that drive design & funding, and high priorities that win the day

John Giordanengo, *AloTerra Restoration Services*

- Jeff Crane, *Crane Associates*
- David Bidelspach, *Five Smooth Stones*
- Suzanne Hutah, *One Fish*
- Luke, Julie, and Co., *Otak (including Flywater)*

Dave Piske (*Rocky Mountain Flycasters – the spark)*
Pam Sponholtz (*US Fish & Wildlife Service – the dynamite)*

COLORADO TROUT UNLIMITED

AloTerra
Restoration Services, LLC

The Carpenter

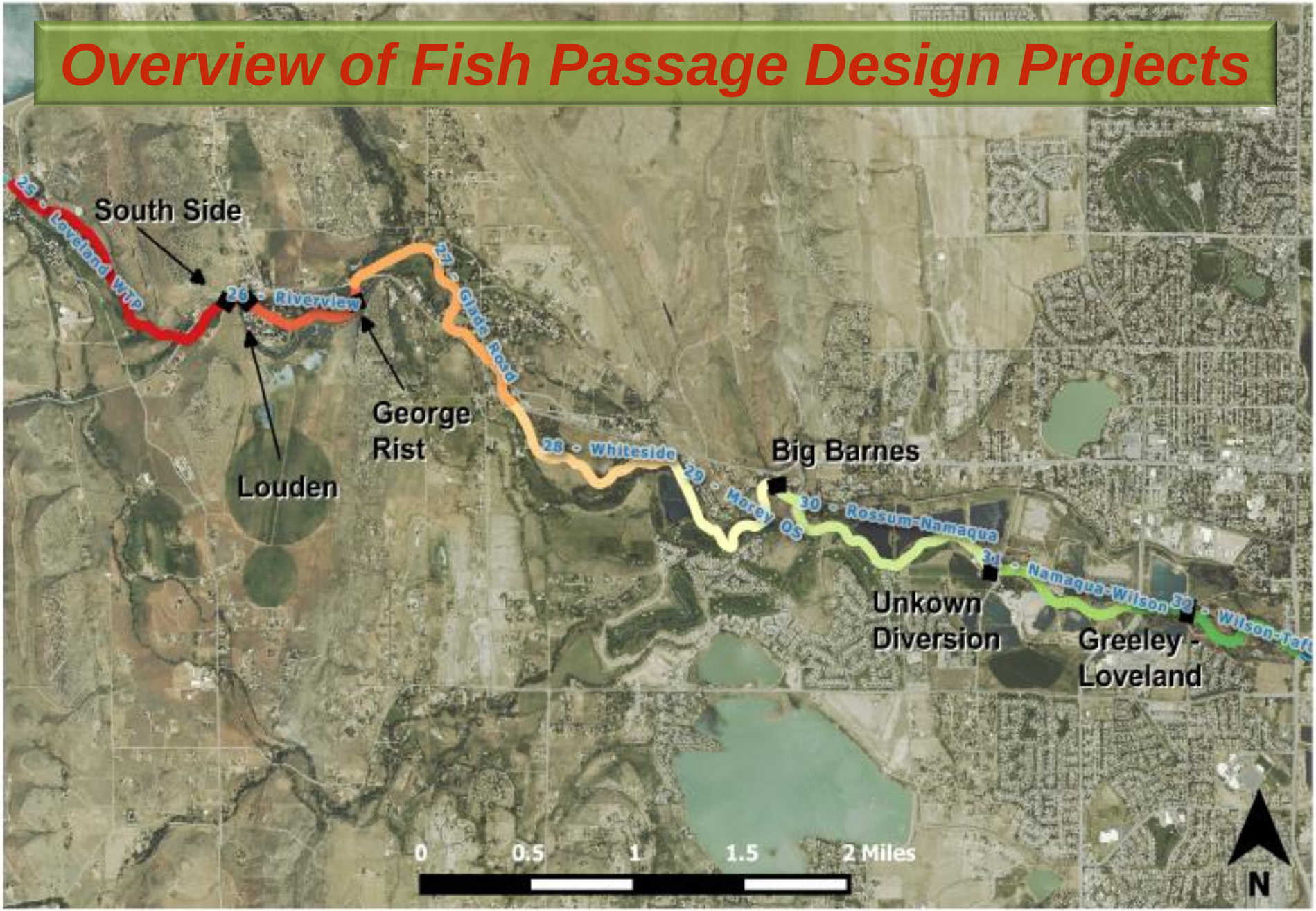
Power = Work/Time

Aggradation

$100K spent to dredge 1 canal (not completed)

~$100K to dredge Lake Loveland

Overview of Fish Passage Design Projects



AloTerra
Restoration Services, LLC

Map created by Joel Sholtes, Aloterra Restoration Services, LLC - November 24, 201

Master Plan Reach Ratings

Reach		Assessment Scores					
No.	Name	GR	FR	AH-IP	RE-IP	Cost	Total
42	Glen Haven	5.0	3.9	5.0	4.0	2.0	4.0
29	Morey Open space	4.9	3.7	3.0	4.6	3.0	3.8
22	Jasper Lake	4.7	4.8	3.6	4.8	1.0	3.8
26	River View	4.7	2.7	3.4	3.6	4.0	3.7
25	Loveland WTP	5.0	1.0	4.3	3.9	4.0	3.6
21	Cedar Cove	4.7	3.3	3.9	4.0	2.0	3.6
51	North Drake	5.0	2.9	3.8	4.0	2.0	3.6
27	Glade Road	3.6	5.0	3.7	4.2	1.0	3.5
28	Whiteside	4.5	2.8	2.9	3.9	3.0	3.4
49	Crosier Mt Trail	4.0	1.0	4.0	3.9	4.0	3.4

Top Ten

Design Goals (project funders)

1. Fish Passage (native & game sp.)

Species Assemblage	Sustained Speed (ft/s)	Burst Speed (ft/s)	Vertical Drop (ft)	Turbulence (EDF)
Rainbow Trout	4.5	10	1.5	4
Brown Trout	7	12	2.2	4
Longnose Sucker	4	8	1.0 (fish do not jump)	3
Longnose Dace	2.4	3.5	0.25 (fish do not jump)	3
Fathead Minnow	TBD	TBD	TBD	3

Goals (ditch companies)

1. No impact to quantity/timing/location
2. Reduce Sediment/maintenance
3. Increase resilience
4. Fish Passage
5. River function

Zero – low risk in operation

Riverview Reach Landowners


CASE 1: George Rist Diversion

CASE 1: George Rist Diversion


Cross Vane Step Pool
11/23/2014 17:26
Suzanne Hutah


CASE 2: Big Barns Dam

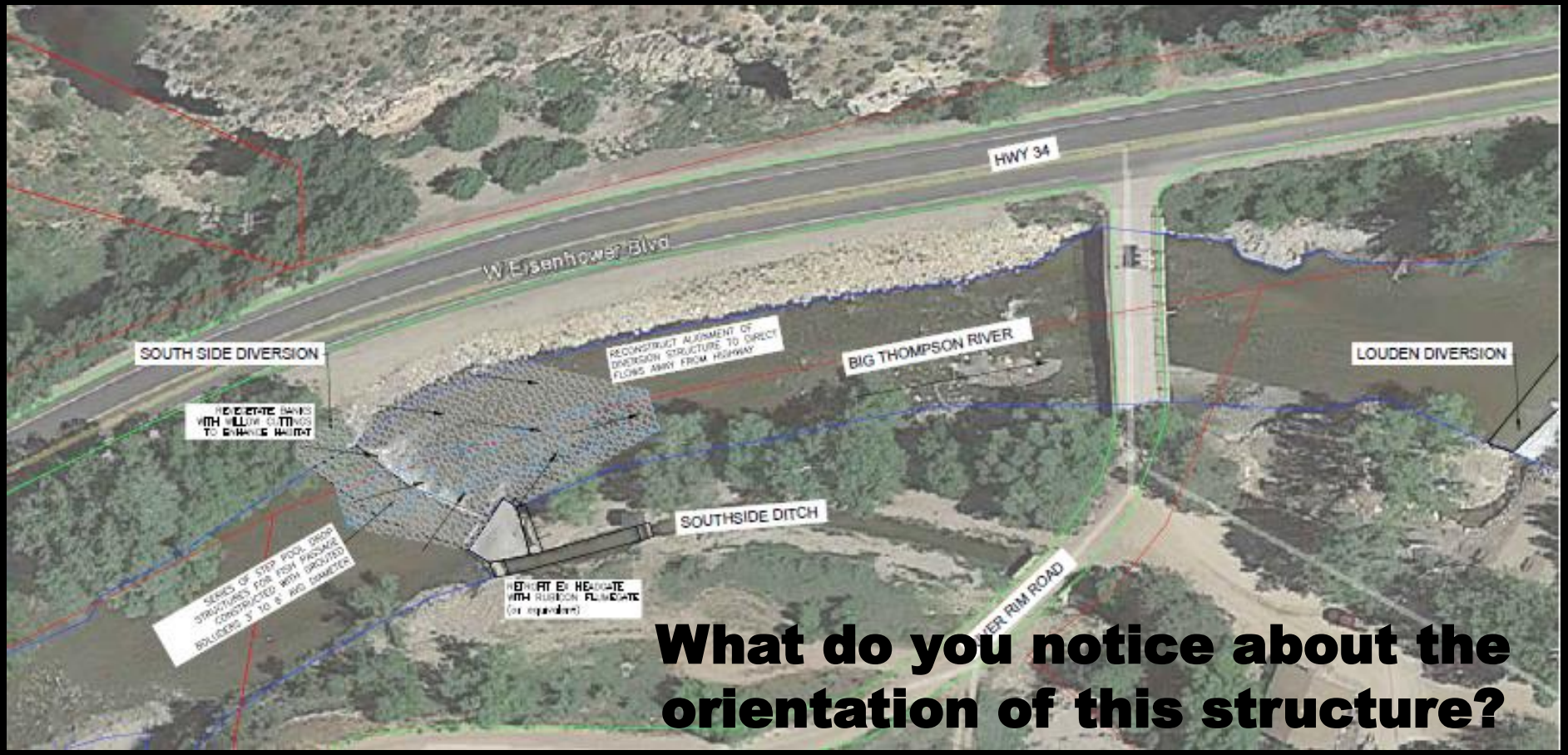
CASE 2: Big Barns Dam

Option 1: relocate river

Why is that an unpopular solution?


CASE 3: South Side Ditch
What do you notice about this structure?

CASE 3: Southside Diversion



What do you notice about the orientation of this structure?

CASE 3: Southside Diversion

CASE 4 (?): Southside Ditch

The spark & the dynamite

Motivations for Ditch Companies

1. Reduced Sediment Delivery
2. Low-zero risk to current operation
3. Reduced maintenance. Reliable maintenance (i.e., fish ladders)

Questions?