

Town of Jamestown Land Use Planning and Stream Corridor Master Plan Community Meeting #3

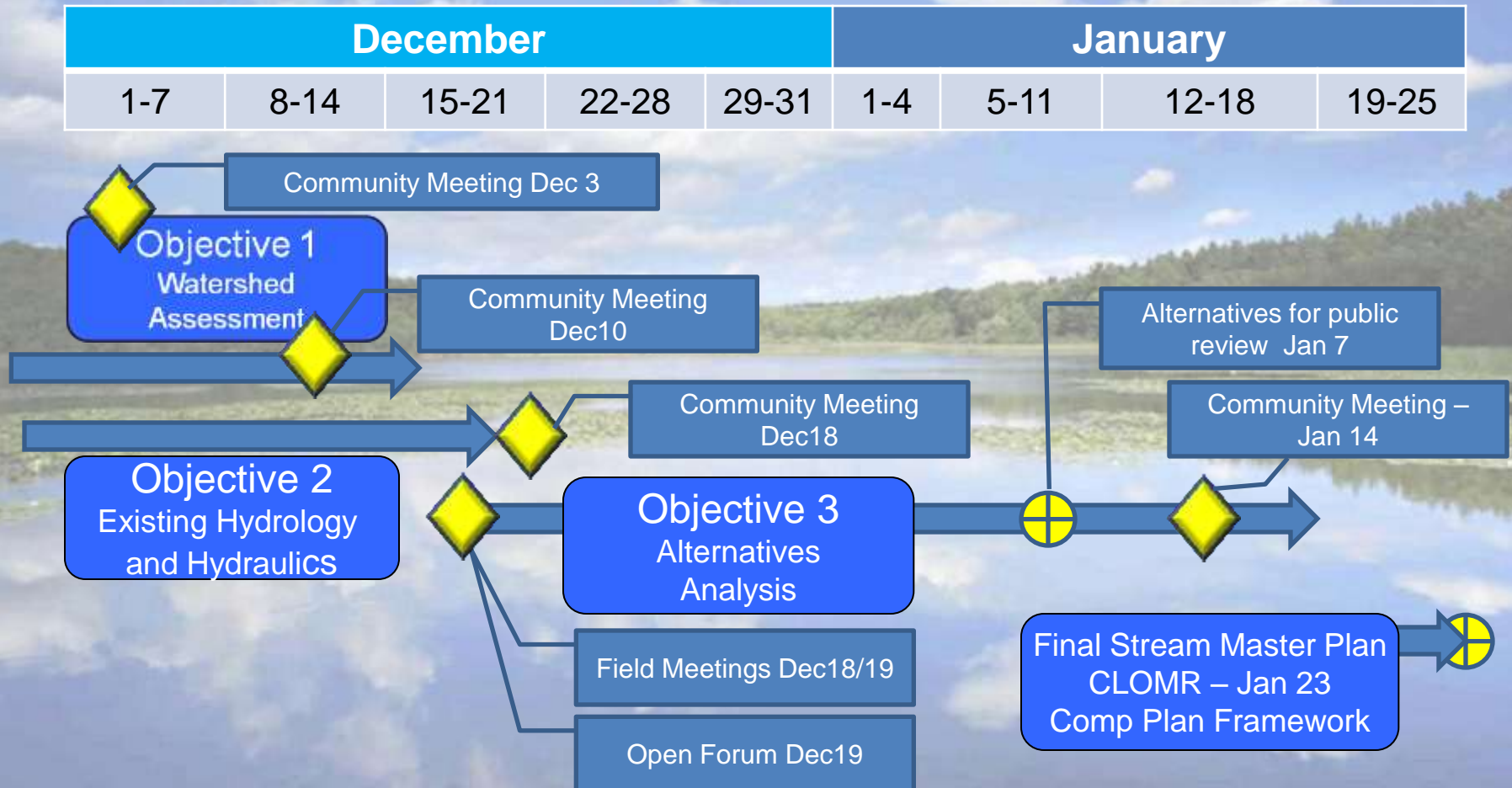
December 18, 2013



Here's our agenda for tonight.

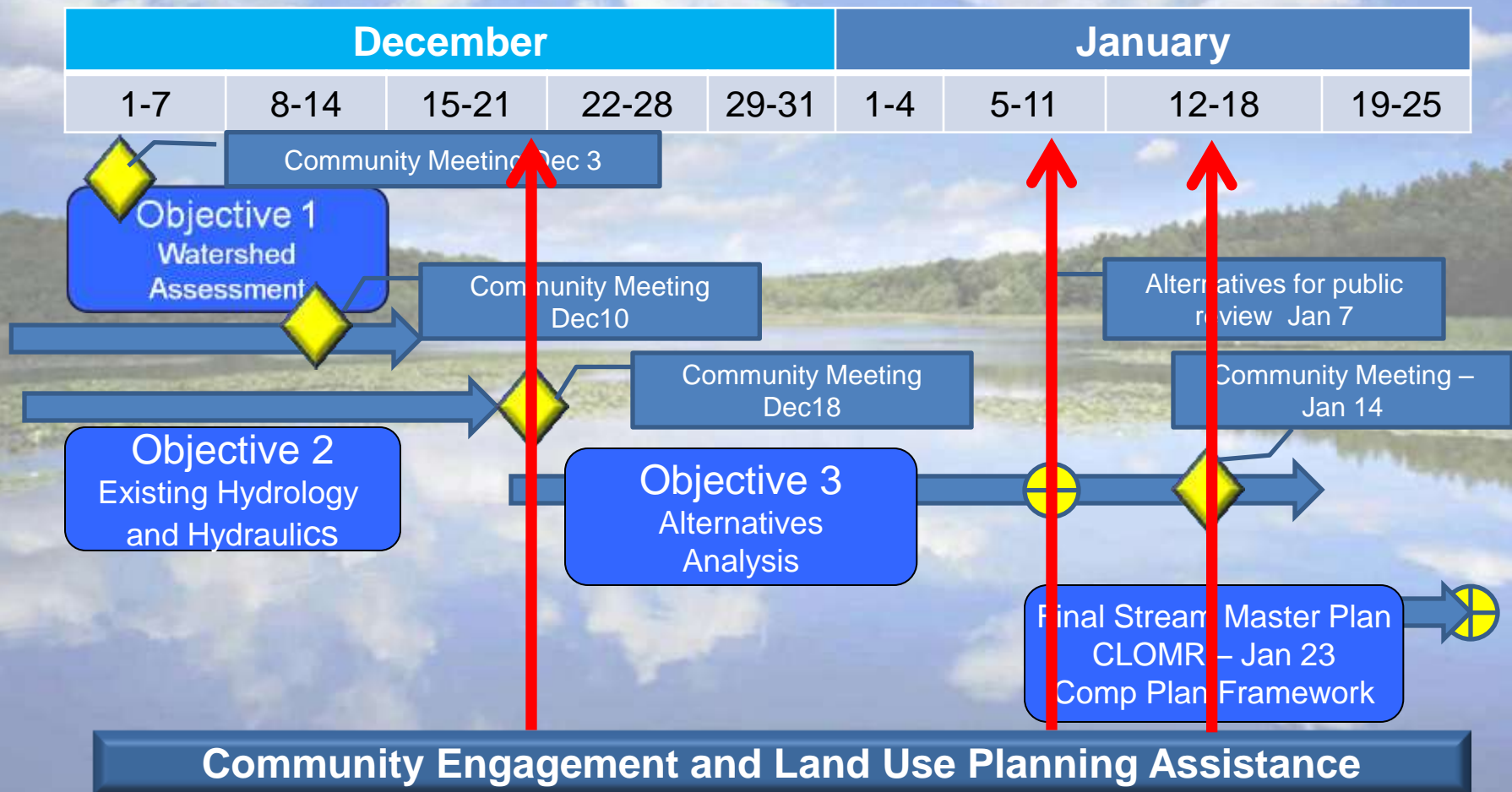
- Introductions
- Initial results of Stream Corridor Master Planning effort – Community Stream Model
- Next steps
- Q/A

With your help we will continue to make progress



Community Engagement and Land Use Planning Assistance

Timeline, Milestones and Meetings



We use models to understand stream channel form.

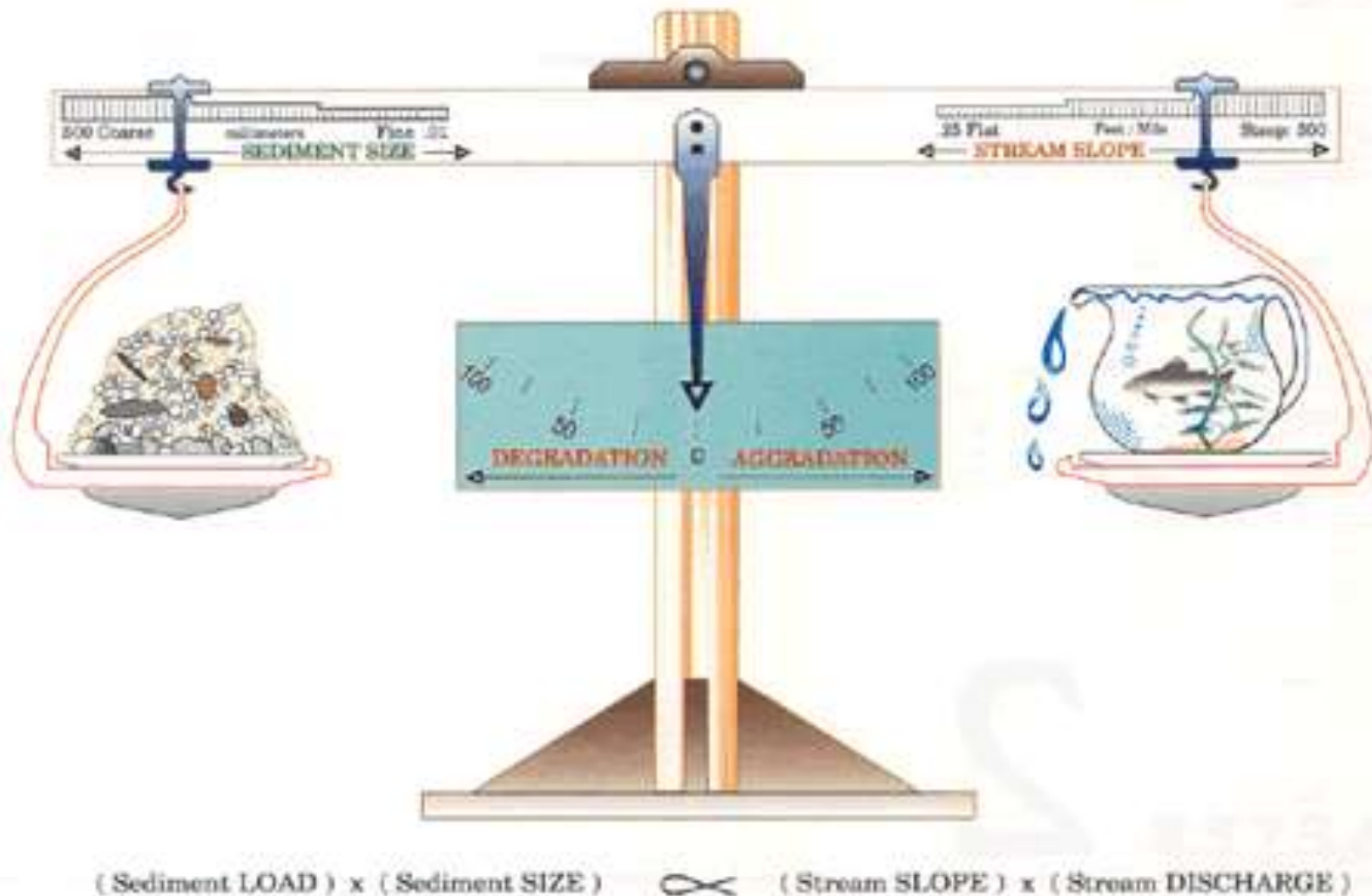
■ Stream channel form is a result of:

- Streamflow (from precipitation)
- Sediment supply (watershed slopes, debris flow, channel migration)
- Morphologic controls (e.g., valley pinches, roads, bridges)

■ Any particular channel is an expression of the relationship of these processes

■ To understand the relationships, we collect data in the field, and we model

Stream Equilibrium - Readjustment

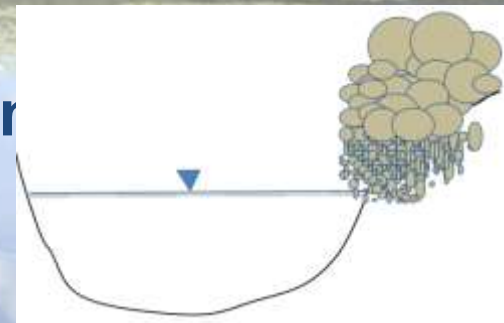


Understanding the flow is a first step.



Debris flows behave differently.

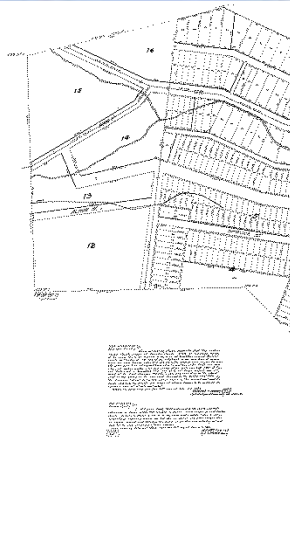
- Relatively few direct observations
- Capacity to carry large boulders long distance
- High erosive capacity on channel sides
- Up to 6 times the shear stress on channel beds compared to flood flow
- Bedrock scour observed: 12 ft in less than 24 hours
- Surges: Temporary damming and breaching of channels by debris, and channel avulsions



Historical Data

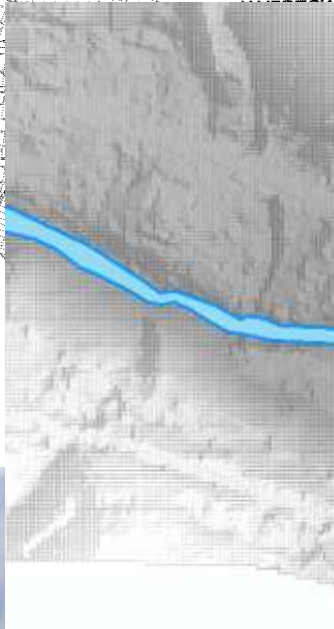
■ Maps and field evidence

1883 Plat Map

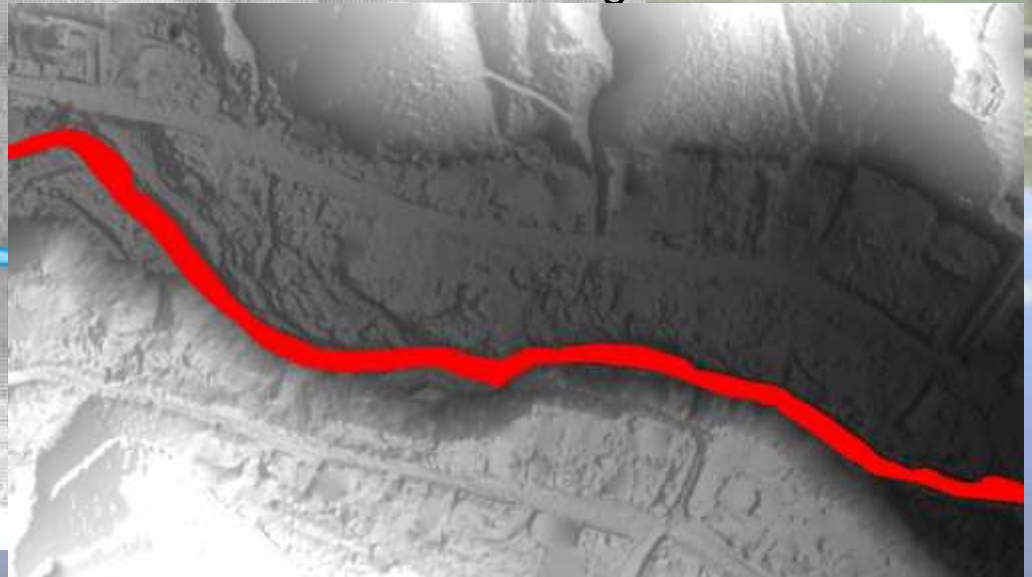


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Pre-Flood Channel Alignment

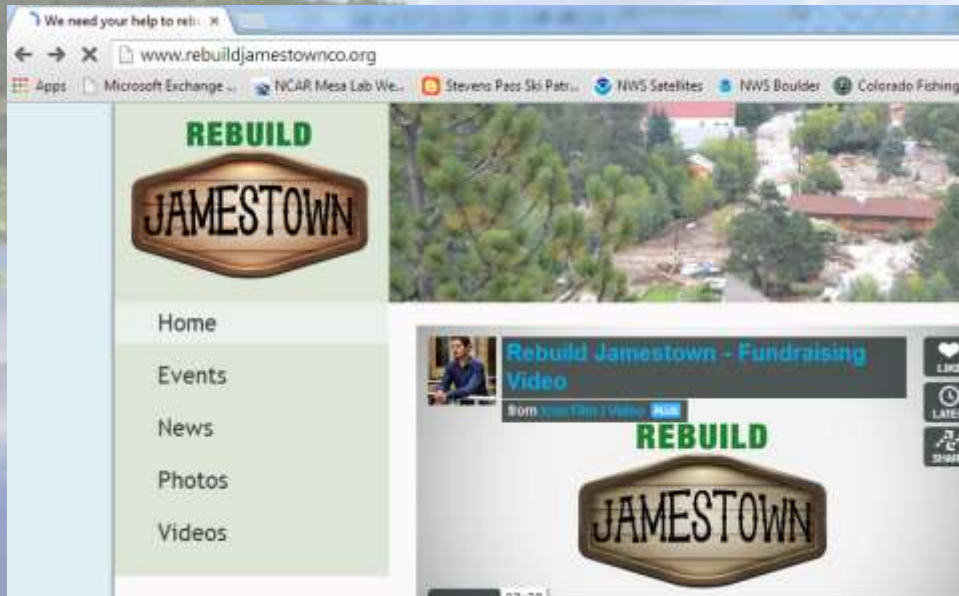


Post-Flood Alignment



Your Observations, photos, and videos are very helpful

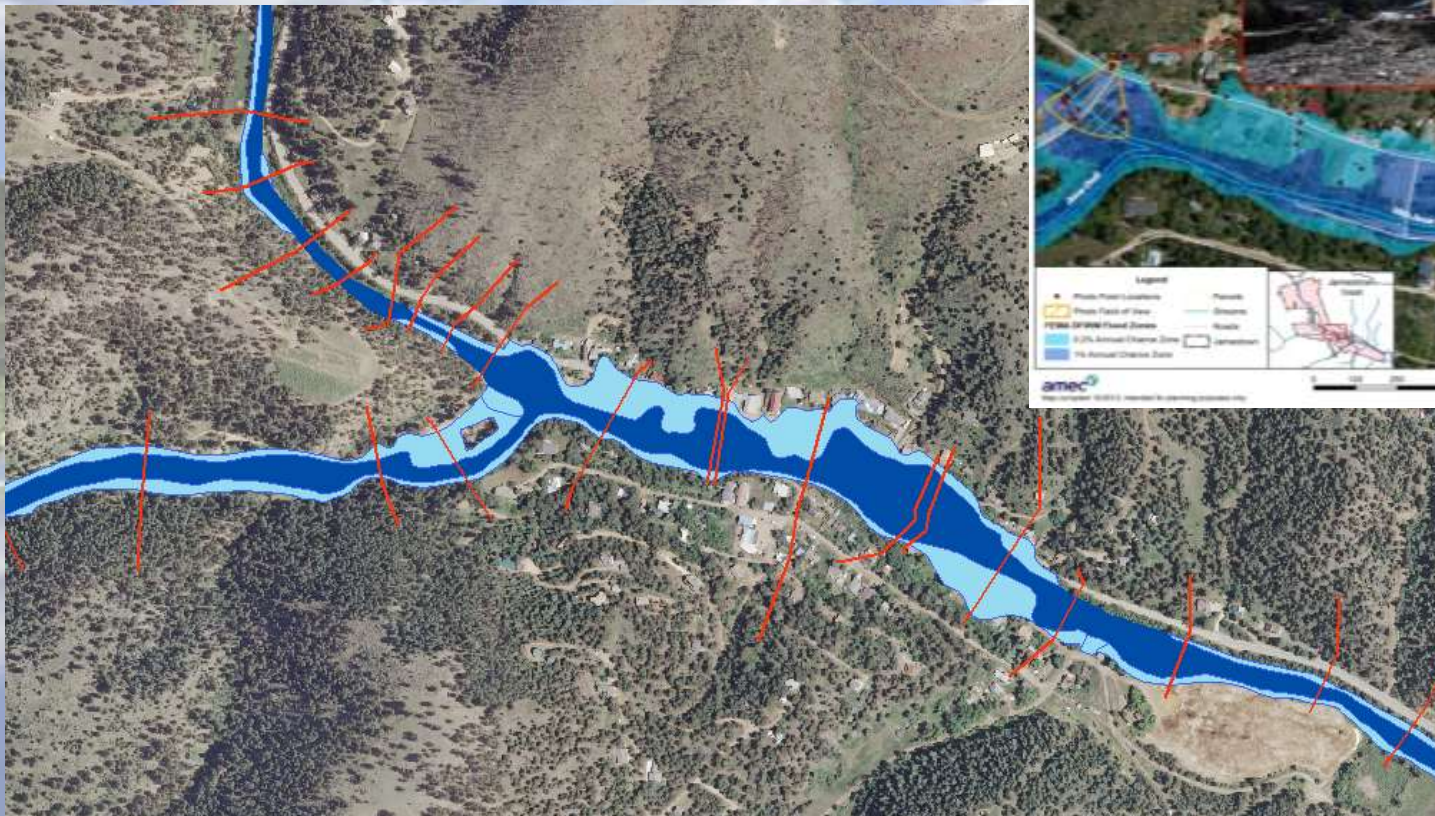
Photos and Videos from the flood



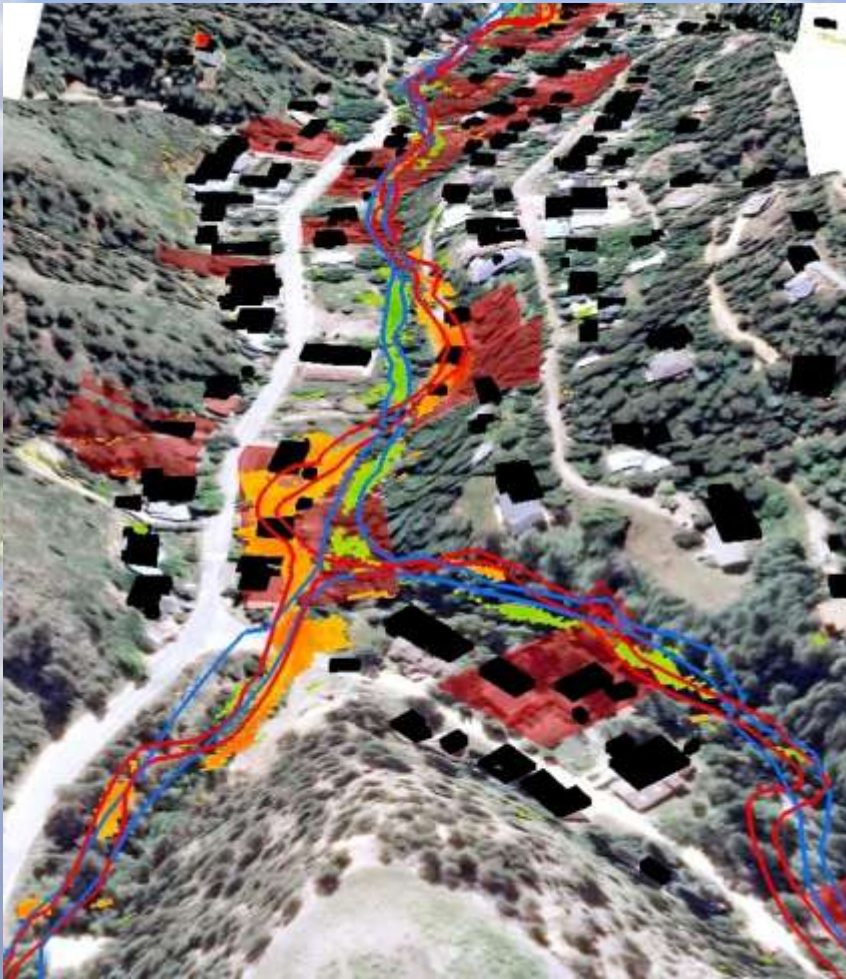
Civil Air Patrol Photos




We also use old Flood Insurance Rate Maps.



The model is accurate compared to aerial photos.

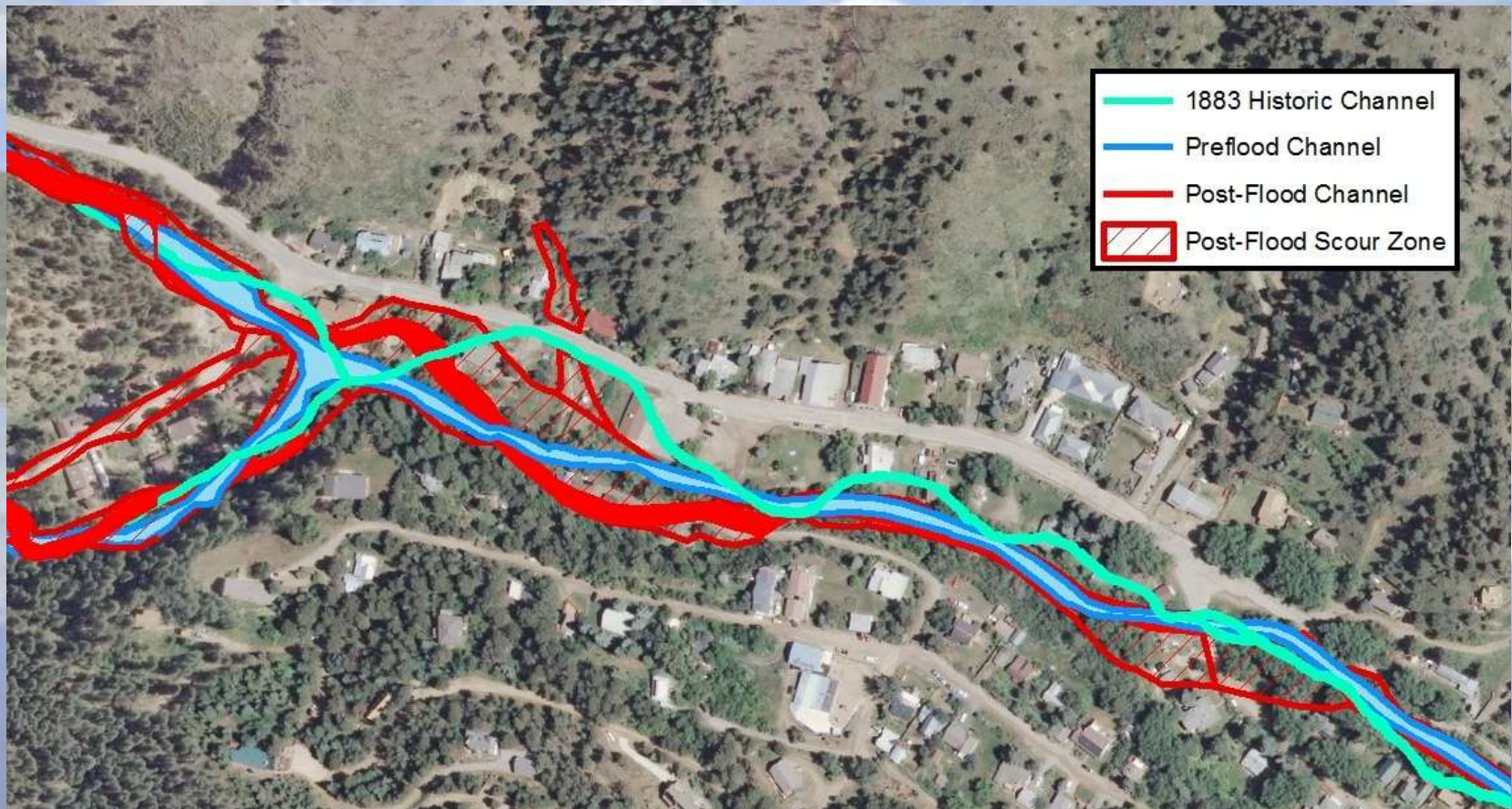




The model will now help us assess changes in stream alignment, terrain, and hydraulics.

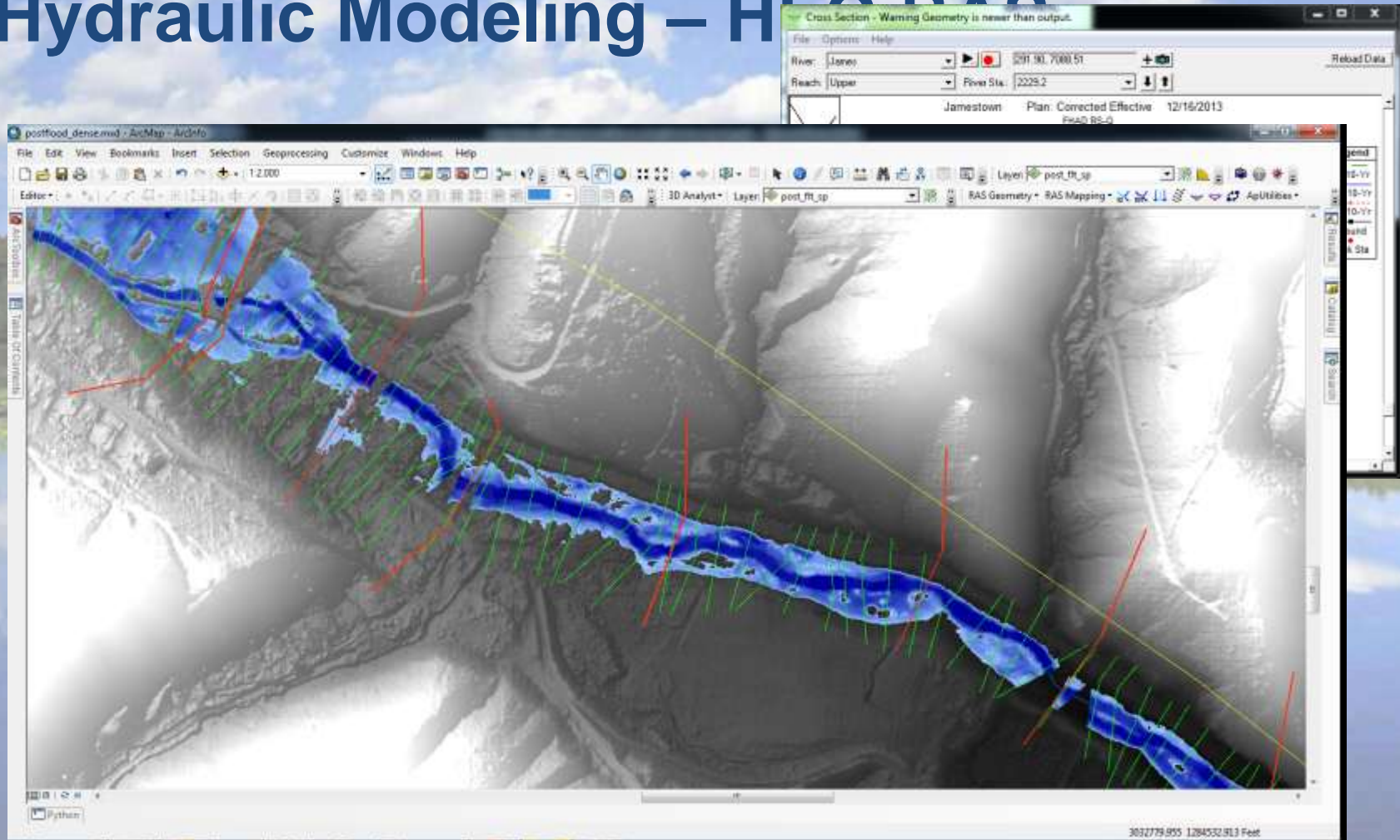
The Channel Migration Zone model shows how the stream corridor has changed over the years.

■ Channel Migration Zone



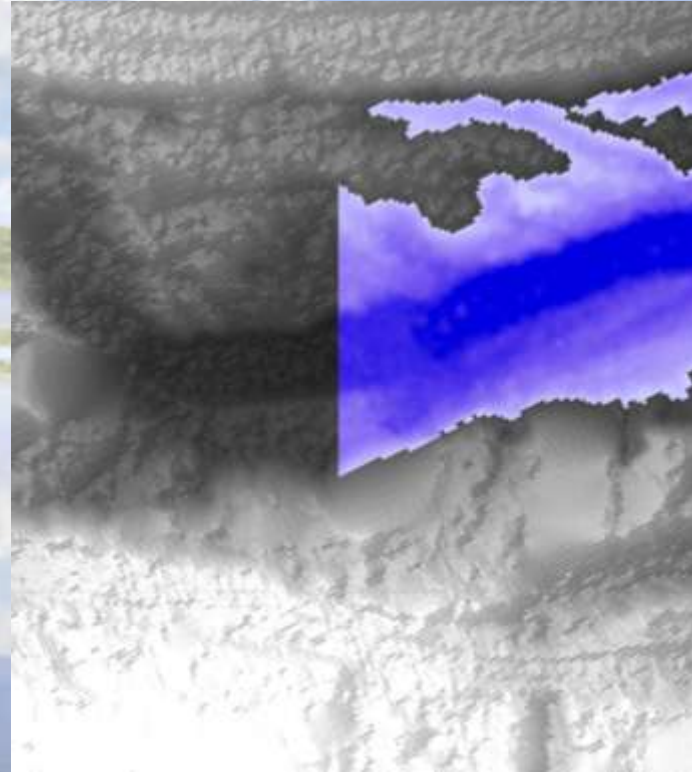
Inundation mapping illustrates the extent of flooding.

■ Hydraulic Modeling – HEC RAS



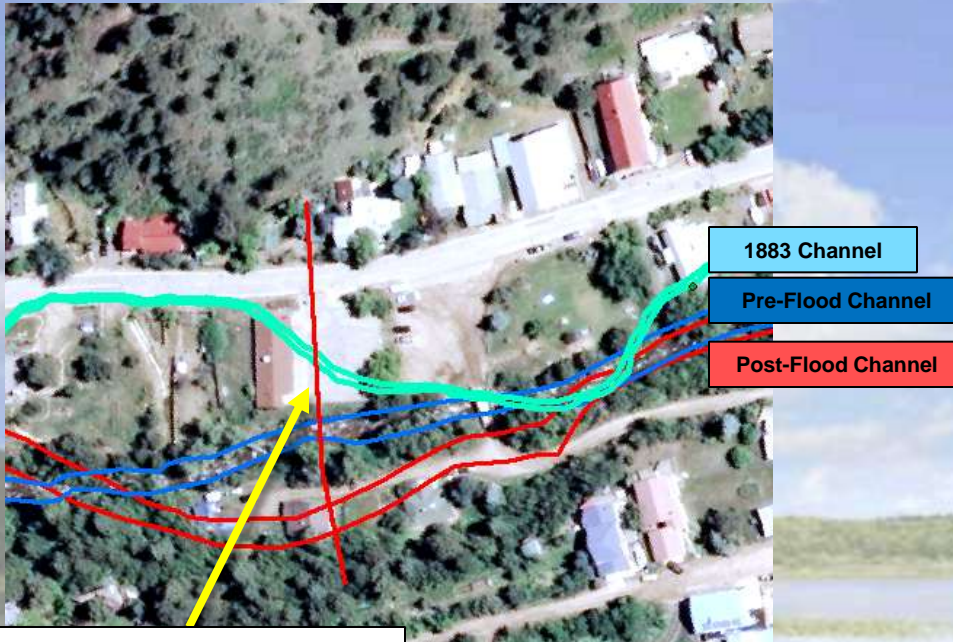
Stream Power is the stream's ability to do geomorphic work (move stuff).

■ Hydraulic Modeling – Flow Competence



Civil Air Patrol Photo
(Gillespie Gulch)

The stream corridor has moved significantly since 1883.

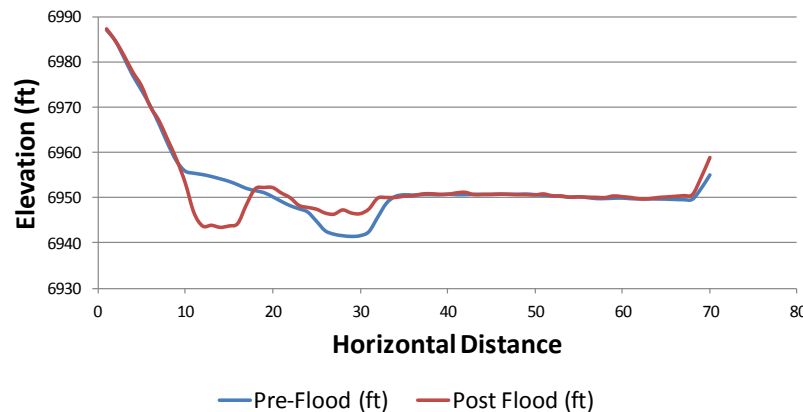


Cross Sections From Here



Civil Air Patrol Photo

Looking Upstream: Sec 7 - PostOffice



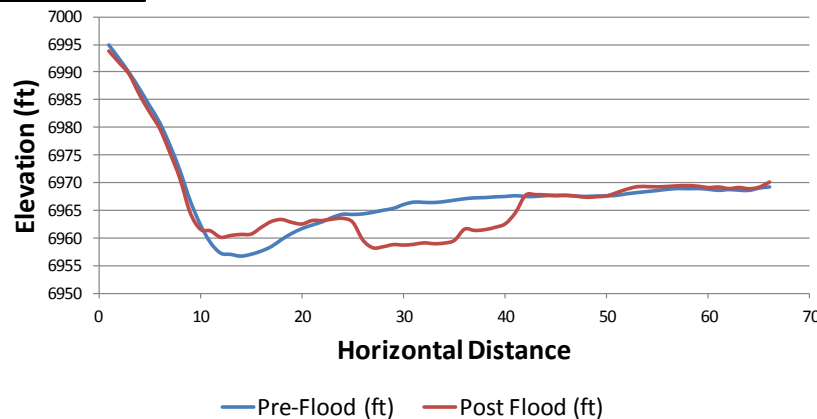
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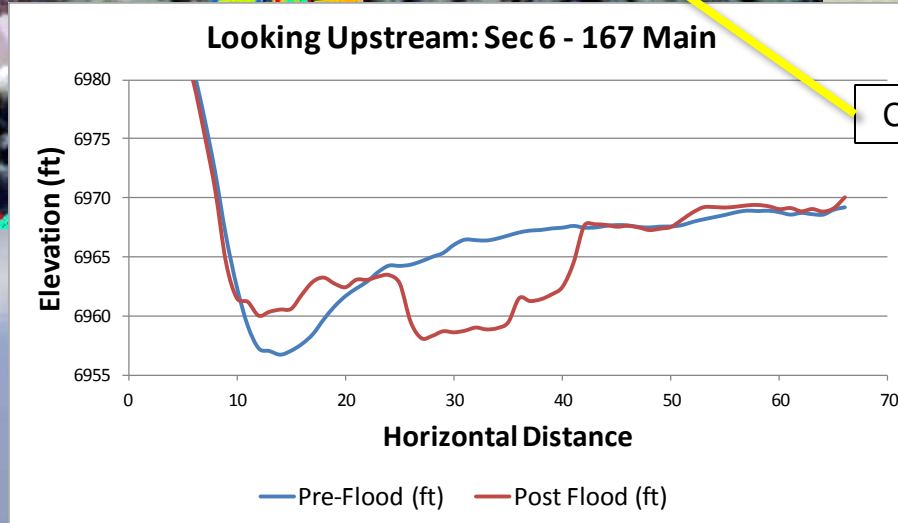
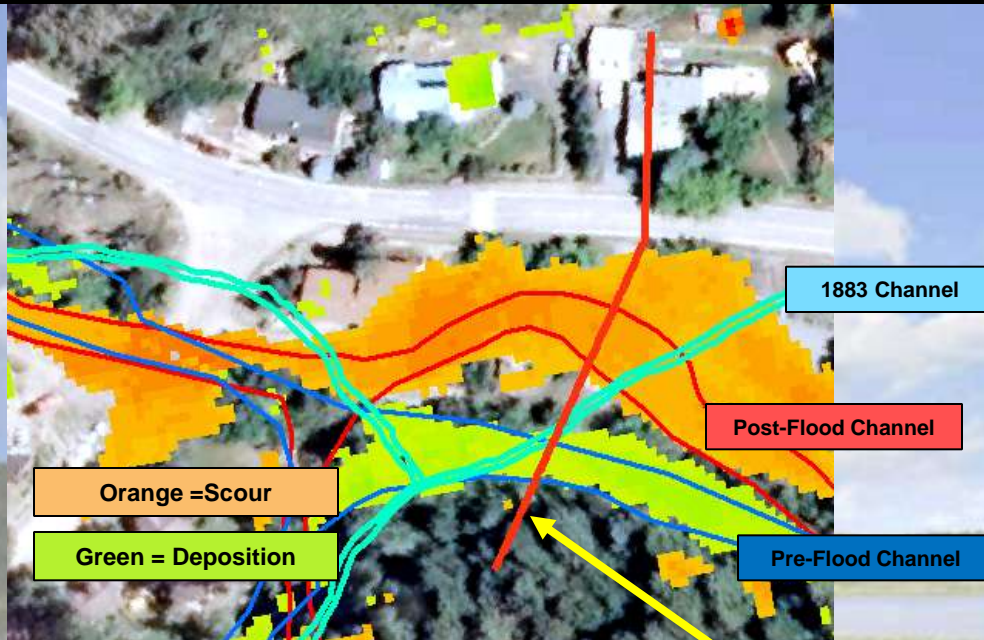
Cross Sections From Here

Looking Upstream: Sec 6 - 167 Main

Civil Air Patrol Photo



Models show us new channel alignment, scour, and deposition.

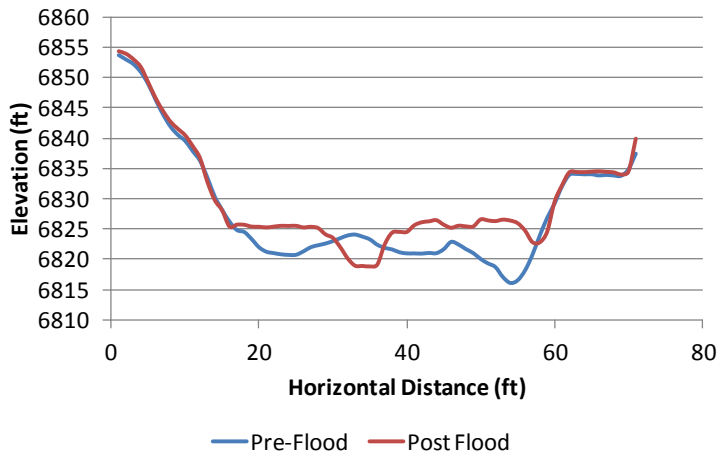


There is significant deposition and drastic changes in channel alignment at the east end of town.

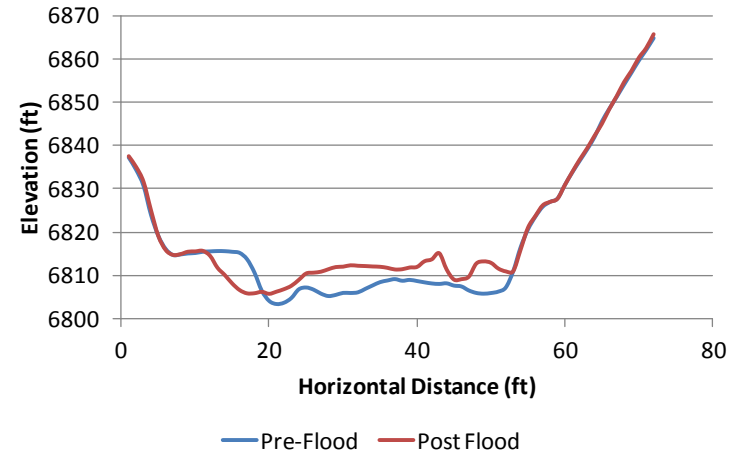


Complex Channel Changes at Downstream End of Town

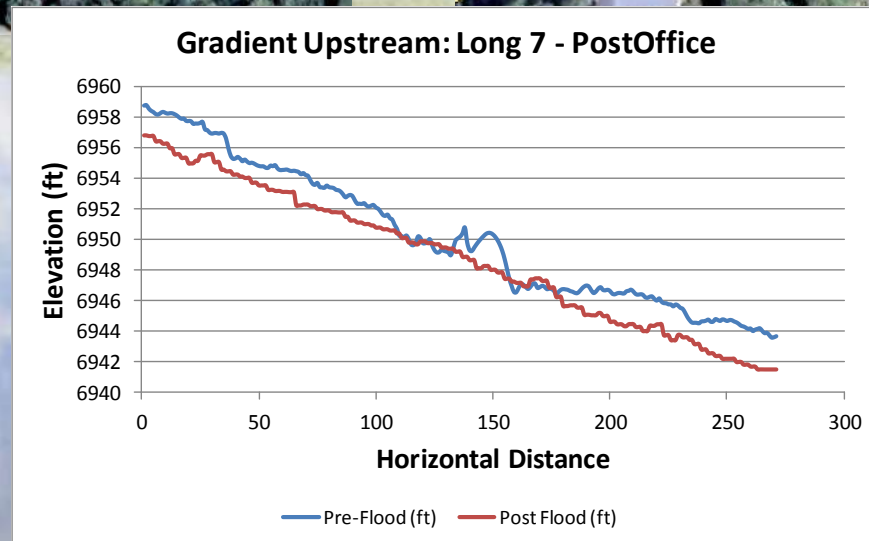
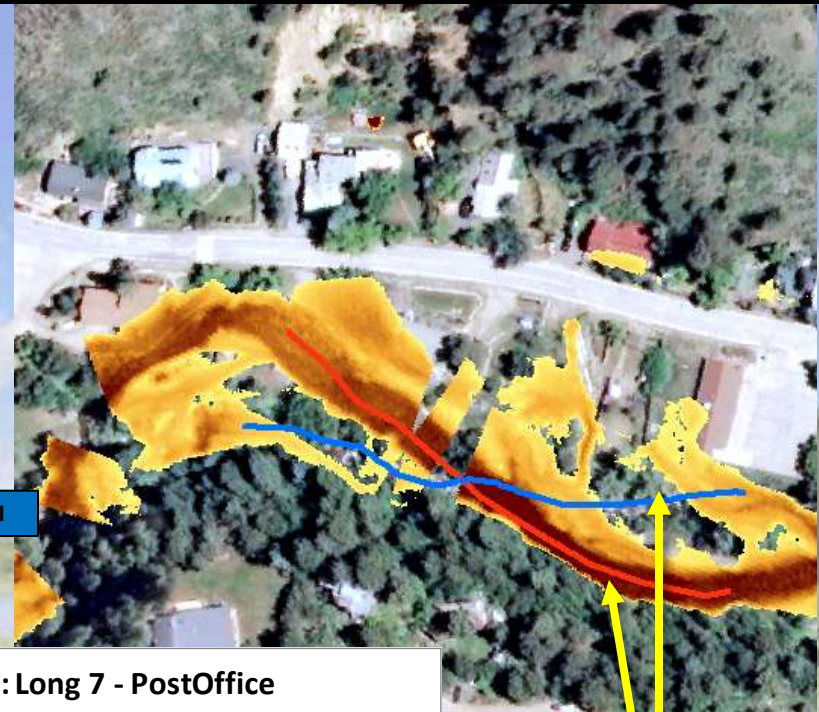
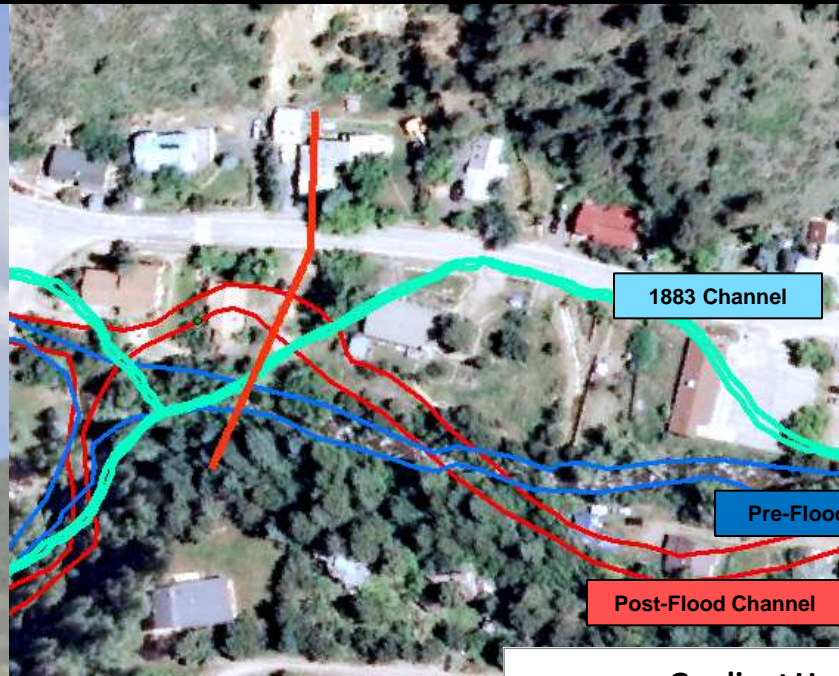
Looking Upstream: Sec 14 - 2199 James



Looking Upstream: Sec 15 - DS Town



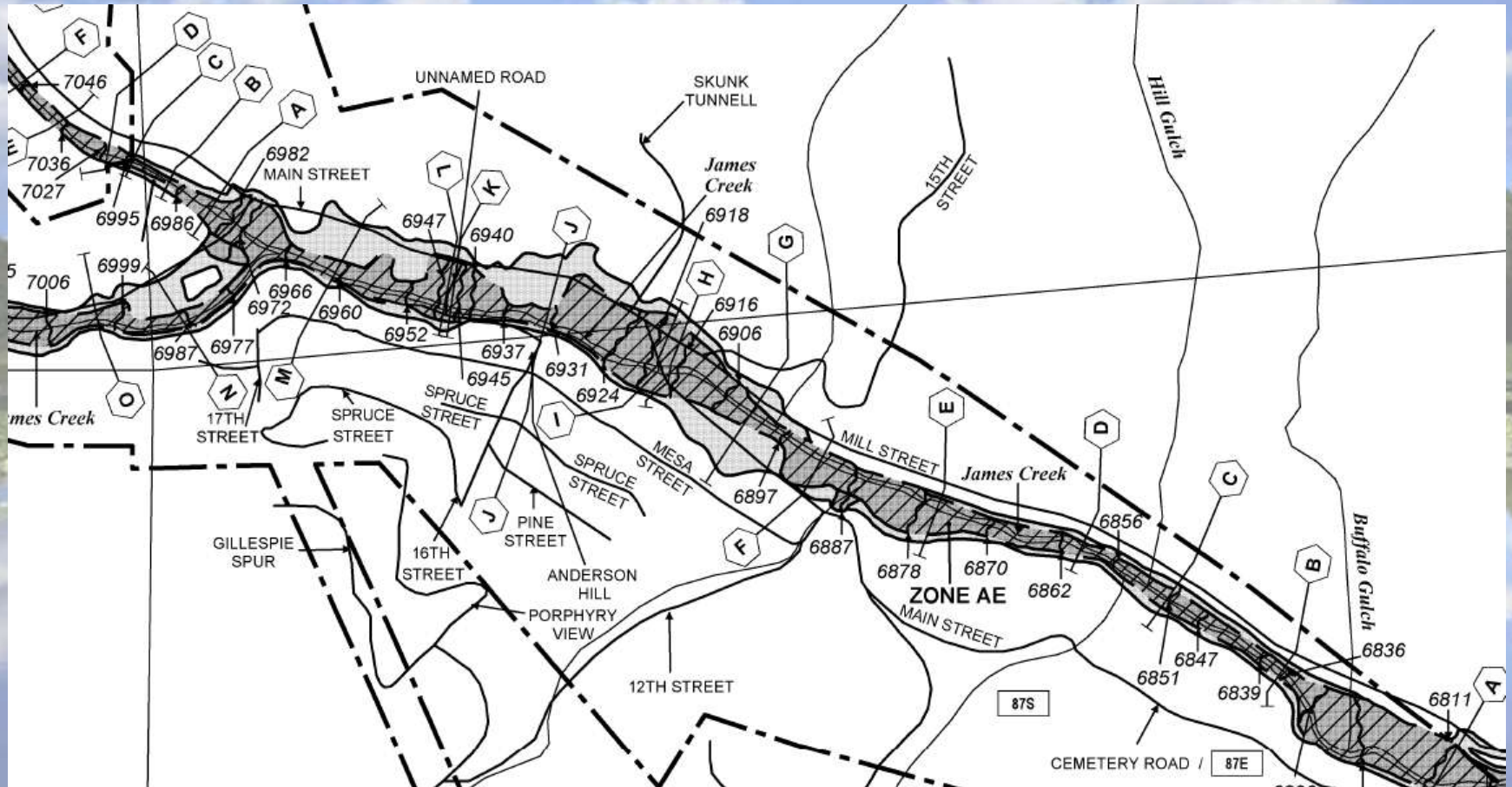
Channel alignment, slope and stream energy have changed drastically.



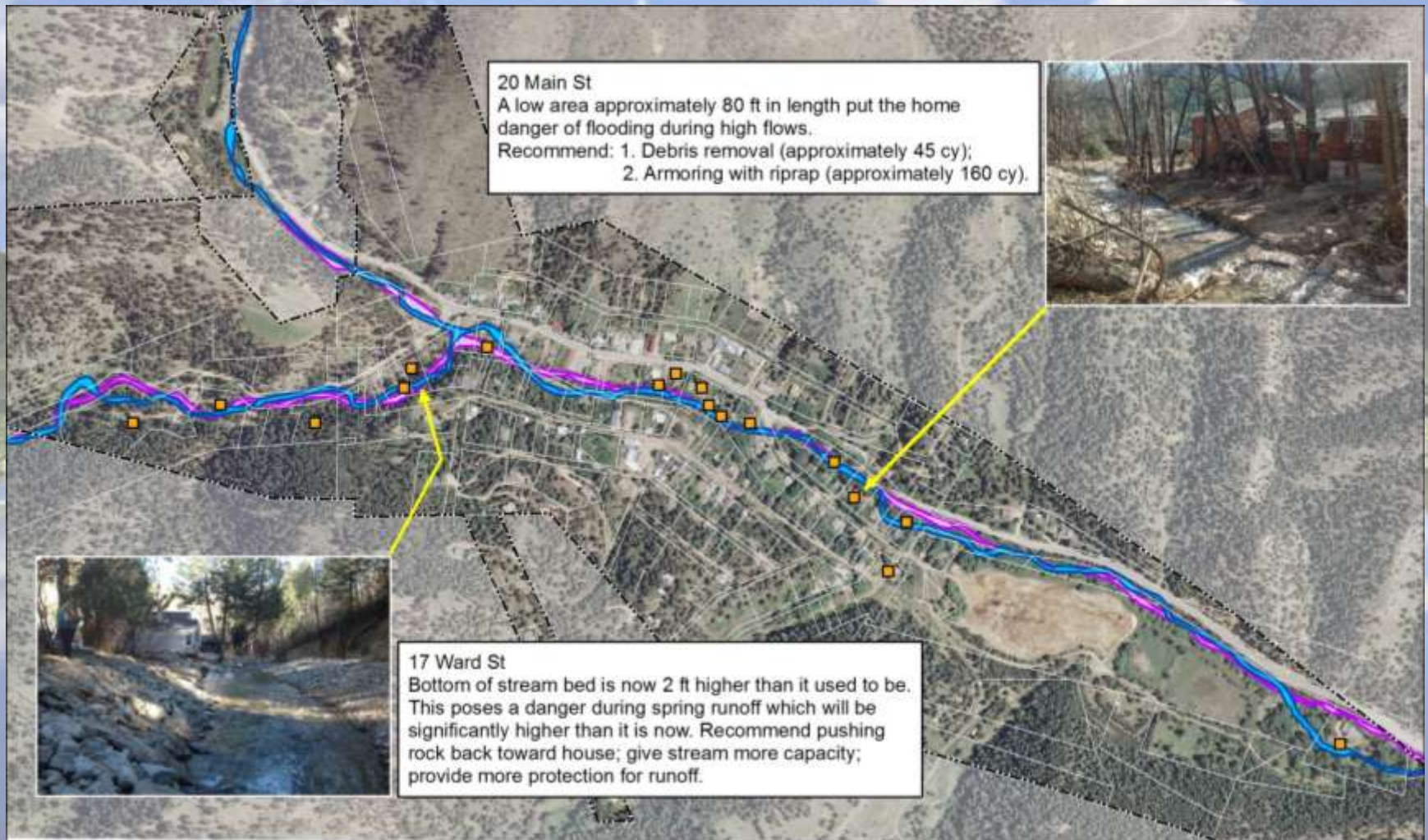
What are the next steps?

- Refine HEC-RAS flood model
- FIRM Reassessment for CLOMR
- Assess who is impacted and why
- Evaluate risk and opportunity by individual property
- Determine 'best' alignment for the stream based on protecting the Town while preserving Town Culture

Revise the Flood Insurance Rate Map (FIRM)



NRCS Emergency Property Protection



We continue to need your input!

■ Meetings

- December 18th and December 19th from 1pm-4pm in Jamestown
- Open Forum on December 19th from 5:30pm-7pm in Boulder at the Caribou Room in the Boulder County Courthouse Annex

■ Online/hardcopy survey

■ Website

■ Communication Plan



Questions?

