

SOUTH ST. VRAIN CREEK RESTORATION AT HALL RANCH DECISION MATRIX - DRAFT

7/6/2016

ID	Critical Issues	Prioritization Criteria	Alternatives Evaluation			
			Floodplain Connectivity	Channel Complexity	Revegetation	Infrastructure Protection
						Fair Better Best
Evaluation Criteria						
1	Community	Protect critical public and private infrastructure?	The best way to increase flood volume and reduce flood energy throughout the system. Note: (Detention ponds can not provide enough volume to mitigate flood impacts. Water rights are needed to detain water. Detention ponds would fill full of sediment. There is physically not enough room to detain the appropriate amount of water needed.)	Can provide some channel stability.	Once vegetation is established can provide some flood-plain stability.	Can provide immediate site specific protection to infrastructure. No system wide mitigation.
2	Community	Avoids negative impacts to downstream infrastructure, channel and storm water systems?	Returns the river corridor to a more natural channel condition with minimal downstream impacts.	Minimal downstream negative impacts.	Minimal downstream negative impacts.	While the technique might provide protection for the immediate element of infrastructure being protected, the technique can cause negative impacts downstream.
3	Community	Improves aesthetics to the creek corridor?	Returns the river corridor to a more natural channel condition. Time needed for naturalization of vegetation	Improves the aesthetics of the channel.	Jump starts revegetation of the entire river corridor.	Most techniques appear engineered.
4	Community	Consider recreation where allowed? ⁽¹⁾	Improves the quality of the recreational experience.	Provides instream structures that could act as a recreational amenity to kayakers and fishermen.	Improves the quality of the recreational experience.	Recreational objectives could be included with infrastructure protection.
5	Resiliency	Benefits larger area of creek corridor?	Benefits the larger creek corridor by jump starting the natural systems.	Benefits the channel by moderating sediment load.	Benefits the larger creek corridor but without floodplain connectivity the results will be diminished.	Very site specific benefits at the point where the improvement is made.
6	Resiliency	Re-establishes floodplain connectivity?	Yes. Floodplain connectivity is the most holistic approach to re-establish a functioning floodplain.	Yes. Cannel complexity would contribute to inundation of floodplain benches.	Yes. Revegetation provides roughness to slow floodwater down and establishes long lasting ecosystem benefits.	No
7	Resiliency	Restores affected areas of the South St. Vrain Creek channel and surrounding areas to stable, resilient and ecologically rich habitats?	Yes	Yes	Jump starts terrestrial and riparian habitat.	Makes certain reaches more stable.
8	Resiliency	Reduces future recovery time?	Jump starts the natural systems of the corridor most holistic approach.	Not a holistic approach, focuses on channel.	Not a holistic approach. Some established vegetation, soil structure and seedbanks would survive a flood event and secondary succession would occur.	Not a holistic approach. Infrastructure protection would protect existing features and reduce future work needed after a flood event.
9	Resiliency	Moderates conveyance of sediment?	Yes for the entire reach.	Yes for the entire reach.	Traps sediment during a flood and minimizes erosion.	Could be part of the strategy at diversions, bridges and culverts.
10	Safety	Reduce flood risk to the public and residents by providing long term solutions that increase resiliency?	Increases flood storage volume and reduces flood energy throughout the system.	Provides some creek channel resiliency.	Once allowed to mature the vegetation provides some resistance to future floods.	Hardened points are created in the corridor not always resilient.
11	Environment	Natural ecosystem processes restored?	Most holistic approach.	Partial approach, not all ecosystems addressed.	Partial approach, not all ecosystems addressed.	Least holistic approach.
12	Environment	Protects or improves existing habitat and significant ecological resources?	Improves both terrestrial and aquatic habitat.	Improves aquatic habitat.	Improves terrestrial and riparian habitat	Not the focus of infrastructure protection techniques.
13	Environment	Incorporates locally available materials and environmentally friendly processes?	Not a differentiator. All alternatives can incorporate locally available materials and environmentally friendly processes.			
14	Environment	Protects and improves water quality and the geomorphology of the creek?	Protects geomorphology and jump starts natural systems of the corridor.	Protects geomorphology and jump starts natural systems of the creek.	Reduces erosion.	Reduces erosion in site specific areas.
15	Implementation	Creates infrastructure investments that are reasonable to construct and provides the best value for their lifecycle, function and purpose?	Because it jump starts the corridor's natural systems it is the best value for their life-cycle.	Reasonable to construct and jump starts natural system of the creek.	Without regrading, the revegetation effort will have diminished results.	Protects infrastructure but requires on-going maintenance.
16	Implementation	Can be supported by current land use regulations or revised land use regulations?	Not a differentiator. All alternatives can be supported by the current land use regulations.			
17	Implementation	Provides funding, partnering and collaboration opportunities by meeting multiple stakeholder objectives?	Not a differentiator. There are opportunities with all alternatives for partnering.			

Notes:

- 1 Currently, Boulder County does not allow public access to the South St. Vrain Creek at Hall Ranch open space.