

Jordan River & Midvale Slag Beneficial Use

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Midvale Slag
Beneficial Use



History of Midvale Slag



446-acre is located 12 miles south of Salt Lake City
1871-1958 Smelters and Mineral Processing



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History of Midvale Slag



Treated ores from Bingham Canyon and other mines
Lead and arsenic were primary products



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History of Midvale Slag



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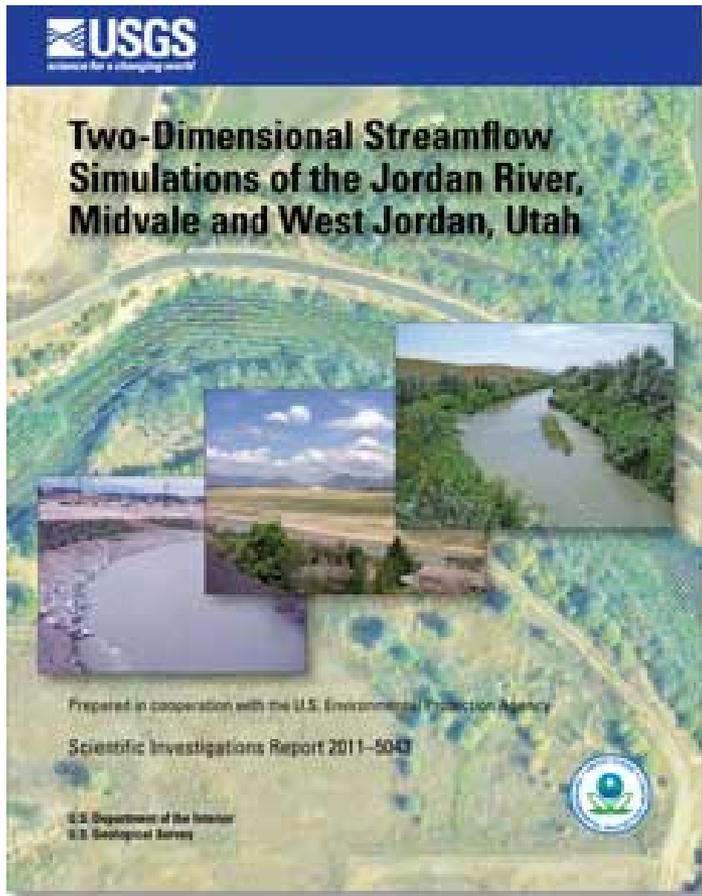
- 1984-Studies determine groundwater and soils are contaminated with metals
- 1990-EPA initiated cleanup actions to address immediate threats at the site
- 1991-Listed on EPA National Priorities List (NPL)
- 2006-EPA issued ESD that changed land use restrictions to accommodate multiple land use and created an approach for riparian management



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United States Geological Survey (USGS)



2008-EPA hires USGS:

- Create a 2D model to evaluate the river's velocities and also where the river is constrained, eroding, and migrating out of current channel
- Borehole sample map to avoid pockets of slag during construction



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Sheet Pile Dam-Grouted Boulder Structure



EPA replaced damaged sheet pile dam

- 2008-Sheet pile dam was dangerous and replaced with a grouted boulder structure
- 2008-Three spur dikes installed east (Midvale) bank of river to redirect flow to away from bank
- 2009-Secondary high flow channel created due to scouring from high flows



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Sheet Pile Dam



Grouted boulder structure becomes a kayakers recreational amenity



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Sheet Pile Dam-Grouted Boulder Structure



2010 and 2011- High Flows cause damage to the grouted boulder structure



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Sheet Pile Dam-Grouted Boulder Structure



2014-Grouted boulder structure repaired with two added cross-veins to aid in navigability



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Box Culverts



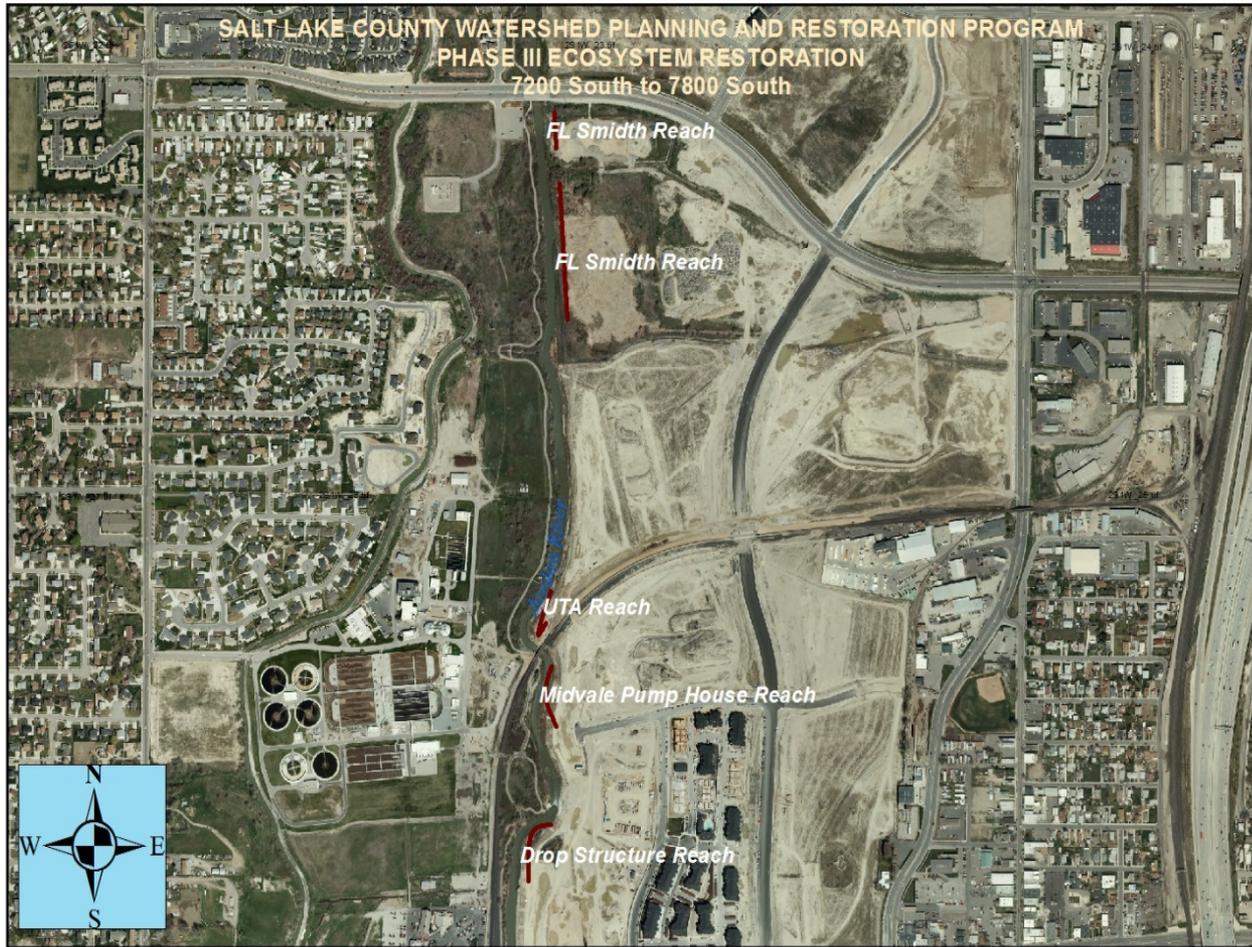
2009-EPA installed two design build box culverts to increase holding capacity of river



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Ecosystem Restoration

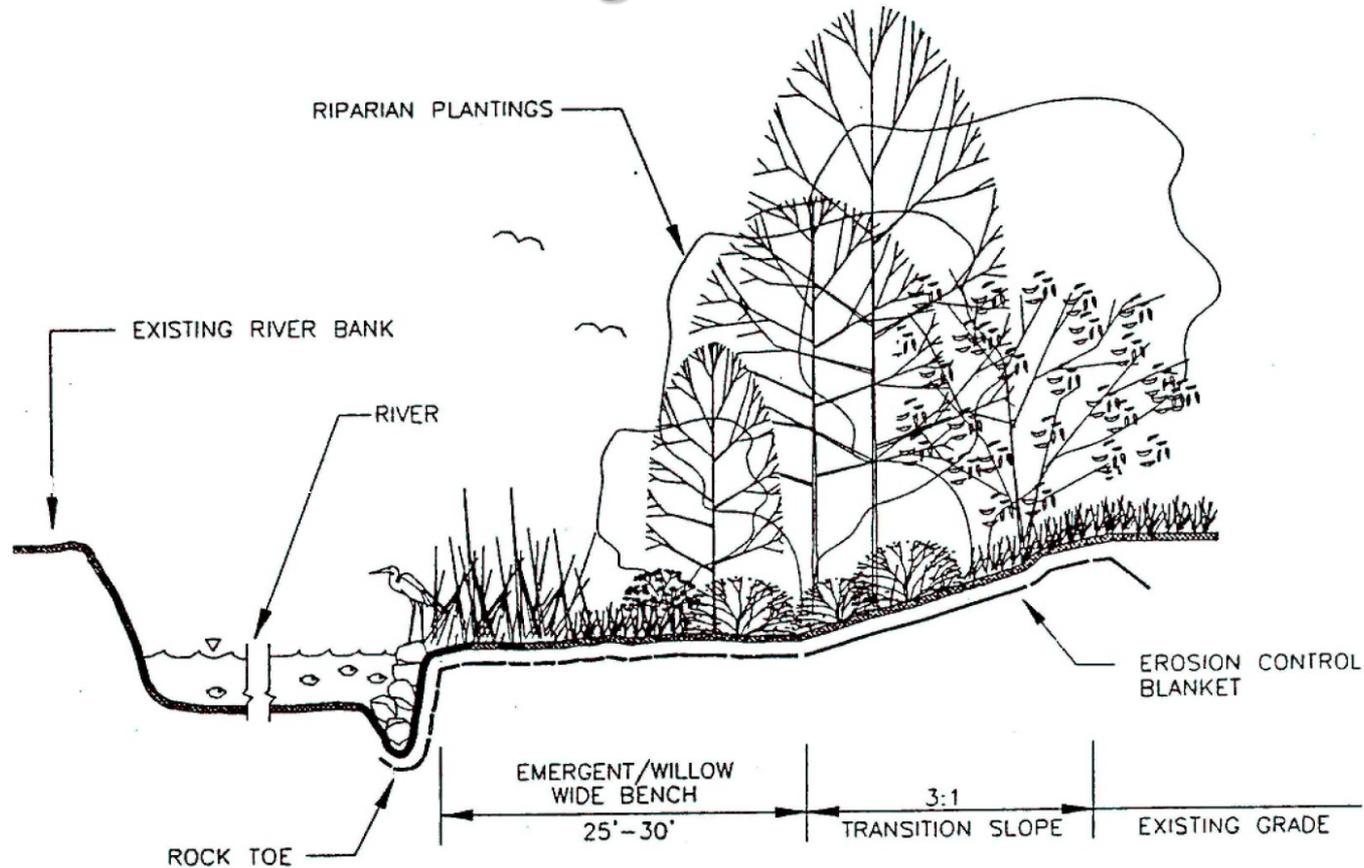


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Ecosystem Restoration

Emergent Bench



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Ecosystem Restoration Challenges and Opportunities



Minimal excavation due to regulated material

- *USGS Borehole map to determine where could excavate*
- *Toe protection and RipRap in areas unable to excavate*



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Ecosystem Restoration Challenges and Opportunities



Jan 8 2009 Flow (Q) 30 cfs



May 4 2009 Flow (Q) 1080 cfs

Highly Managed River

- *Utah Lake Compromise (1985)*
- *Tributaries*
- *Canals*
- *Point Sources*
- *Stormwater (MS4)*
- *Nonpoint Sources*
- *Diversions*
- *Multiple jurisdictions and entities*



Ecosystem Restoration Challenges and Opportunities

Vegetation Establishment

- *Drip Irrigation*
- *Native upland and riparian vegetation*
- *Weed mapping and mitigation*



- *Soil Survey*
- *Beaver fencing*



Ecosystem Restoration

Drop Structure Site- Emergent Bench



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Ecosystem Restoration

Drop Structure Site- Emergent Bench



May 30 2013



July 17 2014

07/17/2014 08:18



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Midvale 4th Grade Stewardship Project



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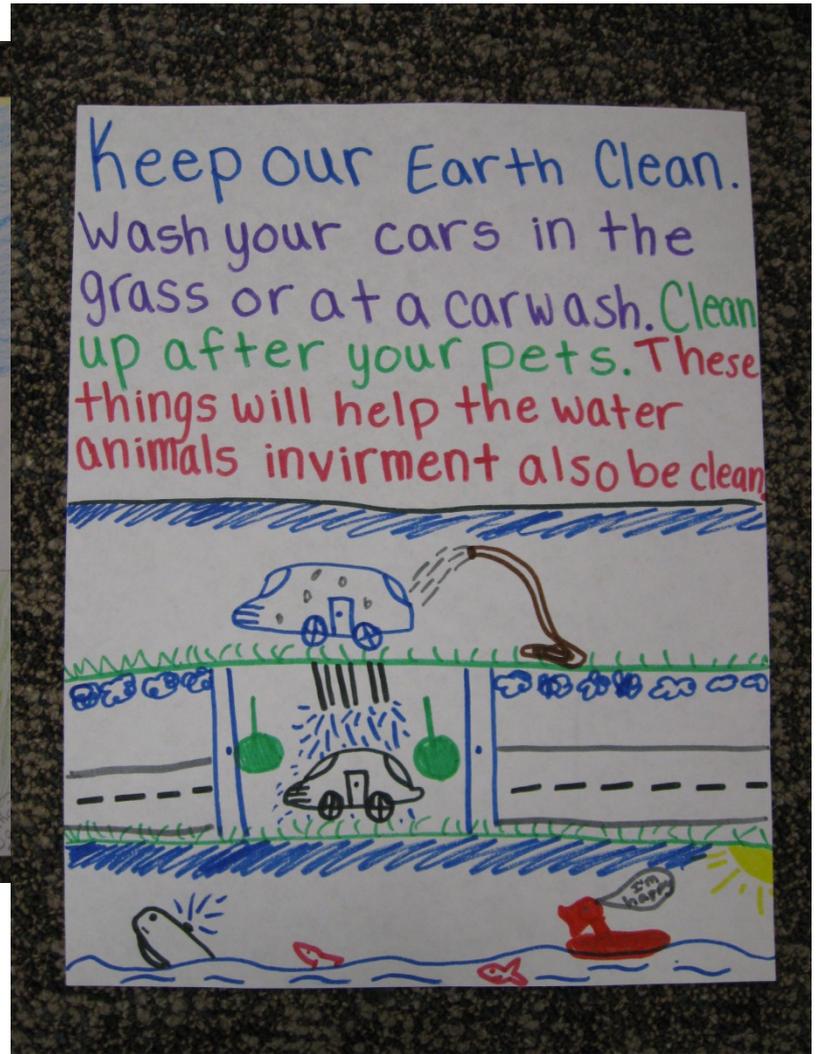
Midvale 4th Grade Stewardship Project



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Midvale 4th Grade Stewardship Project



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Development of Site



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Recreation on the Jordan River



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Recreation on the Jordan River



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Recreation on the Jordan River



Photo



Weekly



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Questions?



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