Regulatory Process for 401/404 Permits for Millsite Dam, Ferron, UT

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Permitting Process

- This discussion covers moving sediment downstream into the receiving river
- I’ll talk about the
  - Process
  - Regulatory issues as I see them
Proposal at Ferron

- **Bring in commercial dredger**
  - Relatively small
  - No lease or purchase: purchase the service
- **Dredge downstream from submerged road**
  - Spoil to borrow pit in right floodplain or
  - Add to uncontrolled spillway discharge
- **Costs is about $100K per month**
Proposal, Continued

• Removal
  – 20 to 40 AF/month
  – Would require 3 months to pass incoming sediment on an annual basis
  – Maybe shortened with experience

• Financing
  – Secured $150K/yr for 5 years from Utah State legislature
  – Remaining funding unknown
Permitting

Borrow pit storage: permit filed

**Downstream discharge**
- letter to be submitted
- verbal preapproval
- no permit from State water commission
- no 404 from COE required

Bureau of Land Management welcomes sediment downstream native fishes require turbidity
Funded Project at Ferron

• Veit Dredging company
• Cost: ~$120,000 per month
  – 10 hours/day, 6-7 days/week
  – Transporting dredge to site and setting up all piping
  – 2 personnel regular time and overtime
  – Service truck and dredge service boat
  – Fuel: funded from elsewhere; about $20K/mo
Present and Longer Term Plans

• Operation to begin in 2013
  – This year very low water
  – No spill over spillway
• After 2 years of operation, irrigation company buys the dredge
• ~500K
• They operate it in the future
Permitting for Downstream Discharge

• Request made and approved by Utah Dept. of Environmental Quality
  – No discharge permit required

• Four conditions to fulfill
  – Cannot discharge more sediment than comes in
  – Turbidity cannot be more than 15 NTUs of incoming sediment averaged over 24 hours (monitoring up and downstream required)
  – Downstream dissolved oxygen must be greater than 3.0 mg/l
  – Annual report to Division Director
Current Status

- No flow over spillway summer 2013!
- 700 ft of pipe purchased
- Recommendations for
  - Turbidity meters and locations
  - Contracting with USGS to run the turbidity stations
Life Changed

• Mike Suflita: “….you just might want to double check to see if a 404 is required....”
USACE Guiding Document

• Regulatory Guidance Letter No. 05-04
  – August 19, 2005 (recent)
  – 5 Sections numbered 1, 2, 3, 4, and 6
  – Quite visionary in some respects
• Not particularly well known with the Corps
• Your District contact will likely either not know about it or simply have it saved somewhere
Permitting Issues

• Dredge and Spill will likely require
  – 404 permit from US Army Corps of Engineers
  – 401 permit from State as administered by USEPA

• Why?
  – Sediment management is a deviation from the norm
  – Everybody is nervous about moving sediment downstream
Environmental Legislation

<table>
<thead>
<tr>
<th>Environmental Act</th>
<th>Year Enacted</th>
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<tbody>
<tr>
<td>Wild and Scenic Rivers Act</td>
<td>1968</td>
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<td>Nat’l Env. Policy Act (NEPA)</td>
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<td>Endangered Species Act (ESA)</td>
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<td>Clean Water Act, Section 404</td>
<td>1977</td>
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<td>Western Water Policy Review Act</td>
<td>1992</td>
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Regulatory challenges

- **Clean Water Act**
  - CLEAN water
  - EPA authorizes states to enforce under section 401

- **States’ typical limits**
  - Guard against uncontrolled erosion from construction site
  - Limits “FNUs” to something in the low 10s
  - That’s clearer water than found in most natural streams
  - Formazin Nephelometric Unit

Found in Ferron Creek often
Example of Utah State Statute

Sediment concentration in discharge shall not exceed

- Utah Statute: 0.1 kg/m³
- Ferron Creek, Mean Daily: 2.5 kg/m³
- Ferron Creek, Max Daily: 48 kg/m³
Challenge #1

• CWA did not anticipate moving sediment downstream from dams
• USACOE document is pretty progressive
• But States implement EPA oversight and have very low ‘effluent’ standards
• ‘Point discharge’
• ‘Fill material’
Update After 6 Months

• Project is stalled over the 404 permit
  – Required because the activity is “a change in normal operation of the dam”
  – May not have needed it otherwise
• 6 months and $60,000 of work so far
• Irrigation company is very frustrated
• 1st application denied
• Waiting for okay to provide new information
Agencies Involved

• USACE – lead agency
• Bureau of Land Management
  – Consultation endangered species of cactus
  – Cultural resources impact analysis
  – Offsite storage permit
• US Fish and Wildlife Service – fish impacts
• USGS (for monitoring)
• Utah Division of Water Quality – habitat
• Utah Division of Wildlife Resources – fish and wildlife habitat
Additional Requirements

• Tell the Corps how much deposition, in ft, can be allowed without impacting flood risk
• Want condition of bed and banks, floodplain connectivity
• Will incoming and outgoing sediment SIZES be matched?
• “We would not be able to permit sluicing of silts only”
• Escrow account required
Update After 1.5 years

• Project is stalled over the 404 permit
  – Required because the activity is “a change in normal operation of the dam”
  – May not have needed it otherwise
• 18 months and $80,000 of work so far
• 1st application and two subsequent submissions denied
Update, Continued

• Two years to obtain the 404 and 401 permits
  – 404: three iterations on the permit application
  – NO public objections
  – The Corps office had never seen a permit on this scale
  – I did NOT resort to anything more than the Manning equation
  – 401: State had recently been embarrassed over casual approvals
  – Utah Division of Natural Resources helped field sample for macroinvertebrates and fish
2015 Update

• 404 and 401 permit granted
  – 401 permit had 24 conditions, two of which were quite restrictive
  – I ignored the two restrictive ones because
• Permission came after spill had been going on for weeks
• We mobilized within two days
• We dredged and spilled for two days
Discharge (blue is in; red is spill)
The Whole Story

Discharge and Sediment

Operation
- Upstream
- Downstream
- Upstream Sediment (tons)
- Downstream Sediment (tons)
Request to Amend Operations

• We need to get more sediment out during spill
• Disconnect direct real time suspended load comparison
• Use the AVERAGE incoming sediment concentration from 50 cfs to time up to spill
• Discharge up to the AVERAGE during spill
• Stop when spillway discharges < 50 cfs
Approval Process

• 401
  – Abbreviated public comment
  – No Comments

• 404
  – No change

• Both approved in time for this year
Why So Difficult?

- All agencies believe this is a good idea
- BUT –
  - First big-time application
  - People are watching
  - State agencies recently embarrassed in lawsuits over not being prepared
- And I’m a beginner
  - USACE is parsing out information on requirements
401 and 404 Permits

• 401 administered by States
• 404 administered by U.S. Army Corps of Engineers
  – Guidelines exist but not well known
  – Moving sediment downstream is new and unknown
• Err on the side of being conservative
Challenge #2

• What are ‘baseline’ conditions?
• Channel may incise after dam construction
• 2-yr flood WELL within banks
• If deposition > 1.5 ft must excavate
Challenge #2, Continued

• Reaches downstream from dams adjust
  – Channel elevation, slope, width, bed material
  – Macroinvertebrates change within channel
  – Riparian vegetation changes

• So what conditions must be maintained?

• Remember: eventually sediment goes downstream at hundreds of dam locations
Regulatory Solutions

• Education throughout Federal agencies
• High-level discussions
  – EPA
  – US Army Corps of Engineers
  – US Fish & Wildlife Serve
  – Natural Resources Conservation Service
  – US Forest Service
  – National Oceanic and Atmospheric Administration
• Subcommittee on Sedimentation
• National Reservoir Sedimentation and Sustainability Team