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Roanoke River Flood Reduction Project

River's Edge North Training Wall 298 (TW298) Erosion Protection

December 1, 2008

Presented by

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Bottom line up front:

Lessons learned from Katrina and other storms 2005-2008 indicate a need to enhance erosion protection for Training Wall 298

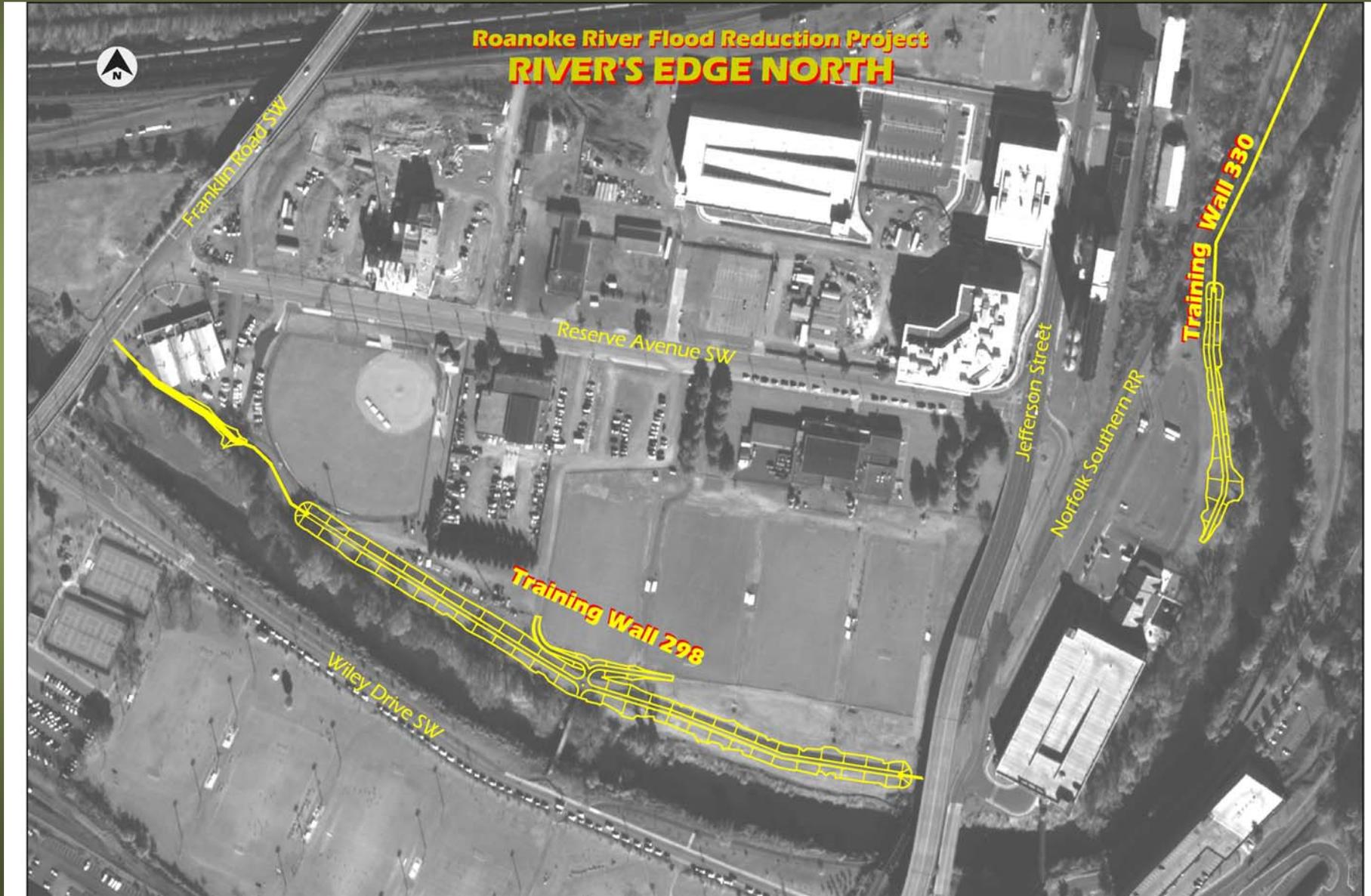
- Agenda:
 - Existing project status, design features & background
 - Lessons learned & changes in Corps design policy
 - Training Wall 298 improvements
 - Questions?



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Roanoke River Flood Reduction Project **RIVER'S EDGE NORTH**





09/30/200



Training Wall 298

Existing Project Design Features

- **TW298 : I-walls with earth levee sections**
- **TW298 : greater elevation above ground than TW330**
- **Erosion control: matting w/ grass, no hard armor**



Lessons learned from Katrina & other floods

- After Hurricane Katrina all flood control / reduction structures & levees came under increased scrutiny:
 - I-walls
 - Earth Levees
- Interagency Performance Evaluation Taskforce (IPET) to investigate Katrina levee failures.
- Command guidance: *"Review all flood reduction projects & apply post Katrina measures as appropriate."*



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Overtopping / Erosion Failure





Flooded area behind failed levee



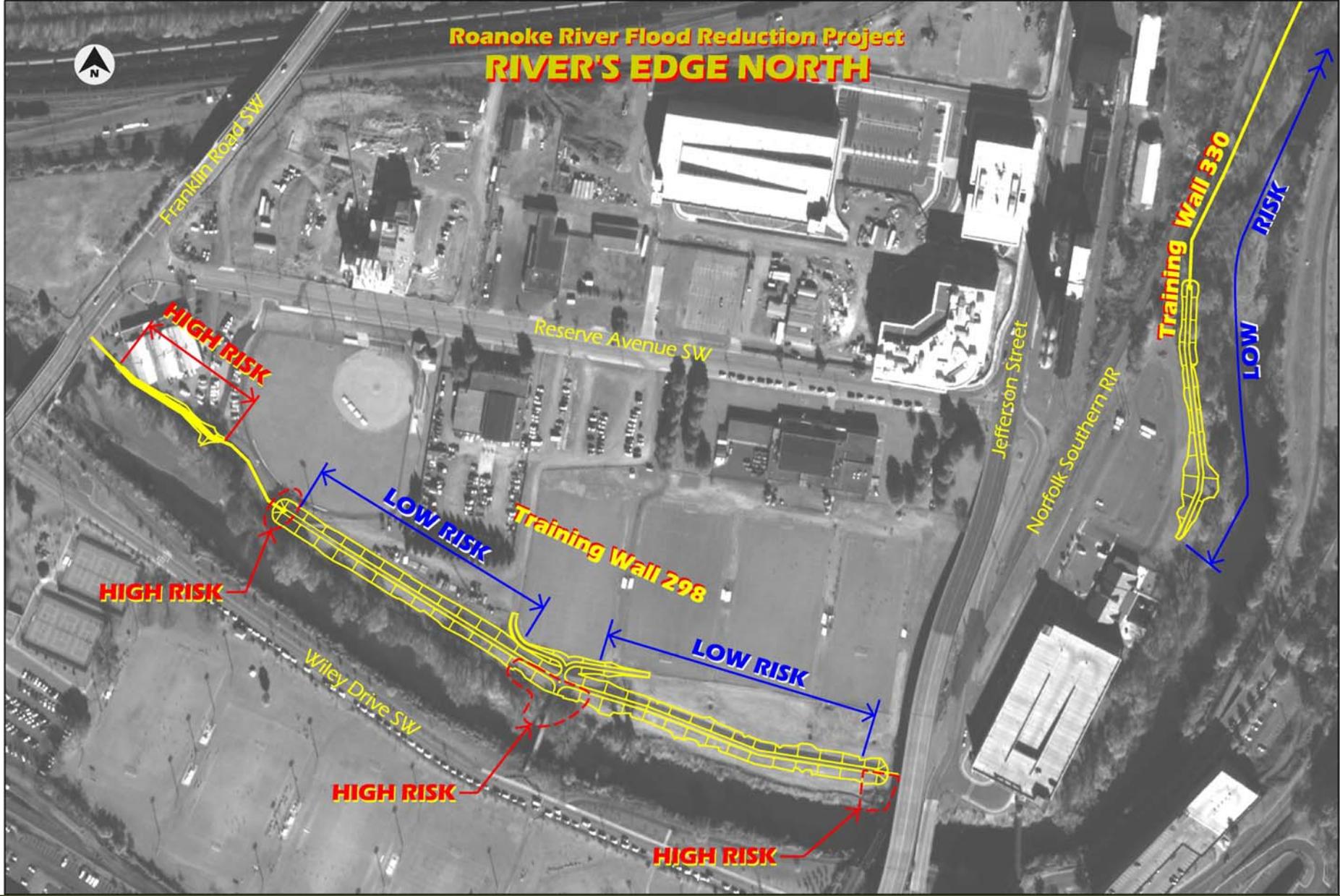


Lessons learned from Katrina & other floods

- Walls and structures less than 6 feet high: *minimal risk (much of TW330)*
- I-walls over 6 feet exposed height: *high risk (TW298)*
- I-walls supported by earth levee: *high risk (TW298)*
- Transition areas between I-wall and earth levee: *high risk (TW298)*
- Earth levee discontinuities or abrupt change of direction toward river: *high risk (TW298)*
- Compacted clay earth levees: *low risk*



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I-WALL / EARTH LEVEE TRANSITION





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PEDESTRIAN BRIDGE AT TW 298





Training Wall 298 Areas at Risk

1. Earth levee below I-wall Section STA 10+75 to 13+59, protected side – *Overtopping erosion*
2. Transition from I-wall to earth levee
 - a. Protected side - *Overtopping erosion*
 - b. River side - *Flood erosion*
3. Intersection of Pedestrian Bridge Embankment with TW298
 - a. River side upstream - *Flood erosion*
 - b. River side downstream - *Overtopping pedestrian embankment*
4. Intersection of TW298 and the NS RR Embankment, river side - *Flood erosion*
5. Earth levee sections – *Low Risk from general Flood & Overtopping Erosion*

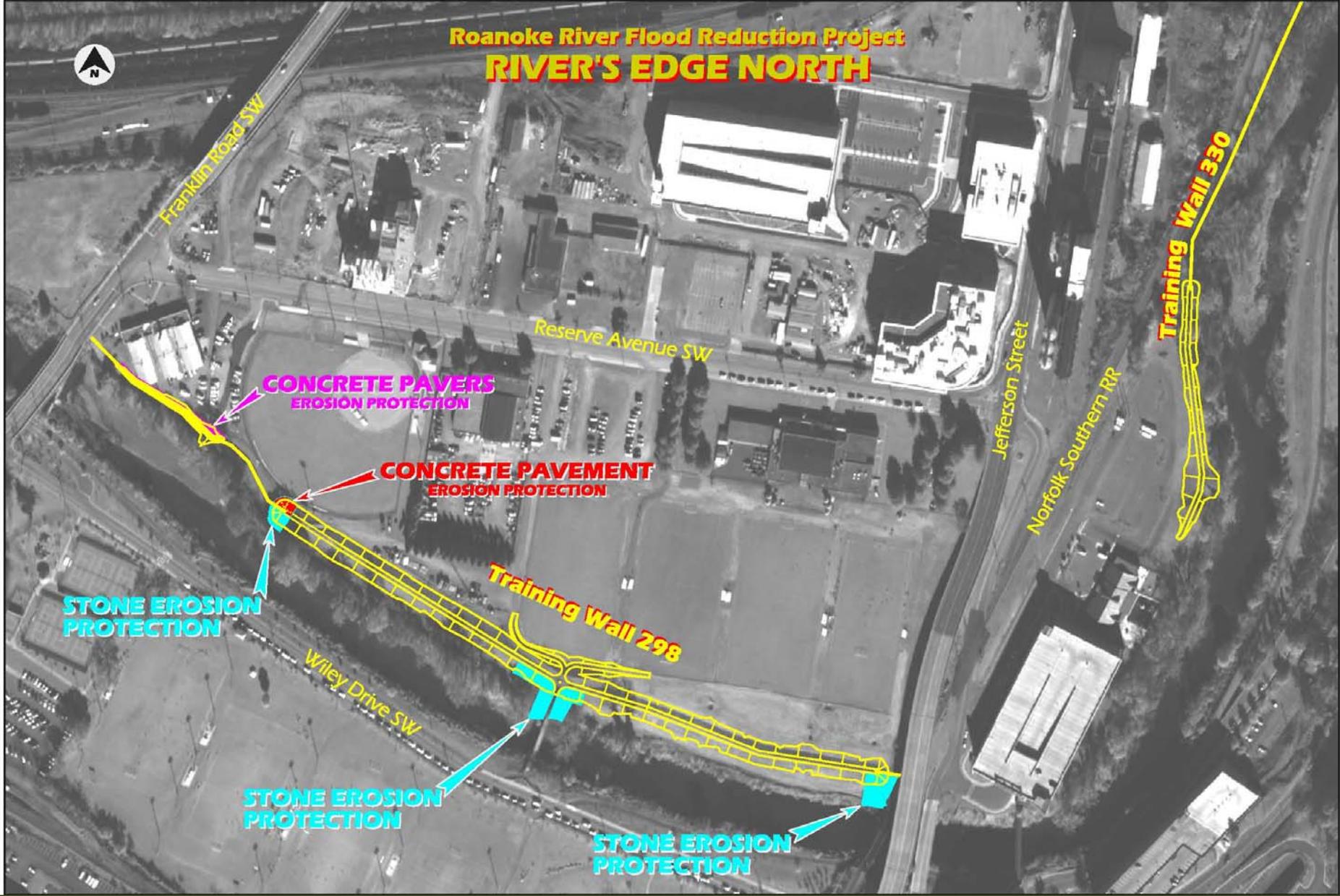


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TW298 EROSION IMPROVEMENTS

Erosion Enhancements:

- 1. I-wall with earth levee – concrete block pavers**
- 2. I-wall / earth levee transition**
 - 1. Protected side – concrete pavement**
 - 2. River side – stone erosion protection**
- 3. Pedestrian bridge– stone erosion protection**
- 4. TW298 & RR intersection, river side – stone erosion protection**
- 5. Remaining earth levees (Including TW330), both sides – Erosion control mat w/ grass**
- 6. Minimize hard armor – only at High Risk areas.**



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Concrete Pavers





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Stone Erosion Protection





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Erosion Control Mat





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Erosion Control Mat





TW Project Completion

- **Estimated construction completion TW298 spring 2009 excluding landscaping.**
- **Estimated construction completion TW330 spring 2009 excluding landscaping.**



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QUESTIONS?

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Flood Risk Presentation

Located At

[http://www.saw.usace.army.mil/Authorized_
Projects/Roanoke/Main.htm](http://www.saw.usace.army.mil/Authorized_Projects/Roanoke/Main.htm)