CLACKAMAS COUNTY BOARD OF COUNTY COMMISSIONERS

Policy Session Worksheet

Presentation Date: Sept 8, 2015 **Approx Start Time:** 1:30 PM **Approx Length:** 60 min

Presentation Title: Upper Sandy River Area Flood Erosion Demonstration Site Prioritization

Department: Emergency Management, County Administration, Transportation & Development, WES, Parks, PGA

Presenters: Laurel Butman, County Administration and Nancy Bush & Jay Wilson, Emergency Management

Other Invitees: Mike McCallister, Rebecca Ceniga & Steve Hanschka, Transportation & Development; Rick Gruen, County Parks & Natural Resources; Gari Johnson, PGA; Matt House, WES; Nate Boderman, County Counsel

WHAT ACTION ARE YOU REQUESTING FROM THE BOARD?

Prioritization of six possible demonstration project sites, guidance on the top priority site for conducting a feasibility analysis as Phase II of the Sandy River Flood Erosion Study, and approval to apply for the Phase II grant.

EXECUTIVE SUMMARY:

A recently completed Erosion Study was funded by a Federal Emergency Management Agency (FEMA) grant. The County now has the opportunity to apply for a Phase II grant that would fund a feasibility analysis for a demonstration project in one of five key areas identified by the consultants. The Sandy River Team has analyzed the six sites identified by the consultants and developed a recommendation for Board consideration. Emergency Management anticipates applying for the Phase II grant once a final decision is made.

If time permits, the Sandy River Team is prepared to provide a brief update for the Board covering other upcoming activities of the Team in the Sandy River Area.

FINANCIAL IMPLICATIONS (current year and ongoing): None at this time, but if the Phase II grant is awarded and the Board accepts the funds those would cover 75% of the project costs and 25% of the cost would come from other funds which may include the County General Fund.

LEGAL/POLICY REQUIREMENTS: None at this time

PUBLIC/GOVERNMENTAL PARTICIPATION:

The Sandy River Team partnered with the Sandy River Area Community Flood Risk Management Committee and Sandy River Basin Watershed Council throughout the development of the Phase I Erosion Study.

OPTIONS: Please see Attachment A: Analysis of Recommended Project Sites.

RECOMMENDATIONS:

SITE SELECTION

Based on work with the Erosion Study consultants and its own analysis of the six sites, the Sandy River Flood Recovery team respectively recommends the following for the Board's consideration. The site we recommend as our first choice and priority for Phase II of this project

which will result in a feasibility analysis and report is project site five. We believe moving forward on this project first will provide the following important opportunities:

- It is the project through which we can best demonstrate to the community the principles of restorative flood protection and no adverse impacts; it works with the river, instead of against it and it will reduce negative flood impacts downstream without causing upstream problems. An upstream project also has more potential benefits to be realized downstream.
- One of the solutions we are exploring with the community for flood protection in this volatile area is buyouts and/or land swaps. This project would position us well to test the buyout process on undeveloped properties first and to demonstrate how buyouts can result in a positive impact for the community.
- We believe this project will garner the greatest community support and trust.
- We also believe that, through public-public and public-private partnerships, we can reduce County costs for the project while establishing critical partnership relationships for future projects and activities the County might undertake related to the Sandy River.

As a second alternative the Sandy River team would recommend either project site four or project site six for the Phase II feasibility analysis and report:

- Project site four would provide analysis and information that could compliment WES' future Hoodland system activities and it is a site that the surrounding community is already aware of and involved with, providing partnership opportunities with the community and the watershed council. Overall, however, this project would also precipitate a major reconfiguration of WES' infrastructure. We believe another downside to pursuing this site first is that the project itself might contradict WES' ultimate solution in the area and result in unfulfilled expectations for the public and difficult community relations for WES as well as a project that has no chance of being realized.
- Project site six would require acquisition of 2-4 currently occupied homes but would also provide protection for E Lolo Pass Road. This site also has the advantage that the County owns the land on which the project would take place.

PHASE II GRANT APPLICATION

The erosion study was completed as phase I of a two-phase grant from FEMA. As was noted when the County applied for the phase I grant, the expectation was that the County would apply for a phase II grant based on the outcomes of phase I. Now that phase I is complete, Board approval is needed to proceed with the grant application for phase II which would entail a feasibility analysis of the selected project. The County would receive 75% of the project costs from FEMA while the remaining 25% would come from other sources. Staff respectfully recommends that the Board approve at this point this phase II grant application.

ATTACHMENTS:

1. Attachment A: Analysis of Recommended Project Sites

SUBMITTED BY:

Division Director/Head Approval JW
Department Director/Head Approval NB
County Administrator Approval LSB

Attachment A: Analysis of Recommended Project Sites

This analysis describes the six potential project sites recommended by our consultants and summarizes the pros and cons of each project. There are some impacts shared by all these sites; detailed analysis of those impacts would be included in a feasibility study as we move forward with the chosen site.

Advantages:

- All six project sites are good candidates for restorative flood protection.
- All project sites align with staff's goals for creating no adverse impacts.
- Recommended actions at all sites work with the character of the Sandy River and will help moderate energy and velocity and/or provide more space for the river to migrate naturally.
- Investments made for any of these projects will result in avoided costs in the future.

Challenges:

- Each project has associated costs, whether for acquisition, in-river installations, permits, or infrastructure relocation.
- Those costs are currently unknown so the projects cannot be compared or prioritized on the basis of cost.

Sites 1 & 2: *These two sites are located across from each other where the river has an active migration zone and there is little room for the river to migrate north or south without threatening road infrastructure or existing homes. Site 1 on the south side is near Brightwood Loop Road and site 2 on the north side of the river is near E. Barlow Trail Road and the site. Both sites are recommended for bank protection work that would seek to protect road infrastructure and existing homes.*

Pros:

- Work on these sites would not impact existing homes.
- Neither of these site proposals would require removal or relocation of existing infrastructure.
- No land acquisition would be required.
- Action could be taken immediately.

Cons:

- In water work for installing the bank protection solutions (e.g., complex timber revetments).
- Introducing wood into the river through complex timber revetments has the potential to impound debris and/or shed material that creates debris elsewhere during a flood and may require rebuilding.
- Water displacement will occur.
- Permits and permissions will be needed (US Army Corps, National Marine Fisheries, etc.)
- If either project is undertaken separate from the other, energy and velocity will likely deflect to the opposite bank, further exacerbating the threat of encroachment on homes and/or infrastructure.
- Both projects would be highly visible to the community who will have questions and perhaps concerns or resistance due to perceived adverse impacts downriver or across the river. This could negatively impact our current efforts to build trust with the community about County interactions with the Sandy River and the area.

Site 3: *This site is located in a river segment where the river is held back from an existing undeveloped gravel pit by a levee which has begun to fail. If the levee fails, the river would enter the gravel pit and double its active migration zone area as it flows toward E. Brightwood Loop Road. This site is recommended for bank protection work in anticipation of levee failure to protect existing homes while allowing the river more space.*

Pros:

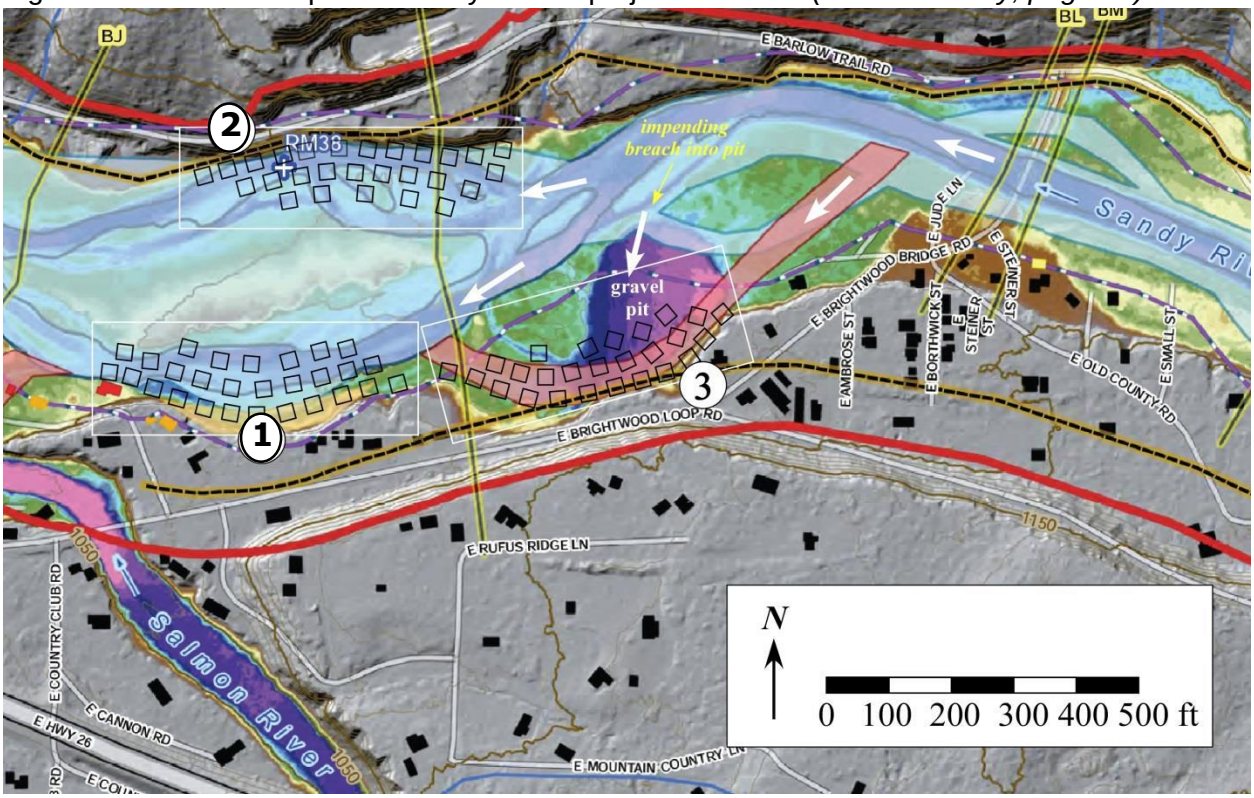
- Work on this site would not impact existing homes.
- Neither of these site proposals would require removal or relocation of existing infrastructure.
- No land acquisition would be required.
- Addresses a future problem proactively.
- Action could be taken immediately.

Cons:

- In water work for installing the bank protection solutions (e.g., complex timber revetments).
- Introducing wood into the river through complex timber revetments has the potential to exacerbate debris during a flood and require rebuilding.
- Permits and permissions will be needed (US Army Corps, National Marine Fisheries, etc.)

These first three sites are depicted in the figure below, pulled from the Erosion Study.

Figure 49: Future bank protection layouts for project sites 1-3. *(from the Study, page 74)*



Site 4: *This site is located at the site of a current CCSD #1 pump station that pumps wastewater uphill to the Hoodland Wastewater Treatment Plant. The pump station is located*

at the base of a terrace below E Brightwood Loop Road. The river here was engineered in 1964-65 by the US Army Corps to restrict it to a single channel. The river has been migrating toward the pump station and has created a side channel which moves water toward an existing County pump station maintenance road and along the bank toward existing homes. As these conditions continue, a County pipeline (which has been replaced several times) crossing the river will likely become exposed and the maintenance road and pump station will become more threatened. This site is recommended for two major activities: relocation of the County infrastructure and implementing restorative flood protection via complex wood structures to give the river more space and reduce active erosion where several homes are at risk.

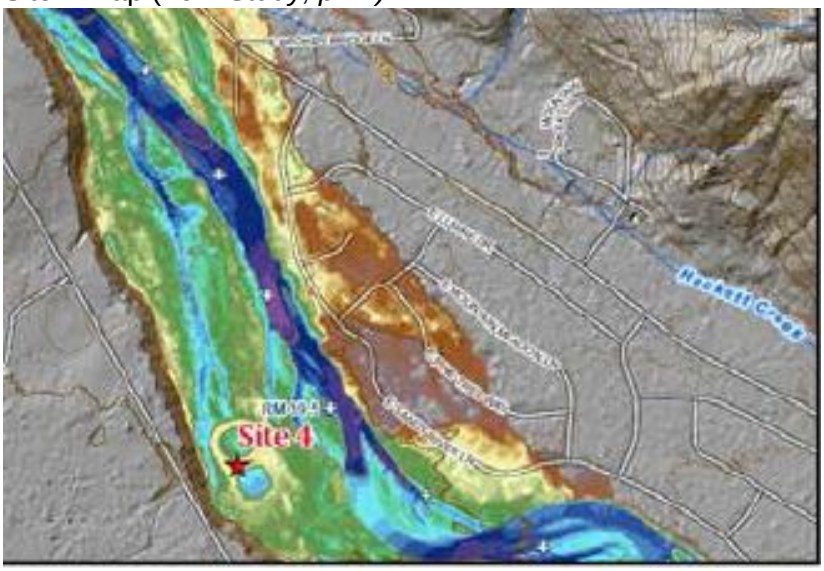
Pros:

- Work on this site would not impact existing homes.
- No land acquisition would be required for the project.
- Addresses a current problem proactively.
- WES is currently preparing a Master Plan for its Hoodland system which will address the issues at this site. They are not yet ready with a solution or able to take on these activities at this point but this project may compliment future solutions.
- The Sandy River Basin Watershed Council is actively working on funding to perform a restorative project at this site. There is an opportunity for coordination and collaboration.

Cons:

- This project would likely require removing one pump station, repurposing another, and abandoning the pipe beneath the river that connects them. WES would likely have to develop a new treatment option for the community on the north side of the river as well as a strategy to convey the wastewater to the existing treatment plant on the south side, since this option would require moving at least one pump station out of the channel migration zone.
- There could be land acquisitions required for WES to site new or relocated facilities.
- This site proposal could require in water work for infrastructure removal.
- Permits and permissions may be needed (US Army Corps, National Marine Fisheries, etc.)

Site 4 map (*from Study, p 72)*



Site 5: *This site is located on the north side of the Sandy at the site of a major channel migration (600 feet) during the 1964 flood southwest of E Barlow Trail Road. The meander created by the flood and a large part of the floodplain were cut off when a levee was constructed in 1965. Recommended activity at this site would include acquiring conservation easements on the undeveloped property or acquiring the property on the site and removing the levee to create a large area for flood storage and channel development where the river already wants to go. Restorative flood protection activity may be needed at the northern edge of the area to protect E Barlow Trail Road and homes on the terrace above the site.*

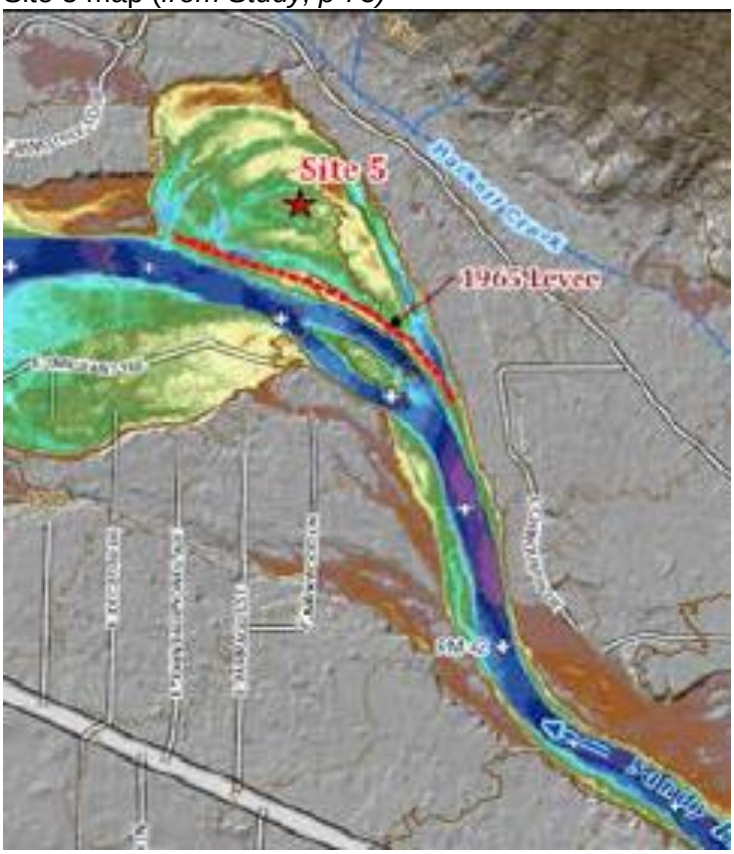
Pros:

- Work on this site would not impact existing homes.
- This proposed project works with the natural behavior of the river to create needed space.
- During a flood and over time, the occupation of this area by the river will significantly reduce flood impacts downstream.
- There would be no in-water work performed.
- This project would be unlikely to face community resistance.
- This project has the potential benefit of reducing river energy at the site of the proposed WES replacement outfall on the south side of the river.

Cons:

- Conservation easements and/or land acquisition would be required.

Site 5 map (*from Study, p 73)*



Site 6: *This site is located where E Lolo Pass Road was damaged in the 2011 flood where the river is constrained between E Lolo Pass Road and E Barlow Trail Road. Recommended activities at this site include relocation of E Lolo Pass Road or, if road relocation is infeasible, implementing restorative bank protections which would increase flood levels upstream of the project, requiring acquisition of 2-4 homes which would ultimately result in better realization of restorative flood protection goals.*

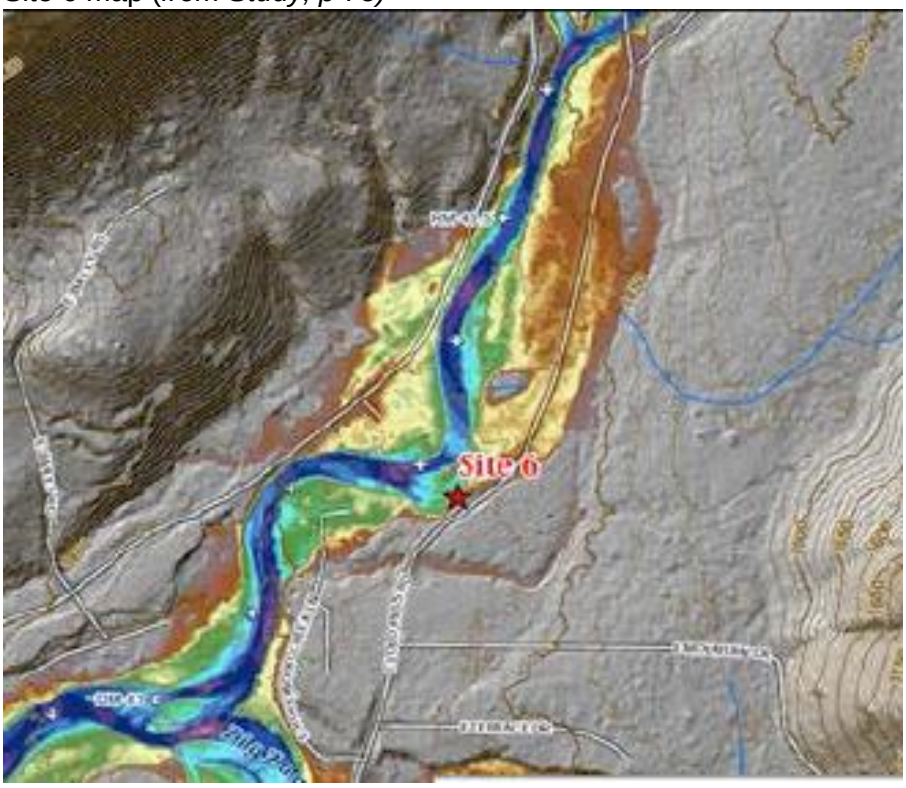
Pros:

- The County owns the property on which the bank protections would be installed.
- The proposed project would help protect E Lolo Pass Road and would support protection of E Barlow Trail Road.

Cons:

- Work on this site would impact existing homes, requiring acquisition of 2-4 homes.
- In water work for installing the bank protection solutions (e.g., complex timber revetments).
- Introducing wood into the river through complex timber revetments has the potential to exacerbate debris during a flood and require rebuilding.
- Permits and permissions will be needed (US Army Corps, National Marine Fisheries, etc.)

Site 6 map (*from Study, p 73)*



County Land Use Notes Applicable to All Six Sites:
Assuming that the project can qualify as a fish habit enhancement project, it would be allowed outright within the River & Stream Conservation Area (RSCA) per ZDO Subsection 704.03(F). Note that RSCA applies within a quarter mile of the mean high water line of the Sandy River. If the project is located in the floodplain, as mapped on the applicable FIRMs, though outside the boundary of the Regulatory Floodway, it would be allowed outright per ZDO Subsection 703.06(C). If the project is located within the boundary of the floodway, it would be subject to Floodway Fish Enhancement Review, a Type I review pursuant to ZDO Subsection 703.07(F).