SPAC Discussion: Floodplains: Ecological Function & Flood Control

The SPAC has discussed current conditions, desired future conditions, and potential performance measures at previous meetings. In the matrices below we are beginning to link the key components of the Strategic Plan (where we are, where we want to be, how we will get there, and how we will measure success).

Today's discussion will focus on potential strategies to address floodplains and flood management. The list of strategies below is a starting point for discussion. The Working Groups have not discussed strategies yet. The goal of today's SPAC discussion is to give the Working Groups clear direction on how to proceed. Please consider these questions:

1. Are there **strategies you would like added** to the lists for further exploration?
2. Which strategies, in any, should be **deleted** from consideration?
3. Which strategies are **most important for short-term implementation** (next 5 years)?
4. Which strategies are **most important for long-term consideration**?
5. Do you have comments on other material in the matrix (current conditions, desired future conditions, gap identification, or performance measures)?

We are planning to provide similar matrices on future topics so any comments on how to improve the structure of the matrix will also be appreciated.

NOTE: There is significant duplication between basin-wide and sub-basin strategies. We will continue to work with SPAC and Working Groups to discern which strategies are unique to a specific geographic area.

Floodplains: Ecological Function & Flood Control

1. Basin-wide Floodplains

<table>
<tr><th>Where we are now
(Current Conditions)</th><th>Where we want to be
(Desired Future Conditions)</th><th>How we will measure success
(Performance Measures)</th><th>How we will get there
(Potential strategies)</th></tr>
<tr><td>Periodic high flow and flooding events occur in the watershed. often causing significant damage.</td><td rowspan="2">• Reduced flood risk during peak flow events.
• Achieve healthy, natural floodplain function.
• Increased natural infiltration.
• Increased acreage and duration of inundation of floodplains.
• Improved river channel complexity index.
• No net loss of shoreline ecological function.</td><td rowspan="3">• Increase in floodplain area over time.
• Length of levees removed or setback.
• Measure channel complexity (sinuosity, mid channel, side channel).
• Number, area, and capacity of new stormwater management features to handle runoff from impervious surfaces (bio swales, retention ponds, etc.).</td><td rowspan="3">• Increase floodplain area via land acquisition; Controlled release of floodwater onto agricultural lands.
• Increase channel complexity (sinuosity, mid-channel, side channels) through restoration projects.
• Eliminate hardening of channels and remove existing structures by identifying where risk to developed structures is acceptable.
• Riparian restoration and re-vegetation.
• Setback levees, prioritized by reach.
• Protect current undeveloped floodplain from development.
• Protect alluvial groundwater development from further development.
• Integrate floodplain health into other planning efforts (Comprehensive Plans, Shoreline Master Program, GMA-Voluntary Stewardship etc.).
• Encourage enactment and enforcement of floodplain zoning requirements through incentive programs.</td></tr>
<tr><td>Channelization of formerly broad stream channels disconnect the river from its floodplain and have made high flow events more likely to result in damaging flooding.</td></tr>
<tr><td colspan="2">Gap identification:
• Flood risk is reduced through strategies that achieve natural floodplain function.
• Integration of flood protection and floodplain health projects.</td></tr>
</table>

2. Mainstem Walla Walla Floodplains

<table>
<tr><th>Where we are now
(Current Conditions)</th><th>Where we want to be
(Desired Future Conditions)</th><th>How we will measure success
(Performance Measures)</th><th>How we will get there
(Potential strategies)</th></tr>
<tr><td>Much of the Walla Walla River mainstem in Oregon is bounded by levees put in place for flood protection with severely incised channels. Levees focus energy from high flow events straight downstream and eliminate floodplain connection</td><td rowspan="2">• Reduced flood risk during peak flow events.
• Achieve healthy, natural floodplain function.
• Increased acreage and duration of inundation of floodplains.
• Improved river channel complexity index.
• No net loss of shoreline ecological function.</td><td rowspan="3">• Increase in floodplain area over time.
• Length of levees removed or setback.
• Measure channel complexity (sinuosity, mid channel, side channel).
• Number, area, and capacity of new stormwater management features to handle runoff from impervious surfaces (bio swales, retention ponds, etc.).</td><td rowspan="3">• Increase floodplain area via land acquisition; Controlled release of floodwater onto agricultural lands.
• Increase channel complexity (sinuosity, mid-channel, side channels) through restoration projects.
• Eliminate hardening of channels and remove existing structures.
• Riparian restoration and re-vegetation along prioritized reaches.
• Setback levees.
• Restoration of tributaries.
• Protect current undeveloped floodplain from development.
• Protection from further alluvial groundwater development.</td></tr>
<tr><td>Impervious surfaces in Milton Freewater increase rapid runoff during high intensity precipitation and exacerbate flood events.</td></tr>
<tr><td colspan="2">Gap identification:
• Flood risk is reduced through strategies that achieve natural floodplain function.
• Integration of flood protection and floodplain health projects.</td></tr>
</table>

3. Mill Creek Floodplains

Where we are now (Current Conditions)	**Where we want to be** (Desired Future Conditions)	**How we will measure success** (Performance Measures)	**How we will get there** (Potential strategies)
Mill Creek USACOE flood control project includes significant leveed reaches and a concrete channel through the city of Walla Walla to help mitigate flood impacts. The **concrete channel** portion provides minimal habitat for fish. **Impervious surfaces in Walla Walla and College Place** increase rapid runoff during high intensity precipitation and exacerbate flood events.	- Reduced flood risk during peak flow events. - Achieve healthy, natural floodplain function. - Increased natural infiltration. - Increased acreage and duration of inundation of floodplains. - Channelization reduced by 25%. - Improved river channel complexity index. - No net loss of shoreline ecological function.	- Length of levees removed or setback. - Measure channel complexity (sinuosity, mid channel, side channel). - Number, area, and capacity of new stormwater management features to handle runoff from impervious surfaces (bio swales, retention ponds, etc.). - Width of riparian buffers.	- Complete installation of low flow channel through the weired section. - Restore flushing flows to Yellowhawk to move sediment. - Address sediment build-up in Mill Creek in weired section. - Improve floodplain connection to reduce flood risk, increase flood storage, and improve habitat in the naturalized channel directly above and below the flood control project. - Restore and protect riparian habitat along small streams and distributaries. - Mill Creek GI actions: Change threshold for diversion to Bennington Lake; Raise levee to accommodate up to 3,700cfs.
Gap identification: - Flood risk is reduced through strategies that achieve natural floodplain function. - Integration of flood protection and floodplain health projects.			

4. Touchet Floodplains

<table>
<tr><th>Where we are now
(Current Conditions)</th><th>Where we want to be
(Desired Future Conditions)</th><th>How we will measure success
(Performance Measures)</th><th>How we will get there
(Potential strategies)</th></tr>
<tr><td>Periodic high flow and flooding events occur in the watershed often causing significant damage in the Cities of Dayton and Waitsburg.</td><td rowspan="2">- Reduced flood risk during peak flow events.
- Achieve healthy, natural floodplain function.
- Increased natural infiltration.
- Increased acreage and duration of inundation of floodplains.
- Improved river channel complexity index.
- No net loss of shoreline ecological function.</td><td rowspan="3">- Length of levees removed or setback.
- Measure channel complexity (sinuosity, mid channel, side channel).
- Width of riparian buffers.</td><td rowspan="3">- Reconnect channel with floodplain.
- Increase floodplain area.
- Increase channel complexity (sinuosity, mid-channel, side channels).
- Eliminate hardening of channels and remove existing structures.
- Riparian restoration.
- Set back levees.
- Restoration of tributaries.
- Protect current undeveloped floodplain from development.</td></tr>
<tr><td>Some reaches of the Touchet are bounded by levees put in place for flood protection with severely incised channels. Levees focus energy from high flow events straight downstream and eliminate floodplain connection.</td></tr>
<tr><td colspan="2">Gap identification:
- Flood risk is reduced through strategies that achieve natural floodplain function.
- Integration of flood protection and floodplain health projects.</td></tr>
</table>