Flood Channel Maintenance in Urban Streams: Using Quantitative and Qualitative Parameters to Assess the Maintenance Need

Moderator Ken Schwarz, Ph.D. May 15, 2014

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Panelists:

Ken Schwarz – Principal at Horizon Water and Environment





Keenan Foster: Principal Environmental Specialist at the Sonoma County Water Agency



Scott Akin: Environmental Service Manager, Stream Maintenance Program, Santa Clara Valley Water District



Christie Beeman, P.E.: Hydrology Program Manager at ESA

















595 Americans have died in floodwater since 2011 (Shea, NWS). A few fell into rivers or drowned while fishing on flooded waterways. And some children died playing too close to high water. But 61% of victims died in vehicles, often after driving around barriers or ignoring signs warning them to turn back. (Chicago Tribune, May 12, 2017)



























Flood control channels – an evolution in thinking



LA River Ecosystem Restoration Feasibility Study 2016



Baseline Information & Management Strategies









Flood control channels – an evolution in thinking



🗛 Horizon

What type of maintenance do they need?

When do they need it?

Can natural resources be protected, and even enhanced, while providing required flood protection?







 \checkmark Sediment removal at culverts, crossings, and open channels









 \checkmark Sediment removal at culverts, crossings, and open channels







Routine Maintenance Activities✓ Sediment removal at culverts, crossings, and open channels

✓ Bank stabilization and erosion repair











- ✓ Sediment removal at culverts, crossings, and open channels
- ✓ Bank stabilization and erosion repair







- ✓ Sediment removal at culverts, crossings, and open channels
- Bank stabilization and erosion repair
- ✓ Basin clearing











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- ✓ Bank stabilization and erosion repair
- ✓ Basin clearing
- ✓ Vegetation thinning, pruning, removal, mowing







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- ✓ LID maintenance







- ✓ Sediment removal at culverts, crossings, and open channels
- ✓ Bank stabilization and erosion repair
- ✓ Basin clearing
- \checkmark Vegetation thinning, pruning, removal, mowing
- ✓ Culvert repairs and replacement
- ✓ LID Maintenance
- \checkmark Trash and debris removal
- ✓ Fire safety
- ✓ Public safety
- ✓ Homeless



Maintenance for Flood Control Channels Permitting Issues and Needs

- Routine activities, generally known locations, methods, BMPs
- Flood management in urban and rural settings
- Individual project permitting process, paperwork, delays, uncertainty
- Delays can impact flood protection





Programmatic Permitting for Maintenance Advantages

- Permitting certainty, schedule and cost benefits
- Consistent, standardized methods and approval process
- Annual notifications, approvals, and reporting for multiple projects in a season
- Greater flexibility
- Defined mitigation requirements
- Permit extension flexibility





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Thank You!

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Programmatic Permitting for Maintenance Process

- Define program activities, work locations, and impact avoidance and minimization measures (Manual)
- Conduct resource assessments (as needed)
- Develop mitigation approach
- Conduct CEQA/NEPA
- Submit permit applications
- Negotiate with agencies
- Use updated methods during interim maintenance projects while programmatic permits are pending approval



