

# Attachment C

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Alternatives

Table 1.4.1 Comparison of Project Alternatives Features

Project Component	Preferred Project	Reduced Project Alternative	Secondary Channel Alternative	No-Build Alternative
<b>Floodplain Restoration</b>	<ul style="list-style-type: none"> <li>▪ 128.2 acres</li> </ul>	<ul style="list-style-type: none"> <li>▪ 98.5 acres</li> </ul>	<ul style="list-style-type: none"> <li>▪ 129.8 acres</li> </ul>	Approximately 79 acres
<i>Levee Removal</i>	<ul style="list-style-type: none"> <li>▪ 4 new notches plus expansion of existing “Notch”</li> <li>▪ 1,470 feet of levee removed</li> <li>▪ Notch cuts to set the top of bank elevations approximately equivalent to, or just slightly below, that of the 2- to 5-year flood event</li> <li>▪ No work below OHW</li> </ul>	<ul style="list-style-type: none"> <li>▪ Expand existing “Notch”</li> <li>▪ “Notch” top of bank elevation approximately equivalent to, or just slightly below, that of the 2- to 5-year flood event</li> <li>▪ No new notches</li> <li>▪ No work below OHW</li> </ul>	<ul style="list-style-type: none"> <li>▪ 4 new notches plus expansion of existing “Notch”</li> <li>▪ Notch cuts to set the top of bank elevations approximately equivalent to, or just slightly below, that of the 2- to 5-year flood event except two notches lowered to channel bed elevation (secondary channel)</li> <li>▪ 1,470 feet of levee removed</li> <li>▪ Work below OHW</li> </ul>	None
<i>Floodplain Grading</i>	<ul style="list-style-type: none"> <li>▪ 471,000 CY cut</li> <li>▪ 67,000 CY fill</li> </ul>	<ul style="list-style-type: none"> <li>▪ 139,000 CY cut</li> <li>▪ 0 CY fill</li> </ul>	<ul style="list-style-type: none"> <li>▪ 592,000 CY cut</li> <li>▪ 48,000 CY fill</li> </ul>	None
<i>MFCAs</i>	<ul style="list-style-type: none"> <li>▪ 36 acres</li> </ul>	<ul style="list-style-type: none"> <li>▪ 15 acres</li> </ul>	<ul style="list-style-type: none"> <li>▪ 24 acres</li> </ul>	None
Floodplain Channel(s)	<ul style="list-style-type: none"> <li>▪ Two distributary channels</li> <li>▪ 1-2 feet deep, 60-ft wide, 8:1 side slopes</li> <li>▪ Sediment sequestration elements</li> <li>▪ High ground islands separating channels</li> </ul>	<ul style="list-style-type: none"> <li>▪ One channel</li> <li>▪ 1-2 feet deep, 30-ft wide, 8:1 slopes</li> <li>▪ No sediment sequestration elements</li> <li>▪ No high ground islands</li> </ul>	<ul style="list-style-type: none"> <li>▪ Two distributary channels</li> <li>▪ 1-2 feet deep, 60-ft wide, 8:1 side slopes</li> <li>▪ Sediment sequestration elements</li> <li>▪ High ground islands separating channels</li> </ul>	None
<i>Intermittent Drainage Channel</i>	<ul style="list-style-type: none"> <li>▪ 2.8 acres</li> </ul>	<ul style="list-style-type: none"> <li>▪ 2.8 acres</li> </ul>	<ul style="list-style-type: none"> <li>▪ 2.8 acres</li> </ul>	None
<i>Agricultural Preserve</i>	<ul style="list-style-type: none"> <li>▪ 23 acres</li> <li>▪ 330,000 CY fill</li> </ul>	<ul style="list-style-type: none"> <li>▪ 23 acres</li> <li>▪ 107,000 CY fill</li> <li>▪ 5 feet lower than Preferred Project</li> </ul>	<ul style="list-style-type: none"> <li>▪ 23 acres</li> <li>▪ 435,000 CY fill</li> <li>▪ 4 feet higher than Preferred Project</li> </ul>	Agricultural practices would continue on APN 243-071-005-000 (approximately 49 acres) but would be limited by available water supplies
<i>Access Roads and Trails</i>	<ul style="list-style-type: none"> <li>▪ 14,000 linear feet</li> <li>▪ Connection to trails on adjacent parks properties and under SR 1</li> </ul>	<ul style="list-style-type: none"> <li>▪ 12,000 linear feet</li> <li>▪ No trails west on State Parks or MPRPD property or under SR 1</li> </ul>	<ul style="list-style-type: none"> <li>▪ 14,000 linear feet</li> <li>▪ Connection to trails on adjacent parks properties and under SR 1</li> </ul>	None planned, although existing access roads could be used as trails

*Alternatives*

**Table 1.4.1 Comparison of Project Alternatives Features**

<b>Project Component</b>	<b>Preferred Project</b>	<b>Reduced Project Alternative</b>	<b>Secondary Channel Alternative</b>	<b>No-Build Alternative</b>
<b><i>Monitoring and Irrigation Wells</i></b>	<ul style="list-style-type: none"> <li>▪ State Parks wells relocated</li> <li>▪ Riverfield well protected in place</li> <li>▪ BSLT well protected in place</li> <li>▪ Monitoring wells MW-A &amp; MW-B removed</li> <li>▪ 2-4 monitoring wells installed post-construction</li> </ul>	<ul style="list-style-type: none"> <li>▪ State Parks well protected in place or relocated</li> <li>▪ Riverfield well protected in place</li> <li>▪ BSLT well protected in place</li> <li>▪ Monitoring wells MW-A &amp; MW-B removed</li> <li>▪ 2-4 monitoring wells installed post-construction</li> </ul>	<ul style="list-style-type: none"> <li>▪ State Parks well relocated</li> <li>▪ Riverfield well protected in place</li> <li>▪ BSLT well protected in place</li> <li>▪ Monitoring wells MW-A &amp; MW-B removed</li> <li>▪ 2-4 monitoring wells installed post-construction</li> </ul>	None impacted
<b><i>Restoration Management Plan</i></b>	<ul style="list-style-type: none"> <li>▪ Tier 1 restoration includes all required compensatory mitigation revegetation</li> <li>▪ Tier 2 restoration includes non-compensatory restoration of the remainder of the site occurring subsequent to the compensatory actions</li> </ul>	<ul style="list-style-type: none"> <li>▪ Same as Preferred Project except restoration area reduced, especially on State Parks property; no work on MPRPD property</li> </ul>	<ul style="list-style-type: none"> <li>▪ Same as Preferred Project except secondary channel may present additional restoration opportunities of different habitat types</li> </ul>	Modified restoration approach on APNs 243-071-006-000 and 243-071-007-000 (approximately 79 acres) to maintain existing riparian vegetation and install native vegetation in lieu of agricultural uses
<b><i>Maintenance Activities</i></b>	<ul style="list-style-type: none"> <li>▪ 38.8 acres (MFCAs and intermittent drainage)</li> </ul>	<ul style="list-style-type: none"> <li>▪ 17.8 acres (MFCA and intermittent drainage)</li> </ul>	<ul style="list-style-type: none"> <li>▪ 28.8 acres (MFCAs, intermittent drainage, and secondary channel)</li> </ul>	Maintenance would likely be reduced to invasive weed control and would not include native vegetation removal as no floodplain channels would be created
<b><i>Causeway</i></b>	<ul style="list-style-type: none"> <li>▪ 5.4 acres</li> <li>▪ 360 feet long</li> <li>▪ Temporary detour road</li> <li>▪ 41,000 CY cut</li> <li>▪ 22,000 CY fill</li> </ul>	<ul style="list-style-type: none"> <li>▪ 4.6 acres</li> <li>▪ 180 feet long</li> <li>▪ Temporary detour road</li> <li>▪ Would require Caltrans to grant an Exception to Design Standards</li> <li>▪ 23,000 CY cut</li> <li>▪ 26,000 CY fill</li> </ul>	<ul style="list-style-type: none"> <li>▪ 5.4 acres</li> <li>▪ 360 feet long</li> <li>▪ Temporary detour road</li> <li>▪ 41,000 CY cut</li> <li>▪ 22,000 CY fill</li> </ul>	None
<b><i>Cut/Fill</i></b>	<ul style="list-style-type: none"> <li>▪ 512,000 CY cut</li> <li>▪ 419,000 CY fill</li> </ul>	<ul style="list-style-type: none"> <li>▪ 162,000 CY cut</li> <li>▪ 133,000 CY fill</li> </ul>	<ul style="list-style-type: none"> <li>▪ 167,000 CY cut</li> <li>▪ 505,000 CY fill</li> </ul>	None

*Alternatives*

**Table 1.4.2 Comparison of Criteria for Project Alternatives**

Criteria	Preferred Project	Reduced Project Alternative	Secondary Channel Alternative	No-Build Alternative
Meets Project Objectives	Yes	Some	Yes	Few
<i>Improves the natural and historic functions and values of the lower Carmel River and Carmel Lagoon</i>	Yes	Yes, but significantly reduced compared to the Preferred Project	Yes, and may provide additional enhancement compared to the Preferred Project	Yes, but significantly reduced compared to Build Alternatives
<i>Creates a self-sustaining hydrologic connection and interaction of the floodplain and south arm of the Carmel Lagoon</i>	Yes	No, the reduced amount of water entering the floodplain and no sediment sequestration elements would result in more sediment within the Carmel Lagoon. Additionally, the steeper profile of the single floodplain channel results in a geomorphically unstable configuration. The floodplain is anticipated to “unzip” over time, causing sedimentation of the Carmel Lagoon and potential avulsion of the Carmel River channel.	Yes, same as Preferred Project	No
<i>Improves habitat conditions for sensitive wildlife species</i>	Yes	Yes, but significantly reduced compared to the Preferred Project	Yes, and may provide additional enhancement compared to the Preferred Project	Yes, but significantly reduced compared to Build Alternatives
<i>Restores approximately 100 acres of natural habitat</i>	Yes	Yes, but reduced success rates for the restoration are anticipated due to the reduced grading, which would place the vegetation further away from the groundwater and less floodwater would enter the floodplain.	Yes, and may provide additional enhancement compared to the Preferred Project	No, restoration and maintenance of existing riparian vegetation would occur on only approximately 79 acres and success rates would be expected to be less successful due to no increased floodwater on the floodplain.

Alternatives

Table 1.4.2 Comparison of Criteria for Project Alternatives

Criteria	Preferred Project	Reduced Project Alternative	Secondary Channel Alternative	No-Build Alternative
<i>Reduces flooding hazards along the north floodplain, to SR 1, and to the red houses</i>	Yes	Yes, but significantly reduced compared to the Preferred Project	Yes, same as Preferred Project	No
<i>Improves the quality of water entering the Carmel Lagoon</i>	Yes	No, the reduced amount of water entering the floodplain and no sediment sequestration elements would result in more sediment within the Carmel Lagoon, However, filtration into the groundwater would occur, but at a reduced rate compared to the Preferred Project.	Yes, same as Preferred Project	No, no effect on water quality compared to existing conditions
<i>Maintains active agricultural operation</i>	Yes	Yes, same as Preferred Project	Yes, same as Preferred Project	Yes, approximately 26 acres more than the Build Alternatives, but would be limited by available water supplies
<i>Creates conditions that allow for adaptation to sea level rise and other climate change impacts</i>	Yes	Yes, but significantly reduced compared to the Preferred Project	Yes, same as Preferred Project	No
Economically Feasible	Yes	Yes	Not Currently	Yes
Reduces hydrologic impacts to downstream resources (CAWD treatment plant, CAWD outfall and sewer force main pipelines, and State Parks Barn Complex)	No, some downstream resources would be impacted; however, not at a significant level with the implementation of the mitigation measures provided	Yes, impacts to CAWD outfall and sewer force main pipelines slightly reduced and impacts to State Parks Complex eliminated compared to Preferred Project	No, same as Preferred Project, some downstream resources would be impacted; however, not at a significant level with the implementation of the mitigation measures provided	N/A