APPENDIX 5A

Response to Comments on Project Descriptions

COMMENT RESPONSE FORM

Client:	City of Chico
Project:	Chico SWRP
Submittal:	Project Description Review Period, Ending 3/30/2018
Prepared By:	Natalie Muradian and Doug Moore
Date:	3/30/2018

ID	REVIEWER	Project	COMMENT	RESPONSE	ACTION
1	Robin McCollum	M (BCC 21st Mgt)	45- The 5 Mile Diversion consists of 2 dams and an overflow weir. The gates on the dams are to be fully open from October 15 until April 15 in accordance with the Operation and Maintenance Manual. The dam on Big Chico Creek has 4 slide gates that pass a maximum of 1,500 cfs. The dam on Lindo Channel (Sandy Gulch) has 7 gates and culverts that pass ,6500 cfs. The Ogee Weir passes 8,500 cfs to accommodate the balance of 16,000 cfs design flow. In the January 1997 flood event the 5 Mile headworks passed in excess of 20,000 cfs according to the DWR Northern District. Water was observed only 6 inches below the levee top at the Big Chico dam. Any operation of the gates not in accordance with the Manual would be unwise. The dams are usually jammed with logs that should be cleared expeditiously as flows can increase rapidly due to the flashy characteristics of the watershed when impacted by Atmospheric Rivers. Trash racks designed to intercept logs and not impede flow, that can be cleaned quickly between storms, should be built upstream of the dams. Also some arrangement should be made, such as a seasonal lease, so that a large excavator with a wrist and grapple (like a logging Skidder) can be stationed in advance to clear the gates during high water. Additionally, it has been observed that the riparian forest and brush in the stilling basin has intercepted many logs while ameliorating erosive flows near the levee. In the mid 1980's Butte County Public Works undertook major sediment removal in the stilling basin upstream of the Lindo Channel dam. Gravel was removed daylighting the concrete sill at the head of Lindo Channel and establishing a continuous grade to the invert of the Lindo dam barrels. This material was stockpiled with the intent to place it in the gravel starved streams below the dams. In the 1/1/97 flood a shoal formed mid-channel above the sill and continuing downstream for 150 yds reaching an elevation nearly level with the adjacent levee. An NRCS grant funded partial removal of the shoal to near its current elevation. The sill was not exposed. Removal of this sediment build-up would be a cost effective way to move toward the mandated 200 year flood protection. The levee between Big Chico and Lindo is the most critical flood control infrastructure for Chico. Vegetation that ameliorates erosive flows and protects the aforementioned levee should continue to be maintained.	The plan is recommending evaluation and modeling of the system (gates, dams, weirs) and working with USACE and DWR to determine if the flows have changed from the original flows and/or to determine what's not working currently, and if a new set of operations and maintenance directions may be beneficial. This information will be added to the Project Description in the SWRP for reference.	Include Information in the Project Description

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2	Robin McCollum	M (BCC 21st Mgt)	Sycamore Diversion Channel to Cohasset Road Bridge. From the time it was built Sycamore Diversion Channel (SDC) initial flows eroded all loose material, carried it downstream and deposited it at the Cohasset Road bridge and in channel just downstream. That deposit compromised channel capacity so badly that the adjacent left bank levee experienced one of 2 greatest freeboard incursions in the entire system during the 1997 flood. DWR was/is responsible to maintain flow in the channel and so undertook clearing the sediment. Because of perennial drainage from nearby development a substantial wetland habitat had grown. Big Chico Creek Watershed Alliance and myself negotiated with DWR to restore the channel to as built configuration with design features that move sediment through during low flows. The habitat was restored for its benefits as well as to prevent scour during high flows. The source of the sediment is up Sycamore Creek where the Sycamore Diversion Channel (10,000 cfs) blasts perpendicularly into South Sycamore Creek (500 cfs). It's a flaw in US Army Corps Engineers design, that they've denied, but DWR is left to design a grade control structure that they've promised to build. If it is not done soon the work below Cohasset Rd bridge will be buried as large flows over the Ogee Weir tear through the sandstone and deliver sand below Cohasset Rd bridge. Non erodible material should be put in the channel, by some design, to stop the head-cut originating at the confluence of the Diversion Channel and South Sycamore Creek.	This information will be added to the Project Description in the SWRP for reference.	Include Information in the Project Description
3	Les Heringer	Project N and Project O	Project descriptions are fine as is. Will there be financial assistance available to upgrade the flow gage west of Crouch Ave on Comanche Creek to measure flood flows as part of the study?	The point of the SWRP is to make projects eligible to compete for grant funding from the State. If the study is successful at obtaining a grant, then the flow gage would be included.	No action required
4	BEC/ Stream Team	All projects	It is our understanding that the SWRP project descriptions are intended to provide a summary description of the seventeen (17) SWRP projects, including enough detail to capture the management elements described in the projects listed in the final screened initial project list. With regards to the project descriptions it is important for the project descriptions to capture the full intent, and identify all implementation projects and strategies identified in each initial project included in the final project description. Please consider expanding the section "Initial Projects Included" for each project description to include a brief summary, and identify implementation projects for each initial project included (i.e. river friendly handbook, pesticide and landscape overwatering campaigns, trash surveys, citizen monitoring, etc.). This would ensure that the details of each submission are more available for review, prioritization and decision making.	The SWRP Project Descriptions are intended to capture the intent of the initial projects that were submitted, and are not necessarily a summary of every element of the included Initial Projects. The full Initial Project Descriptions will be documented and included in the SWRP for reference.	Include full Initial Project Description in the SWRP

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5	BEC/ Stream Team	All projects	Please consider creating more uniform descriptions, headings and sections across all project descriptions, as well as ensuring that the full intent of the initial projects are captured to allow for effective comparison and evaluation.	The descriptions, headings, and sections were developed from a single template, but were customized for each project. The SWRP Project Descriptions are intended to capture the intent of the initial projects that were submitted, and are not necessarily a summary of every element of the included Initial Projects. The full Initial Project Descriptions will be documented and included in the SWRP for reference.	Include full Initial Project Description in the SWRP
6	BEC/ Stream Team	All projects	Please consider revising the “education and outreach” section in each project description to include the development of an education and outreach plan (and budget) to utilize existing local storm water and watershed efforts to implement the SWRP project outreach. This will ensure that every effort is made to keep the community engaged in the City’s efforts to improve local water quality. It will also meet the intent of the initial project submissions and ensure that the required public involvement and implementation components of the SWRP are met.	The education and outreach sections that are included for most of the planning projects will evaluate improvements to existing education and outreach programs. We will revise the current descriptions to also include the preparation of an education and outreach plan that will utilize existing local storm water organizations (such as BEC and Stream Team), which will include establishing an education and outreach budget. The plan and budget will be based on the community's needs at the time the SWRP project is implemented.	Revise project descriptions
7	BEC/ Stream Team	All projects	Please consider revising the “water quality” sections to clearly identify the intent to utilize existing watershed protection groups, such as Butte Environmental Council, The Stream Team, and others to provide education and outreach on water quality and utilize existing citizen monitoring efforts to evaluate the efficacy of the projects for improving water quality. The current description does not capture the elements submitted in initial projects to integrate existing water quality efforts (as is required by the SWRP). The current project descriptions emphasize evaluation rather than utilization.	Water Quality will be included in education and outreach sections. The water quality section already includes the use of citizen monitoring to evalute efficacy of projects for improving water quality, but we will double-check applicable project descrtipions and add it in if not. The full Initial Project Descriptions will be documented and included in the SWRP for reference when the projects are implemented.	Revise project descriptions
8	BEC/ Stream Team	All projects	Please consider revising the “watershed and locations” section to specifically include locations as described in the initial projects (i.e. Dorothy Johnson Center, Lindo Channel by Chico Nut, etc.).	The full Initial Project Descriptions will be documented and included in the SWRP for reference.	Include full Initial Project Descriptions in the SWRP
9	BEC/ Stream Team	All projects	As you prepare to rank, prioritize and select projects for design please consider that the current storm water values were established using a system that involved rating, rather than ranking community storm water values. Had participants ranked, rather than rated the values each participant would have had to weight and truly prioritize storm water values. The data resulting from the values survey that was conducted does not effectively identify the community’s priorities as many values were assigned equal ratings by survey participants. The decision to develop these projects further should be made based on measurable outcomes rather than these value ratings.	This issue was addressed in the SWRP Weighting Values letter published 9/7/2017, including "Concerns were expressed that scoring [versus ranking] does not force participants to prioritize their values, potentially reducing the statistical significance of the survey. For example, scoring would allow someone to give every category the highest (or lowest) score possible. The scoring method was selected to allow participants to convey their preferences accurately, rather than forcing participants to select artificial priorities to meet the survey requirements. For example, if a participant valued stormwater quality and flood control as both very important, scoring would allow both categories to be scored equally. In addition, ranking does not allow the participant to communicate how much they value one category over another. Therefore, the decision was made to use the scoring method."	No action required

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10	BEC/ Stream Team	All projects	Please consider identifying implementation projects submitted in initial projects that were included in the "Big Chico Creek 21st Century Management Plan", "Trash Reduction Master Plan and Specific Implementation Projects", "Updating the City's Storm Water Planning and Policies and Implementation Projects", and others for 30% design (i.e. river friendly handbook, green streets project, LID demonstration projects for education and training, pesticide and landscape overwatering campaigns, trash surveys, cleanups and education campaigns, etc.).	Generic projects, such as Green Streets and LID demonstration projects, while great project ideas, require advance planning and therefore are considered planning projects. Project descriptions already include outreach and education programs for pesticides and overwatering. Trash surveys may or may not be needed for compliance with the Trash Amendments, but will be implemented if needed. Trash cleanups and education campaigns are already included as part of part of Project P (which includes Project F - Storm Water Public Outreach, Education, and Involvement Program).	No action required
11	BEC/ Stream Team	All projects	A number of implementation projects have been included in plans, while others have been identified as standalone projects. Clearly identifying all implementation projects within each plan would allow for these projects to be considered for standalone projects or combined with complimentary projects maximizing potential outcomes. This would also allow for TAC review and consideration of all implementation projects initially submitted when selecting projects for 30% design.	The full Initial Project Descriptions will be documented and included in the SWRP. The TAC can select individual elements of SWRP projects for the 30% design phase of the SWRP.	No action required
12	BEC/ Stream Team	All projects	When selecting projects for 30% design please consider prioritizing implementation projects that include public involvement, build on partnerships with existing watershed groups and on previous storm water efforts that have been established in the community. This will facilitate maximized outcomes from the SWRP.	This comment will be provided to the TAC.	Provide comment to TAC
13	Robin McCollum	Project 33	The term "holistic" gives me pause because it suggests that some are still considering putting Keefer Slough flows into Mud Creek. The USACE Flood Control Study (2000) considered this plan and rejected it because Mud Creek and the Chico Mud and Sycamore system is at or above capacity now. The gravel pit near Dusty Lane is not available for detention as it fills with hyporheic flows when Mud Creek is full. I can attest to these facts having observed them during my flood fight efforts in the January 1997 flood event.	This information can be included in the project description, so the information is available when the SWRP Project is implemented.	Revise project description
14	Robin McCollum	Project 33	Regarding Rock Creek and Keefer Slough there are several problems. 1. At Hagenridge Rd., north of Keefer Rd., Keefer Slough originates from Rock Creek. Since the 1997 flood event the dominant flow has moved into Keefer Slough where there is insufficient capacity causing frequent flooding along its banks east and west of Hwy 99. If Hagenridge Rd. was raised as an earthen dam with large culverts the flow split between Keefer Slough and Rock Creek could apportioned appropriately for the respective channels.	This information will be included in the project description, so the information is available when the SWRP Project is implemented.	Revise project description

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15	Robin McCollum	Project 33	Regarding Rock Creek and Keefer Slough there are several problems. 2. Rock Creek cannot contain additional flows from Keefer because the levees downstream in Nord are at capacity with 5,000 cfs according to the USACE 2000 study. Further, the study showed that Sand Creek, which joins Rock Creek just above Hwy 99, adds another 5,000 cfs at its peak. It is only coincidence that the levees west of Hwy 99 have not received 10,000 cfs, double their capacity, in recent events. There is a current proposal from Rock Creek Reclamation District to detain flows on Sand Creek to help with this problem.	This information will be included in the project description, so the information is available when the SWRP Project is implemented.	Revise project description
16	Robin McCollum	Project 33	Regarding Rock Creek and Keefer Slough there are several problems. 3. Keefer Slough presently carries excess flows from Rock Creek, but there is minor flooding east of Hwy 99 and currently substantial overland flooding through the orchards near Nord. Keefer Slough needs channel improvements including widening, minor levees, increased flood plain access and off stream detention east of Hwy 99.	We will revise the project description to include evaluations of needed channel improvements including widening, minor levees, increased flood plain access and off stream detention east of Hwy 99. This information will be included in the project description, so the information is available when the SWRP Project is implemented.	Revise project description
17	Robin McCollum	Project 33	Regarding Rock Creek and Keefer Slough there are several problems. 4. West of Hwy 99 the orchards can handle, even benefit from, some short term inundation. Improved and coordinated small scale multiple channels could be built that would minimize inundation periods and prevent excessive depths at critical locations. One such channel, just east of Nord, is partially constructed running south from the confluence of Rock Creek and Keefer Slough. It is a one sided levee intended to carry 2,500 cfs if the Keefer Slough levee were to fail at the confluence or east there of. These flows pond against the Union Pacific Railroad and then pass through to meet the backwater of the Sacramento River.	We will revise the project description to include evaluations of using ag lands as detention areas, and channels to minimize flooding. This information will be included in the project description, so the information is available when the SWRP Project is implemented.	Revise project description
18	Robin McCollum	Project 33	Regarding Rock Creek and Keefer Slough there are several problems. 5. Rock Creek left bank levee east of Hwy 99 to Garner Ln. needs to be raised slightly and uniformly constructed to some reasonable standard. West of Hwy 99 the levees reach capacity more often than every 5 years (5-year event). These should be set back, one side or the other, an additional 50 ft. westward to the Union Pacific tracks.	We will revise the project description to include evaluations of modifying the levee system at Rock Creek to Garner Lane. This information will be included in the project description, so the information is available when the SWRP Project is implemented.	Revise project description
19	Steve Breedlove	Project 85	Our design has been revised after we finally had the opportunity to conduct a more thorough site evaluation with designers more experienced with earthworks and managing water. To emphasize, we are NOT moving water but freeing it to enter the land where it can infiltrate. There is considerable natural topographical variation and we intend to utilize existing basins (as evidenced through observation and as indicated by the distribution of Plantago and Rumex species). These existing variations will reduce total equipment time, and will make an attractive series of basins.	We will revise the project description to include use of the existing topography in the project description.	Revise project description
20	Steve Breedlove	Project 85	We would make several (five tentatively, depending on utility pole setbacks) curb cuts in the low spots in the gutter where water slows and pools and these cuts will only remove the riser and not the curb footing and can be accomplished using a rotary hammer and concrete saw. To maintain ADA accessibility, our inlets and outlets will be wide enough to provide a gentle slope and our paths will simply cross this channel.	We will revise the project description to include five curb cuts.	Revise project description

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21	Steve Breedlove	Project 85	These curb cuts would then open to a level sill for further slowing water and allowing solid waste to settle out before continuing into the basins at a slope no greater than 1%. Based on the high point in the collection area (the intersection of Mulberry and 12th) and our gentle slope (essential for infiltration and erosion prevention), we will not need to excavate more than six inches below the lowest curb sill. With the area available for infiltration and the soils as indicated in the UC Davis Soil Web, we do not expect water to leave the site, nor fail to infiltrate in 48 hours preventing mosquito issues. However, our series of basins slowing, spreading and sinking water will connect to a curb cut outlet just above the storm drain on the Southwest edge of the site to compensate for extreme events.	We will revise the project description to include this comment in the project description.	Revise project description
22	Steve Breedlove	Project 85	Implementing the project will be somewhat straight forward. The entire site design intends to minimize labor and equipment use taking advantage of existing slopes and topographical variation. We ask the City waive the cost of lane closure and curb cutting permits and consider making equipment available. We estimate we will need one day or less to survey and prepare the site. We will need one day with one lane closed on both Pine and Cypress (we would do this work on a weekend to minimize disruption to the arterial road) to make the cuts and run a backhoe and bobcat. After cutting the channels and modifying the existing basins to add capacity, volunteers with hand tools would do sculpting work. The third day would be planting and mulching. We estimate our total equipment time will be less than 18 hours. Excess soil will be used to shape the trail and create a level area in the shade of the pine trees on the western edge which can be used in the future to make a picnic area, and we intend to include space in the rain garden landscape design to facilitate later installation of public art.	We will revise the project description to include this comment in the project description.	Revise project description