



September 7, 2017

Project No.: 755-10-17-01.007
SENT VIA: EMAIL

Ms. Angela Spain
City of Chico
411 Main Street
Chico CA 95928

SUBJECT: City of Chico Storm Water Resource Plan—SWRP Project Evaluation Criteria Weighting Values

Dear Ms. Spain:

This letter presents West Yost Associates' (West Yost) Big Chico Creek (BCC) and Little Chico Creek (LCC) Storm Water Resource Plan (SWRP) Project Evaluation Criteria Weighting Values, including the following sections.

- Introduction
- Summary of Public and Technical Advisory Committee (TAC) Input on Weighting Values
- Resolution of Weighting Value Issues and Questions

INTRODUCTION

As part of the development of the SWRP, we have requested input from the public and the TAC members related to their storm water values; in other words, how much do they value the various types of benefits that could result from the storm water projects identified and developed in the SWRP. This valuation of benefits is a relative ranking of benefits relative to other benefits. These values will be used in prioritizing and ranking the SWRP projects in a later phase of the SWRP development.

SUMMARY OF PUBLIC AND TAC INPUT ON WEIGHTING VALUES

Input on storm water values was requested from the public and stakeholders at Public and Stakeholders Meeting 1 on May 17, 2017. A copy of the original values scoring forms are provided as Attachment 1. Seven completed forms were received at Public and Stakeholder Meeting 1. The form was modified based on the input received from the public, and the modified form was provided to the TAC members at TAC Meeting 2 on May 24 (Attachment 2). Four completed forms were received at TAC Meeting 2. Additionally, one form was emailed to West Yost and one email was received that summarized the respondent's values without using the form. All this input is summarized in Table 1.

The upper section of Table 1 summarizes each respondent's valuation of the main benefit categories identified in the California State Water Resources Control Board Storm Water Resource Plan Guidelines (December 15, 2015). Of these broad categories, storm water quality was valued the highest at 8.7 out of a possible score of 10. Water supply was valued the lowest at 6.7 out of a possible score of 10.

The lower part of Table 1 summarizes the input from the public, stakeholders, and TAC members on the additional benefits that were identified during Public Meeting 1 and TAC Meeting 2. Some of the suggested benefits are duplicative of others and some appear to actually be potential projects rather than benefits. Also, because the public/stakeholder suggested benefits have been provided over time since May 17, 2017 not all respondents were able to provide value scores for each benefit.

The benefits are listed in the left column of Table 1. The text in parentheses in the left column explains our question or uncertainty of what was intended by the person providing the information. The value scores (how important each benefit is to the respondent) are provided in the center of the table. Also, an average of the value scores is calculated.

RESOLUTION OF WEIGHTING VALUE ISSUES AND QUESTIONS

The proposed resolution of the questions or issues in the left column of Table 1 are summarized in the right column of Table 1. The results of the proposed resolutions are summarized in the right-most column of Table 1, and discussed below:

- **State Guideline Main Benefits** – The average value score of these main benefit categories will be used for weighting the evaluation criteria that will be used for each of the 16 SWRP projects. However, if there is a specific public or stakeholder benefit identified in Table 2, that specific average value score will be used.
- **Public, Stakeholder, and TAC-Suggested Benefits** – In some cases, suggested benefits were similar to each other, and these similar benefits have been grouped into a single benefit, and an average value score was calculated for the grouped benefit. The average value score of these specific benefits will be used for weighting the evaluation criteria that will be used for each of the 16 SWRP projects.
- **Create Initial Projects** – These suggested benefits seem to actually represent potential initial storm water projects rather than benefits. For each of these, an initial project was submitted via the City's SWRP website.

At TAC Meeting 3, the list of benefits and weighting values were discussed. The TAC and public attendees were concerned that not enough public opinion had been collected to fully adopt the weighting values. The TAC decided to continue to make the weighting values open for public input, so the weighting values form was posted online (see Attachment 3) and was available at Public Meeting 2. Weighting value survey forms were accepted until August 9, 2017, for three weeks following Public Meeting 2.

During Public Meeting 2, several concerns regarding the weighting value survey were discussed:

- The first concern was that the survey asked the public to *score* their priorities, rather than *rank* their priorities.
- The second concern was that an organization wished to submit one survey, but have that one survey be weighted to represent the organization's entire constituency.

Scoring versus Ranking

Concerns were expressed that *scoring* 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 move forward with the scoring method.

A related concern involved the wording used on the original survey form. The original survey form used the terminology *rank* rather than *score* when asking participants for their feedback. The survey that replaced the original survey used the terminology *score*. Every respondent, except for one survey, *scored* values rather than *ranked* values. The person that ranked their values was invited to submit a new form to score their values.

Weighting Survey Results

Attendees of Public Meeting 2 asked if organizations that represent multiple people can submit one survey and have that survey be given more weighting than an individual person's survey based on the number of members in that organization.

This question was presented to the TAC members by email. The following bullets summarize the TAC's responses:

- Membership verification – we would need to determine and verify how many people each survey submitted represents. This would greatly complicate the survey process.
- Fairness would demand that the City, the County, the University, and other organizations all be weighted according to their constituency. For example, if a City Council member (an elected official) filled out the survey, would their form be weighted as representing the entire City population (estimated at about 91,000 in 2016)?
- It would make more sense for the organization to contact their members and have them complete the survey individually.

Consequently, no weighting of forms was included in the evaluation of Community Storm Water Values. Organizations were encouraged to have their members submit individual forms.

Summary of Survey Values Submitted Between TAC 3 and August 9, 2017

Between TAC Meeting 3 and August 9, 2017, the following additional surveys were submitted and are included in the results in Table 2:

- Nine survey forms were received between TAC 3 and August 9, 2017 from the SWRP website.
- Four survey forms were received from Public Meeting 2.
- Seven survey forms were hand delivered to City staff between TAC 3 and August 9, 2017.

CONCLUSION

The final community storm water values are shown in Table 2. The TAC submitted five surveys and the public submitted 27 surveys, for a total of 32 surveys. One public member submitted two signed surveys at different meetings, so their original submittal was superseded by their final submittal.

DISCLOSURE STATEMENT

Funding has been provided in full or in part through an agreement with the State Water Resources Control Board, using funds from Proposition 1. The contents of this document do not necessarily reflect the views and policies of the foregoing, nor does the mention of trade names or commercial products constitute endorsement or recommendation for use.

This work product is part of Task 4.5.3 of Grant Agreement No. D1612613 between the City of Chico and the California State Water Resource Control Board.

Please contact me at (530) 792-3275 or dmoore@westyost.com with any questions or comments.

Sincerely,

WEST YOST ASSOCIATES



Douglas T. Moore
Engineering Manager
RCE #58122

DTM:lh

Table 1. Summary of SWRP Benefit Weighting Values for Project Ranking

Benefits / Values	Values by Respondent												Average	Resolution of TAC and Public Values Input	
State Guideline Main Benefits															
1. Community	6	10	7	7	10	10	5	2	8	8	8	6	4	7.0	
2. Environment	10	10	10	8	10	10	7	2	8	10	9	7	8	8.4	
3. Flood Management	9	3	6	6	6	9	6	10	10	6	7	9	3	6.9	
4. Storm Water Quality	8	7	9	7	10	10	10	10	8	8	10	10	6	8.7	
5. Water Supply	7	4	8	5	5	9	8	8	6	5	9	8	5	6.7	
Public, Stakeholder, and TAC Suggested Benefits															
A. Public awareness of storm water BMPs (a value and/or a program?)		10						9	5	6	7			7.4	Combine into "Public education, outreach, and involvement" under each State Category
B. Public process in developing SWRP & implementing projects		10							4	7	0			5.3	Combine into "Public education, outreach, and involvement" under each State Category
C. Collaboration with existing storm water efforts		10							2	0	7	5		4.8	Combine into "Public education, outreach, and involvement" under each State Category
D. Links to citizen monitoring efforts & other watershed protection efforts for E & O (education and outreach?) & monitoring project effectiveness		10							5	10	7			8.0	Combine education and outreach part of this into "Public education, outreach, and involvement" under each State Category. Create "Water Quality Monitoring and Assessment" Evaluation Criteria under the Storm Water Quality State category. Add a "Storm Water Monitoring and Assessment" initial project/program.
E. Public education (a value and/or a project?)			NV				9		4	10	8		7	7.6	Combine into "Public education, outreach, and involvement" under each State Category
F. Updating the City's plan to make it proactive (a project?)			NV						7	0	10			5.7	Convert to an initial project
G. Regular cleanups (a value and/or a project/program?)			NV						8	9	5			7.3	Convert to an initial project (program)
H. Housing homeless (a value and/or a project/program?)									7	9	5			7.0	Include as an evaluation criteria under the Community category
I. Mosquito & vector control				7					8	7	4	4		6.0	Include as an evaluation criteria under the Community category
J. Native study area (benefit is native habitat) - Teichert Ponds (a project?)					10				5	9	8			8.0	Evaluate native habitat under the wetlands and riparian habitat ECs under the Environment category. Include Teichert Ponds as in initial project.
K. Sediment & erosion control/stream bank stabilization (a value and /or project/program?)						8			10	9	9			9.0	Include "Sediment and Erosion" as an Evaluation Criteria in the Quality category
L. Neighborhood beautification						8			9	8	8			8.3	Include "Neighborhood Beautification" as an Evaluation Criteria in the Quality category
M. Policies and Regulations													2	2.0	Convert to a project to update the City's storm water policies and regulations
N. Assessment and Monitoring													1	1.0	Combine with the monitoring part of Item D above

NV: No value provided by the respondent.

Table 2. Revised and Recommended SWRP Benefit Weighting Values for Project Ranking

Benefits / Values	Values by Respondent																												Average						
State Guideline Main Benefits																																			
1. Community	6	10	7	7	10	10	5	2	8	8	8	6	4	5	7	5	8	10	1	3	3	8	8	10	7	9	7	5	9	9	7	9	7	6.7	
2. Environment	10	10	10	8	10	10	7	2	8	10	9	7	8	9	7	3	9	10	7	2	4	8	7	8	10	10	10	10	10	10	7	10	7	8.0	
3. Flood Management	9	3	6	6	6	9	6	10	10	6	7	9	3	10	3	5	6	9	10	10	10	6	4	8	10	10	10	10	10	3	10	2	7.8		
4. Storm Water Quality	8	7	9	7	10	10	10	10	8	8	10	10	6	6	10	9	10	10	10	2	8	10	10	8	10	9	10	10	10	10	10	10	8.8		
5. Water Supply	7	4	8	5	5	9	8	8	6	5	9	8	5	9	10	7	10	10	7	7	10	10	10	10	10	10	10	10	10	10	10	10	8.3		
Public, Stakeholder, and TAC Suggested Benefits																																			
A. Public awareness of storm water BMPs (a value and/or a program?)		10						9	5	6	7			NV	NV	NV	NV	5	3	7	3	NV	NV	10	6	NV	10	9	9	10	NV	NV	NV	7.3	
B. Public process in developing SWRP & implementing projects		10							4	7	0			NV	NV	NV	NV	7	6	5	4	NV	NV	10	6	NV	9	NV	9	10	NV	NV	NV	6.7	
C. Collaboration with existing storm water efforts		10							2	0	7	5		5	10	3	10	5	5	10	5	10	10	8	5	10	9	10	9	10	10	10	10	7.5	
E. Public education and outreach		10	NV					9		4.5	10	7.5		7	7	10	2	10	9	3	2	3	10	10	9	8	9	7	10	10	10	10	10	8.0	
Public education, outreach, and involvement (average of four above)	10							9	9	3.88	5.75	5.38	5	7	6	10	2.5	10	6.5	4.25	6	3.75	10	10	9.25	6.25	9.5	8.75	9.67	9.25	10	10	10	10	7.7
D2. Links to citizen monitoring efforts & other watershed protection efforts for education and outreach		10							5	10	7			7	10	2	10	6	7	2	4	10	10	10	8	10	7	10	9	6	10	10	10	7.9	
N. Assessment and Monitoring													1	9	10	5	10	5	NV	2	4	10	10	7	7	7	5	9	9	8	10	10	10	7.4	
Water quality monitoring and assessment (average of two above)	10								5	10	7	1	8	10	3.5	10	5.5	7	2	4	10	10	8.5	7.5	8.5	6	9.5	9	7	10	10	10	10	7.6	
H. Housing homeless									7	9	5			5	6	1	6	7	2	0	0	3	6	10	7	9	5	9	9	8	7	1	6	5.6	
I. Mosquito & vector control				7					8	7	4	4		5	0	10	1	NV	6	10	8	0	2	5	9	10	9	8	0	7	2	10	0	5.5	
K. Sediment & erosion control/stream bank stabilization						8			10	9	9			5	6	7	6	10	10	10	9	7	6	10	9	9	9	9	10	8	9	6	8.3		
L. Neighborhood beautification						8			9	8	8			9	6	3	6	8	5	2	1	3	6	8	7	10	9	9	8	7	5	9	6	6.7	
J1. Native habitat (include in wetland and riparian habitat ECs)					10				5	9	8			10	6	6	6	10	10	1	2	8	6	7	10	10	10	10	9	10	8	10	6	7.7	
NV: No value provided by the respondent.																																			
Create Initial Projects																																			
F. Updating the City's stormwater plan (to make it proactive)																																			
G. Routine Community Creek Clean Up Project (Program)																																			
D3. Storm Water Monitoring and Assessment Project (program)																																			
J2. Teichert Ponds Project																																			
M. Update the City's storm water policies and regulations																																			
This survey was submitted by an individual who submitted a new form later in the process, so this form was not included in the average calculations.																																			
NV: The respondent acknowledged the existence of the category, but did not provide a value.																																			



Community Stormwater Values
City of Chico
Stormwater Resource Plan
Public and Stakeholder Meeting No. 1



May 17, 2017, 6:00 – 8:00 pm
 City Council Chambers, Room 1, 421 Main Street Chico, CA

Please Share and Rank Your Stormwater Values

<p align="center">Stormwater Values (listed alphabetically)</p>	<p align="center">Ranking (1 to 10) 1 = Least Important 10 = Most Important</p>
<p>Community (Examples: Recreation, Employment Opportunities)</p>	
<p>Environment (Examples: Wetlands, Riparian, Open Space, Greenhouse Gases)</p>	
<p>Flood Management (Examples: Reduce Flood Risk, Improve Stormwater Drainage)</p>	
<p>Stormwater Quality (Examples: Trash Removal, Reduce Pesticide/Herbicide Pollution)</p>	
<p>Water Supply (Examples: Groundwater Recharge, Reuse Stormwater for Landscape Irrigation)</p>	
<p>Other Stormwater Values and Benefits</p> <p>A.</p> <p>B.</p> <p>C.</p> <p>D.</p> <p>E.</p>	



Community Storm Water Values

City of Chico

Storm Water Resource Plan

TAC Meeting No. 2

May 24, 2017, 61:30 to 3:30 pm

City Council Chambers, Room 2, 421 Main Street Chico, CA



Please Share and Rank Your Storm Water Values

Storm Water Values (listed alphabetically)	Ranking (1 to 10) 1 = Least Important 10 = Most Important
Community (Examples: recreation, employment opportunities)	
Environment (Examples: wetlands, riparian, open space, energy use, greenhouse gases)	
Flood Management (Examples: reduce flood risk, improve storm water drainage)	
Storm Water Quality (Examples: trash removal, reduce pesticide/herbicide pollution)	
Water Supply (Examples: groundwater recharge, reuse storm water for landscape irrigation)	
Other Storm Water Values and Benefits A. Public awareness of storm water BMPs (a value and a program) B. Public process in developing SWRP & implementing projects C. Collaboration with existing storm water efforts D. Links to citizen monitoring efforts & other watershed protection efforts for E & O & monitoring project effectiveness E. Public education (a value and a project) F. Updating the City's stormwater plan to make it proactive (a project) G. Regular cleanups (a value and a project/program) H. Housing homeless (a value and a project/program) I. Mosquito & vector control (a value and a project/program) J. Native study area (benefit is native habitat) - Teichert Ponds (a project) K. Sediment & erosion control/stream bank stabilization (a value and project/program) L. Neighborhood beautification M.	



Community Storm Water Values
City of Chico Storm Water Resource Plan
 Please only submit survey once



Please share your storm water values by providing a score for each benefit.

Storm Water Benefits		Scoring										
	<i>Not important</i>											<i>Very Important</i>
		0	1	2	3	4	5	6	7	8	9	10
State Guideline Main Benefits												
Community (Examples: recreation, employment opportunities)												
Environment (Examples: wetlands, riparian, open space, energy use, greenhouse gases)												
Flood Management (Examples: reduce flood risk, improve storm water drainage)												
Storm Water Quality (Examples: trash removal, reduce pesticide/herbicide pollution)												
Water Supply (Examples: groundwater recharge, reuse storm water for landscape irrigation)												
Public, Stakeholder, and TAC Suggested Benefits												
Public awareness of storm water BMPs												
Public process in developing SWRP & implementing projects												
Collaboration with existing storm water efforts												
Public education and outreach												
Links to citizen monitoring efforts & other watershed protection efforts for education and outreach												
Assessment and monitoring												
Housing homeless												
Mosquito & vector control												
Sediment & erosion control/stream bank stabilization												
Neighborhood beautification												
Native habitat (including wetlands and riparian habitat)												

Please email your completed form to swrp@chicoca.gov