APPENDIX 2B

Technical Advisory Committee (TAC)

- 2B-1: Commitment Letters
- 2B-2: TAC Meeting #1 Materials
- 2B-3: TAC Meeting #2 Materials
- 2B-4: TAC Meeting #3 Materials
- 2B-5: TAC Meeting #4 Materials
- 2B-6: TAC Meeting #5 Materials

Note: Ravinder Jawanda, the State Grant Manager, was not listed as a TAC member in the submittal included in the following Appendix, however, she was an active TAC member throughout the SWRP development and has been acknowledged in the SWRP report.

(THIS PAGE LEFT BLANK INTENTIONALLY)

2B-1

Commitment Letters

(THIS PAGE LEFT BLANK INTENTIONALLY)

September 12, 2017

Diana Langley
Public Works Director
1201 Civic Center Boulevard
Yuba City, CA 95993

SUBJECT: Commitment to participate on the Technical Advisory Committee for the Yuba City Basin Storm Water Resource Plan

Dear Ms. Langley:

The City of Yuba City has received a grant from the State of California to prepare a Storm Water Resource Plan (SWRP) for the Yuba City Basin watershed. The development of the SWRP, the selection of projects to be included in the SWRP, and the project prioritization will be guided by a Technical Advisory Committee (TAC). The TAC will be made up of staff from the State Water Resources Control Board, Regional Water Quality Control Board, municipalities, county, water suppliers, local agencies, non-governmental organizations and nonprofit organizations, public utilities, and regulatory agencies. Based on our discussions, I understand that you have agreed to serve on the TAC. This letter summarizes the responsibilities associated with serving on the TAC. Please sign below to confirm your intent to serve on the TAC and return the signed letter to me (a scanned copy of the signed letter is adequate).

The requirements of the TAC members are summarized below:

- There will be four TAC meetings at the City of Yuba City offices (1201 Civic Center Blvd, Yuba City, CA). The meetings are tentatively scheduled to occur for:
  - September 20, 2017
  - December 6, 2017
  - April 4. 2018
  - May 4, 2018

  TAC members will need to review meeting materials in advance of the meetings, attend and participate in the meetings, and review and provide comments on the meeting summaries.
- Review and provide comments on the draft SWRP within three weeks of receiving it from the City. The draft SWRP is expected to be available in April 2018.
- TAC members will represent their agency or organization and may work with others in their agency or organization to disseminate information about the SWRP, and to solicit input from others within their agency or organization that will assist in the preparation of the SWRP, including data, comments, and projects, as needed.
- Serving on the TAC is voluntary, and neither the TAC members nor their agencies or organizations will be compensated or reimbursed for TAC service.
- The TAC members will recommend potential projects for inclusion into the SWRP. The TAC members will assist in an initial feasibility screening of up to 40 projects, resulting in identification of up to 12 SWRP projects. The TAC members will assist with the ranking and prioritization of the 12 SWRP projects.

- TAC members may request to be removed or replaced on the TAC, by submitting a request in writing. The resignation or replacement will take effect 30 days after the receipt of the written resignation.
- No participant on the TAC or the agency or organization they are representing are responsible for any liability, loss, damage, or claims that result from TAC membership and preparation of the SWRP.

Yuba City appreciates the commitment of the TAC membership and acknowledges the significant role that the TAC will play in preparing a SWRP for the good of the public. If you have additional questions or comments, please contact me, Manu Dhaliwal (mdhaliwa@yubacity.net, (530) 822-7685). If after reviewing this letter, you believe you meet the TAC membership requirements and wish to serve as a TAC member, please sign below and return a copy of this letter to me. The signed letter can be scanned and emailed to mdhaliwal@yubacity.net.

Sincerely,

Manu Dhaliwal

Manu Dhaliwal, P.E.
Associate Engineer

I have reviewed this letter, understand the TAC membership requirements, and agree to serve on the Yuba City Basin SWRP TAC.

Diana Langley
Printed Name

Diana Langley
Signature

9/18/17
Date

Required 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 2.1 of Agreement No. D1612615.

September 12, 2017

Matthew Langley
Parks and Grounds Superintendent
1201 Civic Center Boulevard
Yuba City, CA 95993

SUBJECT: Commitment to participate on the Technical Advisory Committee for the Yuba City Basin Storm Water Resource Plan

Dear Mr. Langley:

The City of Yuba City has received a grant from the State of California to prepare a Storm Water Resource Plan (SWRP) for the Yuba City Basin watershed. The development of the SWRP, the selection of projects to be included in the SWRP, and the project prioritization will be guided by a Technical Advisory Committee (TAC). The TAC will be made up of staff from the State Water Resources Control Board, Regional Water Quality Control Board, municipalities, county, water suppliers, local agencies, non-governmental organizations and nonprofit organizations, public utilities, and regulatory agencies. Based on our discussions, I understand that you have agreed to serve on the TAC. This letter summarizes the responsibilities associated with serving on the TAC. Please sign below to confirm your intent to serve on the TAC and return the signed letter to me (a scanned copy of the signed letter is adequate).

The requirements of the TAC members are summarized below:

- There will be four TAC meetings at the City of Yuba City offices (1201 Civic Center Blvd, Yuba City, CA). The meetings are tentatively scheduled to occur for:
  - September 20, 2017
  - December 6, 2017
  - April 4. 2018
  - May 4, 2018

  TAC members will need to review meeting materials in advance of the meetings, attend and participate in the meetings, and review and provide comments on the meeting summaries.
- Review and provide comments on the draft SWRP within three weeks of receiving it from the City. The draft SWRP is expected to be available in April 2018.
- TAC members will represent their agency or organization and may work with others in their agency or organization to disseminate information about the SWRP, and to solicit input from others within their agency or organization that will assist in the preparation of the SWRP, including data, comments, and projects, as needed.
- Serving on the TAC is voluntary, and neither the TAC members nor their agencies or organizations will be compensated or reimbursed for TAC service.
- The TAC members will recommend potential projects for inclusion into the SWRP. The TAC members will assist in an initial feasibility screening of up to 40 projects, resulting in identification of up to 12 SWRP projects. The TAC members will assist with the ranking and prioritization of the 12 SWRP projects.

- TAC members may request to be removed or replaced on the TAC, by submitting a request in writing. The resignation or replacement will take effect 30 days after the receipt of the written resignation.
- No participant on the TAC or the agency or organization they are representing are responsible for any liability, loss, damage, or claims that result from TAC membership and preparation of the SWRP.

Yuba City appreciates the commitment of the TAC membership and acknowledges the significant role that the TAC will play in preparing a SWRP for the good of the public. If you have additional questions or comments, please contact me, Manu Dhaliwal (mdhaliwa@yubacity.net, (530) 822-7685). If after reviewing this letter, you believe you meet the TAC membership requirements and wish to serve as a TAC member, please sign below and return a copy of this letter to me. The signed letter can be scanned and emailed to mdhaliwal@yubacity.net.

Sincerely,

Manu Dhaliwal

Manu Dhaliwal, P.E.
Associate Engineer

I have reviewed this letter, understand the TAC membership requirements, and agree to serve on the Yuba City Basin SWRP TAC.

MATTHEW E HAWLEY
Printed Name

Signature

9/18/17
Date

Required 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 2.1 of Agreement No. D1612615.

September 12, 2017

Benjamin K. Moody
Deputy Director Public Works - Engineering
1201 Civic Center Boulevard
Yuba City, CA 95993

SUBJECT: Commitment to participate on the Technical Advisory Committee for the Yuba City Basin Storm Water Resource Plan

Dear Mr. Moody:

The City of Yuba City has received a grant from the State of California to prepare a Storm Water Resource Plan (SWRP) for the Yuba City Basin watershed. The development of the SWRP, the selection of projects to be included in the SWRP, and the project prioritization will be guided by a Technical Advisory Committee (TAC). The TAC will be made up of staff from the State Water Resources Control Board, Regional Water Quality Control Board, municipalities, county, water suppliers, local agencies, non-governmental organizations and nonprofit organizations, public utilities, and regulatory agencies. Based on our discussions, I understand that you have agreed to serve on the TAC. This letter summarizes the responsibilities associated with serving on the TAC. Please sign below to confirm your intent to serve on the TAC and return the signed letter to me (a scanned copy of the signed letter is adequate).

The requirements of the TAC members are summarized below:

- There will be four TAC meetings at the City of Yuba City offices (1201 Civic Center Blvd, Yuba City, CA). The meetings are tentatively scheduled to occur for:
  - September 20, 2017
  - December 6, 2017
  - April 4. 2018
  - May 4, 2018

  TAC members will need to review meeting materials in advance of the meetings, attend and participate in the meetings, and review and provide comments on the meeting summaries.
- Review and provide comments on the draft SWRP within three weeks of receiving it from the City. The draft SWRP is expected to be available in April 2018.
- TAC members will represent their agency or organization and may work with others in their agency or organization to disseminate information about the SWRP, and to solicit input from others within their agency or organization that will assist in the preparation of the SWRP, including data, comments, and projects, as needed.
- Serving on the TAC is voluntary, and neither the TAC members nor their agencies or organizations will be compensated or reimbursed for TAC service.
- The TAC members will recommend potential projects for inclusion into the SWRP. The TAC members will assist in an initial feasibility screening of up to 40 projects, resulting in identification of up to 12 SWRP projects. The TAC members will assist with the ranking and prioritization of the 12 SWRP projects.

- TAC members may request to be removed or replaced on the TAC, by submitting a request in writing. The resignation or replacement will take effect 30 days after the receipt of the written resignation.
- No participant on the TAC or the agency or organization they are representing are responsible for any liability, loss, damage, or claims that result from TAC membership and preparation of the SWRP.

Yuba City appreciates the commitment of the TAC membership and acknowledges the significant role that the TAC will play in preparing a SWRP for the good of the public. If you have additional questions or comments, please contact me, Manu Dhaliwal (mdhaliwa@yubacity.net, (530) 822-7685). If after reviewing this letter, you believe you meet the TAC membership requirements and wish to serve as a TAC member, please sign below and return a copy of this letter to me. The signed letter can be scanned and emailed to mdhaliwal@yubacity.net.

Sincerely,

Manu Dhaliwal

Manu Dhaliwal, P.E.
Associate Engineer

I have reviewed this letter, understand the TAC membership requirements, and agree to serve on the Yuba City Basin SWRP TAC.

Benjamin K. Moody
Printed Name

Signature

9/18/17
Date

Required 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 2.1 of Agreement No. D1612615.

September 12, 2017

Eduardo Nick Ramos
Associate Civil Engineer
Sutter County Development Services
1130 Civic Center Blvd, Yuba City, CA 95993

SUBJECT: Commitment to participate on the Technical Advisory Committee for the Yuba City Basin Storm Water Resource Plan

Dear Eduardo Nick Ramos:

The City of Yuba City has received a grant from the State of California to prepare a Storm Water Resource Plan (SWRP) for the Yuba City Basin watershed. The development of the SWRP, the selection of projects to be included in the SWRP, and the project prioritization will be guided by a Technical Advisory Committee (TAC). The TAC will be made up of staff from the State Water Resources Control Board, Regional Water Quality Control Board, municipalities, county, water suppliers, local agencies, non-governmental organizations and nonprofit organizations, public utilities, and regulatory agencies. Based on our discussions, I understand that you have agreed to serve on the TAC. This letter summarizes the responsibilities associated with serving on the TAC. Please sign below to confirm your intent to serve on the TAC and return the signed letter to me (a scanned copy of the signed letter is adequate).

The requirements of the TAC members are summarized below:

- There will be four TAC meetings at the City of Yuba City offices (1201 Civic Center Blvd, Yuba City, CA). The meetings are tentatively scheduled to occur for:
    - September 20, 2017
    - December 6, 2017
    - April 4. 2018
    - May 4, 2018

  TAC members will need to review meeting materials in advance of the meetings, attend and participate in the meetings, and review and provide comments on the meeting summaries.
- Review and provide comments on the draft SWRP within three weeks of receiving it from the City. The draft SWRP is expected to be available in April 2018.
- TAC members will represent their agency or organization and may work with others in their agency or organization to disseminate information about the SWRP, and to solicit input from others within their agency or organization that will assist in the preparation of the SWRP, including data, comments, and projects, as needed.
- Serving on the TAC is voluntary, and neither the TAC members nor their agencies or organizations will be compensated or reimbursed for TAC service.
- The TAC members will recommend potential projects for inclusion into the SWRP. The TAC members will assist in an initial feasibility screening of up to 40 projects, resulting in identification of up to 12 SWRP projects. The TAC members will assist with the ranking and prioritization of the 12 SWRP projects.

- TAC members may request to be removed or replaced on the TAC, by submitting a request in writing. The resignation or replacement will take effect 30 days after the receipt of the written resignation.
- No participant on the TAC or the agency or organization they are representing are responsible for any liability, loss, damage, or claims that result from TAC membership and preparation of the SWRP.

Yuba City appreciates the commitment of the TAC membership and acknowledges the significant role that the TAC will play in preparing a SWRP for the good of the public. If you have additional questions or comments, please contact me, Manu Dhaliwal (mdhaliwa@yubacity.net, (530) 822-7685). If after reviewing this letter, you believe you meet the TAC membership requirements and wish to serve as a TAC member, please sign below and return a copy of this letter to me. The signed letter can be scanned and emailed to mdhaliwal@yubacity.net.

Sincerely,

Manu Dhaliwal

Manu Dhaliwal, P.E.
Associate Engineer

I have reviewed this letter, understand the TAC membership requirements, and agree to serve on the Yuba City Basin SWRP TAC.

Eduardo Nick Ramos

Printed Name

Signature

9/13/17

Date

Required 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 2.1 of Agreement No. D1612615.

(THIS PAGE LEFT BLANK INTENTIONALLY)

YUBA CITY BASIN STORM WATER RESOURCE PLAN TAC KICKOFF MEETING

Client:	**City of Yuba City**
Project:	**Yuba City Storm Water Resource Plan**
Subject:	**Technical Advisory Kickoff Meeting**
Meeting Date/Time:	**Sept 20, 2017; 2 pm**
Location:	**Sutter Room, 1201 Civic Center Boulevard, Yuba City, CA 95993**
Summary by:	**Natalie Muradian**

INVITED ATTENDEES:

Present (Y/N)	Name	Representing	TAC Member (Y/N)
	Manu Dhaliwal	City - Storm Water Management	Y
	Ben Moody	City – Storm Drainage Management	Y
	Diana Langley	City – Public Works	Y
	Matthew Langley	City – Parks and Grounds	Y
	Terrance Prioro	City – Water Supply	Y
	Nick Ramos	Sutter County – Development Services	Y
	Sean Minard	MHM – Engineering and Development Community	Y
		Agricultural Community	Y
	Ravinder Jawanda	State Water Board – Grant Manager	Y
	Natalie Muradian	West Yost	N
	Doug Moore	West Yost	N
	Karen Ashby	Larry Walker	N

DISCUSSION TOPICS:

- Major Goals for TAC Kickoff Meeting
- Introductions
- What is a SWRP?
- SWRP Process Overview
- Roles & Responsibilities
- Schedule Review and Key Milestones
- Discussions
- Next Steps

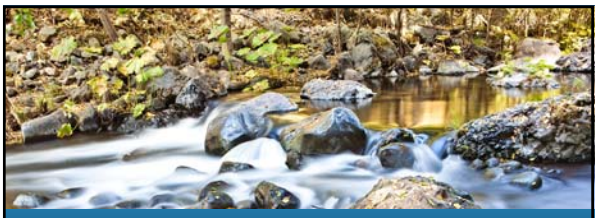
(THIS PAGE LEFT BLANK INTENTIONALLY)

Sign-In Sheet

September 20, 2017

Name	Affiliation	Email	Initial
Karen Ashby	Larry Walker	karena@lwa.com	KA
Nick Ramos	Sutter County	nramos@co.sutter.ca.us	ENR
Sean Minard	MHM INC	sminard@mhm-inc.com	SMM
Ben Moody	Yuba City - P.W.	bmoody@yubacity.net	BM
Matt Langley	YUBA CITY - PARKS	MLANGLEY@YUBACITY.NET	M
Doug Moore	West Yost Assoc	dMoore@westyost.com	DM
Manu Dhaliwal	Yuba City	mdhaliwal@yubacity.net	MD
[illegible]	Sutter Extension WD	lpsewd@hughes.net	LP
Natalie Muradian	West Yost	nmuradian@westyost.com	NM
On Phone:	Ravi Jawanda	(State Grant Manager)	

(THIS PAGE LEFT BLANK INTENTIONALLY)



Storm Water Resource Plan Technical Advisory Committee

(AKA Storm Water and Dry Weather Runoff Capture Master Plan)

Kickoff Meeting
September 20, 2017

Agenda

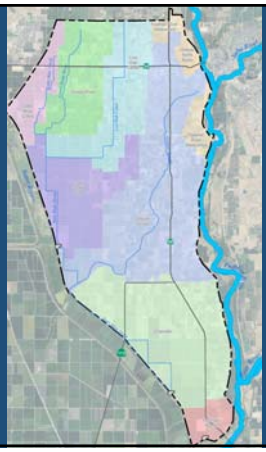
- Major Goals for TAC Kickoff Meeting
- Introductions
- What is a SWRP?
- SWRP Process Overview
- Roles & Responsibilities
- Schedule Review and Key Milestones
- Discussion
- Next Steps

Major Goals for This Meeting

- Discuss what a SWRP is and its purpose for Yuba City
- Understand the TAC's roles and responsibilities
- Discuss and approve project eligibility and feasibility criteria
- Provide input on watershed issues
- Prioritize state benefit categories

Introductions

Yuba City Basin



Agenda

- Major Goals for TAC Kickoff Meeting
- Introductions
- **What is a SWRP?**
- SWRP Process Overview
- Roles & Responsibilities
- Schedule Review and Key Milestones
- Discussion
- Next Steps

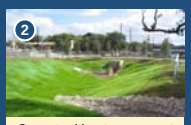

What is a SWRP?
• Identify and prioritize stormwater and dry weather runoff capture projects
• Identify projects to reestablish natural water drainage treatment and infiltration systems
Why prepare a SWRP?
• Required to receive grants for stormwater capture projects


SWRP Requirements
• Watershed wide
• Projects have multiple benefits
• Community participation
• Be consistent with other plans and permits
• Be submitted to an applicable IRWM group
• Prioritize the use of publicly owned lands or easements over private lands for projects


SWRP Requirements
• Identify design criteria and best management practices for development to prevent stormwater and dry weather runoff pollution and increase effective stormwater and dry weather runoff management.
• Reduce effective impermeability
• Increase water storage for beneficial use
• Increase groundwater supplies through infiltration
• Support low-impact development for new and upgraded infrastructure and development

SWRP is Required to Identify

1 Activities that generate pollution of stormwater or dry weather runoff



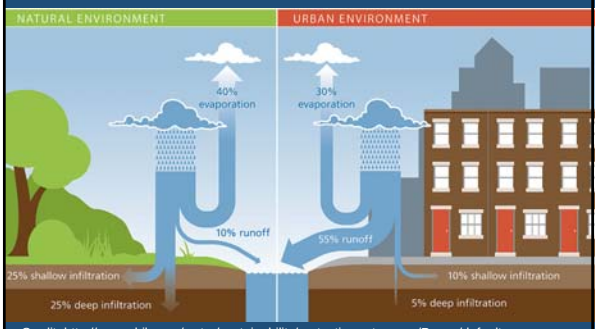
2 Opportunities to augment local water supply through groundwater recharge or storage

3 Opportunities to develop, restore, or enhance habitat and open space

4 Source control for pollution and runoff volume, onsite and local infiltration, and use of stormwater and dry weather runoff

5 Opportunities to use existing publicly owned lands and easements

Why do a SWRP?



Credit: http://www.phila.gov/water/sustainability/protectingwaterways/Pages/default.aspx

Applicable SWRP Projects: On-Site

On-site storage

- Collect stormwater runoff and store for use at a later time
- Irrigation uses

On-site infiltration

- Collect storm water runoff from parcel and infiltrate on same parcel
- Rain gardens, bioretention, dry wells

Applicable SWRP Projects: Regional

Regional storage

- Collect storm water from multiple parcels and store in a basin or underground

Wildlife Habitat and Water Supply (Groundwater Recharge)

Regional infiltration

- Collect stormwater from multiple parcels or a large area and convey to large infiltration facility

Infiltration gallery from Contech

Applicable SWRP Projects: Right of Way

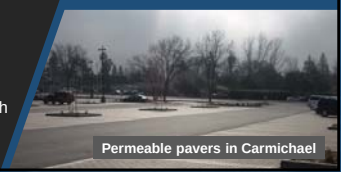
Green Streets

- Capture storm water from public right-of-ways
- Rain gardens, permeable pavements, curb cuts

Green Streets in Tennessee

Impervious Surface Replacement

- Remove impermeable hardscapes and replace with permeable surfaces

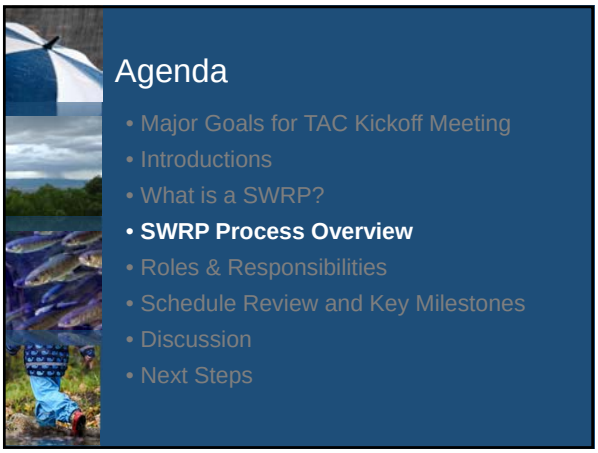


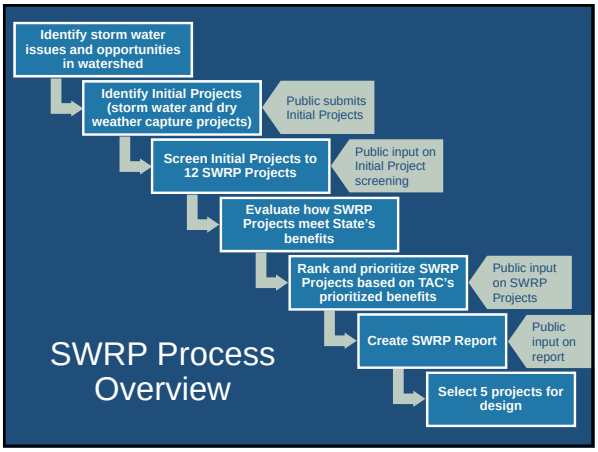
Permeable pavers in Carmichael

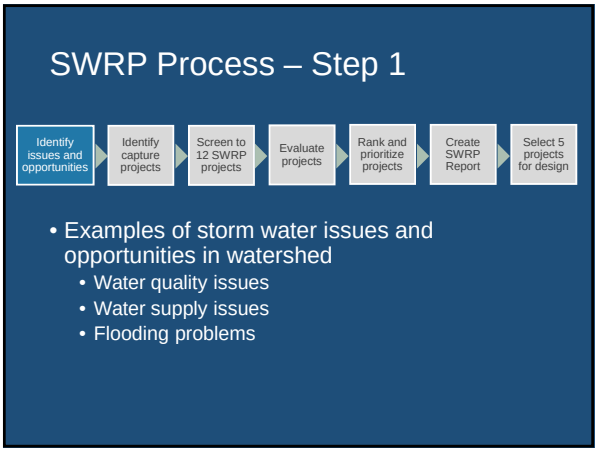
State-Identified Benefits

TABLE 4. STORM WATER MANAGEMENT BENEFITS

Benefit Category	Main Benefit	Additional Benefit
Water Quality while contributing to compliance with applicable permit and/or TMDL requirements	Increased filtration and/or treatment of runoff	Nonpoint source pollution control
		Reestablished natural water drainage and treatment
Water Supply through groundwater management and/or runoff capture and use	Water supply reliability	Water conservation
	Conjunctive use	
Flood Management	Decreased flood risk by reducing runoff rate and/or volume	Reduced sanitary sewer overflows
Environmental	Environmental and habitat protection and improvement, including: - wetland enhancement/creation; - riparian enhancement; and/or - instream flow improvement	Reduced energy use, greenhouse gas emissions, or provides a carbon sink
		Reestablishment of the natural hydrograph
	Increased urban green space	Water temperature improvements
Community	Employment opportunities provided	Community involvement
	Public education	Enhance and/or create recreational and public use areas
	Must have two	Must have as many as feasible


Agenda
• Major Goals for TAC Kickoff Meeting
• Introductions
• What is a SWRP?
• SWRP Process Overview
• Roles & Responsibilities
• Schedule Review and Key Milestones
• Discussion
• Next Steps


Identify storm water issues and opportunities in watershed
Identify Initial Projects (storm water and dry weather capture projects)
Public submits Initial Projects
Screen Initial Projects to 12 SWRP Projects
Public input on Initial Project screening
Evaluate how SWRP Projects meet State's benefits
Rank and prioritize SWRP Projects based on TAC's prioritized benefits
Public input on SWRP Projects
Create SWRP Report
Public input on report
Select 5 projects for design
SWRP Process Overview


SWRP Process – Step 1
Identify issues and opportunities
Identify capture projects
Screen to 12 SWRP projects
Evaluate projects
Rank and prioritize projects
Create SWRP Report
Select 5 projects for design
• Examples of storm water issues and opportunities in watershed
• Water quality issues
• Water supply issues
• Flooding problems

SWRP Process – Step 2

Identify issues and opportunities → **Identify capture projects** → Screen to 12 SWRP projects → Evaluate projects → Rank and prioritize projects → Create SWRP Report → Select 5 projects for design

Identify projects

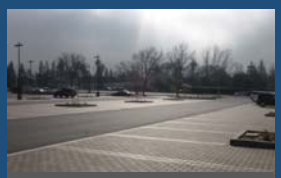
- Projects submitted by TAC, stakeholders, and public

Wildlife Habitat and Water Supply (Groundwater Recharge)

SWRP Process – Step 2

Identify issues and opportunities → **Identify capture projects** → Screen to 12 SWRP projects → Evaluate projects → Rank and prioritize projects → Create SWRP Report → Select 5 projects for design

Bio-Retention, Seasons Senior Apartments, Elk Grove



Permeable Pavers, Safeway, Carmichael

SWRP Process – Step 2

Identify issues and opportunities → **Identify capture projects** → Screen to 12 SWRP projects → Evaluate projects → Rank and prioritize projects → Create SWRP Report → Select 5 projects for design

Submit Online – Google form

https://goo.gl/forms/7cIqhj8mO9w2uKum2

Project submissions closes: November 8, 2017

SWRP Process – Step 3

Identify issues and opportunities → Identify capture projects → **Screen to 12 SWRP projects** → Evaluate projects → Rank and prioritize projects → Create SWRP Report → Select 5 projects for design

Screening Step 1 – Draft Eligibility Criteria

- Located in the Yuba City Basin Watershed? Yes / No
- Include capture? Yes / No
- Achieve two of the State's primary benefits and as many as feasible of the State's secondary benefits? Yes / No
- Have a funding sponsor? Yes / No

SWRP Process – Step 3

Identify issues and opportunities → Identify capture projects → **Screen to 12 SWRP projects** → Evaluate projects → Rank and prioritize projects → Create SWRP Report → Select 5 projects for design

Screening Step 2 – Draft Feasibility Criteria

- **Affordability:** More affordable projects get a high
- **Feasibility:** potential environmental impacts, compliance with laws and regulations, project complexity, or community support/opposition. High / Medium / Low
- **Regulatory Requirements:** The intent if this criterion is to help select projects that must be implemented versus projects that would be "good to implement." High / Medium / Low
- **Public Land:** The State guidelines requires projects located on publicly owned land have a higher priority. High / Medium / Low

SWRP Process – Step 4

Identify issues and opportunities → Identify capture projects → Screen to 12 SWRP projects → **Evaluate projects** → Rank and prioritize projects → Create SWRP Report → Select 5 projects for design

- Evaluate 12 SWRP Projects
  - Develop detailed project descriptions
  - Use Evaluation Criteria to evaluate each project

SWRP Process Overview – Step 5

Identify issues and opportunities → Identify capture projects → Screen to 12 SWRP projects → Evaluate projects → **Rank and prioritize projects** → Create SWRP Report → Select 5 projects for design

- Rank and Prioritize Projects
  - Survey TAC to understand how they value State's benefits
  - Apply TAC values to evaluation criteria

SWRP Process Overview – Step 5

Identify issues and opportunities → Identify capture projects → Screen to 12 SWRP projects → Evaluate projects → **Rank and prioritize projects** → Create SWRP Report → Select 5 projects for design

Prioritization of State-Identified Benefits
City of Yuba City Storm Water Resource Plan
Please submit one survey per TAC Member

Directions: The State Water Board has identified five benefit categories. Please circle one value for each benefit category based on your priorities.

State-identified Storm Water Benefits	Scoring (circle one)										
	Not important										Very important
Community (Examples: recreation, employment opportunities)	0	1	2	3	4	5	6	7	8	9	10
Environment (Examples: wetlands, riparian, open space, energy use, greenhouse gases)	0	1	2	3	4	5	6	7	8	9	10
Flood Management (Examples: reduce flood risk, improve storm water drainage)	0	1	2	3	4	5	6	7	8	9	10
Storm Water Quality (Examples: trash removal, reduce pesticide/herbicide pollution)	0	1	2	3	4	5	6	7	8	9	10
Water Supply (Examples: ground-water recharge, reuse storm water for landscape irrigation)	0	1	2	3	4	5	6	7	8	9	10

SWRP Process Overview – Step 6

Identify issues and opportunities → Identify capture projects → Screen to 12 SWRP projects → Evaluate projects → Rank and prioritize projects → **Create SWRP Report** → Select 5 projects for design

Create SWRP

- Developed from all work products
- Develop 3 drafts
  - Administrative Draft – TAC, City, and State to review
  - Public Draft – Public to review
  - Final Draft SWRP – For second submittal to TAC and State
  - Final SWRP – For submittal to City Council and the NSV IRWMP

SWRP Process Overview – Step 7

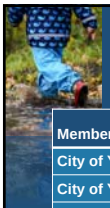
Identify issues and opportunities → Identify capture projects → Screen to 12 SWRP projects → Evaluate projects → Rank and prioritize projects → Create SWRP Report → **Select 5 projects for design**

Select 5 projects for conceptual design

- Projects recommended by the TAC
- Competitive for Round 2 Implementation Grant Applications

Agenda

- Major Goals for TAC Kickoff Meeting
- Introductions
- What is a SWRP?
- SWRP Process Overview
- **Roles & Responsibilities**
- Schedule Review and Key Milestones
- Discussion
- Next Steps



Roles & Responsibilities

Member Agency	Representation	TAC Member
City of Yuba City	Storm Water Quality	Manu Dhaliwal
City of Yuba City	Public Works	Diana Langley
City of Yuba City	Storm Drainage Management	Ben Moody
City of Yuba City	Parks and Grounds	Matthew Langley
City of Yuba City	Water Supply	Terrance Prioro
Sutter County	Development Services	Nick Ramos
MHM Inc.	Development Community	Sean Minard
TBD	Agricultural Community	TBD
State Water Board	State Grant Contract Manager	Ravi Jawanda

TAC Roles & Responsibilities

- Review and advise on SWRP process
- Propose projects
- Prioritize state benefits
- Review & comment on work products
- Assist in public engagement
- Recommend projects for conceptual design

Agenda

- Major Goals for TAC Kickoff Meeting
- Introductions
- What is a SWRP?
- SWRP Process Overview
- Roles & Responsibilities
- **Schedule Review and Key Milestones**
- Discussion
- Next Steps

Schedule & Key Milestones

Schedule Item	Proposed Detailed Schedule for Delivery to State	State Contract Critical Due Date
State Contract Executed	7/11/2017	
Detailed Project Schedule	8/11/2017	8/11/2017
TAC meeting 1	9/20/2017	
Public/Stakeholder Meeting 1	10/25/2017	
Close Public Comments and Submission of Initial Projects	11/8/2017	
TAC meeting 2	12/6/2017	
Public Meeting 2	1/9/2018	
TAC meeting 3	4/4/2018	
TAC meeting 4	5/4/2018	
Public and Stakeholder Meeting 3	5/9/2018	
Final Conceptual Design of Five Projects	6/7/2018	Summer 2018
Final Draft SWRP and Self Certification	7/2/2018	7/30/2018
SWRP adoption materials to City	7/16/2018	
City Council adopts SWRP	8/20/2018	
Submit materials for NSV IRWM TAC Meeting	TBD	
NSV IRWM Adopts SWRP	TBD	
All work complete	11/23/2018	12/31/2018

Agenda

- Major Goals for TAC Kickoff Meeting
- Introductions
- What is a SWRP?
- SWRP Process Overview
- Roles & Responsibilities
- Schedule Review and Key Milestones
- **Discussion**
- Next Steps

Discussion – Water Quality

SWRP Requirements – CA Water Code

Plan identifies **watershed and sub-watershed(s)** for storm water resource planning. [10565(c), 10562(b)(1)]

Plan describes how it is consistent with and assists in, compliance with **TMDL** implementation plans and applicable **NPDES permits.** [10562(b)(5)]

Plan identifies applicable permits and describes how it meets all applicable **WDRs.** [10562(b)(6)]

Plan **identifies activities that generate or contribute** to the pollution of storm water or dry weather runoff, or that impair the effective beneficial use of storm water or dry weather runoff. [10562(d)(7)]

SWRP Recommendations

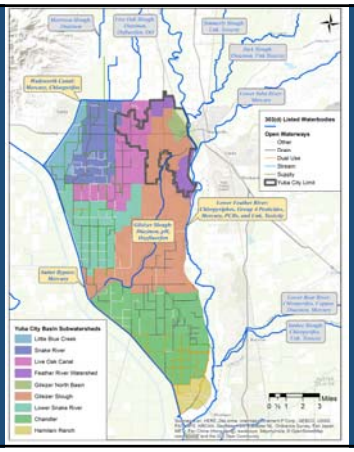
Plan describes the **water quality priorities** within the watershed based on, at a minimum, applicable TMDLs and consideration of water body-pollutant combinations listed on the State's Clean Water Act Section 303(d) list of water quality limited segments. (VI.A)

37

Key Regulatory Requirements

- Phase II Stormwater General Permit
- Wastewater Permits (Live Oak, Yuba City, Linda County Water District)
- Irrigated Agriculture (Sac Valley, CA Rice)
- Applicable TMDLs
  - Sacramento and Feather River: Diazinon and Chlorpyrifos (Permit Attachment G)
  - Pyrethroid TMDL
- Statewide Trash Amendments
- Statewide Mercury Objectives
- 303(d) Listed Waterbodies

38



Potential Water Quality Priorities

- Pesticides
  - Diazinon and Chlorpyrifos
  - Pyrethroids
- PCBs
- Oxyflourfen
- Mercury
- Trash
- Unknown Toxicity

40

TAC Discussion Items

- Regulated Community
  - Municipalities
  - Wastewater
  - Agriculture
  - Other?
- Other Water Quality Priorities
- Key Activities

Discussion – Other Issues?

- Water supply?
- Flood control?
- Environment?
- Community?

Discussion - Prioritize State Benefits

Please turn in forms now or email them to Natalie Muradian at **nmuradian@westyost.com**

Discussion - Initial Projects

Location of online project submission form
https://goo.gl/forms/7cIqhj8mO9w2uKum2

Discussion - Outreach

SWRP Requirements – CA Water Code

Local agencies and non-governmental organizations were consulted in Plan development. [10565(a)]

Community participation was provided for in Plan development. [10562(b)(4)]

46

SWRP Recommendations

Plan includes **coordination with agencies and organizations** that need to participate and implement their own authorities and mandates in order to address the storm water and dry weather runoff management objectives of the Plan for the targeted watershed. (VI.B)

Plan includes identification and discussion of **public engagement efforts** and community participation in Plan development. (VI.B)

Plan describes strategies to **engage disadvantaged and climate vulnerable communities** within the Plan boundaries and ongoing tracking of their involvement in the planning process. (VI.F)

Key Outreach Efforts

- Public Engagement Plan
- Public Meetings
  - SWRP Kickoff Meeting – Oct 25
  - SWRP Projects – Jan 9
  - Ranked/Prioritized SWRP Projects – May 9

48

TAC Discussion Items

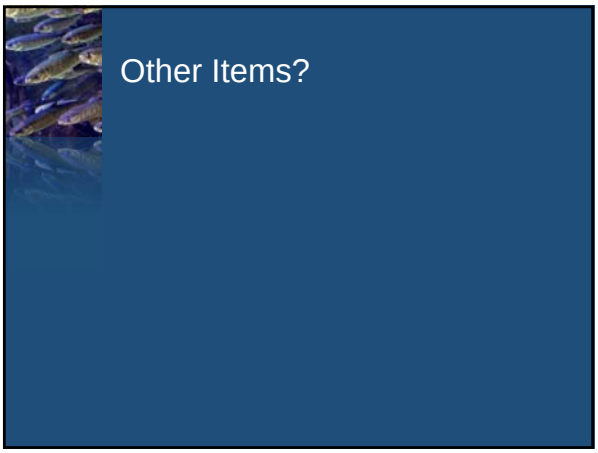
- Potential Stakeholders/Interested Parties
  - Watershed groups
  - Local municipalities / public agencies
  - Utilities (public and private)
  - Regulatory agencies
  - NGOs, non-profits
  - Special interest groups
  - Interested public (community groups)
  - Disadvantaged and/or environmental justice groups
  - Climate-vulnerable communities
  - Local Ratepayers
  - Developers
  - Locally regulated industrial and commercial stakeholders
- Mechanisms for Outreach

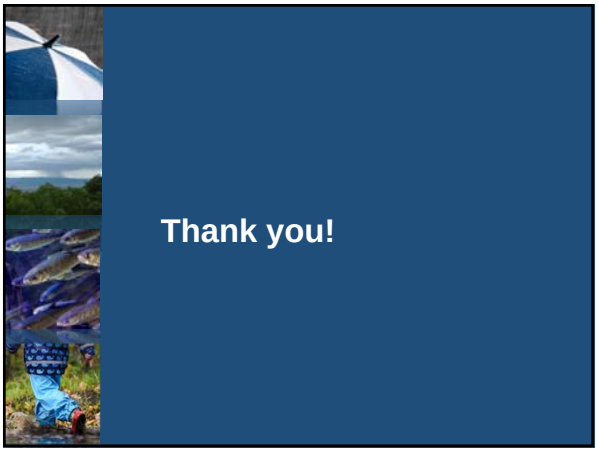
Agenda

- Major Goals for TAC Kickoff Meeting
- Introductions
- What is a SWRP?
- SWRP Process Overview
- Roles & Responsibilities
- Schedule Review and Key Milestones
- Discussion
- **Next Steps**

Next Steps

Action Items	Proposed Due Dates in 2017
TAC Meeting 1 – Action Items	
Submit Initial Project descriptions and data	Nov 8
Prioritize State Benefits	Sep 27
TAC Meeting 2	
Approve Initial Project list and screening results	Dec 6
Discuss SWRP project prioritization and evaluation methods	Dec 6
Project Management Team	
Set up SWRP website on City's website	Sep 29
Complete outreach plan	Oct 2
Initiate public outreach	Oct 1
Meeting materials for stakeholder and public meeting 1	Oct 4
Stakeholder and public meeting 1	Oct 25
Compile data and request additional data	Oct 11
Screen Initial Projects & solicit data & references	After Nov 8


Other Items?


Thank you!

YUBA CITY BASIN STORM WATER RESOURCE PLAN TAC KICKOFF MEETING

Client:	**City of Yuba City**
Project:	**Yuba City Basin Storm Water Resource Plan**
Subject:	**Technical Advisory Kickoff Meeting**
Meeting Date/Time:	**Sept 20, 2017; 2:30 pm**
Location:	**Sutter Room, 1201 Civic Center Boulevard, Yuba City, CA 95993**
Summary by:	**Natalie Muradian**

INVITED ATTENDEES:

Present (Y/N)	Name	Representing	TAC Member (Y/N)
Y	Manu Dhaliwal	City - Storm Water Management	Y
Y	Ben Moody	City – Storm Drainage Management	Y
N	Diana Langley	City – Public Works	Y
Y	Matthew Langley	City – Parks and Grounds	Y
N	Terrance Prioro	City – Water Supply	N – No longer able to participate
Y	Nick Ramos	Sutter County – Development Services	Y
Y	Sean Minard	MHM – Engineering and Development Community	Y
Y	Lynn Phillips	Agricultural Community	Y
Y	Ravinder Jawanda	State Water Board – Grant Manager	N – Advisor on Contract
Y	Natalie Muradian	West Yost	Consultant Team
Y	Doug Moore	West Yost	
Y	Karen Ashby	Larry Walker	

DISCUSSION TOPICS:

Please see attached slides for the key discussion items.

- Major Goals for TAC Kickoff Meeting
- Introductions
- What is a SWRP?
- SWRP Process Overview
- Roles & Responsibilities
- Schedule Review and Key Milestones
- Discussions

- Next Steps
- Discussion - Adoption of eligibility and feasibility screening criteria
    - Question from Nick [paraphrased]: Does sponsorship mean that there needs to be funds for operations and maintenance costs? Getting funds for O&M is difficult because there's not a lot of means to collect funds on an annual basis. So the County would likely prioritize projects that have a higher initial cost, but low annual costs.
        - Answer: sponsorship means that an agency would be willing to or have the ability to gather funds for a project. If the agency wants the project to be competitive for the Prop 1 Round 2 Implementation Grant Application that is happening in Spring 2018, there need to be matching funds available and a commitment to O&M funds for 20 years. If not, the project will not be competitive for Round 2 Funds. Projects without a sponsor can still be submitted and should be submitted so they can be included in the SWRP in case future funds are available.
    - Question from Ravi [paraphrased]: Why are you narrowing down projects from all the projects submitted to just 12 projects? All the projects submitted should be included in the SWRP so they can be available for future grant funding.
        - Answer: We will include all projects submitted in the SWRP. We are screening all the projects down to 12 projects so only the most eligible and feasible projects will be evaluated, ranked, and prioritized – this is so we remain within the budget and State contract.
    - The TAC voted to adopt the 2-step screening eligibility and feasibility criteria.
- Discussion – Benefit Weighting Values
    - The six TAC members in attendance submitted State Benefit categories prioritization forms
- Discussion – Water Quality/Watershed Specific Issues
    - Groundwater recharge is important and ties into the Sustainable Groundwater Management Act (SGMA)-related work that Yuba City and Sutter County are involved in.
    - Very few potable water supplies within the City are from groundwater wells – most of the potable water is from surface water.
    - Agriculture uses water from both groundwater and surface water supplies. However, some areas have ground water quality issues, i.e. high salinity that can harm crops. Examples include Feather and Tudor Water Districts, Garden Highway Mutual Water Company, and Oswald Water District.
    - The groundwater table can be high in areas, such as the Chandler watershed/Live Oak area.

- City noted that flood control, storm drainage, and meeting regulations (including the Trash Amendments) are among their top priorities.
- The City is open to having multi-use projects that benefit both the City and the ag communities. For example, if the ag communities have requirements that they need to meet under the irrigated lands regulations, perhaps there's some synergies with stormwater and dry weather runoff capture.
- Butte Sutter Water Quality Coalition may have water quality data
- Sutter County participates in the Delta Regional Monitoring Program (Delta RMP), however the City is developing a local water quality monitoring program that may be implemented in 2018.
- Water quality considerations that will be included in the SWRP are: pesticides, PCBs, Oxyflouren, mercury, trash, and toxicity.

- Discussion – Initial Projects
  - Projects can be submitted by the TAC, public, and stakeholders. Consultants will also likely be submitting projects on behalf of the agencies.
  - Projects submittals will close November 8, so there will be no TAC meeting in between now and when the projects submissions close.
  - If there are any questions on developing ideas for projects, we are happy to help with discussing ideas.
  - If TAC members have ideas for projects that are not yet fully fleshed out and would like help filling out the Google form, we can do so, please let us know. We want to get great projects that benefit the watershed implemented, but don't want to the process to stop anyone from submitting projects.
  - Ideas for projects:
    - Retrofitting existing ponds to provide treatment and infiltration
      - Ponds near Pease Road is an example
    - Developers are already working on multi-benefit detention basins that could be applicable projects
    - A large detention pond is proposed for the Live Oak subshed near Wadsworth Canal – if funding for part of this project could occur than more development could happen in this area.

- Discussion – Outreach
  - The key public outreach meetings will be held on:
    - October 25
    - January 9
    - May 9

- During the October 25 meeting the public will be asked to submit projects.
- The consultant team will work with the City to get the meetings advertised.

ACTION ITEM LOG:

No.	Subject	Action	Party	Date	Status
1	Submit Projects	Submit projects to the Google Form	TAC, public, stakeholders	11/8/2017	On-going
2	Water Quality Data	Butte Sutter Water Quality Coalition – obtain data for possible use in SWRP	Consultant Team	October 2017	---
3	City Water Quality Monitoring Plan	Obtain copy of final plan	Consultant Team	Late 2017	---
4	Public Meeting (Oct 25)	Develop outreach piece for distribution by City	Consultant Team	October 2017	---
5	Prioritization of State Benefits	Have last TAC member (Diana) fill out survey of prioritization of State's Benefits	Consultant Team	Early October, 2017	In progress

DECISION LOG:

No.	Subject	Decision	Date	Party	Notes
1	Screening criteria	TAC decided to adopt the criteria as listed in the presentation	9/20/2017	TAC	
2	Prioritization of State Benefits	6 TAC members submitted their prioritization forms	9/20/2017	TAC	
3	Water Quality	SWRP to include consideration of agriculture communities, but not wastewater	9/20/2017	TAC	
4	Water Quality	Water quality constituents to consider within SWRP include: pesticides, PCBs, Oxyflouren, mercury, trash, and toxicity	9/20/2017	TAC	

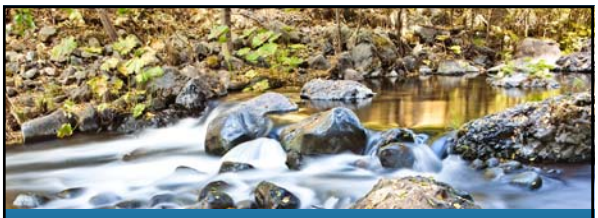
(THIS PAGE LEFT BLANK INTENTIONALLY)

Sign-In Sheet

December 6, 2017

Name	Affiliation	Email
Natalie Muradian	West Yost	nmuradian@westyost.com
Doug Moore	West Yost	dMoore@Westyost.com
Karen Ashby	Larry Walker	Karena@lwa.com
Nick Ramos	Sutter County	nramos@co.sutter.ca.us
Manu Dhaliwal	Yuba City	mdhaliwa@yubacity.net
Ben Moody	Yuba City	bmoody@yubacity.net

(THIS PAGE LEFT BLANK INTENTIONALLY)

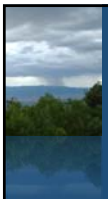


Storm Water Resource Plan Technical Advisory Committee

TAC Meeting 2
December 6, 2017

Agenda

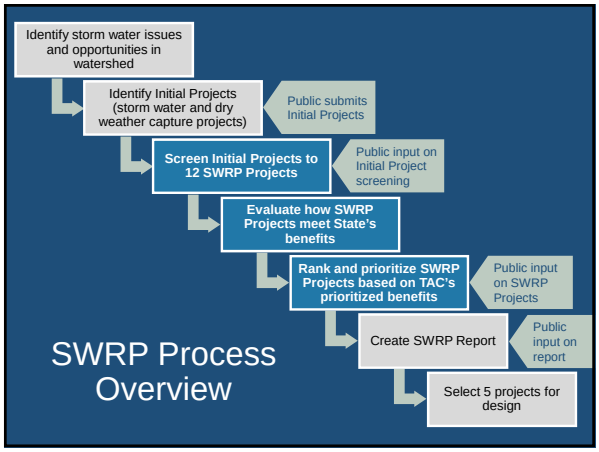
- Introductions
- Major Goals for TAC Meeting
- SWRP Process Overview
- Water Quality Compliance
- Initial Projects
- Screening Results
- Project Evaluation Methodology
- Next Steps

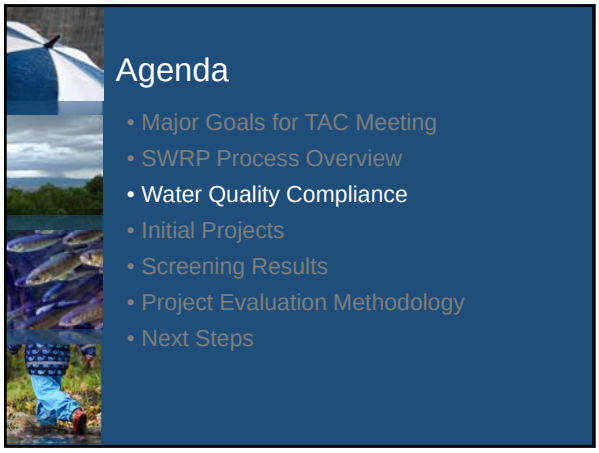


Major Goals for This Meeting

- Understand water quality compliance and how it affects the SWRP
- Adopt (or revise) screened SWRP Projects
- Understand the way projects will be evaluated, ranked, and prioritized
- Adopt (or revise) evaluation method


Agenda
• Major Goals for TAC Meeting
• SWRP Process Overview
• Water Quality Compliance
• Initial Projects
• Screening Results
• Project Evaluation Methodology
• Next Steps


Identify storm water issues and opportunities in watershed
Identify Initial Projects (storm water and dry weather capture projects)
Public submits Initial Projects
Screen Initial Projects to 12 SWRP Projects
Public input on Initial Project screening
Evaluate how SWRP Projects meet State's benefits
Rank and prioritize SWRP Projects based on TAC's prioritized benefits
Public input on SWRP Projects
Create SWRP Report
Public input on report
Select 5 projects for design
SWRP Process Overview


Agenda
• Major Goals for TAC Meeting
• SWRP Process Overview
• Water Quality Compliance
• Initial Projects
• Screening Results
• Project Evaluation Methodology
• Next Steps

SWRP Requirements – CA Water Code

Plan identifies watershed and sub-watershed(s) for storm water resource planning. [10565(c), 10562(b)(1)]

Plan describes how it is consistent with and assists in, compliance with TMDL implementation plans and applicable NPDES permits. [10562(b)(5)]

Plan identifies applicable permits and describes how it meets all applicable WDRs. [10562(b)(6)]

Plan identifies activities that generate or contribute to the pollution of storm water or dry weather runoff, or that impair the effective beneficial use of storm water or dry weather runoff. [10562(d)(7)]

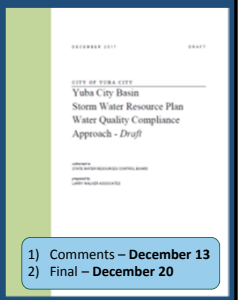
SWRP Recommendations

Plan describes the water quality priorities within the watershed based on, at a minimum, applicable TMDLs and consideration of water body-pollutant combinations listed on the State's Clean Water Act Section 303(d) list of water quality limited segments. (VI.A)

8

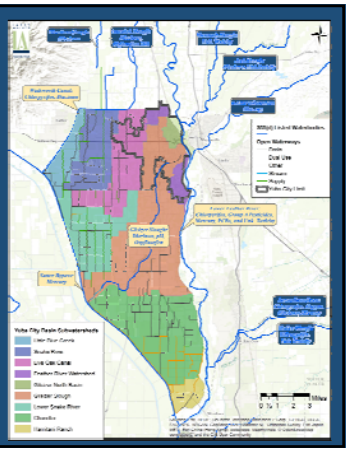
Water Quality Compliance Report

1) Introduction
2) Water Quality Priorities in the YCB Watershed
3) Regulatory Framework
4) Strategies to Address Water Quality Compliance
5) Disclosure Statement
6) References



1) Comments – **December 13**
2) Final – **December 20**

Water Quality Priorities in the YCB Watershed



Regulatory Framework

- Phase II Stormwater General Permit
- Irrigated Agriculture
- [Wastewater Permits]

- Surface water
- Groundwater

11

Strategies to Address Water Quality Compliance

Pollutants of Concern	Potential SWRP Strategies	Benefits
• Diazinon, Chlorpyrifos • Pyrethroid Pesticides • Group A Legacy Pesticides and PCBs • Oxyfluorfen (herbicide) • Mercury • Trash	• Infiltration / groundwater recharge • Biofiltration • Bioretention • Detention/retention basins • Hydromodification control • Green street projects • Grass filter strips, bioswales and/or other BMPs to improve water quality of runoff • Capture and use systems • Public outreach/education	• Groundwater replenishment • Reduced volume of stormwater to surface water • Reduced pollutant load to surface water and improvements to water quality • Flood management • Habitat protection and improvement • Community benefits

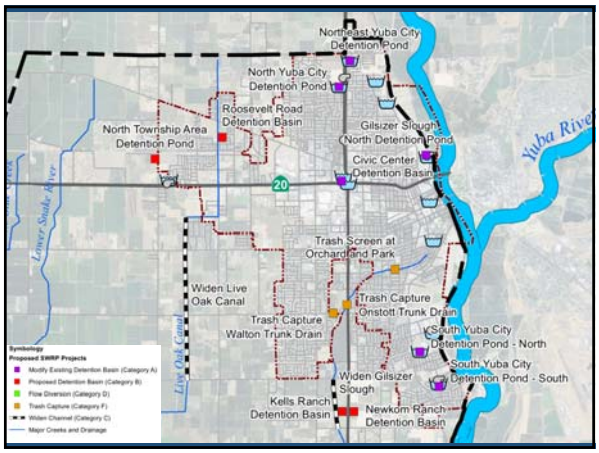
Agenda

- Major Goals for TAC Meeting
- SWRP Process Overview
- Water Quality Compliance
- Initial Projects
- Screening Results
- Project Evaluation Methodology
- Next Steps

Initial Projects

- 22 projects submitted
- Projects grouped and consolidated into 19 projects
- 19 projects categorized into 6 categories
  - Modify existing detention basins
  - Proposed detention basins
  - Widen segments of channels
  - Flow diversion
  - Update or create standards or plans
  - Trash capture

Initial Project Location Map



Update or create engineering/design standards

- Standards for detention basins:
  - Recreational use of the basin
  - Infiltration requirements
  - Trash control
  - Revise low flow channel design standards to provide infiltration
- Standards for Gilsizer Slough:
  - Minimize erosion
  - Improve side slope
  - Standardize pipe inlets into the canal to increase trash capture
- Trash capture master plan:
  - Identify locations where trash capture is needed
  - Include standards for installing pipes into channels to control trash sources
  - Installing trash screens in detention basins

Agenda

- Major Goals for TAC Meeting
- SWRP Process Overview
- Water Quality Compliance
- Initial Projects
- Screening Results
- Project Evaluation Methodology
- Next Steps

Approved Screening Criteria

Identify issues and opportunities → Identify capture projects → **Screen to 12 SWRP projects** → Evaluate projects → Rank and prioritize projects → Create SWRP Report → Select 5 projects for design

Screening Step 1 – Eligibility Criteria

- Located in the Yuba City Basin Watershed? Yes No
- Include capture? Yes No
- Achieve two of the State's primary benefits and as many as feasible of the State's secondary benefits? Yes No
- Have a funding sponsor? Yes No

Eligibility Screening Result

- All projects passed
- "Includes capture" criteria not cause for elimination

Approved Screening Criteria, con't.

Identify issues and opportunities → Identify capture projects → **Screen to 12 SWRP projects** → Evaluate projects → Rank and prioritize projects → Create SWRP Report → Select 5 projects for design

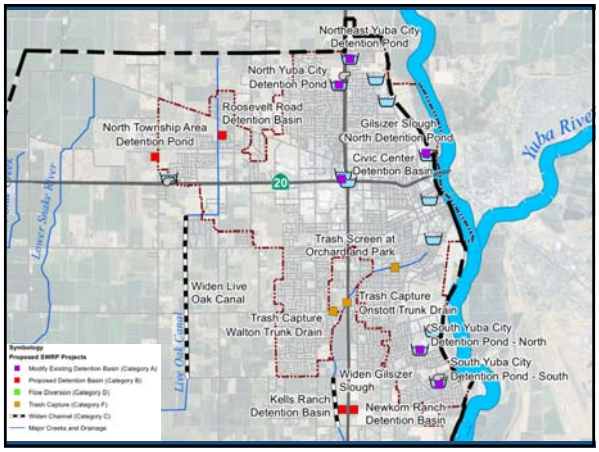
Screening Step 2 – Feasibility Criteria

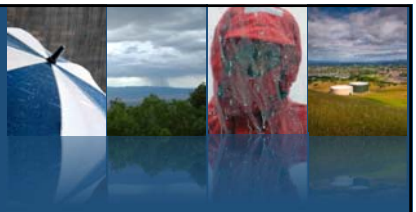
- **Affordability:** More affordable projects get a high — High Medium Low
- **Feasibility:** potential environmental impacts, compliance with laws and regulations, project complexity, or community support/opposition. — High Medium Low
- **Regulatory Requirements:** The intent if this criterion is to help select projects that must be implemented versus projects that would be "good to implement." — High Medium Low
- **Public Land:** The State guidelines requires projects located on publicly owned land have a higher priority. — High Medium Low

Feasibility Screening Result

- Modification of existing detention basins projects (6)
- Update or create standards and plans (3)
- Trash Capture (3)

These 12 SWRP projects will be evaluated for how well they meet the State's Benefit Categories





Questions?

Adopt/Revise SWRP Projects?

Agenda

- Major Goals for TAC Meeting
- SWRP Process Overview
- Water Quality Compliance
- Initial Projects
- Screening Results
- Project Evaluation Methodology
- Implementation Strategy
- Next Steps

Evaluation Methodology

- Evaluate 12 SWRP Projects
  - Develop detailed project descriptions
  - Use evaluation criteria to evaluate each project
- Rank and Prioritize Projects
  - Apply TAC prioritizations to evaluation criteria

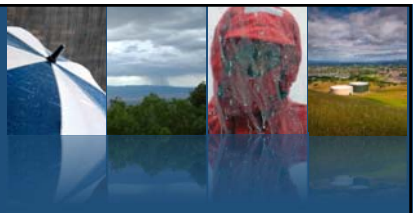
TAC Prioritization of Benefit Categories

Table 2. Maximum Score for each Benefit Category

Categories	TAC Prioritization of Category	Maximum Score Possible for Project Evaluations
Water Quality	8	80
Water Supply	8.1	81
Flood Management	9.4	94
Environment	4	40
Community	5.4	54

Evaluation Methodology

- Evaluate plans and implementation projects differently
  - Plans – content of the plan
  - Implementation projects – implementation of project
- Planning Projects (see TM)
  - Table 3 – Method of analysis for each criteria
  - Table 9 – Points/scoring method
- Implementation Projects (see TM)
  - Table 4 – Method of analysis for each criteria
  - Table 10 – Points/scoring method



Questions?

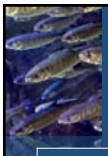
Adoption of Evaluation Method?

Agenda

- Major Goals for TAC Meeting
- SWRP Process Overview
- Water Quality Compliance
- Initial Projects
- Screening Results
- Project Evaluation Methodology
- Next Steps

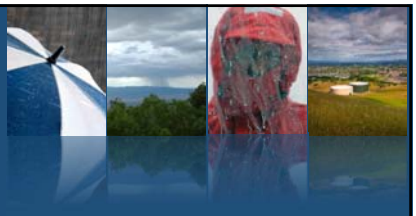
Next Steps- Schedule & Key Milestones

Schedule Item	Proposed Detailed Schedule for Delivery to State	State Contract Critical Due Date
State Contract Executed	7/11/2017	
Detailed Project Schedule	8/11/2017	8/11/2017
TAC meeting 1	9/20/2017	
Public/Stakeholder Meeting 1	10/25/2017	
Close Public Comments and Submission of Initial Projects	11/8/2017	
TAC Meeting 2	12/6/2017	
Public and Stakeholder Meeting 2	1/9/2018	
TAC Meeting 3	4/4/2018	
TAC Meeting 4	5/4/2018	
Public and Stakeholder Meeting 3	5/9/2018	
Final Conceptual Design of Five Projects	6/7/2018	Summer 2018
Final Draft SWRP and Self Certification	7/2/2018	7/30/2018
SWRP adoption materials to City	7/16/2018	
City Council adopts SWRP	8/20/2018	
Submit materials for NSV IRWM TAC Meeting	TBD	
NSV IRWM Adopts SWRP	TBD	
All work complete	11/23/2018	12/31/2018

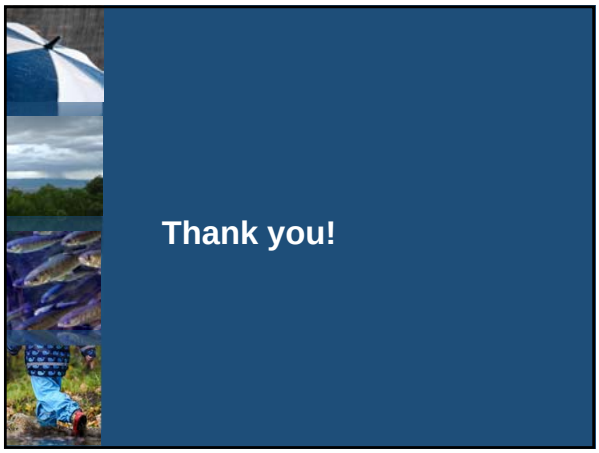


Next Steps – Action Items

Action Items	Proposed Due Dates
TAC Meeting 2	
Adopt Initial Project list and screening results	Dec 6
Adopt SWRP project prioritization and evaluation methods	Dec 6
Project Management Team	
Finalize evaluation methodology	Dec 2017
Develop project descriptions	Feb 2018
Evaluate and rank projects	Feb 2018
Prepare implementation strategy	March 2018



Other Items?


Thank you!

YUBA CITY BASIN STORM WATER RESOURCE PLAN TAC MEETING 2

Client:	**City of Yuba City**
Project:	**Yuba City Basin Storm Water Resource Plan**
Subject:	**Technical Advisory Kickoff Meeting**
Meeting Date/Time:	**December 6, 2017; 1:30 pm**
Location:	**Sutter Room, 1201 Civic Center Boulevard, Yuba City, CA 95993**
Summary by:	**Natalie Muradian**

INVITED ATTENDEES:

Present (Y/N)	Name	Representing	TAC Member (Y/N)
Y	Manu Dhaliwal	City - Storm Water Management	Y
Y	Ben Moody	City – Storm Drainage Management	Y
N	Diana Langley	City – Public Works	Y
N	Matthew Langley	City – Parks and Grounds	Y
Y	Nick Ramos	Sutter County – Development Services	Y
N	Sean Minard	MHM – Engineering and Development Community	Y
N	Ravinder Jawanda	State Water Board – Grant Manager	State Grant Contract Manager
Y	Natalie Muradian	West Yost	Consultant Team
Y	Doug Moore	West Yost	
Y	Karen Ashby	Larry Walker	

DISCUSSION TOPICS:

Please see attached slides for the key discussion items.

- Introductions
- Major Goals for TAC Meeting
- SWRP Process Overview
- Water Quality Compliance
- Initial Projects
- Screening Results
- Project Evaluation Methodology
- Next Steps

Water Quality Compliance:

- Question from Ben [paraphrased]: Will the water quality compliance document or SWRP document create new requirements that will be passed onto agriculture?
    - Response: The water quality compliance document is only a summary of existing permitting requirements and how the SWRP can help agencies achieve the permitting requirements. The water quality compliance document will not create new requirements.
    - The SWRP document will be a list of projects, and includes supporting information on why those projects are important to the watershed. From what we understand, the City is not forced to implement these projects and neither are any of the other agencies in the watershed.
    - It would be helpful if an agricultural representative from the community could review the water quality compliance document and provide feedback on whether they think the section that adequately represents the permitting requirements for irrigated lands.

Discussion on Project Screening:

- The City would like to see projects for modifying existing detention basins modified to prioritize only the basins that help the city meet the trash capture requirements. The other projects that involve modifying the existing detention basins can be included as a separate project.
    - West Yost can revise the projects to focus on detention basins with trash capture and will resubmit screening
    - The revised screening will be reviewed by the TAC prior to adoption. If no comments are received by the due date, the revised screening will be adopted.

Discussion on Evaluation Methodology:

- The method seems logical
- Concern: The point spread between water quality and water supply is only one point. Since these are so close, the TAC wants to make sure that the prioritized list actually represents the TAC's priorities.
    - The initial prioritized list will be provided to the TAC so they can confirm the prioritization represents the TAC's priorities.
    - An implementation strategy will be developed that discusses available capital and O&M funds and long-term reliability of O&M funding. This funding information will be used to develop an implementation schedule. If the TAC has concerns about very expensive projects with no capital or O&M funds available receiving a high prioritization, the implementation strategy will include a project schedule that accounts for funding availability.

- The TAC decided to review the methodology for several days prior to adopting. However, the TAC is interested in adopting the methodology contingent on the ability to review and update the prioritization values or make adjustments in the future. If no comments are received by the due date, the methodology will be adopted.

ACTION ITEM LOG:

No.	Subject	Action	Party	Date	Status
1	Project Screening	Resubmit project screening with projects focusing on detention basins that help the City meet trash capture requirements.	West Yost	12/8/2017	Done
2	Project Screening	Review and comment on updated project screening by 12/20/2017.	TAC	12/11/17	In-progress
3	Evaluation Methodology	Review and comment by 12/20/2017.	TAC	12/11/17	In-progress
4	Water Quality Compliance	Send water quality document to Yuba Sutter Farm Bureau for review, particularly the section related to the Irrigated Lands Permit	City	12/11/17	In-progress

DECISION LOG:

No.	Subject	Decision	Date	Party	Notes
1	Project Screening	TAC decided to review the project screening revisions prior to adopting.	12/7/17	TAC	Final comments on the revised project screening should be submitted to the Consultant by 12/20/2017.
2	Evaluation methodology	TAC decided to review the methodology for several days prior to adopting	12/7/17	TAC	Final comments on the evaluation methodology should be submitted to the Consultant by 12/20/2017.

(THIS PAGE LEFT BLANK INTENTIONALLY)

DECEMBER 2017 DRAFT

CITY OF YUBA CITY

Yuba City Basin Storm Water Resource Plan Water Quality Compliance Approach - *Draft*

submitted to
STATE WATER RESOURCES CONTROL BOARD

prepared by
LARRY WALKER ASSOCIATES

This page intentionally left blank.

Table of Contents

List of Tables

List of Figures

1. Introduction

1.1 PURPOSE AND BACKGROUND

This report was developed pursuant to Grant Task 4.3 under the Project-Specific Scope of Work outlined in the Proposition 1 Storm Water Planning Grant Agreement Number D1612615 for the development of the Yuba City Basin Storm Water Resource Plan (SWRP). Grant Task 4.3 requires the City of Yuba City (City) to describe the approach to address water quality requirements, including consideration of the following:

4.3.1 Activities generating or contributing to polluted runoff or that impair beneficial use of storm water and dry weather runoff; and

4.3.2 Strategies in which the SWRP will be used to address pollutant runoff or sources, and how the SWRP will be consistent with and help to implement applicable regulatory permits, Total Maximum Daily Loads (TMDLs) and other relevant water quality requirements.

These grant provisions are based on requirements in the State Water Resources Control Board's (State Water Board's) Storm Water Resource Plan Guidelines (Guidelines) (SWRCB, 2015b)[1]. This report satisfies the grant requirements and provides the information that will be included in the SWRP to satisfy those elements of the Guidelines listed in **Table 1-1**.

Table 1-1. SWRP Guidelines Addressed in this Report.

SWRP Guidelines Plan Element	California Water Code Section
Plan identifies activities that generate or contribute to the pollution of storm water or dry weather runoff, or that impair the effective beneficial use of storm water or dry weather runoff. [also addresses grant task 4.3.1]	10562(d)(7)
Plan describes how it is consistent with and assists in compliance with total maximum daily load implementation plans and applicable national pollutant discharge elimination system permits. [also addresses grant task 4.3.2]	10562(b)(5)
Plan identifies applicable permits and describes how it meets all applicable waste discharge permit requirements. [also addresses grant task 4.3.2]	10562(b)(6)
Plan describes the water quality priorities within the watershed based on, at a minimum, applicable TMDLs and consideration of water body-pollutant combinations listed on the State's Clean Water Act Section 303(d) list of water quality limited segments (a.k.a., the impaired waters list).	n/a

"n/a": This element is not mandatory, so there is no associated California Water Code reference.

[1] https://www.waterboards.ca.gov/water_issues/programs/grants_loans/swgp/docs/prop1/swrp_finalguidelines_dec2015.pdf

1.2 PLANNING AREA BOUNDARY AND DESCRIPTION

The planning area is the Yuba City Basin (YCB) watershed, which encompasses approximately 106 square miles and is located in Sutter County (**Figure 1-1**). Key attributes of the watershed include the following:

- The watershed is bounded by the East Interceptor Canal to the north, Sutter Bypass to the west, and Feather River to the east.
- The YCB has 8 major subwatersheds, has relatively flat topography, and is surrounded by levees.
- The watershed is urbanized in the northeast corner, with the rest of the watershed comprised of rural and agricultural land uses.
- Stormwater runoff generally flows from the northeast to southwest, where it is pumped out of the YCB at several locations by California Department of Water Resource (DWR) facilities.

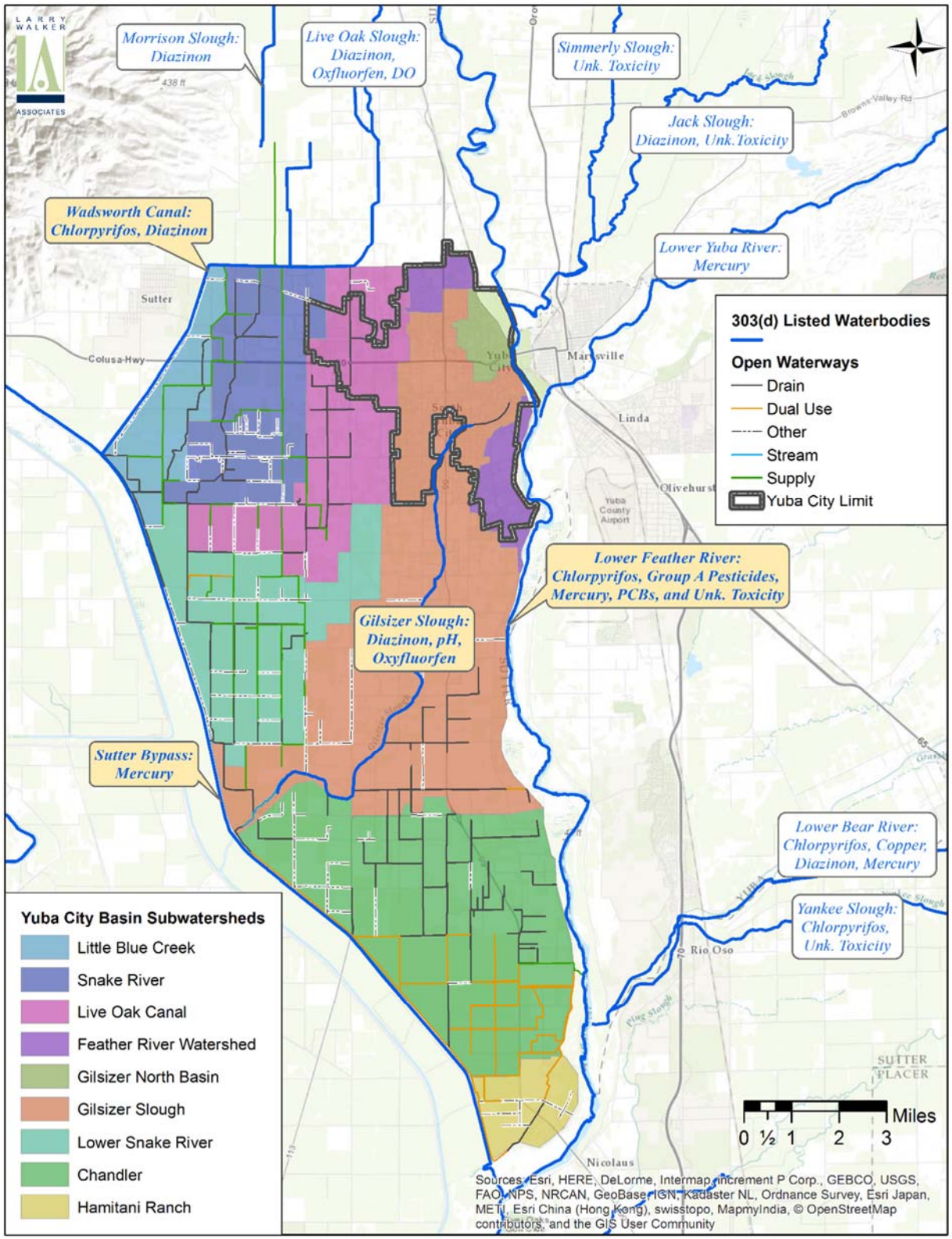


Figure 1-1. Yuba City Basin Planning Area Watershed and Subwatersheds

2. Water Quality Priorities in the YCB Watershed

2.1 WATER QUALITY CONTROL PLAN FOR THE SACRAMENTO RIVER AND SAN JOAQUIN RIVER BASINS

Under the federal Clean Water Act (CWA) and California's Porter-Cologne Water Quality Control Act, the State Water Board and Regional Water Quality Control Boards (Regional Water Boards) have regulatory responsibility for protecting the quality of the State's surface water and groundwater. Each Regional Water Board is required to formulate, adopt, and support the implementation of/compliance with water quality control plans (Basin Plans), which establish beneficial uses and water quality objectives (WQOs) to protect those uses, and develop an implementation program to achieve the established WQOs.

The Basin Plan applicable to the YCB watershed is the Central Valley (Region 5) Regional Water Board's "Water Quality Control Plan for the Sacramento and San Joaquin River Basins" (CVRWQCB, 2016). Table II-1 of the Basin Plan lists the main waterbodies within the region as well as the associated beneficial uses, and Section III of the Basin Plan establishes the WQOs to protect the designated beneficial uses.

The main waterbodies located in the YCB watershed include the Sutter Bypass, the Lower Feather River, Gilsizer Slough and Wadsworth Canal. Beneficial uses for the Sutter Bypass and Lower Feather River are listed in Table II-1 of the Basin Plan and are presented in **Table 2-1**. Pursuant to the Tributary Rule (40 CFR 131.10(b)), the beneficial uses designated for the Sutter Bypass and the Lower Feather River generally apply to their tributaries so that beneficial uses for the Sutter Bypass also apply to Gilsizer Slough and Wadsworth Canal. The beneficial use definitions applicable to main waterbodies in the YCB watershed are provided in **Table 2-2**.

Table 2-1. Main Surface Water Bodies in the YCB Watershed and Associated Beneficial Uses.

SURFACE WATER BODIES	HYDRO UNIT NUMBER	MUN	AGRICULTURE		INDUSTRY			RECREATION			FRESHWATER HABITAT [1]		MIGRATION		SPAWNING		WILD	NAV
			AGR		PROC	IND	POW	REC-1		REC-2	WARM	COLD	MIGR		SPWN			
		MUNICIPAL AND DOMESTIC SUPPLY	IRRIGATION	STOCK WATERING	PROCESS	SERVICE SUPPLY	POWER	CONTACT	CANOEING AND RAFTING	OTHER NON-CONTACT	WARM	COLD	WARM	COLD [2]	WARM	COLD (2)	WILDLIFE HABITAT	NAVIGATION
SUTTER BYPASS	520.3		E					E			E			E		E	E	
LOWER FEATHER RIVER [3]	515.	E	E					E	E	E	E	E	E	E	E	E	E	

Footnotes to Table 2-1:

1 Resident does not include anadromous. Any segments with both COLD and WARM beneficial use designations will be considered COLD water bodies for the application of water quality objectives.
2 Salmon and steelhead.
3 Fish Barrier Dam to Sacramento River.
"E" = Existing beneficial uses.

Table 2-2. Beneficial Use Definitions Applicable to Main Waterbodies in the YCB Watershed.

Beneficial Use	Definition
MUN	*Municipal and Domestic Supply*: Uses of water for community, military, or individual water supply systems including, but not limited to, drinking water supply.
AGR	*Agricultural Supply*: Uses of water for farming, horticulture, or ranching including, but not limited to, irrigation (including leaching of salts), stock watering, or support of vegetation for range grazing.
REC-1	*Water Contact Recreation*: Uses of water for recreational activities involving body contact with water, where ingestion of water is reasonably possible. These uses include, but are not limited to, swimming, wading, water-skiing, skin and scuba diving, surfing, white water activities, fishing, or use of natural hot springs.
REC-2	*Non-contact Water Recreation:* Uses of water for recreational activities involving proximity to water, but where there is generally no body contact with water, nor any likelihood of ingestion of water. These uses include, but are not limited to, picnicking, sunbathing, hiking, beachcombing, camping, boating, tidepool and marine life study, hunting, sightseeing, or aesthetic enjoyment in conjunction with the above activities.
WARM	*Warm Freshwater Habitat*: Uses of water that support warm water ecosystems including, but not limited to, preservation or enhancement of aquatic habitats, vegetation, fish, or wildlife, including invertebrates.
COLD	*Cold Freshwater Habitat*: Uses of water that support cold water ecosystems including, but not limited to, preservation or enhancement of aquatic habitats, vegetation, fish, or wildlife, including invertebrates.
MIGR	*Migration of Aquatic Organisms*: Uses of water that support habitats necessary for migration or other temporary activities by aquatic organisms, such as anadromous fish.
SPWN	*Spawning, Reproduction, and/or Early Development*: Uses of water that support high quality aquatic habitats suitable for reproduction and early development of fish.
WILD	*Wildlife Habitat*: Uses of water that support terrestrial or wetland ecosystems including, but not limited to, preservation and enhancement of terrestrial habitats or wetlands, vegetation, wildlife (e.g., mammals, birds, reptiles, amphibians, invertebrates), or wildlife water and food sources.

2.2 303(d) LIST OF IMPAIRED WATERBODIES

Waterbodies not meeting the designated Basin Plan WQOs and/or water quality standards are considered impaired and are placed on the CWA section 303(d) list, often times triggering the requirement to develop a TMDL in order to ensure the attainment of the WQO and, ultimately, the protection of the beneficial uses.

Table 2-3 Table 2-3. 303(d)-Listed Waterbody-Pollutant Combinations for the YCB Watershed identifies the 303(d)-listed waterbodies located in the YCB watershed and associated pollutants causing the impairments. The pollutant-waterbody combinations are also depicted on **Figure 1-1**. The 303(d) list indicates that the sources for the listed pollutants are unknown, with the exception of mercury in the Lower Feather River, to which the 303(d) list attaches the following comment: "All resource extraction sources are abandoned mines."

Table 2-3. 303(d)-Listed Waterbody-Pollutant Combinations for the YCB Watershed.

Waterbody	Pollutant
Gilsizer Slough	Diazinon, Oxyfluorfen, pH
Lower Feather River	Chlorpyrifos, Group A Pesticides, Mercury, PCBs, and Unknown Toxicity
Sutter Bypass	Mercury
Wadsworth Canal	Diazinon, Chlorpyrifos

2.3 TOTAL MAXIMUM DAILY LOADS

A TMDL is a water quality management plan for restoring impaired waters. It specifies the maximum amount of a pollutant allowed to enter a waterbody so that the waterbody will meet water quality standards for that particular pollutant. To ensure that water quality standards are met and beneficial uses are attained, allocations of the pollutant load to all identified sources are established for the pollutant(s) in question.

The following TMDLs are applicable to the YCB watershed:

- Sacramento and Feather Rivers Diazinon and Chlorpyrifos TMDL;[2] and
- Central Valley Pyrethroid Pesticides TMDL.[3]

Additional details regarding TMDL implementation requirements where stormwater or urban runoff has been identified as a source are discussed below.

The YCB SWRP will enhance efforts to achieve pollutant reductions required by TMDLs by prioritizing those projects that have multiple benefits. For example, stormwater infiltration will not only provide groundwater recharge, but it will also reduce the volume of stormwater discharged to surface water, which reduces pollutant loads discharged to surface water. Monitoring data collected under TMDL implementation requirements will be used to evaluate constituent levels and assess attainment of wasteload allocations (WLAs) in urban discharges. Water quality improvements will be realized as discharges of stormwater and dry weather runoff to waterbodies are reduced through multi-benefit stormwater projects.

[2] https://www.waterboards.ca.gov/centralvalley/board_decisions/adopted_orders/resolutions/r5-2007-0034.pdf
[3] https://www.waterboards.ca.gov/centralvalley/board_decisions/adopted_orders/resolutions/r5-2017-0057_res.pdf

2.3.1 Sacramento and Feather Rivers Diazinon and Chlorpyrifos TMDL

The TMDL for two organophosphorus insecticides, diazinon and chlorpyrifos, became effective on August 11, 2008. The May 2007 Final Staff Report (Staff Report) prepared by the Regional Water Board identified the primary sources as agricultural and urban applications. However, since most non-agricultural uses of diazinon and chlorpyrifos were phased out beginning in 2001, agricultural applications are the primary sources of these insecticides. After application, diazinon and chlorpyrifos can reach surface water during rainfall or irrigation events, when residual material can migrate with stormwater runoff or irrigation return water and enter the Sacramento or Feather Rivers or their tributaries (CVRWQCB, 2007).

The Staff Report identifies municipal wastewater treatment plants and municipal stormwater discharges as point sources with assigned WLAs, and agricultural operations as non-point sources with load allocations.

TMDL implementation requirements applicable to stormwater and dry weather runoff are specified in Attachment G of the Phase II Municipal Separate Storm Sewer System General Permit (Order No. 2013-0001 DWQ, NPDES General Permit No. CAS000004) (Phase II MS4 Permit) (SWRCB, 2013). Attachment G, "Region-Specific Requirements for Implementation of TMDLs," specifically identifies 18 Phase II MS4 responsible parties for TMDL implementation, including 2 located in the YCB watershed (the City and the County of Sutter). Implementation activities conducted by the City currently focus on education and outreach, pollution prevention and good housekeeping (City of Yuba City, 2017).

The Phase II MS4 Permit requires that Permittees who are assigned a WLA or who are identified as a responsible party in an approved TMDL must comply with monitoring requirements in Attachment G and to consult with the Regional Water Board within one year of the Permit effective date to determine the study design and a monitoring implementation schedule. In accordance with the Regional Water Board's June 2014 letter (CVRWQCB, 2014), the City is required to develop and implement a TMDL monitoring program. The City is in the process of preparing a TMDL Monitoring Plan and Quality Assurance Project Plan to fulfill the monitoring requirements specified in Attachment G.

Compliance with the Phase II MS4 Permit-related TMDL requirements is documented in Annual Reports.

2.3.2 Central Valley Pyrethroid Pesticides TMDL

This TMDL was adopted by the Regional Water Board on June 8, 2017 and is pending approval by the State Water Board, the Office of Administrative Law, and USEPA. The information in this section is excerpted from the Central Valley Water Board's June 2017 Final Staff Report (CVRWQCB, 2017).

The main sources of pyrethroid insecticides are agricultural and urban applications, with the mass applied split almost evenly between agricultural (49%) and non-agricultural (51%) uses. A portion of urban and agricultural pyrethroid applications can reach surface water during rainfall or irrigation events, when residual pyrethroids can migrate with stormwater runoff or irrigation return water, and enter streams, rivers, creeks and sloughs. In urban areas, pyrethroids are primarily used for structural pest control, which accounted for 92% of reported non-agricultural uses from 2002-2011. The agricultural uses of pyrethroids are diverse and include use on a wide variety of crops.

The proposed Basin Plan amendment includes total maximum daily loads for urban water bodies with pyrethroids impairments, requirements for addressing water bodies on the 303(d) list for pyrethroids in agricultural areas, and a conditional prohibition of discharge for pyrethroids to water bodies with designated or existing warm and cold freshwater habitat (WARM and COLD, respectively) beneficial uses throughout the basin. None of the waterbody segments with pyrethroid impairments listed in the Basin Plan amendment are located in the YCB watershed. However, implementation requirements under the conditional prohibition apply to municipal storm water discharges, municipal and domestic wastewater discharges, and agricultural discharges to the Lower Feather River (WARM and COLD), and the Sutter Bypass (WARM), as well as to their tributary streams.

According to the Final Staff Report, attainment of the proposed pyrethroid triggers in stormwater will likely require continued support through actions of the municipal dischargers working together with the Regional Water Board, and state, federal and local agencies responsible for registering pesticides and regulating pesticide use as part of an overall pesticide pollution prevention strategy. Where WLAs are established, compliance with the proposed WLAs can be attained by implementing BMPs to reduce pyrethroid pesticides in urban runoff. The specific BMPs include education and outreach activities and pollution prevention activities.

Under the proposed TMDL, specific monitoring and reporting requirements will be established in the monitoring and reporting programs associated with NPDES permits (including the Phase II MS4 Permit), WDRs, and conditional waivers of WDRs. Monitoring for pyrethroids will be incorporated within the TMDL Monitoring Plan for the Sacramento and Feather Rivers Diazinon and Chlorpyrifos TMDL. Compliance with Phase II MS4 Permit-related TMDL implementation requirements will be documented in Annual Reports.

2.4 STATEWIDE TRASH AMENDMENTS

On April 7, 2015, the State Water Board adopted an Amendment to the Water Quality Control Plan for Ocean Waters of California (Ocean Plan) to Control Trash and Part 1 Trash Provision of the Water Quality Control Plan for Inland Surface Waters, Enclosed Bays, and Estuaries (ISWEBE Plan). Together, they are collectively referred to as "the Trash Amendments," which became effective on December 2, 2015. The objective of the Trash Amendments is to provide statewide consistency for the Water Boards' regulatory approach to protect aquatic life and public health beneficial uses, and reduce environmental issues associated with trash in State waters, while focusing limited resources on high trash generating areas (SWRCB, 2015a).

The Trash Amendments require Phase II MS4 Permittees, after receiving the California Water Code Section 13383 letter from the State Water Board (issued June 1, 2017), to choose either "Track 1" or "Track 2" to comply with the narrative water quality objective for trash. The two options are summarized below:

- Track 1 – Install, operate, and maintain full capture systems in storm drains that capture runoff from one or more of the Priority Land Uses (PLUs) within the municipalities' jurisdiction. The monitoring requirements are fulfilled by the implementation/ demonstration of the full capture systems.
- Track 2 – Implement a plan with a combination of full capture systems, multi-benefit projects, institutional controls, and/or other treatment controls to achieve full capture

system equivalency. Monitoring is required to demonstrate the effectiveness of the controls and compliance with full capture system equivalency.

The City submitted a response to the Section 13383 letter via the Storm Water Multiple Application and Report Tracking System (SMARTS) on September 1, 2017. The City conducted a preliminary planning level analysis to identify the extent of PLU areas within its Phase II jurisdiction and to determine a compliance option selection. For this analysis, the City examined its current land uses to determine which ones met the definition of PLU areas as defined in the Statewide Trash Provisions. The City then categorized individual parcels as PLUs by relating the current land use of the parcel with the PLU land use analysis and excluded parcels with land uses that did not fit the definition. As a result of the preliminary planning level analysis, the City selected Track 1 as its compliance option.

Projects prioritized and selected through the SWRP process are anticipated to incorporate, as appropriate, full capture systems approved for use by the State Water Board to fulfill requirements of the Trash Amendments. Examples of full capture systems currently on the State Water Board's approved list include bioretention, detention basins, and infiltration trenches or basins.[4] Accordingly, SWRP projects that incorporate these systems will support compliance with the Trash Amendments, while at the same time achieving stormwater runoff quantity and quality benefits.

2.5 STATEWIDE MERCURY PROVISIONS

On May 2, 2017, the State Water Board adopted Resolution 2017-0027, which approved "Part 2 of the Water Quality Control Plan for Inland Surface Waters, Enclosed Bays, and Estuaries of California—Tribal and Subsistence Fishing Beneficial Uses and Mercury Provisions" (Statewide Mercury Provisions).[5] This Resolution provides a consistent regulatory approach throughout the State by setting mercury limits to protect the beneficial uses associated with the consumption of fish by people and wildlife. Additionally, the State Water Board established three new beneficial use definitions for use by the State and Regional Water Boards in designating Tribal Traditional Culture (CUL), Tribal Subsistence Fishing (T-SUB), and Subsistence Fishing (SUB) beneficial uses to inland surface waters, enclosed bays, or estuaries in the State. The State Water Board approved one new narrative and four new numeric mercury objectives to apply to those inland surface waters, enclosed bays, and estuaries of the State that have any of the following beneficial use definitions: COMM, CUL, T-SUB, WILD, MAR, RARE, WARM, COLD, EST, or SAL, with the exception of waterbodies or waterbody segments with site-specific mercury objectives.

Pursuant to the implementation approach for the Statewide Mercury Provisions, the Phase II MS4 Permit will be revised in the future to include a combination of the following mercury pollution prevention and mercury control measures to reduce total mercury or methylmercury discharges:

- Thermometer exchange programs and fluorescent lamp recycling programs, or enhancement of household hazardous waste collection programs to better address mercury-containing waste products (potentially including thermometers and other gauges batteries, fluorescent and other lamps, switches, relays, sensors and thermostats).

[4] https://www.waterboards.ca.gov/water_issues/programs/stormwater/docs/trash_implementation/fcs_list_of_mbts_04aug17.pdf
[5] https://www.waterboards.ca.gov/water_issues/programs/mercury/docs/hg_prov_final.pdf

- Public education and outreach on disposal of household mercury-containing products and use of non-mercury containing alternatives.
- Education of auto dismantlers on how to remove, store, and dispose of mercury switches in autos.
- Survey of use, handling, and disposal of mercury-containing products used by the MS4 discharger agencies and development of a policy and time schedule for eliminating the use of mercury containing products by the discharger.

All of the aforementioned control measures are required, except, at the discretion of the Permitting Authority, additional measure(s) may be substituted for one or more measures if the substituted measure(s) would provide an equivalent level of control or prevent total mercury or methylmercury pollution.

In conjunction with the BMPs and control measures identified above, projects selected through the SWRP prioritization process will further contribute to mercury load reductions to surface water, thereby supporting compliance with the new mercury standards. SWRP projects that reduce the volume of stormwater runoff to surface water (e.g., through infiltration) also reduce the load of waterborne mercury and other pollutants that might otherwise reach surface water. Projects that filter sediment and other particulates from stormwater runoff (e.g., through infiltration, vegetated swales or detention basins) also reduce the pollutant load typically associated with sediment, including mercury.

3. Regulatory Framework

The Phase II MS4 Permit is the National Pollutant Discharge Elimination System (NPDES) General Permit that regulates small MS4 stormwater discharges in the YCB watershed. General Waste Discharge Requirements (WDRs) regulating discharges from irrigated agricultural lands are also described in this section. These regulatory mechanisms are designed to control the discharge of pollutants to surface water primarily through the implementation of Best Management Practices (BMPs). Each regulation is described in more detail below.

3.1 PHASE II MS4 PERMIT

The Phase II MS4 Permit regulates discharges of stormwater and dry weather runoff from small MS4s to waters of the U.S. (SWRCB, 2013). The City is required to comply with the Phase II MS4 Permit, including the applicable TMDL implementation requirements in Attachment G. Compliance with the Phase II MS4 Permit, including TMDL implementation requirements, is documented in Annual Reports submitted to the State Water Board. Specific TMDL implementation actions undertaken by the City are described in more detail in **Section 2** of this report.

The Phase II MS4 Permit recognizes the following:

> *Finding 1. Storm water is a resource and an asset and should not be treated as a waste product. Managing rainwater and storm water at the source is a more effective and sustainable alternative to augmenting water supply, preventing impacts from flooding, mitigating storm water pollution, creating green space, and enhancing fish and wildlife habitat. California encourages alternative, innovative, multi-objective solutions to help use and protect this valuable resource, while at the same time controlling pollution due to urban runoff.*

The Phase II MS4 Permit and TMDLs generally require Permittees and responsible parties to implement a series of BMPs in order to reduce pollutants from the MS4s to the maximum extent practicable (MEP). The MEP standard requires Permittees to apply BMPs that are effective in reducing or eliminating the discharge of pollutants to the waters of the U.S. The specific requirements are included within the NPDES Permit provisions.

As a part of the overall strategy for the municipal stormwater program, a series of BMPs are implemented in order to comply with the Discharge Prohibitions and Receiving Water Limitations, including source controls and/or treatment controls. Regulated projects (i.e., those that create and/or replace 5,000 square feet or more of impervious surface) must implement low impact development (LID) standards designed to reduce the volume of runoff, treat stormwater, and provide baseline hydromodification management.

The YCB SWRP will prioritize projects that will be consistent with LID and green infrastructure-type solutions, such as site design and stormwater treatment measures to achieve infiltration, evapotranspiration, harvesting/reuse and/or bioretention. SWRP projects that incorporate green infrastructure employ a variety of natural and constructed features that reduce the rate and volume of stormwater runoff to the MS4 or surface water, filter pollutants out of runoff, facilitate the infiltration of water into the ground and replenishment of local natural surface water systems, and/or allow for on-site storage of water for a beneficial use (SWRCB

2015b). As such, SWRP multi-benefit projects will support and assist with Phase II MS4 Permit compliance and attainment of TMDL WLAs.

3.2 IRRIGATED AGRICULTURE WASTE DISCHARGE REQUIREMENTS

Water discharges from agricultural operations in California include irrigation runoff, flows from tile drains, and stormwater runoff. These discharges can affect water quality by transporting pollutants, including pesticides, sediment, nutrients, salts (including selenium and boron), pathogens, and heavy metals, from cultivated fields into surface waters. Many surface water bodies are impaired by such pollutants as pesticides, nitrate and salts from agricultural sources. Nutrients and salts contained in such discharges that percolate down to groundwater can also impact groundwater quality.

To prevent agricultural discharges from impairing the waters that receive these discharges, the State Water Board's Irrigated Lands Regulatory Program (ILRP) regulates discharges from irrigated agricultural lands. This is done by issuing waste discharge requirements (WDRs) or conditional waivers of WDRs (Orders) to growers. The WDRs regulate waste discharges from irrigated lands that could affect ground and/or surface waters of the State. The WDRs allow for the formation of compliance groups or coalitions to promote economies of scale and reduce the potential administrative burden on State Water Board staff that would result from issuing individual WDRs to each grower.

The ILRP issued two WDRs that are applicable to the YCB watershed, as follows:

- Central Valley Regional Water Board Order No. R5-2014-0030-R1, amended by Order Nos. R5-2015-0115, R5-2016-0014, and R5-2016-0015 and entitled "Waste Discharge Requirements General Order for Growers within the Sacramento River Watershed that are Members of a Third-Party Group" (SWRCB, 2016):
    - The Sacramento Valley Water Quality Coalition (SVWQC) is the largest compliance group in the state, encompassing approximately 1.3 million acres of irrigated agricultural lands. There are 13 individual subwatershed compliance groups under the umbrella of the SVWQC, with third-party oversight of the SVWQC provided by the Northern California Water Association (NCWA). Local Farm Bureaus and Resource Conservation Districts also provide oversight and assistance to subwatershed groups.
- Central Valley Regional Water Board Order No. R5-2014-0032, amended by Order No. R5-2015-0115 and entitled "Waste Discharge Requirements General Order for Sacramento Valley Rice Growers" (SWRCB, 2015c):
    - Sacramento Valley Rice Growers (SVRG) formed a compliance group separate from SVWQC, driven by the unique agricultural practices required for rice cultivation. The California Rice Commission provides third-party oversight of the SVRG.

The WDRs specify numerous requirements for members (owners or operators that enroll irrigated acreage in the program) and third-party groups (entities that coordinate the actions of members), including surface water monitoring and reporting, submittal of farm evaluations, attendance at outreach events, preparation and implementation of sediment and erosion control plans and nitrogen management plans, and groundwater quality assessment and monitoring.

Where water quality objectives or triggers are exceeded in surface water or groundwater, WDRs may require development and implementation of a Surface Water Quality Management Plan or a Groundwater Quality Management Plan, respectively. Approved TMDLs in the Basin Plan that apply to water bodies within the third-party's geographic area and have allocations for irrigated agriculture are required to be implemented in accordance with the applicable Basin Plan provisions.

The YCB SWRP will be consistent with and support compliance with WDRs where prioritized multi-benefit projects direct stormwater runoff from agricultural lands to groundwater recharge. Benefits will be realized in groundwater quantity and quality through groundwater replenishment, particularly in groundwater basins with elevated concentrations of salts. Reducing the volume of runoff to surface water will reduce pollutant loads including pesticides, sediment, nutrients, salts, pathogens and heavy metals, contributing to surface water quality improvements and attainment of TMDL WLAs.

4. YCB SWRP Strategies to Address Water Quality Compliance

Urbanization has led to the modification and disruption of natural watershed processes. The increase in impervious surfaces increases runoff volume and velocity. As less precipitation is allowed to enter the root zone, increased runoff rates and volumes more effectively mobilize and transport pollutants to drainage networks like MS4s and eventually to receiving waters (McKee, 2003). Additionally, there is a strong relationship between urban watershed sediment yields and loading of contaminants to local waterbodies, such as mercury, heavy metals and pesticides/insecticides. Stormwater runoff from agricultural and rural areas also mobilizes and transports substances such as chemicals (e.g., fertilizers, insecticides, legacy pesticides, heavy metals), pathogenic bacteria, sediment, and many other constituents of concern that degrade surface water quality.

The YCB SWRP is designed to prioritize and select projects that achieve multiple benefits, including the following:

- Water quality improvements;
- Water supply augmentation through groundwater management and/or stormwater runoff capture and use;
- Flood management;
- Environmental benefits, such as habitat protection and improvement, increased urban green space, reestablishment of the natural hydrograph, and reduced greenhouse gas emissions;
- Community benefits, such as enhanced and/or created recreational and public use areas, community involvement and employment opportunities.

Among these, one of the more significant benefits is the mitigation of water quality impacts to surface water from stormwater runoff. The SWRP's objective of maximizing water quality serves as the nexus between the SWRP and those regulatory mechanisms described in Sections 2 and Section 3 of this report (i.e., the Phase II MS4 Permit, TMDLs, WDRs); SWRP projects that are consistent with and contribute to compliance with these regulatory mechanisms are given a higher priority ranking and therefore have a greater likelihood of being implemented.

Table 4-1 summarizes the pollutants of concern in the YCB watershed and potential strategies to address them through anticipated SWRP projects. In addition to the benefits listed in **Table 4-1**, potential SWRP strategies are designed to contribute toward compliance with applicable regulatory permits, TMDLs and WDRs.

Table 4-1. Pollutants of Concern in the YCB Watershed, Anticipated SWRP Strategies to Address Them, and Resulting Benefits.

Pollutants of Concern	Potential SWRP Strategies	Benefits
• Diazinon, Chlorpyrifos • Pyrethroid Pesticides • Group A Legacy Pesticides and PCBs • Oxyfluorfen (herbicide) • Mercury • Trash	• Infiltration / groundwater recharge • Biofiltration • Bioretention • Detention/retention basins • Hydromodification control • Green street projects • Grass filter strips, bioswales and/or other BMPs to improve water quality of runoff • Capture and use systems • Public outreach/education	• Groundwater replenishment • Reduced volume of stormwater to surface water • Reduced pollutant load to surface water and improvements to water quality • Flood management • Habitat protection and improvement • Community benefits

The YCB SWRP will identify, prioritize and select projects that reduce stormwater and dry weather runoff, reduce pollutants in stormwater discharges, increase infiltration/groundwater recharge, improve flood control, and protect water quality in receiving waters. These objectives will be accomplished by employing an array of appropriate non-structural, structural, regional and green infrastructure BMPs to reduce runoff volume, velocity, and erosion and sediment transport, maximize the use of green infrastructure for catchment, infiltration and treatment, and by conducting public outreach and education. Such BMPs have benefits across multiple pollutant categories (e.g., pesticides, trash, heavy metals). SWRP projects will therefore be consistent with and will contribute toward compliance with applicable regulatory mechanisms, including applicable permits, TMDLs, and WDRs.

5. Disclosure Statement

Funding for this project has been provided in full or in part through an agreement with the State Water 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 required by Task 4.3 of Agreement No. D1612615.

6. References

City of Yuba City, 2017. 2016-2017 Phase II Small MS4 Annual Report. October 2017.

CVRWQCB, 2007. Basin Plan Amendments to the Water Quality Control Plan for the Sacramento River and San Joaquin River Basins for Control of Diazinon and Chlorpyrifos Runoff into the Sacramento and Feather Rivers. May 2007.

CVRWQCB, 2014. Clarification on Water Quality Monitoring Tiers, NPDES General Permit for Waste Discharge Requirements for Storm Water Discharges from Small Municipal Separate Storm Sewer Systems. June 12, 2014.

CVRWQCB, 2016. Water Quality Control Plan for the Sacramento and San Joaquin River Basins. Table II-1. July 2016.

CVRWQCB, 2017. Proposed Amendments to the Water Quality Control Plan for the Sacramento and San Joaquin River Basins for the Control of Pyrethroid Pesticides Discharges – Final Staff Report. June 2017.

McKee, 2003. McKee, L., Leatherbarrow, J., Newland, S., and Davis, J., 2003. A review of urban runoff processes in the Bay Area: Existing knowledge, conceptual models, and monitoring recommendations. A report prepared for the RMP Sources, Pathways and Loading Workgroup. San Francisco Estuary Regional Monitoring Program for Trace Substances. SFEI Contribution Number 66. San Francisco Estuary Institute, Oakland, Ca.

SWRCB, 2013. Water Quality Order No. 2013-0001 DWQ. National Pollutant Discharge Elimination System (NPDES) General Permit No. CAS000004. Waste Discharge Requirements (WDRs) for Storm Water Discharges from Small Municipal Separate Storm Sewer Systems (MS4s) (Phase II MS4 Permit). February 2013.

SWRCB, 2015a. Appendix E: Final Part 1 Trash Provisions of the Water Quality Control Plan for Inland Surface Waters, Enclosed Bays and Estuaries of California (Final Staff Report for Trash Amendments). April 7, 2015.

SWRCB, 2015b. Storm Water Resource Plan Guidelines. December 15, 2015.

SWRCB, 2015c. Order No. R5-2014-0032 (amended by Order No. R5-2015-0115). Waste Discharge Requirements General Order for Sacramento Valley Rice Growers. October 2015.

SWRCB, 2016. Order No. R5-2014-0030-R1 (amended by Orders No. R5-2015-0115, R5-2016-0014 and R5-2016-0015). Waste Discharge Requirements General Order for Growers Within the Sacramento River Watershed that are Members of a Third-Party Group. February 2016.

WEST YOST ASSOCIATES
Consulting Engineers

November 30, 2017

Project No.: 285-10-17-13
SENT VIA: EMAIL

Mr. Manu Dhaliwal
City of Yuba City
1201 Civic Center Blvd
Yuba City CA 95993

SUBJECT: Yuba City Basin Storm Water Resource Plan: Eligibility and Feasibility Screening of Initial Projects

Dear Mr. Dhaliwal:

This letter presents the list of projects submitted for the Yuba City Basin (YCB) Storm Water Resource Plan (SWRP) and their screening. The following sections are included:

- Introduction
- Project List
- Eligibility and Feasibility Screening Criteria
- Eligibly and Feasibility Screening Results

INTRODUCTION

As part of the development of the SWRP process, stormwater projects that provide storm water and dry weather runoff capture were requested from the public, stakeholders, and Technical Advisory Committee (TAC). The project submission period was open from September 27, 2017 to November 8, 2017. During this period, Public Meeting 1 was conducted on October 23, 2017. Projects were also requested at Public Meeting 1.

The YCB watershed does not have any projects included in the North Sacramento Valley Integrated Regional Watershed Management Plan, nor do they have a green infrastructure plans or Watershed-based Water Quality Priorities and Projects, so the project submittal period was crucial to the development of the SWRP.

PROJECT LIST

Twenty-two projects were submitted. Many of the projects were similar types of projects and therefore, were categorized and consolidated based on the type of project. The categories include:

A. Modify existing detention basins to promote infiltration and enhance water quality, incorporate trash capture where appropriate, and incorporate multi-use park or playfield facilities,

B. Proposed regional detention basins will provide flood control during large storms and infiltration/water quality enhancement during small storms, and incorporate multi-use park or playfield facilities. The regional detentio basins projects proposed for development do not include the construction of the basins, but do include the infiltration/water quality enhancements, and the multi-use or playfield facilities.

C. Widen segments of large drainage channels to add water quality features and bike paths

D. Divert dry weather flows for irrigation water supply

E. Update or create engineering/design standards for detention basins, channels, and trash capture

F. Implement trash capture projects, including infiltration swales, daylighting storm drains, and installing trash racks

The categorized list of projects is shown in Table 1 and on Figure 1, and includes nineteen projects. The original list of un-categorized projects as submitted is included in Attachment A.

ELIGIBILITY AND FEASIBILITY SCREENING CRITERIA

To prepare a list of twelve projects to be evaluated further, a two-step screening process was used. All projects submitted will be included in the final SWRP, but only the screened projects will be evaluated qualitatively and quantitatively for the benefits they provide. The TAC adopted the following screening criteria at the September 20, 2017 TAC meeting.

The first step in the screening process is the eligibility screening, which is presented in Table 2 and includes the following:

- Location – The SWRP Projects must be located in the YCB watershed and subwatersheds as defined in the Planning Area Watershed Description letter from West Yost Associates to Manu Dhaliwal, dated November 28, 2017. This criterion was evaluated as either Yes or No.
- Capture – As encouraged by the State SWRP Guidelines, each SWRP project should have a component of stormwater or dry weather runoff capture. The State recently clarified that projects submitted to the SWRP can be general stormwater projects, and do not necessarily have to provide capture. Therefore, projects were not eliminated using this criterion.
- Benefits – As required by the State SWRP Guidelines, each SWRP Project must have at least two main benefits and as many additional benefits as possible. See Table 4 of the SWRP Guidelines for the list of main and additional benefits. Projects that provide more than the minimum benefits were prioritized above projects that meet only the minimum number of benefits. This criterion was evaluated as either Yes or No.

- Project Sponsor – The SWRP Project must have a sponsor that can fund the initial capital costs and the annual operations and maintenance of the project. This criterion was evaluated as either Yes or No, and the sponsor was identified.

The second step in the screening process is the feasibility screening, which is presented on Table 3, and includes the following:

- Estimated Affordability – The SWRP Projects must be affordable to the sponsoring agency. This criterion was evaluated as High, Medium, or Low. High indicates the project is affordable, while low indicates the project is not affordable.
- Implementability – SWRP Projects must be feasible. This criterion includes compliance with all applicable federal and state laws, the cost of potential environmental impacts, permitting, complexity, and anticipated community support/opposition. This criterion was evaluated as High, Medium, or Low. High indicates the project is relatively easy to implement, while low indicates that the project may be complex or hard to implement.
- Regulatory Requirements – Projects that help an agency meet regulatory requirements, (including compliance with the Trash Amendments), rules, or guidelines, received a High rating, while projects that were just "good to implement," received a Medium or Low rating.
- Publicly Owned Land – The SWRP Guidelines recommend that projects be sited on publicly owned lands (page 15). This criterion was evaluated as High, Medium, or Low. High indicates the project is fully located on publicly owned land, while low indicates that the project is not on public owned land.

ELIGIBILITY AND FEASIBILITY SCREENING RESULTS

The results of the eligibility screening are shown in Table 2 and the results of the feasibility screening are shown in Table 3.

Only one project, the addition of a trash rack at Orchard and Park, did not make it past the eligibility screening criteria. All projects had a sponsor. The majority of projects were sponsored by Yuba City, while project D1, the flow diversion project, was sponsored by municipal water companies and agriculture.

A qualitative estimate of High, Medium, and Low was used for the feasibility screening. High received a score of 5 points, medium received a score of 3 points, and low received a score of 1 point. The points were summed for each project, and the twelve projects with the highest scores were considered SWRP projects that will be further evaluated. The projects that received lower scores in the feasibility screening are considered Initial Projects, and will be included in the final SWRP document without further evaluations.

The list of twelve SWRP projects that will be evaluated further include:

- Modification of existing detention basins
  - Gilsizer Slough North Detention Pond (includes water quality upgrades in city corporation yard).
  - Northeast Yuba City Detention Pond.
  - North Yuba City Detention Pond.
  - South Yuba City Improvement District Detention Pond – North Pond.
  - South Yuba City Improvement District Detention Pond – South Pond.
  - Detention Basin between Hwy 99 and Civic Center Blvd, north of Highway 20.
- Update or create standards and plans
  - Standards for detention basins: Modify detention basin standards to allow recreational use of the basin, while meeting flood control, infiltration requirements, and trash control. Adjust low flow channel design standards to provide infiltration.
  - Standards for Gilsizer Slough: Minimize erosion, improve side slope, and standardize pipe inlets into the canal to increase trash capture.
  - Trash capture master plan: Identify locations of where trash capture is needed. Include standards for installing pipes into channels to control trash sources, and for installing trash screens in detention basins.
- Trash Capture Projects: Infiltration swales, daylighting storm drains, and trash racks.
  - Walton Pipeline along Lincoln Road – daylight storm drain and add an infiltration swale and trash rack.
  - Onstott Pipeline along Highway 99 – daylight storm drain and add an infiltration swale and trash rack.
  - Add trash rack in Gilsizer Slough at Orchard and Park

CONCLUSION

The eligibly and screening criteria help identify twelve projects that are the most feasible and therefore should be evaluated further.

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. D1612615 between the City of Yuba City and the California State Water Resource Control Board.

Please contact me at (530) 761-0222 or nmuradian@westyost.com with any questions or comments.

Sincerely,

WEST YOST ASSOCIATES

Natalie K. Muradian
Associate Engineer
RCE #84895

NKM:lh

attachments

Table 1. Project List		
Reference to Project Number in Attachment	Project Number	Project Name
	Category A	**Modify Existing Detention Basins: Remove existing concrete low flow channels and replace with vegetated swales, add trash capture where required, add playfields or parks, add water quality basins**
4, 12, 13, 15, 20	A1	Gilsizer Slough North Detention Pond (includes water quality upgrades in corp yard)
5, 12, 13	A2	Northeast Yuba City Detention Pond
6, 12, 13	A3	North Yuba City Detention Pond
7, 12, 13	A4	South Yuba City Improvement District Detention Pond – North Pond
8, 12, 13	A5	South Yuba City Improvement District Detention Pond – South Pond
21	A6	Detention Basin between Hwy 99 and Civic Center Blvd, north of Hwy 20.
	Category B	**Proposed Regional Detention Basins: Provide flood control for large storms and infiltration for small storms. Includes multi-use playfields, water quality basins, and vegetated swales.**
1	B1	Newkom Ranch Detention Pond, for development
2	B2	Kells Ranch Detention Pond, for development
3	B3	North Township Area Detention Pond, for development
22	B4	Roosevelt Road Detention Pond, for existing flooding issues
	Category C	**Widen segments of channels to add water quality features and bike paths**
10	C1	Gilsizer Slough, from Lincoln Road to Stewart Road
9	C2	Live Oak Canal, from Wilder Estates to Bogue Road
	Category D	**Flow Diversion**
11	D1	Divert stormwater from the Gilsizer and Live Oak Canals to father south in the basin for agricultural and habitat use
	Category E	**Update or create standards and plans**
12, 13	E1	Standards for detention basins: Modify detention basin standards to allow recreational use of the basin, while meeting flood control, infiltration requirements, and trash control. Revise low flow channel design standards to provide infiltration.
14	E2	Standards for Gilsizer Slough: Minimize erosion, improve side slope, and standardize pipe inlets into the canal to increase trash capture
12, 19	E3	Trash capture master plan: Identify locations where trash capture is needed. Include standards for installing pipes into channels to control trash sources, and for installing trash screens in detention basins
	Category F	**Trash Capture Projects: Infiltration swales, daylighting storm drains, and trash racks**
16	F1	Walton Pipeline along Lincoln Road - daylight storm drain and add an infiltration swale and trash rack
17	F2	Onstott Pipeline along Highway 99 - daylight storm drain and add an infiltration swale and trash rack
18	F3	Add trash rack at Orchard and Park

Table 2. Eligibility Screening

Reference to Original Number	Project Number	Project Name	Located in Yuba City Basin	Includes Capture	Meets State's Benefit Requirements	Funding Sponsor
	Category A	**Modify Existing Detention Basins: Remove existing concrete low flow channels and replace with vegetated swales, add trash capture where required, add playfields or parks, add water quality basins**				
4, 12, 13, 15, 20	A1	Gilsizer Slough North Detention Pond (includes water quality upgrades in corp yard)	Yes	Yes	Yes	Yes, Yuba City
5, 12, 13	A2	Northeast Yuba City Detention Pond	Yes	Yes	Yes	Yes, Yuba City
6, 12, 13	A3	North Yuba City Detention Pond	Yes	Yes	Yes	Yes, Yuba City
7, 12, 13	A4	South Yuba City Improvement District Detention Pond – North Pond	Yes	Yes	Yes	Yes, Yuba City
8, 12, 13	A5	South Yuba City Improvement District Detention Pond – South Pond	Yes	Yes	Yes	Yes, Yuba City
21	A6	Detention Basin between Hwy 99 and Civic Center Blvd, north of Hwy 20.	Yes	Yes	Yes	Yes, Yuba City
	Category B	**Proposed Regional Detention Basins: Provide flood control for large storms and infiltration for small storms. Includes multi-use playfields, water quality basins, and vegetated swales**				
1	B1	Newkom Ranch Detention Pond	Yes	Yes	Yes	Yes, Yuba City
2	B2	Kells Ranch Detention Pond	Yes	Yes	Yes	Yes, Yuba City
3	B3	North Township Area Detention Pond	Yes	Yes	Yes	Yes, Yuba City
22	B4	Roosevelt Road Detention Pond	Yes	Yes	Yes	Yes, Yuba City
	Category C	**Widen segments of channels to add water quality features and bike paths**				
10	C1	Gilsizer Slough, from Lincoln Road to Steward Road	Yes	Yes	Yes	Yes, Yuba City
9	C2	Live Oak Canal, from Wilder Estates to Bogue Road	Yes	Yes	Yes	Yes, Yuba City
	Category D	**Flow Diversion**				
11	D1	Divert stormwater from the Gilsizer and Live Oak Canals to father south in the basin for agricultural and habitat use	Yes	Yes	Yes	Yes, Agriculture water districts
	Category E	**Update or create standards and plans**				
12, 13	E1	Standards for detention basins: Modify detention basin standards to allow recreational use of the basin, while meeting flood control, infiltration requirements, and trash control. Adjust low flow channel design standards to provide infiltration.	Yes	Yes	Yes	Yes, Yuba City
14	E2	Standards for Gilsizer Slough: Minimize erosion, improve side slope, and standardize pipe inlets into the canal to increase trash capture	Yes	Yes	Yes	Yes, Yuba City
12, 19	E3	Trash capture master plan: Identify locations of where trash capture is needed. Include standards for installing pipes into channels to control trash sources, and for installing trash screens in detention basins	Yes	Yes	Yes	Yes, Yuba City
	Category F	**Trash Capture Projects: Infiltration swales, daylighting storm drains, and trash racks**				
16	F1	Walton Pipeline along Lincoln Road - daylight storm drain and add an infiltration swale and trash rack	Yes	Yes	Yes	Yes, Yuba City
17	F2	Onstott Pipeline along Highway 99 - daylight storm drain and add an infiltration swale and trash rack	Yes	Yes	Yes	Yes, Yuba City
18	F3	Add trash rack at Orchard and Park	Yes	No [(a)]	Yes	Yes, Yuba City

[(a)] This project does not provide capture of stormwater, but the State of California clarified that projects submitted to the SWRP can be general stormwater projects, and do not necessarily have to provide capture. Therefore, this project was not removed during the eligibility screening.

(THIS PAGE LEFT BLANK INTENTIONALLY)

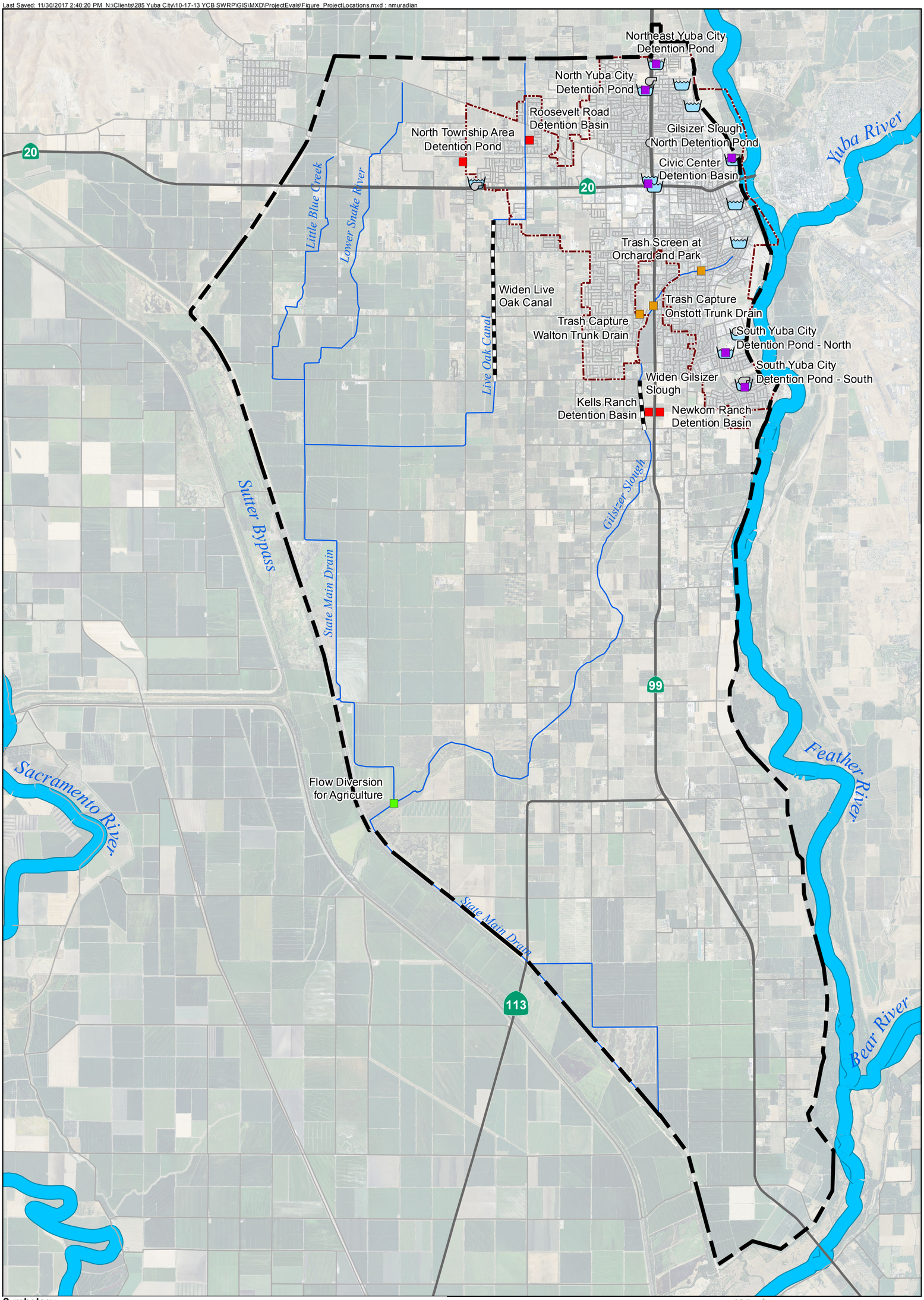
Table 3. Feasibility Screening

Reference to Original Number	Project Number	Project Name	Affordability	Implement-ability	Helps Agency Meet Regulatory Requirements[(a)]	Public Land	Score	Results	Reasoning
	Category A	**Modify Existing Detention Basins: Remove existing concrete low flow channels and replace with vegetated swales, add trash capture where required, add playfields or parks, add water quality basins**							
4, 12, 13, 15, 20	A1	Gilsizer Slough North Detention Pond (includes water quality upgrades in corp yard)	Medium	High	High	High	18	SWRP	Top 12
5, 12, 13	A2	Northeast Yuba City Detention Pond	Medium	High	Low	High	14	SWRP	Top 12
6, 12, 13	A3	North Yuba City Detention Pond	Medium	High	Low	High	14	SWRP	Top 12
7, 12, 13	A4	South Yuba City Improvement District Detention Pond – North Pond	Medium	High	High	High	18	SWRP	Top 12
8, 12, 13	A5	South Yuba City Improvement District Detention Pond – South Pond	Medium	High	Low	High	14	SWRP	Top 12
21	A6	Detention Basin between Hwy 99 and Civic Center Blvd, north of Hwy 20.	Medium	High	Medium	High	16	SWRP	Top 12
	Category B	**Proposed Regional Detention Basins: Provide flood control for large storms and infiltration for small storms. Includes multi-use playfields, water quality basins, and vegetated swales**							
1	B1	Newkom Ranch Detention Pond	Medium	Medium	Low	Medium	10	Initial	Low score
2	B2	Kells Ranch Detention Pond	Medium	Medium	Low	Medium	10	Initial	Low score
3	B3	North Township Area Detention Pond	Medium	Medium	Low	Medium	10	Initial	Low score
22	B4	Roosevelt Road Detention Pond	Low	Medium	Medium	Low	8	Initial	Low score
	Category C	**Widen segments of channels to add water quality features and bike paths**							
10	C1	Gilsizer Slough, from Lincoln Road to Steward Road	Medium	Low	Low	Medium	8	Initial	Low score
9	C2	Live Oak Canal, from Wilder Estates to Bogue Road	Medium	Low	Low	Medium	8	Initial	Low score
	Category D	**Flow Diversion**							
11	D1	Divert stormwater from the Gilsizer and Live Oak Canals to the southern part of the basin for agricultural and habitat use.	Low	Low	Low	Medium	6	Initial	Low score
	Category E	**Update or create standards and plans**							
12, 13	E1	Standards for detention basins: Modify detention basin standards to allow recreational use of the basin, while meeting flood control, infiltration requirements, and trash control. Adjust low flow channel design standards to provide infiltration.	High	High	Medium	N/A	14	SWRP	Top 12
14	E2	Standards for Gilsizer Slough: Minimize erosion, improve side slope, and standardize pipe inlets into the canal to increase trash capture	High	High	Medium	N/A	14	SWRP	Top 12
12, 19	E3	Trash capture master plan: Identify locations of where trash capture is needed. Include standards for installing pipes into channels to control trash sources, and for installing trash screens in detention basins	High	High	High	N/A	16	SWRP	Top 12
	Category F	**Trash Capture Projects: Infiltration swales, daylighting storm drains, and trash racks**							
16	F1	Walton Pipeline along Lincoln Road - daylight storm drain and add an infiltration swale and trash rack	Medium	Medium	High	Low	12	SWRP	Top 12
17	F2	Onstott Pipeline along Highway 99 - daylight storm drain and add an infiltration swale and trash rack	Medium	Medium	High	Low	12	SWRP	Top 12
18	F3	Add trash rack at Orchard and Park for ease of maintenance. Consider configuring for trash amendments.	Medium	Medium	High	High	16	SWRP	Top 12
						Total Projects		19	
						Total SWRP Projects		12	
						Initial Projects		7	

[(a)] If an agency is required to meet State or Federal permits or requirements (such as the Trash Amendments) and the project helps meet those requirements, the project receives a "High"

(THIS PAGE LEFT BLANK INTENTIONALLY)

Last Saved: 11/30/2017 2:40:20 PM N:\Clients\285 Yuba City\10-17-13 YCB SWRP\GIS\MXD\ProjectEvals\Figure_ProjectLocations.mxd : nmuradian



Symbology

Proposed SWRP Projects

- Modify Existing Detention Basin (Category A)
- Proposed Detention Basin (Category B)
- Flow Diversion (Category D)
- Trash Capture (Category F)
- Widen Channel (Category C)
- Major Creeks and Drainage

Existing City Drainage Facilities

- Detention Basin
- Pump Station
- CityLimits
- Yuba City Basin Watershed Boundary
- River
- State Highways

Notes:
1. Projects in Category E (Update or create standards or plans) are not shown.

N

0 0.7 1.4
Miles

YUBA CITY STORM WATER GRANT PROGRAM
WEST YOST ASSOCIATES

Figure 1

Project Locations

Yuba City Basin
Storm Water
Resource Plan

(THIS PAGE LEFT BLANK INTENTIONALLY)

Attachment A. Original List of Projects

Project No.	Project Title	Location of Project	Runoff capture or infiltration?	Description of Project (500 characters max)	Public land?	Sponsor	Sponsor's name	"Main Benefits"	Summarize "Main Benefits"	"Additional Benefits"	Summarize "Additional Benefits"	Name and contact information
1	Newkom Ranch Detention Pond Facility (Proposed Det Basin)	East of Highway 99, between Stewart Rd and Bogue Rd	Yes	This proposed basin will have multiple functions and will be a tiered design. The primary function is to provide flood control for large storms where the basin will fill. In small storms, runoff will be conveyed to the lower tier of the basin, which will allow sediment to settle and water to infiltrate. Vegetation can be planted in multiple areas to allow for treatment from plants and provide habitat. The upper tier of the basin will be used for multi-use playfields.	Not sure	Yes	Yuba City	Increased filtration and/or treatment of runoff, Decreased flood risk by reducing runoff rate and/or volume, Increased urban green space.	The water quality portion of the basin will provide treatment for small storms and dry weather runoff. Flood risk will be reduced in large storms. Some amount of infiltration will occur, reducing volume of runoff delivered to streams and increasing groundwater recharge. The vegetation planted will provide urbanized green space.	Enhance and/or create recreational and public use areas	By using the detention basin as a multi-use facility (i.e. soccer fields, playgrounds, etc.), the public will benefit from having this flood control and water quality facility in their community.	Natalie Muradian, nmuradian@westyost.com
2	Kells Ranch Detention Pond Facility (Proposed Det Basin)	West of highway 99, between Bogue Road and Stewart Road	Yes	This proposed basin will have multiple functions and will be a tiered design. The primary function is to provide flood control for large storms where the basin will fill. In small storms, runoff will be conveyed to the lower tier of the basin, which will allow sediment to settle and water to infiltrate. Vegetation can be planted in multiple areas to allow for treatment from plants and provide habitat. The upper tier of the basin will be used for multi-use playfields.	Not sure	Yes	Yuba City	Increased filtration and/or treatment of runoff, Decreased flood risk by reducing runoff rate and/or volume, Increased urban green space.	The water quality portion of the basin will provide treatment for small storms and dry weather runoff. Flood risk will be reduced in large storms. Some amount of infiltration will occur, reducing volume of runoff delivered to streams and increasing groundwater recharge. The vegetation planted will provide urbanized green space.	Enhance and/or create recreational and public use areas	By using the detention basin as a multi-use facility (i.e. soccer fields, playgrounds, etc.), the public will benefit from having this flood control and water quality facility in their community.	Natalie Muradian, nmuradian@westyost.com
3	North Township Area Detention Pond (Proposed Det Basin)	The southwest corner of Alemendra Road and Township Road	Yes	This proposed basin will have multiple functions and will be a tiered design. The primary function is to provide flood control for large storms where the basin will fill. In small storms, runoff will be conveyed to the lower tier of the basin, which will allow sediment to settle and water to infiltrate. Vegetation can be planted in multiple areas to allow for treatment from plants and provide habitat. The upper tier of the basin will be used for multi-use playfields.	Not sure	Yes	Yuba City	Increased filtration and/or treatment of runoff, Decreased flood risk by reducing runoff rate and/or volume, Increased urban green space.	The water quality portion of the basin will provide treatment for small storms and dry weather runoff. Flood risk will be reduced in large storms. Some amount of infiltration will occur, reducing volume of runoff delivered to streams and increasing groundwater recharge. The vegetation planted will provide urbanized green space.	Enhance and/or create recreational and public use areas	The water quality portion of the basin will provide treatment for small storms and dry weather runoff. Flood risk will be reduced in large storms. Some amount of infiltration will occur, reducing volume of runoff delivered to streams and increasing groundwater recharge. The vegetation planted will provide urbanized green space.	Natalie Muradian, nmuradian@westyost.com
4	Gilsizer Slough North Detention Pond (existing basin)	Between Market Street and the Feather River levee, north of Lamon Way	Yes	This existing basin can be modified to include multi-use play fields and a water quality basin sized to allow sediment to settle and water to infiltrate. Vegetation can be planted in multiple areas to allow for treatment from plants and provide habitat, shade, and carbon sequestration.	Yes	Yes	Yuba City	Increased filtration and/or treatment of runoff, Decreased flood risk by reducing runoff rate and/or volume, Increased urban green space.	The water quality portion of the basin will provide treatment for small storms and dry weather runoff. Some amount of infiltration will occur, reducing volume of runoff delivered to streams, increasing groundwater recharge. The vegetation planted will provide urbanized green space. A trash screen would help treat runoff and prevent trash from entering the Feather River.	Reduced energy use, greenhouse gas emissions, or provides carbon sink, Enhance and/or create recreational and public use areas	By using the detention basin as a multi-use facility (i.e. soccer fields, playgrounds, etc.), the public will benefit from having this flood control and water quality facility in their community. It's possible that by allowing the water to be treated and infiltrate, pump use may be reduced.	Natalie Muradian, nmuradian@westyost.com
5	Northeast Yuba City Detention Pond Modifications	39.169666°, -121.633566°	Yes	This existing basin can be modified to include multi-use play fields and a water quality basin sized to allow sediment to settle and water to infiltrate. Vegetation can be planted in multiple areas to allow for treatment from plants and provide habitat, shade, carbon sequestration.	Yes	Yes	Yuba City	Increased filtration and/or treatment of runoff, Decreased flood risk by reducing runoff rate and/or volume, Increased urban green space.	The water quality portion of the basin will provide treatment for small storms and dry weather runoff. Some amount of infiltration will occur, reducing volume of runoff delivered to streams, increasing groundwater recharge. The vegetation planted will provide urbanized green space.	Reduced energy use, greenhouse gas emissions, or provides carbon sink, Enhance and/or create recreational and public use areas	By using the detention basin as a multi-use facility (i.e. soccer fields, playgrounds, etc.), the public will benefit from having this flood control and water quality facility in their community.	Natalie Muradian, nmuradian@westyost.com
6	North Yuba City Detention Pond Modifications	39.163301°, -121.634281°	Yes	This existing basin can be modified to include multi-use play fields and a water quality basin sized to allow sediment to settle and water to infiltrate. Vegetation can be planted in multiple areas to allow for treatment from plants and provide habitat, shade, and carbon sequestration.	Yes	Yes	Yuba City	Increased filtration and/or treatment of runoff, Decreased flood risk by reducing runoff rate and/or volume, Increased urban green space.	The water quality portion of the basin will provide treatment for small storms and dry weather runoff. Some amount of infiltration will occur, reducing volume of runoff delivered to streams, increasing groundwater recharge. The vegetation planted will provide urbanized green space.	Reduced energy use, greenhouse gas emissions, or provides carbon sink, Enhance and/or create recreational and public use areas	By using the detention basin as a multi-use facility (i.e. soccer fields, playgrounds, etc.), the public will benefit from having this flood control and water quality facility in their community. It's possible that by allowing the water to be treated and infiltrate, pump use may be reduced.	Natalie Muradian, nmuradian@westyost.com
7	South Yuba City Improvement District Detention Pond – North Pond Modifications	39.104446°, -121.612174°	Yes	This existing basin can be modified to include multi-use play fields and a water quality basin sized to allow sediment to settle and water to infiltrate. Vegetation can be planted in multiple areas to allow for treatment from plants and provide habitat, shade, and carbon sequestration.	Yes	Yes	Yuba City	Increased filtration and/or treatment of runoff, Decreased flood risk by reducing runoff rate and/or volume, Increased urban green space.	The water quality portion of the basin will provide treatment for small storms and dry weather runoff. Some amount of infiltration will occur, reducing volume of runoff delivered to streams, increasing groundwater recharge. The vegetation planted will provide urbanized green space.	Enhance and/or create recreational and public use areas	By using the detention basin as a multi-use facility (i.e. soccer fields, playgrounds, etc.), the public will benefit from having this flood control and water quality facility in their community.	Natalie Muradian, nmuradian@westyost.com

(THIS PAGE LEFT BLANK INTENTIONALLY)

Attachment A. Original List of Projects

Project No.	Project Title	Location of Project	Runoff capture or infiltration?	Description of Project (500 characters max)	Public land?	Sponsor	Sponsor's name	"Main Benefits"	Summarize "Main Benefits"	"Additional Benefits"	Summarize "Additional Benefits"	Name and contact information
8	South Yuba City Improvement District Detention Pond – South Pond Modifications	39.097175°, -121.607501°	Yes	This existing basin can be modified to include multi-use play fields and a water quality basin sized to allow sediment to settle and water to infiltrate. Vegetation can be planted in multiple areas to allow for treatment from plants and provide habitat, shade, carbon sequestration.	Yes	Yes	Yuba City	Increased filtration and/or treatment of runoff, Decreased flood risk by reducing runoff rate and/or volume, Increased urban green space.	The water quality portion of the basin will provide treatment for small storms and dry weather runoff. Flood risk will be reduced in large storms. Some amount of infiltration will occur, reducing volume of runoff delivered to streams and increasing groundwater recharge. The vegetation planted will provide urbanized green space.	Reduced energy use, greenhouse gas emissions, or provides carbon sink, Enhance and/or create recreational and public use areas	By using the detention basin as a multi-use facility (i.e. soccer fields, playgrounds, etc.), the public will benefit from having this flood control and water quality facility in their community. It's possible that by allowing the water to be treated and infiltrated, pump use may be reduced.	Natalie Muradian, nmuradian@westyost.com
9	Widen segment of Live Oak Canal	LOC, from Wilder Estates to Bogue Road	Yes	Widen the existing channel to incorporate walking/bike paths and water quality features.	Not sure	Not sure		Increased filtration and/or treatment of runoff, Environmental and habitat protection and improvement, including: wetland enhancement/creation; riparian enhancement; and/or instream flow improvement, Increased urban green space.	The water quality features will provide increased filtration and treatment of runoff. The water quality features could be configured to enhance the riparian habitat. Since this project incorporates a walking/biking path, this would increase urban green space.	Enhance and/or create recreational and public use areas	The walking/bike path will enhance the community by providing space for the community to enjoy the proposed water quality features in Live Oak Canal.	Natalie Muradian, nmuradian@westyost.com
10	Widen segment of Gilsizer Slough	Gilsizer Slough, from Lincoln Road to Stewart Road	Yes	Widen existing channel to incorporate walking/bike paths and water quality features.	Not sure	Not sure		Increased filtration and/or treatment of runoff, Environmental and habitat protection and improvement, including: wetland enhancement/creation; riparian enhancement; and/or instream flow improvement, Increased urban green space.	The water quality features will provide increased filtration and treatment of runoff. The water quality features could be configured to enhance the riparian habitat. Since this project incorporates a walking/biking path, this would increase urban green space.	Enhance and/or create recreational and public use areas	The walking/bike path will enhance the community by providing space for the community to enjoy the proposed water quality features in Gilsizer Slough	Natalie Muradian, nmuradian@westyost.com
11	Channel Flow Diversion	Near the confluence of the Gilsizer and Live Oak Canals	Yes	Design a project that would allow the diversion of stormwater from the Gilsizer and Live Oak Canals to father south in the basin for agricultural and habitat use.	Not sure	Yes	Yuba City, Muncial Water Companies, Agriculture	Increased filtration and/or treatment of runoff, Water supply reliability, Conjunctive use, Decreased flood risk by reducing runoff rate and/or volume, Environmental and habitat protection and improvement, including: wetland enhancement/creation; riparian enhancement; and/or instream flow improvement.	The channel diversion would provide additional stormwater capacity for the basin in the winter, Irrigation tailwater could be diverted in the summer for agricultural and habitat use, increases recharge by keeping water in the basin	Nonpoint source pollution control, Reestablish natural water drainage and treatment, Water conservation, Reduced energy use, greenhouse gas emissions, or provides carbon sink, Water temperature improvements	To be added to	Manu Dhaliwal
12	Storm Basin Trash Improvement Project	Yuba City Storm Basins	Yes	Modify the Storm Basin Discharge Points to capture trash in compliance with pending State requirements.	Not sure	Yes	City of Yuba City	Increased filtration and/or treatment of runoff, Environmental and habitat protection and improvement, including: wetland enhancement/creation; riparian enhancement; and/or instream flow improvement.	Modify the City's storm water basins and establish a design criteria for future stormwater basins to capture trash in a way that has long term reliability and minimal maintenance.	Nonpoint source pollution control, Reestablish natural water drainage and treatment, Enhance and/or create recreational and public use areas	The non point source pollution control comes from the removal of trash. The basins could be modified to provide infiltration, contributing to re-establishing natural water drainage and treatment.	Manu Dhaliwal
13	Storm Basin - Low Flow Channel Modifications	City Storm Water Retention Basins	Yes	Modify existing low flow channels by removing existing concerete and replacing with vegetated swales. Design a City standard for a low flow channels within the storm water basins that allow recreational use of the basin floor, while meeting drainage, infiltration, and trash control requirements. Allows playfields to also be incorprorated into the basins.	Yes	Yes	City of Yuba City	Increased filtration and/or treatment of runoff, Conjunctive use, Increased urban green space.	by taking out the concrete low flow channels in the middle of the basins and replacing them with vegetated swales. More useable area will be left allowing for play fields - helping with infiltration, water quality, air quality improvements, etc.	Nonpoint source pollution control, Reestablish natural water drainage and treatment, Water conservation, Reduced energy use, greenhouse gas emissions, or provides carbon sink, Enhance and/or create recreational and public use areas	by taking out the concrete low flow channels in the middle of the basins and replacing them with vegetated swales, more useable area will be left allowing for play fields - helping with infiltration, water quality, providing a carbon sink. The playfields will create recreatonal and public use areas.	Manu Dhaliwal
14	Channel Improvements	Gilsizer Slough	Yes	Analyze the Gilsizer Slough Channel through the basin and identify channel design standards to minimize erosion, side slope improvements, and standardize pipe line inlets into the canal to increase trash capture.	Yes	Yes	Gilsizer Drainage District	Increased filtration and/or treatment of runoff, Water supply reliability, Conjunctive use, Environmental and habitat protection and improvement, including: wetland enhancement/creation; riparian enhancement; and/or instream flow improvement.	Improving the Gilsizer Slough would help minimize erosion and would also provide trash capture.	Nonpoint source pollution control	See above	Manu Dhaliwal
15	Corporation Yard Storm Water Improvements	1185 Market Street, Yuba City CA	Yes	Install trash capture device at outfall from adjacent detention basin, remove existing low flow channels and replace with vegetated swale around the edge of the detention basin, cover gasoline pump area, cover material storage area, and utilize detention basin for open space/recreation.	Yes	Yes	City of Yuba City	Increased filtration and/or treatment of runoff, Decreased flood risk by reducing runoff rate and/or volume, Increased urban green space.	The replacement of the concrete channel in the detention basin with a vegetated swale will provide an opportunity for runoff to infiltrate rather than flowing directly out of the basin. The utilization of the space for recreation will increase green space within the City. Puttting a cover over the gasoline station will help improve water quality of runoff.	Nonpoint source pollution control, Reestablish natural water drainage and treatment, Enhance and/or create recreational and public use areas	The project will provide trash capture and create a recreational use for the land.	Manu Dhaliwal

(THIS PAGE LEFT BLANK INTENTIONALLY)

Attachment A. Original List of Projects

Project No.	Project Title	Location of Project	Runoff capture or infiltration?	Description of Project (500 characters max)	Public land?	Sponsor	Sponsor's name	"Main Benefits"	Summarize "Main Benefits"	"Additional Benefits"	Summarize "Additional Benefits"	Name and contact information
16	Stormwater infiltration and trash capture on Walton Pipline	39.112833, -121.638921	Yes	The Walton trunk drain conveys stormwater and dry weather runoff to Gilsizer Slough. Prior to discharging into GS, the trunk drain will daylight into an open channel or a small detention basin, where the the runoff would be allowed to infiltrate to groundwater. A trash rack will be provided at the end of this channel/detention basin prior to discharging into GS to remove trash from the runoff.	Not sure	Yes	Yuba City	Increased filtration and/or treatment of runoff, Decreased flood risk by reducing runoff rate and/or volume.	By daylighting the large storm drain into a channel, the runoff can infiltrate. There is also the potential for increased urban green space. The addition of the trash screen will remove trash and increase water quality.	Nonpoint source pollution control, Reestablish natural water drainage and treatment	The non point source pollution control comes from the removal of trash. The daylighting the stream allows for a re-establishment of natural water drainage and treatment, through infiltration, and providing a more natural drainage path.	Natalie Muradian, nmuradian@westyost.com
17	Stormwater infiltration and trash capture on Onstott Pipline	39.114477, -121.635025	Yes	The Onstott trunk drain conveys stormwater and dry weather runoff to Gilsizer Slough. Prior to discharging into GS, the trunk drain will daylight into an open channel or a small detention basin, where the the runoff would be allowed to infiltrate to groundwater. A trash rack will be provided at the end of this channel/detention basin prior to discharging into GS to remove trash from the runoff.	Not sure	Yes	Yuba City	Increased filtration and/or treatment of runoff, Decreased flood risk by reducing runoff rate and/or volume.	By daylighting the large storm drain into a channel, the runoff can infiltrate. There is also the potential for increased urban green space. The addition of the trash screen will remove trash and increase water quality. The infiltration will lead to a decreased flood risk by reducing the runoff volume.	Nonpoint source pollution control, Reestablish natural water drainage and treatment	The non point source pollution control comes from the removal of trash. The daylighting the stream allows for a re-establishment of natural water drainage and treatment, through infiltration, and providing a more natural drainage path.	Natalie Muradian, nmuradian@westyost.com
18	Trash Rack Update at Park and Orchard	39.122599, -121.621066	No	Currently, City staff struggle to provide consistent maintenance on this trash rack due to the hassle of removing the trash rack. A new trash rack that allows for easy maintenance is desirable. This new trash rack could also be configured to remove trash up to 5 mm.	Yes	Yes	Yuba City	Decreased flood risk by reducing runoff rate and/or volume, Environmental and habitat protection and improvement, including: wetland enhancement/creation; riparian enhancement; and/or instream flow improvement.	Lack of maintenance on this trash rack can sometimes result in a build up of trash, leading to flooding problems. By re-designing this trash rack, this could decrease flooding risk. A trash rack that removes more trash would increase water qualtiy.	Nonpoint source pollution control	The removal of trash will provide pollution control.	Natalie Muradian, nmuradian@westyost.com
19	Trash Capture Master Plan	Throughout Yuba City	No	The City is required to comply with the Trash Amendments required for permittees with a Phase II MS4. Providing trash capture will help reduce water qualtiy issues in the watershed.	Not sure	Yes	Yuba City	Increased filtration and/or treatment of runoff, Environmental and habitat protection and improvement, including: wetland enhancement/creation; riparian enhancement; and/or instream flow improvement.	Adding a trash rack would provide treatment of runoff and improve channel quality.	Nonpoint source pollution control	The removal of trash will provide pollution control.	Natalie Muradian, nmuradian@westyost.com
20	Gilsizer North Detention Basin Modifications for Trash Removal	Gilsizer North Detention Basin	Yes	The Gilsizer Slough North Detention Basin could be modified to provide more infiltration by adding water qualtiy swales/mini-ponds around the edge of the detention bains. The mini-ponds would need to be designed with vector control in mind. A trash screen could be added to the pump station to provide trash removal. Trees could be planted around the detention basin to provide shade and carbon sequestration. A multi-use playfield could be added to re-configure the detention basin.	Yes	Yes	Yuba City	Increased filtration and/or treatment of runoff, increased urban green space.	The infiltration swales could proivde filtration and treatment of runoff. The swales and trees, along with the multi-use play fields, could increase urban green space.	Enhance and/or create recreational and public use areas, reduced energy use, greenhouse gas emissions, or provides carbon sink, nonpoint source pollution control	The playfields and swales/trees would contribute to community enhancement, the trees would contirbute to carbon sink, and potentially the more infiltration, the less pumping requried, so a reduction in energy use. The trash rack would provide non point source pollution control.	Natalie Muradian, nmuradian@westyost.com
21	Expand Detention Basin between Hwy 99 and Civic Center Blvd, north of Hwy 20	39.143447, -121.636005	Yes	Expand this detention basin to provide flood control to reduce flooding for 100-yr storm. Add a water quatliy basin, and adjust low flow channel.	Yes	Yes	Yuba City	Increased filtration and/or treatment of runoff, Decreased flood risk by reducing runoff rate and/or volume.	Expanding this detention basin will provide flood reduction during large storms. Modifying the outlet and low flow channels will provide water quality increases during small storms.	Nonpoint source pollution control	Adding water quatliy features here will help improve the water quality of runoff	Natalie Muradian, nmuradian@westyost.com
22	Roosevelt Road Detention Basin (Proposed Basin)	39.151254, -121.670638	Yes	This proposed basin will have multiple functions and will be a tiered design. The primary function is to provide flood control for large storms where the basin will fill. In small storms, runoff will be conveyed to the lower tier of the basin, which will allow sediment to settle and water to infiltrate. Vegetation can be planted in multiple areas to allow for treatment from plants and provide habitat. The upper tier of the basin will be used for multi-use playfields.	Not Sure	Yes	Yuba City	Increased filtration and/or treatment of runoff, Decreased flood risk by reducing runoff rate and/or volume, Increased urban green space.	The water quality portion of the basin will provide treatment for small storms and dry weather runoff. Flood risk will be reduced in large storms. Some amount of infiltration will occur, reducing volume of runoff delivered to streams and increasing groundwater recharge. The vegetation planted will provide urbanized green space.	Enhance and/or create recreational and public use areas	By using the detention basin as a multi-use facility (i.e. soccer fields, playgrounds, etc.), the public will benefit from having this flood control and water quality facility in their community.	Natalie Muradian, nmuradian@westyost.com

(THIS PAGE LEFT BLANK INTENTIONALLY)

WEST YOST ASSOCIATES
Consulting Engineers

TECHNICAL MEMORANDUM

DATE: December 5, 2017 Project No.: 285-10-17-13
SENT VIA: EMAIL

TO: Manu Dhaliwal, City of Yuba City

FROM: Doug Moore, PE, RCE #58122

REVIEWED BY: Mark Kubik, PE, RCE #50963

SUBJECT: Yuba City Basin SWRP—Multiple Benefits Evaluation Methodology

This Technical Memorandum (TM) presents the Yuba City Basin (YCB) Storm Water Resource Plan (SWRP) multiple benefits evaluation methodology.

This TM includes the following sections:

- Planning Area Watershed
- SWRP Project Categories
- Quantitative Evaluation Methodology
- Ranking and Prioritizing Projects

PLANNING AREA WATERSHED

The planning area watershed (PAW) for this study was defined by West Yost Associates in the *Stormwater Resource Plan Planning Area Description, Map, and Boundaries* letter to Manu Dhaliwal dated November 28, 2017. Figure 1 of that letter defined the planning area, and it is reproduced as Figure 1 of this TM.

SWRP PROEJCT CATEGORIES

As discussed in the *Eligibility and Feasibility Screening of Initial Projects* letter to Manu Dhaliwal (dated November 30, 2017), 22 Initial Projects were submitted for inclusion in the SWRP and were grouped and consolidated to a list of 19 Initial Projects. The grouped and consolidated Initial Projects were screened to a set of 12 SWRP Projects.

The SWRP projects included a mixture of different types of stormwater projects, including planning studies and implementation projects. The projects were separated into two categories: plans and studies (hereafter referred to as planning projects) and implementation projects. See Table 1 for how each of the 12 SWRP projects were categorized.

Table 1. Categorized SWRP Projects

Planning Projects[(a)]	Implementation Projects[(a)]
E1. Standards for detention basins: Modify detention basin standards to allow recreational use of the basin, while meeting flood control, infiltration requirements, and trash control. Adjust low flow channel design standards to provide infiltration. E2. Standards for Gilsizer Slough: Minimize erosion, improve side slope, and standardize pipe inlets into the canal to increase trash capture. E3. Trash capture master plan: Identify locations of where trash capture is needed. Include standards for installing pipes into channels to control trash sources, and for installing trash screens in detention basins.	A1. Modify existing detention pond: Gilsizer Slough North (includes water quality upgrades in city corporation yard) A2. Modify existing detention pond: Northeast Yuba City A3. Modify existing detention pond: North Yuba City A4. Modify existing detention pond: South Yuba City Improvement District Detention Pond – North Pond A5. Modify existing detention pond: South Yuba City Improvement District Detention Pond – South Pond A6. Modify existing detention pond: between Hwy 99 and Civic Center Blvd, north of Hwy 20. F1. Trash capture project: Walton Pipeline along Lincoln Road - daylight storm drain and add an infiltration swale and trash rack F2. Trash capture project: Onstott Pipeline along Highway 99 - daylight storm drain and add an infiltration swale and trash rack F3. Trash capture project: Add a trash rack at Orchard and Park.

(a) The projects numbers refer to the category and number of the project as identified in the *Eligibility and Feasibility Screening of Initial Projects Letter,* dated November 30, 2017.

QUANTITATIVE EVALUATION METHODOLOGY

Projects will be evaluated both quantitatively and qualitatively for how well they meet the State's Benefit Categories. The State-identified benefit categories are defined in Table 4 of the California State Water Resource Control Board's *Storm Water Resource Plan Guidelines* (December 15, 2015), and include:

- Water Quality
- Water Supply
- Flood Management
- Environmental

- Community

The Technical Advisory Committee (TAC) prioritized the State's Benefit Categories for the YCB watershed. The prioritization is shown in Table 2; 1 is the least important and 10 is the most important. This prioritization was used to calculate the maximum score possible for each benefit category, also shown in Table 2.

Table 2. Maximum Score for each Benefit Category

Categories	TAC Prioritization of Category	Maximum Score Possible for Project Evaluations
State Benefit Categories		
Water Quality	8	80
Water Supply	8.1	81
Flood Management	9.4	94
Environment	4	40
Community	5.4	54

Due to the difficulty of evaluating quantitative benefits from plans, projects included in the planning category will be evaluated qualitatively based on how well they achieve each of the five State-identified benefits relative to the other SWRP Planning projects. Planning projects will be evaluated based on a general idea of what will be included in the plans. Table 3 shows how the five benefit categories will be evaluated for planning projects.

Implementation projects will have direct impacts on State- and community-identified benefits. Implementation projects will be evaluated both qualitatively and quantitatively based on how well they achieve each of the State- and community-identified benefits relative to the other implementation projects. Table 4 shows the multiple evaluation criteria under each State-identified benefit category and explains the method of analysis for each criterion. The dark grey rows indicate a primary benefit, while light grey rows indicate an additional benefit, as defined by the State.

Table 3. Method of Evaluation for Planning SWRP Projects

Evaluation Criteria	Qualitative Evaluation Criteria (Metric)	Method of Analysis	Point Allocation	Possible Points
Water Quality Benefit Category	None, Low, Medium, High	Project Specific Evaluation	None (0 pts), Low (3 pts), Medium (6 pts), High (10 pts)	10
Water Supply Benefit Category	None, Low, Medium, High	Project Specific Evaluation	None (0 pts), Low (3 pts), Medium (6 pts), High (10 pts)	10
Flood Management Benefit Category	None, Low, Medium, High	Project Specific Evaluation	None (0 pts), Low (3 pts), Medium (6 pts), High (10 pts)	10
Environmental Benefit Category	None, Low, Medium, High	Project Specific Evaluation	None (0 pts), Low (3 pts), Medium (6 pts), High (10 pts)	10
Community Benefit Category	None, Low, Medium, High	Project Specific Evaluation	None (0 pts), Low (3 pts), Medium (6 pts), High (10 pts)	10

Table 4. Method of Evaluation for Implementation SWRP Projects

Evaluation Criteria	Quantitative Evaluation Criteria (Metric)	Qualitative Evaluation Criteria (Metric)	Method of Analysis	Point Allocation
Water Quality Benefit Category (Increased filtration and/or treatment of runoff)				
- Natural water drainage and treatment		Not Improved, Improved	Improved = Establish natural water drainage (allow more infiltration)	Not Improved (0 pts), Improved (10 pts)
- Nonpoint source pollution control. See Priority Pollutants, (i.e. 303(d) List Pollutants) and common storm water conaminants listed below.				
- Sediment, mercury, Group A Pesticides, and oxygen demanding substances	lbs/year of sediment (TSS) removed		*Mercury concentrations associated with sediment concentrations, so projects that remove sediment will also remove mercury. Constructed wetlands enhance mercury methylation. The amount of flow treated is relative to the mercury removed.* *Group A Pesticides include DDT and Dieldrin: Urban SW preliminary data summary found that DDT in urban storm water exceeded health criteria of DDT in water. Eventhough DDT was banned in 1970s, its very persistent and thus likely present in soils. Organochlorine levels are declining in environment as a whole. Projects that remove sediment may also remove DDT. Dieldrin was banned in 1985. Very persistent and thus likely present in soils. Organochlorine levels are declining in environment as a whole. Projects that remove sediment may also remove Dieldrin.* *The Effectiveness Evaluation of BMPs in Portland Oregon (2005) uses TSS as a surrogate for oxygen demand, including biochemical oxygen demand, chemical oxygen demand, and total organic carbon.* - Calculate flow per year to project within drainage watershed. - Calculate loading to project per year, using average inflow concentration in Table 7. - Use average precent removal for pollutant in Table 7.	0 to 10 points based on estimated load reduction relative to the maximum load reduction for all implementation SWRP Projects.
- Chlorpyrifos, Diazinon, Oxyfluorfen		None, Medium, High	*Diuron is a non-banned pesticide. Chlorpyrifos and diazinon are restricted use pesticides.* None = No change in pesticide use Medium = Reduces use of pesticides High = Eliminates use of pesticides	None (0 pts), Medium (5 pts), High (10 pts)
- PCBs	lb/year of PCBs removed		PCBs can enter a watershed through trasnformers, atmospheric deposition, and eroded or re-suspended particles. PCBs tend to behave like sediment, and can be settled out. BMPs that remove PCBs will need to be maintained with special handling and disposal. - Calculate flow per year to project within drainage watershed. - Calculate loading to project per year, using average inflow concentration in Table 7. - Use average precent removal for pollutant in Table 7.	0 to 10 points based on load reduction relative to the maximum load reduction for all implementation SWRP Projects.
- Trash	lbs/year of trash removed		- Calculate flow per year to project within drainage watershed. - Calculate loading to project per year, using average trash generation rate in Table 8. - Assume full capture equivalency trash systems will be implemented.	0 to 10 points based on trash removal relative to maximum trash removals for all implementation Projects.
- Fecal Coliform	MPN/year		- Calculate flow per year to project within drainage watershed. - Calculate loading to project per year, using average trash generation rate in Table 8. - Use average precent removal for pollutant in Table 7.	0 to 10 points based on load reduction relative to the maximum load reduction for all implementation SWRP Projects.
- Heavy Metals (cadmium, copper, lead, and zinc)	lbs/year of heavy metals removed		These metals are detected in nearly all of urban storm water samples and exceed aquatic life standards. Typical sources include roofing, brake pads, tire wear, and vehicle emissions. - Calculate flow per year to project within drainage watershed. - Calculate loading to project per year, using average inflow concentration in Table 7. - Use average precent removal for pollutant in Table 7.	0 to 10 points based on load reduction relative to the maximum load reduction for all implementation SWRP Projects.
- Oils and grease (polyaromatic hydrocarbons or PAHs)	lb/year of PAHs removed		- Calculate flow per year to project within drainage watershed. - Calculate loading to project per year, using average inflow concentration in Table 7. - Use average precent removal for pollutant in Table 7.	0 to 10 points based on load reduction relative to the maximum load reduction for all implementation SWRP Projects.
- Total Nitrogen	lb/year of Nitrogen removed		- Calculate flow per year to project within drainage watershed. - Calculate loading to project per year, using average inflow concentration in Table 7. - Use average precent removal for pollutant in Table 7.	0 to 10 points based on load reduction relative to the maximum load reduction for all implementation SWRP Projects.
- Total Phosphorus	lb/year of Phosphorus removed		- Calculate flow per year to project within drainage watershed. - Calculate loading to project per year, using average inflow concentration in Table 7. - Use average precent removal for pollutant in Table 7.	0 to 10 points based on load reduction relative to the maximum load reduction for all implementation SWRP Projects.
- Infiltration	acre-feet/year		-Estimate the amount of flow to the project - Estimate the amount of infiltration based on BMP design and saturated hydraulic conductivity	0 to 10 points based on infiltration volume relative the maximum infiltration volume for all implementation SWRP Projects.
			Possible Points	**100.00**
Water Supply Benefit Category				
- Water supply reliability		None, Low, Medium, High	High = augments a water supply, replaces a water supply, and reduces dependence on imported water Medium = does 2 out of the 3 Low = does 1 out of the 3 None = does 0 out of the 3	None (0 pts), Low (3 pts), Medium (6 pts), High (10 pts)
- Conjunctive Use		Not Improved, Improved	Improved = Stormwater used as an additional or alternative water supply	Not Improved (0 pts), Improved (10 pts)
- Water Conservation	acre-feet/year		- Estimate the amount of water this project may conserve	0 to 10 points based on estimated volume relative to total range of estimated volumes for all implementation SWRP Projects.
			Possible Points	**30.00**

(THIS PAGE LEFT BLANK INTENTIONALLY)

Table 4. Method of Evaluation for Implementation SWRP Projects

Evaluation Criteria	Quantitative Evaluation Criteria (Metric)	Qualitative Evaluation Criteria (Metric)	Method of Analysis	Point Allocation
Flood Management Benefit Category				
- Reduction of runoff rate/volume		None, Low, Medium, High	None = project does not reduce runoff rate/volume Medium = reduces runoff rate/volume High = eliminates runoff	None (0 pts), Medium (5 pts), High (10 pts)
- Sanitary sewer overflow reduction	acres of urban floodplain reduction		Estimate how many acres are removed from the floodplain	0 to 10 points based on estimated acreage reduced relative to maximum acreage reduced for all implementation SWRP Projects.
- Improved flood protection	number of houses/businesses protected		Estimate how many buildings are removed from the floodplain	0 to 10 points based on estimated number protected relative to maximum of estimated buildings protected for all implementation SWRP Projects.
- Reduction of flood risk-life and safety		None, Low, Medium, High	None = project does not reduce flooding Low = reduces flooding slightly Medium = reduce street flooding High = protect houses and businesses	None (0 pts), Low (3 pts), Medium (6 pts), High (10 pts)
			Possible Points	**40.00**
Environmental Benefit Category				
- Create or improve wetland/riparian habitat	acres		Estimate amount of acres created or improved	0 to 10 points based on estimated acreage relative to total range of estimated acreages for implementation SWRP Projects.
- Environmental flow (Instream Flow)		Decrease, no change, increase	Increase = increase environmental flows. No change = no change Decrease = Decrease environmental flows through reduction in runoff	Decrease (0 pts), no change (5 pts), increase (10 pts)
- Urban green space		Increase, no change, decrease	Increase = increase in urban green space No change = no change Decrease = decrease in urban green space	Increase (0 pts), no change (5 pts), decrease (10 pts)
- Energy use and greenhouse gas		Increase, no change, decrease	Project specific evaluation	Increase (0 pts), no change (5 pts), decrease (10 pts)
- Restore natural hydrograph		degrade, no change, restore	Degrade = less infiltration is allowed No change = project does not change infiltration Restore = project provides increase in infiltration.	degrade (0 pts), no change (5 pts), restore (10 pts)
- Water temperature		Increase, no change, decrease	Increase = riparian trees are removed, hardscapes are added No change Decrease = plant trees along creeks for shade or remove dark colored hardscapes to decrease heat islands	Increase (0 pts), no change (5 pts), decrease (10 pts)
			Possible Points	**60.00**
Community Benefit Category				
- Employment opportunities		Decrease, no change, increase	Decrease = Project will eliminate jobs No change = project will not change employment Increase = project will create or expand job opportunities (i.e. increase in maintenance)	Decrease (0 pts), no change (5 pts), Increase (10 pts)
- Public education		None, Low, Medium, High	(Educational signs, educational programs, media reports) None = Uses 0 out of 3 Low = Uses 1 out of 3 Medium = Uses 2 out of 3 High = Uses 3 out of 3	None (0 pts), Low (3 pts), Medium (6 pts), High (10 pts)
- Community involvement		None, low, medium, high	None = project will not involve community at all Low = project will have educational signs Medium = project will have outreach programs to educate community on how project works High = community will help implement project	None (0 pts) Low (3 pts), medium (6 pts), high (10 pts)
- Public use / recreation	acres		Project specific evaluation	0 to 10 points based on estimated acreage relative to total range of estimated acreages for implementation SWRP Projects.
			Possible Points	**40.00**

Legend:

	Dark grey indicates a Primary Benefit, as defined by the State
	Light grey indicates an Additional Benefit, as defined by the State
	White indicates an evaluation criteria not required by the State, but considered important

Italics = background info

(THIS PAGE LEFT BLANK INTENTIONALLY)

Storm Water Quality Evaluation Criteria for Implementation Projects

The evaluation criteria listed in Table 4 are analyzed using either qualitative or quantitative methods. While many of the analysis methods listed in Table 4 are straight forward, the evaluation criteria method for the qualitative water quality parameters need additional explanation:

To calculate the flow per year to each project requires the following steps:

1. Delineate a tributary watershed to the SWRP implementation project using the City's storm drain mapping or site visits.
2. Estimate impervious and pervious areas of a tributary watershed based on the tributary land uses. The City's land uses are shown on Figure 2. The impervious coverage for each City land use type is presented in Table 5.
3. Estimate the annual runoff volume based on the annual runoff depth per year, shown in Table 6.

To calculate pollutant loading and removal for each project requires the following steps:

1. Estimate the pollutant load using the typical pollutant concentration shown in Table 7 multiplied by the annual runoff volume.
2. Estimate the volume of infiltration using saturated hydraulic conductivity for each BMP and estimate the percent of pollutant removed through infiltration, shown in Table 7.
3. Estimate the volume of flow through each project (by subtracting out the infiltration volume) and estimate the pollutant load reduction for each project by multiplying the pollutant load by its associated removal percentage, shown in Table 7.
4. For trash removal load reduction calculations: The trash load rates are available by land use type, and are independent of the runoff volume. Consequently, the trash load is estimated by multiplying the area of the tributary land uses by the trash generation rates. Table 8 has trash generation rates by land use.

Land Uses and Impervious Percent

Subsheds and the percent of the subshed that is impervious and pervious will be delineated for each project site. Typical impervious percentages for various land uses are provided in Table 5. Figure 2 shows land uses in the City.

Table 5. Typical Impervious Percent for Land Uses	
Land Use	Impervious Percent
Commercial and Services	90
Industrial/Manufacturing	85
High Density Residential	70
Public, Government Facilities, K-12 Schools, Mixed Use	50
Low Density Residential	40
Urban Parks	5
Agriculture/Open space/Vacant	2

Annual Runoff Volume to Project Site

The runoff depth to a project site per year will be estimated using the mean annual precipitation depth and subtracting out the infiltration and depression storage. The annual runoff depth for impervious areas depends on depression storage. A depression storage value of 0.1 inch per storm was used for impervious surfaces. The annual runoff depth for pervious areas depends on both the depression storage and infiltration. A depression storage value of 0.35 inch per storm was used for pervious surfaces. Infiltration capacity depends on the hydrologic soil group (HSG) in the watershed, so a different runoff depth was estimated for each HSG. Figure 3 shows HSG for the PAW.

Table 6 shows the annual runoff depth for each HSG and impervious areas. This runoff volume will be used in conjunction with the inflow concentrations in Table 7 to estimate a pollutant loading to the site.

Table 6. Annual runoff depths and parameters					
	Impervious Area	Pervious Area, HSG A	Pervious Area, HSG B	Pervious Area, HSG C	Pervious Area, HSG D
Mean Annual Precipitation, in/year	19.5				
Depression Storage, in	0.1	0.35	0.35	0.35	0.35
Infiltration rate, in/hr	Not applicable	0.35	0.19	0.11	0.08
Annual Runoff Depth, in/year	19.27	1.6	2.6	3.8	4.7

Pollutant Concentrations

Table 7 has pollutant concentrations found in urban stormwater runoff averaged from a variety of land uses that are used to estimate the benefit the SWRP projects will have on water quality.

Table 7. Average Inflow Concentrations for Urban Stormwater Runoff Pollutants and Percent Removals for LID

Storm Water Contaminant	Average Inflow Concentration	Average Percent Removal for BMPs				Source
		Swales	Wet Basins	Dry Basins	Infiltration	
Sediment – TSS, mg/L	47.0	16%	78%	67%	90%	WE&RF, 2016 CWP, 2007
Fecal Coliform, MPN/100 mL	4857.1	10%	70%	76%	90%[b]	WE&RF, 2016
Heavy Metals[a], ug/L	725.7	21%	59%	36%	76%	WE&RF, 2016 CWP, 2007
Total Nitrogen, mg/L	1.3	30%	27%	10%	42%	CASQA, 2003
Total Phosphorus, mg/L	0.2	38%	60%	19%	65%	CASQA, 2003
Polychlorinated biphenyls (PCBs), ng/L	14.5	16%[b]	78%[b]	50%	90%[b]	CSN, 2015
Polyaromatic Hydrocarbons (PAHs), ng/L	9600.0	62%	78%	22%	90%[b]	CSN, 2015 NSCEP, 1999

[a] Heavy metals include total cadmium, total copper, total lead, and total zinc.
[b] Values for this percent removal were not found in literature, and therefore were assumed to act like sediment.

The averages for each of the inflow concentrations and percent removals were derived from a highly variable data set. Using averages is sufficient for the SWRP as the point of this study is to compare *relative* performance to develop a prioritization of the SWRP projects relative to each other.

Trash will be evaluated using averages of the BASMAA (2014) trash generation rates. See Table 8 for trash generation rates in urban stormwater runoff.

Table 8. Trash Generation Rates by Land Use (Adapted from BASMAA, 2014)

Land Use	Average for this study, gal/acre
Commercial and Services	6.2
Industrial	8.4
High Density Residential, Multi-Family Residential, and Mobile Homes	47.7
Low Density Residential	8.7
Commercial/Services for areas with a mean household income of under $50,000/year[a]	114.1
Public/Government Facilities	6.2
Urban Parks	5.0

[a] Yuba City has a median household income of $49,683/year (http://www.yubacity.net/city_hall/departments/economic_development/community_profile/demographics/)

RANKING AND PRIORITIZING PROJECTS

Tables 9 and 10 illustrate the methodology that will be used to rank and prioritize the SWRP Projects.

- Table 9. SWRP Planning Project Evaluations:
  - — Evaluation Result – The qualitative results of None, Low, Medium, or High.
  - — Evaluation Points – The points corresponding to the qualitative result, where None = 0 points, Low = 3 points, Medium = 6 points, and High = 10 points.
  - — At the bottom of each category is the points total and the normalized score for each project.
  - — At the bottom of the table is a Total Project Score, which represents the total of the normalized score for all categories.
- Table 10. SWRP Implementation Project Evaluations
  - — Evaluation Result – For qualitative evaluation criteria, this column will have the qualitative results of None, Low, Medium, or High. For quantitative evaluation criteria, this column will have the numerical results of the evaluation. A column is provided for each SWRP project.
  - — Evaluation Points – For qualitative evaluation criteria, this column will have the points corresponding to the qualitative result, where None = 0 points, Low = 3 points, Medium = 6 points, and High = 10 points. For quantitative evaluation criteria, points from 0-10 will be scaled relative to the other SWRP Projects. A column is provided for each SWRP project.
  - — At the bottom of each category is the points total and the normalized score for each project.
  - — At the bottom of the table is a Total Project Score, which represents the total of the normalized scores for all categories.

The SWRP Projects from both Tables 9 and 10 will be combined, ranked, and prioritized based on the Total Project Score, with higher scores being better than lower scores.

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 4.4 of Grant Agreement No. D1612615 between the City of Yuba City and the California State Water Resource Control Board.

Table 9. SWRP Planning Project Evaluations

Evaluation Criteria	Evaluation Result Units or Rating	E1. Detention Basin Standards		E2. Gilsizer Slough Standards		E3. Trash Capture Master Plan	
		Evaluation Result	Evaluation Points	Evaluation Result	Evaluation Points	Evaluation Result	Evaluation Points
Water Quality Benefit Category	None (0 pts), Low (3 pts), Medium (6 pts), High (10 pts)						
	Normalized Score						
Water Supply Benefit Category	None (0 pts), Low (3 pts), Medium (6 pts), High (10 pts)						
	Normalized Score						
Flood Management Benefit Category	None (0 pts), Low (3 pts), Medium (6 pts), High (10 pts)						
	Normalized Score						
Environmental Benefit Category	None (0 pts), Low (3 pts), Medium (6 pts), High (10 pts)						
	Normalized Score						
Community Benefit Category	None (0 pts), Low (3 pts), Medium (6 pts), High (10 pts)						
	Normalized Score						
	Total Project Score						

(THIS PAGE LEFT BLANK INTENTIONALLY)

Table 10. SWRP Implementation Project Evaluations

Evaluation Criteria	Evaluation Result Units or Rating	A1. Gilsizer Slough North Detention Pond		A2.Notheast Yuba City Detention Pond		A2.Notheast Yuba City Detention Pond		A3. Noth Yuba City Detention Pond		A4. South Yuba City Detention Pond – North Pond		A5. South Yuba City Detention Pond – South Pond		A6. Civic Center Detention Pond		F1. Trash Capture Walton Pipeline		F2. Trash Capture Onstott Pipeline		F3. Trash Screen at Orchard and Park	
		Evaluation Result	Evaluation Point	Evaluation Result	Evaluation Point	Evaluation Result	Evaluation Point	Evaluation Result	Evaluation Point	Evaluation Result	Evaluation Point	Evaluation Result	Evaluation Point	Evaluation Result	Evaluation Point	Evaluation Result	Evaluation Point	Evaluation Result	Evaluation Point	Evaluation Result	Evaluation Point
Water Quality Benefit Category																					
- Natural water drainage and treatment	Not Improved, Improved																				
- Nonpoint source pollution control. See Priority Pollutants, (i.e. 303(d) List Pollutants) and common storm water conaminants listed below.																					
- Sediment, mercury, Group A Pesticides, and oxygen demanding substances	lbs/year of sediment (TSS) removed																				
- Chlorpyrifos, Diazinon, Oxyfluorfen	None, Medium, High																				
- PCBs	lb/year of PCBs removed																				
- Trash	lbs/year of trash removed																				
- Heavy Metals (cadmium, copper, lead, and zinc)	lbs/year of heavy metals removed																				
- Oils and grease (polyaromatic hydrocarbons or PAHs)	lb/year of PAHs removed																				
- Total Nitrogen	lb/year of Nitrogen removed																				
- Total Phosphorus	lb/year of Phosphorus removed																				
- Infiltration	acre-feet/year																				
	Water Quality Points																				
	Normalized Score																				
Water Supply Benefit Category																					
- Water supply reliability	None, Low, Medium, High																				
- Conjunctive Use	Not Improved, Improved																				
- Water Conservation	acre-feet/year																				
	Water Supply Points																				
	Normalized Score																				

(THIS PAGE LEFT BLANK INTENTIONALLY)

Table 10. SWRP Implementation Project Evaluations

Evaluation Criteria	Evaluation Result Units or Rating	A1. Gilsizer Slough North Detention Pond		A2.Notheast Yuba City Detention Pond		A2.Notheast Yuba City Detention Pond		A3. Noth Yuba City Detention Pond		A4. South Yuba City Detention Pond – North Pond		A5. South Yuba City Detention Pond – South Pond		A6. Civic Center Detention Pond		F1. Trash Capture Walton Pipeline		F2. Trash Capture Onstott Pipeline		F3. Trash Screen at Orchard and Park	
		Evaluation Result	Evaluation Point	Evaluation Result	Evaluation Point	Evaluation Result	Evaluation Point	Evaluation Result	Evaluation Point	Evaluation Result	Evaluation Point	Evaluation Result	Evaluation Point	Evaluation Result	Evaluation Point	Evaluation Result	Evaluation Point	Evaluation Result	Evaluation Point	Evaluation Result	Evaluation Point
Flood Management Benefit Category																					
- Reduction of runoff rate/volume	None, Low, Medium, High																				
- Sanitary sewer overflow reduction	acres of urban floodplain reduction																				
- Improved flood protection	number of houses/businesses protected																				
- Reduction of flood risk-life and safety	None, Low, Medium, High																				
	Flood Management Points																				
	Normalized Score																				
Environmental Benefit Category																					
- Create or improve wetland/riparian habitat	acres																				
- Environmental flow (Instream Flow)	Decrease, no change, increase																				
- Urban green space	Increase, no change, decrease																				
- Energy use and greenhouse gas	Increase, no change, decrease																				
- Restore natural hydrograph	degrade, no change, restore																				
- Water temperature	Increase, no change, decrease																				
	Environmental Points																				
	Normalized Score																				
Community Benefit Category																					
- Employment opportunities	Decrease, no change, increase																				
- Public education	None, Low, Medium, High																				
- Community involvement	None, low, medium, high																				
- Public use / recreation	acres																				
	Community Points																				
	Normalized Score																				
	Total Project Scores																				

(THIS PAGE LEFT BLANK INTENTIONALLY)

REFERENCES

BASMAA (Bay Area Stormwater Management Agencies Association). June 20, 2014. San Francisco Stormwater Trash Generation Rates, Final Technical Report. Obtained July 2017. https://www.waterboards.ca.gov/sanfranciscobay/water_issues/programs/stormwater/MRP/BASMAA_Trash_Generation_Rates_Final_Report.pdf

CASQA (California Stormwater Quality Association). 2003. Stormwater Best Management Practice Handbook: New Development and Redevelopment.

CSN (Chesapeake Stormwater Network). 2015. Potential Benefits of Nutirent and Sediment Practicies to Reduce Toxic Contaminants in the Chesapeake Bay Watershed, Part 1: Removal of Urban Toxic Contaminants. Obtained August 2017. http://chesapeakestormwater.net/2016/03/urban-toxic-contaminants-in-the-chesapeake-bay/

CWP (Center for Watershed Protection). September 2007. National Pollutant Removal Performance Database, Version 3. Obtained August 2017. http://www.stormwaterok.net/CWP%20Documents/CWP-07%20Natl%20Pollutant%20Removal%20Perform%20Database.pdf

NSCEP (National Service Center for Environmental Publications). 1999. Storm Water Technology Fact Sheet Vegetated Swales. https://nepis.epa.gov/Exe/ZyNET.exe/200044A8.txt?ZyActionD=ZyDocument&Client=EPA&Index=1995%20Thru%201999&Docs=&Query=&Time=&EndTime=&SearchMethod =1&TocRestrict=n&Toc=&TocEntry=&QField=&QFieldYear=&QFieldMonth=&QFieldDay=&UseQField=&IntQFieldOp=0&ExtQFieldOp=0&XmlQuery=&File=D%3A%5CZYFILES%5CINDEX%20DATA%5C95THRU99%5CTXT%5C00000015%5C200044A8.txt&User=ANONYMOUS&Password=anonymous&SortMethod=h%7C-&MaximumDocuments=1&FuzzyDegree=0&ImageQuality=r75g8/r75g8/x150y150g16/i425&Display=hpfr&DefSeekPage=x&SearchBack=ZyActionL&Back=ZyActionS&BackDesc=Results%20page&MaximumPages=1&ZyEntry=4

WE&RF (Water Environment and Reuse Foundation). 2016. Final Report International Stormwater BMP Database 2016 Summary Statistics. Obtained August 2017. http://www.bmpdatabase.org/index.htm

(THIS PAGE LEFT BLANK INTENTIONALLY)

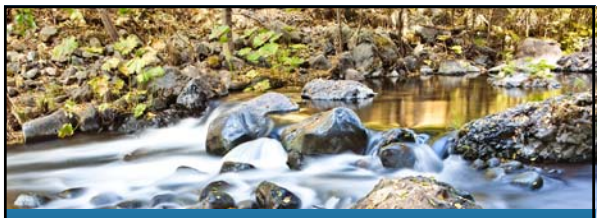
(THIS PAGE LEFT BLANK INTENTIONALLY)

Sign-In Sheet

April 18, 2018

Name	Affiliation	Email
Manu Dhaliwal	Yuba City	
Nick Ramos	Sutter County	
Ben Moody	Yuba City	
Natalie Muradian	West Yost	
Doug Moore	West Yost	
Karen Ashby	Larry Walker (on phone)	
Ravi Jawanda	State Grant Manager (on phone)	

(THIS PAGE LEFT BLANK INTENTIONALLY)



Storm Water Resource Plan Technical Advisory Committee

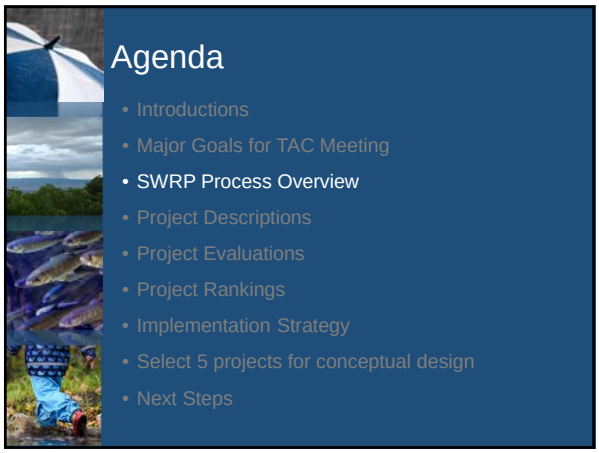
TAC Meeting 3
April 18, 2018

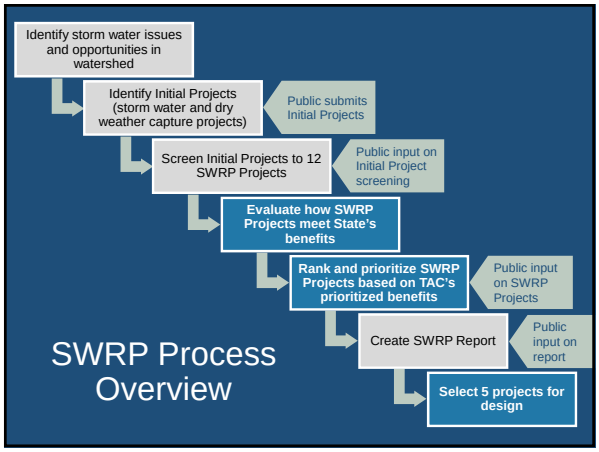
Agenda

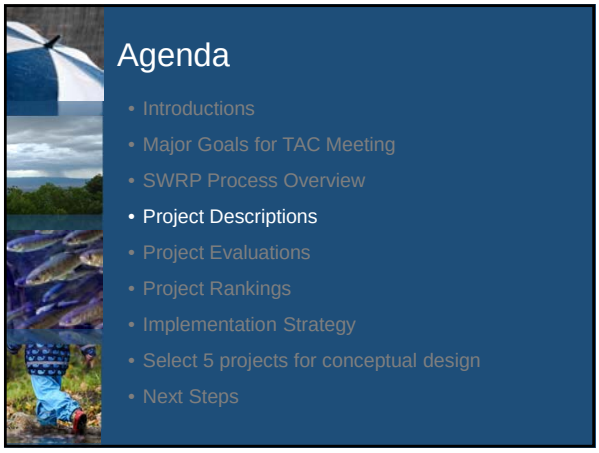
- Introductions
- Major Goals for TAC Meeting
- SWRP Process Overview
- Project Descriptions
- Project Evaluations
- Project Rankings
- Implementation Strategy
- Select 5 projects for conceptual design
- Next Steps

Major Goals for This Meeting

- Understand the project rankings
- Understand and discuss the implementation schedule and strategy
- Select 5 projects for conceptual design


Agenda
• Introductions
• Major Goals for TAC Meeting
• SWRP Process Overview
• Project Descriptions
• Project Evaluations
• Project Rankings
• Implementation Strategy
• Select 5 projects for conceptual design
• Next Steps

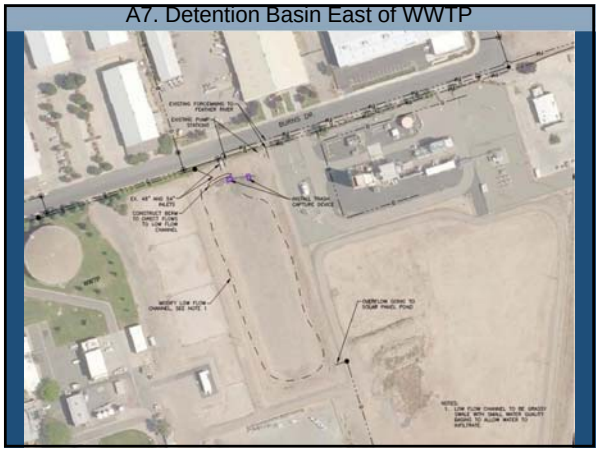

SWRP Process Overview
Identify storm water issues and opportunities in watershed
Identify Initial Projects (storm water and dry weather capture projects)
Public submits Initial Projects
Screen Initial Projects to 12 SWRP Projects
Public input on Initial Project screening
Evaluate how SWRP Projects meet State's benefits
Rank and prioritize SWRP Projects based on TAC's prioritized benefits
Public input on SWRP Projects
Create SWRP Report
Public input on report
Select 5 projects for design


Agenda
• Introductions
• Major Goals for TAC Meeting
• SWRP Process Overview
• Project Descriptions
• Project Evaluations
• Project Rankings
• Implementation Strategy
• Select 5 projects for conceptual design
• Next Steps

A1. Gilsizer North Detention Basin

A4. Shanghai Bend Detention Basin

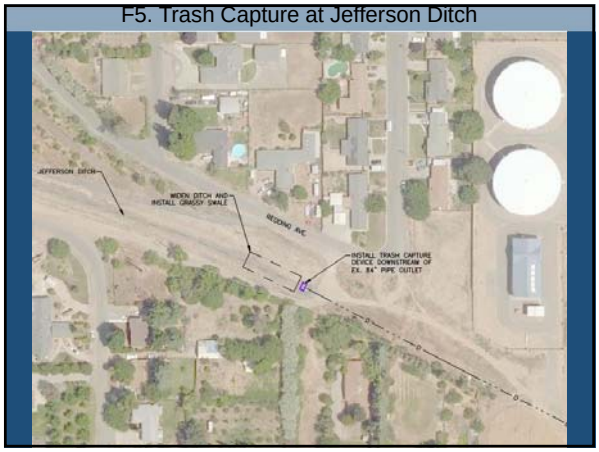
A7. Detention Basin East of WWTP



F1-F2-F4. Trash Capture at Gilsizer Slough and Lincoln Road

F3. Trash Capture at Orchard and Park

F5. Trash Capture at Jefferson Ditch



F6. Trash Capture at Live Oak Canal and Franklin Road

Planning Projects

- E1. Standards for Detention Basins
- E2. Standards for Gilsizer Slough
- E3. Trash Capture Master Plan

Agenda

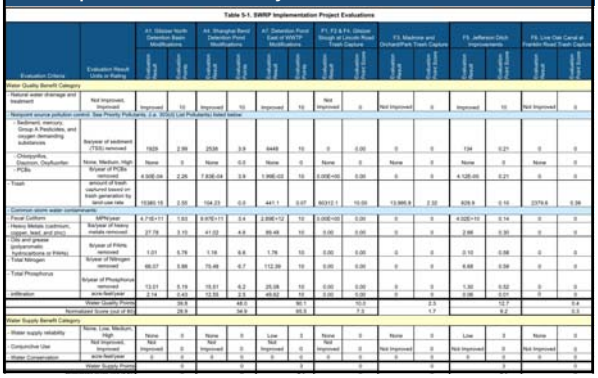
- Introductions
- Major Goals for TAC Meeting
- SWRP Process Overview
- Project Descriptions
- Project Evaluations
- Project Rankings
- Implementation Strategy
- Select 5 projects for conceptual design
- Next Steps

TAC Prioritization of Benefit Categories

Table 2. Maximum Score for each Benefit Category

Categories	TAC Prioritization of Category	Maximum Score Possible for Project Evaluations
Water Quality	8	80
Water Supply	8.1	81
Flood Management	9.4	94
Environment	4	40
Community	5.4	54

Implementation Project Evaluation



Implementation Project - Evaluation Points

Benefit Category	A1. Gilsizer North Detention Basin Modifi-cations	A4. Shanghai Bend Detention Pond Modifi-cations	A7. Detention Pond East of WWTP Modifi-cations	F1, F2 & F4. Gilsizer Slough at Lincoln Road Trash Capture	F3. Madrone and Orchard/ Park Trash Capture	F5. Jefferson Ditch Improve-ments	F6. Live Oak Canal at Franklin Road Trash Capture
Water Quality	39.8	48	90.1	10	2.3	12.7	0.4
Water Supply	0	0	3	0	0	3	0
Flood Manage-ment	6	6	6	0	3	3	0
Environ-mental	51.8	51.8	40	25	25	38.2	25
Community	21.2	26	10	10	10	10	10

TAC Prioritization of Benefit Categories

Table 2. Maximum Score for each Benefit Category

Categories	TAC Prioritization of Category	Maximum Score Possible for Project Evaluations
Water Quality	8	80
Water Supply	8.1	81
Flood Management	9.4	94
Environment	4	40
Community	5.4	54

Normalized Score

Benefit Category	A1. Gilsizer North Detention Basin Modifi-cations	A4. Shanghai Bend Detention Pond Modifi-cations	A7. Detention Pond East of WWTP Modifi-cations	F1, F2 & F4. Gilsizer Slough at Lincoln Road Trash Capture	F3. Madrone and Orchard/ Park Trash Capture	F5. Jefferson Ditch Improve-ments	F6. Live Oak Canal at Franklin Road Trash Capture
Water Quality	28.9	34.9	65.5	7.3	1.7	9.2	0.3
Water Supply	0	0	8.1	0	0	8.1	0
Flood Management	14.1	14.1	14.1	0	7.1	7.1	0
Environmental	34.5	34.5	26.7	16.7	16.7	25.5	16.7
Community	26.8	35.1	13.5	13.5	13.5	13.5	13.5
FINAL PROJECT SCORE	106.2	118.6	127.9	37.4	38.9	63.3	30.5

Planning Project Evaluation

Evaluation Points

Benefit Category	E1. Detention Basin Standards	E2. Gilsizer Slough Standards	E3. Trash Capture Master Plan
Water Quality	6	6	6
Water Supply	6	0	3
Flood Management	10	10	3
Environmental	3	3	3
Community	6	0	3

Normalized Score

Benefit Category	E1. Detention Basin Standards	E2. Gilsizer Slough Standards	E3. Trash Capture Master Plan
Water Quality	4.4	4.4	4.4
Water Supply	16.2	0	8.1
Flood Management	23.5	23.5	7.1
Environmental	2	2	2
Community	8.1	0	4.1
FINAL PROJECT SCORE	54.2	29.9	25.6

Agenda

- Introductions
- Major Goals for TAC Meeting
- SWRP Process Overview
- Project Descriptions
- Project Evaluations
- Project Ranking
- Implementation Strategy
- Select 5 projects for conceptual design
- Next Steps

Project Ranking

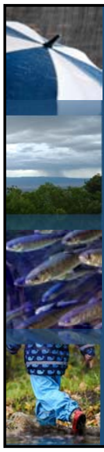
Table 5-6. Project Ranking Summary Based on Multiple Benefit Evaluation

Rank	Project Number	Project Title	Total Points
1	A7	Detention Pond East of WWTP Modifications	127.9
2	A4	Shanghai Bend Detention Pond Modifications	118.6
3	A1	Gilsizer North Detention Basin Modifications	106.2
4	F5	Jefferson Ditch Improvements	63.3
5	E1	Detention Basin Standards	54.2
6	F3	Madrone and Orchard/Park Trash Capture	38.9
7	F1, F2 & F4	Gilsizer Slough at Lincoln Road Trash Capture	37.4
8	F6	Live Oak Canal at Franklin Road Trash Capture	30.5
9	E2	Gilsizer Slough Standards	29.9
10	E3	Trash Capture Master Plan	25.6

Project Ranking – Cost Summary

Table 6-1. Project Cost Summary (Summarized from Chapter 5)

Rank	SWRP Project	Total Capital Cost, dollars	Annual O&M Costs, dollars per year
1	A7. Detention Basin East of WWTP	236,100	4,000
2	A4. Shanghai Bend Detention Basin	786,800	24,800
3	A1. Gilsizer North Detention Basin	612,000	26,800
4	F5. Trash Capture at Jefferson Ditch	110,000	4,000
5	E1. Standards for Detention Basins	20,000	--
6	F3. Trash Capture at Orchard and Park	180,800	6,000
7	F1., F2., F4., Trash Capture in Gilsizer Slough at Lincoln Road	398,100	6,000
8	F6. Trash Capture in Live Oak Canal at Franklin Road	71,700	6,000
9	E2. Standards for Gilsizer Slough	20,000	--
10	E3. Trash Capture Master Plan	79,800	--
	Total	$2,515,300	$77,600



Agenda

- Introductions
- Major Goals for TAC Meeting
- SWRP Process Overview
- Project Descriptions
- Project Evaluations
- Project Rankings
- Implementation Strategy
- Select 5 projects for conceptual design
- Next Steps

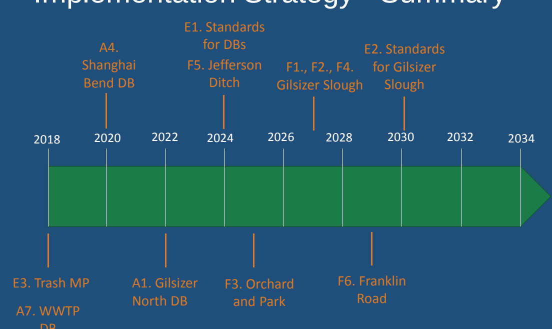
Implementation Strategy - Schedule

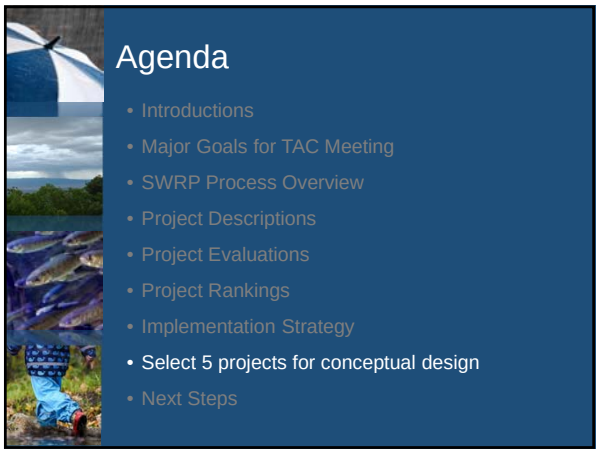
- Table 6-2

Table 6-2. SWRP Project Funding and Implementation Plan/Schedule

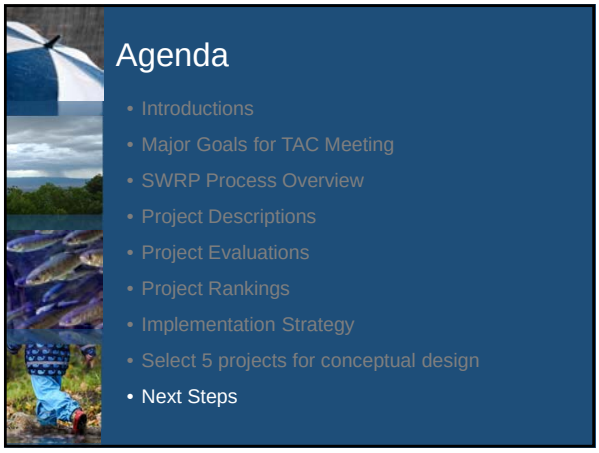
SWRP Project	Planning/ Engineering Cost	Construction Cost	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031
Annual Available Capital Funds	--	--	$ 200,000	$ 100,000	$ 100,000	$ 100,000	$ 100,000	$ 100,000	$ 100,000	$ 100,000	$ 100,000	$ 100,000	$ 100,000	$ 100,000	$ 100,000	$ 100,000
Capital Costs																
E3. Trash Capture Master Plan	$ 79,800	--	79,800													
A7. Detention Basin East of WWTP	$ 38,100	$ 198,000	38,100	198,000												
A4. Shanghai Bend Detention Basin	$ 126,900	$ 659,900			126,900	659,900										
A1. Gilsizer North Detention Basin	$ 98,700	$ 513,300					98,700	513,300								
E1. Standards for Detention Basins	$ 20,000	--							20,000							
F5. Trash Capture at Jefferson Ditch	$ 17,800	$ 92,200							17,800	92,200						
F3. Trash Capture at Orchard and Park	$ 29,200	$ 151,600								29,200	151,600					
F1., F2., F4., Trash Capture in Gilsizer Slough at Lincoln Road	$ 64,200	$ 333,900										64,200	333,900			
F6. Trash Capture in Live Oak Canal at Franklin Road	$ 11,600	$ 60,100												11,600	60,100	
E2. Standards for Gilsizer Slough	$ 20,000	--													20,000	
Cumulative Available Capital Funds	--	--	$ 82,100	$ (15,900)	$ (26,900)	$ (559,900)	$ 1,300	$ (412,000)	$ 62,200	$ 40,800	$ (10,800)	$ 35,800	$ (198,100)	$ 88,400	$ 108,300	$ 208,300
Grants or Loans Needed	--	--	$ -	$ 15,900	$ 26,900	$ 559,900	$ -	$ 412,000	$ -	$ -	$ 10,800	$ -	$ 198,100	$ -	$ -	$ -
O&M Costs																
Annual Available O&M Funds	--	--	$ 50,000	$ 50,000	$ 50,000	$ 50,000	$ 50,000	$ 50,000	$ 50,000	$ 50,000	$ 50,000	$ 50,000	$ 50,000	$ 50,000	$ 50,000	$ 50,000
E3. Trash Capture Master Plan	--	--														
A7. Detention Basin East of WWTP	--	$ 4,000			4,000	4,000	4,000	4,000	4,000	4,000	4,000	4,000	4,000	4,000	4,000	4,000
A4. Shanghai Bend Detention Basin	--	$ 24,800					24,800	24,800	24,800	24,800	24,800	24,800	24,800	24,800	24,800	24,800
A1. Gilsizer North Detention Basin	--	$ 26,800							26,800	26,800	26,800	26,800	26,800	26,800	26,800	26,800
E1. Standards for Detention Basins	--	--														
F5. Trash Capture at Jefferson Ditch	--	$ 4,000									4,000	4,000	4,000	4,000	4,000	4,000
F3. Trash Capture at Orchard and Park	--	$ 6,000										6,000	6,000	6,000	6,000	6,000
F1., F2., F4., Trash Capture in Gilsizer Slough at Lincoln Road	--	$ 6,000												6,000	6,000	6,000
F6. Trash Capture in Live Oak Canal at Franklin Road	--	$ 6,000														6,000
E2. Standards for Gilsizer Slough	--	--														
Total Cumulative O&M Costs			$ -	$ -	$ 4,000	$ 4,000	$ 28,800	$ 28,800	$ 55,600	$ 55,600	$ 59,600	$ 65,600	$ 65,600	$ 71,600	$ 71,600	$ 77,600
Additional Source of O&M Funds Needed			$ -	$ -	$ -	$ -	$ -	$ -	$ 5,600	$ 5,600	$ 9,600	$ 15,600	$ 15,600	$ 21,600	$ 21,600	$ 27,600

Implementation Strategy - Summary



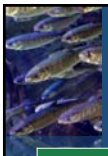

Agenda
• Introductions
• Major Goals for TAC Meeting
• SWRP Process Overview
• Project Descriptions
• Project Evaluations
• Project Rankings
• Implementation Strategy
• Select 5 projects for conceptual design
• Next Steps


Select 5 Projects for Conceptual Design


Agenda
• Introductions
• Major Goals for TAC Meeting
• SWRP Process Overview
• Project Descriptions
• Project Evaluations
• Project Rankings
• Implementation Strategy
• Select 5 projects for conceptual design
• Next Steps

Next Steps- Schedule & Key Milestones

Schedule Item	Proposed Detailed Schedule for Delivery to State	State Contract Critical Due Date
State Contract Executed	7/11/2017	
Detailed Project Schedule	8/11/2017	8/11/2017
TAC meeting 1	9/20/2017	
Public/Stakeholder Meeting 1	10/25/2017	
Close Public Comments and Submission of Initial Projects	11/8/2017	
TAC Meeting 2	12/6/2017	
Public and Stakeholder Meeting 2	1/9/2018	
TAC Meeting 3	4/18/2018	
Publish Draft SWRP	4/30/218	
TAC Meeting 4 – Comments Due	5/14/2018	
Public and Stakeholder Meeting 3	5/16/2018	
Final Conceptual Design of Five Projects	6/28/2018	Summer 2018
Final SWRP and Self Certification	7/30/2018	7/30/2018
SWRP adoption materials to City	7/30/2018	
City Council adopts SWRP	9/4/2018	
Submit materials for NSV IRWM TAC Meeting	TBD	
NSV IRWM Adopts SWRP	TBD	
All work complete	11/23/2018	12/31/2018



Next Steps – Action Items

Action Items	Proposed Due Dates
Select 5 projects for conceptual design	April 18
Send out Admin Draft SWRP	April 30
Provide comments on Admin Draft SWRP	May 14
Attend TAC Meeting 4	May 14
Provide conceptual design for comment	June 7
Provide comments on conceptual designs	June 14

Other Items?

(THIS PAGE LEFT BLANK INTENTIONALLY)

YUBA CITY BASIN STORM WATER RESOURCE PLAN TAC KICKOFF MEETING

Client:	**City of Yuba City**
Project:	**Yuba City Basin Storm Water Resource Plan**
Subject:	**Technical Advisory Kickoff Meeting**
Meeting Date/Time:	**April 18, 2018; 2:00 pm**
Location:	**Sutter Room, 1201 Civic Center Boulevard, Yuba City, CA 95993**
Summary by:	**Natalie Muradian**

INVITED ATTENDEES:

Present (Y/N)	Name	Representing	TAC Member (Y/N)
Y	Manu Dhaliwal	City - Storm Water Management	Y
Y	Ben Moody	City – Storm Drainage Management	Y
N	Diana Langley	City – Public Works	Y
N	Matthew Langley	City – Parks and Grounds	Y
Y	Nick Ramos	Sutter County – Development Services	Y
N	Sean Minard	MHM – Engineering and Development Community	Y
Y	Ravinder Jawanda	State Water Board – Grant Manager	State Grant Contract Manager
Y	Natalie Muradian	West Yost	Consultant Team
Y	Doug Moore	West Yost	
Y	Karen Ashby	Larry Walker	

DISCUSSION TOPICS:

Please see attached slides for the key discussion items.

- Introductions
- Major Goals for TAC Meeting
- SWRP Process Overview
- Project Descriptions
- Project Evaluations
- Project Rankings
- Implementation Strategy
- Selection of 5 projects for conceptual design
- Next Steps

Project Descriptions

- Question from Ben: What happened to the project that was proposed down in the south end of the watershed that involved the diversion from Gilsizer Slough?
  - This project was screened during the initial screening process. It will still be included in the SWRP document but was not evaluated further. The reason it was screened out was because it did not include public land, which was a requirement of the SWRP. In addition, it was estimated to be a relatively expensive project and potentially difficult to implement, and did not help agencies or organizations meet regulatory requirements. This result is shown in the Project Screening TM.
- Question from Ben: Why weren't the northern detention basins included in the SWRP projects?
  - Based on discussions with the City, we decided to focus on basins that have large amounts of high trash generating land uses. The basins in the northern part of the City mainly serve low density residential areas, and therefore, it would be more cost effective to implement more localized approach to trash capture for the few parcels that are high trash generating land uses.
- Can in-channel trash screens be used in these channels?
  - West Yost discussed this question with the State, and they confirmed that in trapezoidal channels intended for storm drainage conveyance, in-line devices may be used.
  - The in-channel trash screens will need to be approved by the State Water Board prior to being used as a "full trash capture device" under Track 1 in the California Trash Amendments.
- Public domain BMPs could potentially be considered full trash capture systems as long as the basin provides infiltration for the 1-year, 1-hour storm (i.e. the infiltration could act as screening) and proper operations and maintenance is followed. (O&M requirements are included in the public domain BMP sheets on the State's website.)

Project Ranking

- Ben worried that the infiltration capabilities of the projects may be over-prioritizing the water quality results, resulting in under-prioritizing the trash capabilities of the projects.

Project Cost

- The costs for the detention basins are so high because they also include costs for implementing playfields and irrigation for playfields.
- Costs of projects could be phased as funding becomes available.

Implementation Strategy

- Schedule was based on the results of the ranking as well as on project dependencies.

— Even though the master plan was ranked low, it needs to be implemented prior to the other trash capture projects.

- If the City was interesting in implementing projects based on their performance of trash removal, they can use Table 5-1, using the Trash results. For example, the Gilsizer Slough project at Lincoln Road performed the best for trash capture, followed by the Gilsizer North Detention Basin project.
- Additionally, approval for the in-channel trash capture device may take several years, and therefore, should not implemented until this approval is received.

Selection of 5 Projects for Conceptual Design

- Based on the discussions on the project descriptions and rankings, Ben will take the information to another TAC member who could not attend the meeting, Diana Langley, to receive her feedback.

ACTION ITEM LOG:

No.	Subject	Action	Party	Date	Status
1	Admin Draft SWRP	West Yost to complete admin draft SWRP to send to TAC and State for review and comment	West Yost	4/30/2018	In progress
2	Adaptive management strategy	Ravi to provide feedback on if the adaptive management strategy incorporated into the text of Chapter 6 meets the requirements.	Ravi	4/27/2018	In progress
3	Projects for Conceptual Design	TAC members will discuss amongst themselves and may convene via phone to discuss results.	4/18/2018	TAC members/ City public works	In progress

DECISION LOG:

No.	Subject	Decision	Date	Party	Notes

(THIS PAGE LEFT BLANK INTENTIONALLY)

Table 5-1. SWRP Implementation Project Evaluations

Evaluation Criteria	Evaluation Result Units or Rating	A1. Gilsizer North Detention Basin Modifications		A4. Shanghai Bend Detention Pond Modifications		A7. Detention Pond East of WWTP Modifications		F1, F2 & F4. Gilsizer Slough at Lincoln Road Trash Capture		F3. Madrone and Orchard/Park Trash Capture		F5. Jefferson Ditch Improvements		F6. Live Oak Canal at Franklin Road Trash Capture	
		Evaluation Result	Evaluation Points	Evaluation Result	Evaluation Points	Evaluation Result	Evaluation Points	Evaluation Result	Evaluation Point Score	Evaluation Result	Evaluation Point Score	Evaluation Result	Evaluation Point Score	Evaluation Result	Evaluation Point Score
Water Quality Benefit Category															
- Natural water drainage and treatment	Not Improved, Improved	Improved	10	Improved	10	Improved	10	Not Improved	0	Not Improved	0	Improved	10	Not Improved	0
- Nonpoint source pollution control. See Priority Pollutants, (i.e. 303(d) List Pollutants) listed below:															
- Sediment, mercury, Group A Pesticides, and oxygen demanding substances	lbs/year of sediment (TSS) removed	1929	2.99	2538	3.9	6448	10	0	0.00	0	0	134	0.21	0	0
- Chlorpyrifos, Diazinon, Oxyfluorfen	None, Medium, High	None	0	None	0.0	None	0	None	0	None	0	None	0	None	0
- PCBs	lb/year of PCBs removed	4.50E-04	2.26	7.83E-04	3.9	1.99E-03	10	0.00E+00	0.00	0	0	4.12E-05	0.21	0	0
- Trash	amount of trash captured based on trash generation by land-use rate	15380.15	2.55	104.23	0.0	441.1	0.07	60312.1	10.00	13,995.8	2.32	628.9	0.10	2379.6	0.39
- Common storm water contaminants:															
- Fecal Coliform	MPN/year	4.71E+11	1.63	9.97E+11	3.4	2.89E+12	10	0.00E+00	0.00	0	0	4.02E+10	0.14	0	0
- Heavy Metals (cadmium, copper, lead, and zinc)	lbs/year of heavy metals removed	27.78	3.10	41.02	4.6	89.48	10	0.00	0.00	0	0	2.66	0.30	0	0
- Oils and grease (polyaromatic hydrocarbons or PAHs)	lb/year of PAHs removed	1.01	5.76	1.16	6.6	1.76	10	0.00	0.00	0	0	0.10	0.58	0	0
- Total Nitrogen	lb/year of Nitrogen removed	66.07	5.88	75.48	6.7	112.39	10	0.00	0.00	0	0	6.68	0.59	0	0
- Total Phosphorus	lb/year of Phosphorus removed	13.01	5.19	15.51	6.2	25.08	10	0.00	0.00	0	0	1.30	0.52	0	0
- Infiltration	acre-feet/year	2.14	0.43	12.55	2.5	49.62	10	0.00	0.00	0	0	0.06	0.01	0	0
	Water Quality Points		39.8		48.0		90.1		10.0		2.3		12.7		0.4
	Normalized Score (out of 80)		28.9		34.9		65.5		7.3		1.7		9.2		0.3
Water Supply Benefit Category															
- Water supply reliability	None, Low, Medium, High	None	0	None	0	Low	3	None	0	None	0	Low	3	None	0
- Conjunctive Use	Not Improved, Improved	Not Improved	0	Not Improved	0	Not Improved	0	Not Improved	0	Not Improved	0	Not Improved	0	Not Improved	0
- Water Conservation	acre-feet/year	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Water Supply Points		0		0		3		0		0		3		0
	Normalized Score (out of 81)		0		0		8.1		0		0		8.1		0

(THIS PAGE LEFT BLANK INTENTIONALLY)

Table 5-1. SWRP Implementation Project Evaluations

Evaluation Criteria	Evaluation Result Units or Rating	A1. Gilsizer North Detention Basin Modifications		A4. Shanghai Bend Detention Pond Modifications		A7. Detention Pond East of WWTP Modifications		F1, F2 & F4. Gilsizer Slough at Lincoln Road Trash Capture		F3. Madrone and Orchard/Park Trash Capture		F5. Jefferson Ditch Improvements		F6. Live Oak Canal at Franklin Road Trash Capture	
		Evaluation Result	Evaluation Points	Evaluation Result	Evaluation Points	Evaluation Result	Evaluation Points	Evaluation Result	Evaluation Point Score	Evaluation Result	Evaluation Point Score	Evaluation Result	Evaluation Point Score	Evaluation Result	Evaluation Point Score
Flood Management Benefit Category															
- Reduction of runoff rate/volume	None, Low, Medium, High	Low	3	Low	3	Low	3	None	0	None	0	Low	3	None	0
- Sanitary sewer overflow reduction	acres of urban floodplain reduction	0	0	0	0	0	0	0	0	0	0	0	0	0	0
- Improved flood protection	number of houses/businesses protected	0	0	0	0	0	0	0	0	0	0	0	0	0	0
- Reduction of flood risk-life and safety	None, Low, Medium, High	Low	3	Low	3	Low	3	None	0	Low	3	None	0	None	0
Flood Management Points			6		6		6		0		3		3		0
Normalized Score (out of 94)			14.1		14.1		14.1		0.0		7.1		7.1		0
Environmental Benefit Category															
- Create or improve wetland/riparian habitat	acres	0.194	6.8	0.285	6.8	0.000	0.0	0	0.0	0	0	0.092	3.2	0	0
- Environmental flow (Instream Flow)	Degrade, No change, Enhance	Enhance	10	Enhance	10	Enhance	10	No change	5	No change	5	Enhance	10	No change	5
- Urban green space	Decrease, No change, Increase	Increase	10	Increase	10	No change	5	No change	5	No change	5	No change	5	No change	5
- Energy use and greenhouse gas	Increase, No change, Decrease	Decrease	10	Decrease	10	Decrease	10	No change	5	No change	5	No change	5	No change	5
- Restore natural hydrograph	Degrade, No change, Restore	Restore	10	Restore	10	Restore	10	No change	5	No change	5	Restore	10	No change	5
- Water temperature	Degrade, No change, Restore	No change	5	No change	5	No change	5	No change	5	No change	5	No change	5	No change	5
Environmental Points			51.8		51.8		40.0		25.0		25		38.2		25
Normalized Score (out of 40)			34.5		34.5		26.7		16.7		16.7		25.5		16.7
Community Benefit Category															
- Employment opportunities	Decrease, No change, Increase	Increase	10	Increase	10	Increase	10	Increase	10	Increase	10	Increase	10	Increase	10
- Public education	None, Low, Medium, High	Low	3	Low	3	None	0	None	0	None	0	None	0	None	0
- Community involvement	None, Low, Medium, High	Low	3	Low	3	None	0	None	0	None	0	None	0	None	0
- Public use / recreation	acres	2.78	5.18	5.37	10	0	0	0	0	0	0	0	0	0	0
Community Points			21.2		26		10		10		10		10		10
Normalized Score (out of 54)			28.6		35.1		13.5		13.5		13.5		13.5		13.5
Total Project Scores (out of 349)			**106.2**		**118.6**		**127.9**		**37.4**		**38.9**		**63.3**		**30.5**

(THIS PAGE LEFT BLANK INTENTIONALLY)

Table 5-2. SWRP Planning Project Evaluations							
		E1. Detention Basin Standards		E2. Gilsizer Slough Standards		E3. Trash Capture Master Plan	
Evaluation Criteria	Evaluation Result Units or Rating	Evaluation Result	Evaluation Points	Evaluation Result	Evaluation Points	Evaluation Result	Evaluation Points
Water Quality Benefit Category	None (0 pts), Low (3 pts), Medium (6 pts), High (10 pts)	Medium	6	Medium	6	Medium	6
	Normalized Score (out of 80)		4.4		4.4		4.4
Water Supply Benefit Category	None (0 pts), Low (3 pts), Medium (6 pts), High (10 pts)	Medium	6	None	0	Low	3
	Normalized Score (out of 81)		16.2		0		8.1
Flood Management Benefit Category	None (0 pts), Low (3 pts), Medium (6 pts), High (10 pts)	High	10	High	10	Low	3
	Normalized Score (out of 94)		23.5		23.5		7.1
Environmental Benefit Category	None (0 pts), Low (3 pts), Medium (6 pts), High (10 pts)	Low	3	Low	3	Low	3
	Normalized Score (out of 40)		2		2		2
Community Benefit Category	None (0 pts), Low (3 pts), Medium (6 pts), High (10 pts)	Medium	6	None	0	Low	3
	Normalized Score (out of 54)		8.1		0		4.1
Total Project Scores (out of 349)			54.16		29.86		25.56

(THIS PAGE LEFT BLANK INTENTIONALLY)

Table 6-2. SWRP Project Funding and Implementation Plan/Schedule

SWRP Project	Planning/ Engineering Cost	Construction Cost	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038
Annual Available Capital Funds	--	--	$ 200,000	$ 100,000	$ 100,000	$ 100,000	$ 100,000	$ 100,000	$ 100,000	$ 100,000	$ 100,000	$ 100,000	$ 100,000	$ 100,000	$ 100,000	$ 100,000	$ 100,000	$ 100,000	$ 100,000	$ 100,000	$ 100,000	$ 100,000	$ 100,000
Capital Costs																							
E3. Trash Capture Master Plan	$ 79,800	--	79,800																				
A7. Detention Basin East of WWTP	$ 38,100	$ 198,000	38,100	198,000																			
A4. Shanghai Bend Detention Basin	$ 126,900	$ 659,900			126,900	659,900																	
A1. Gilsizer North Detention Basin	$ 98,700	$ 513,300					98,700	513,300															
E1. Standards for Detention Basins	$ 20,000	--							20,000														
F5. Trash Capture at Jefferson Ditch	$ 17,800	$ 92,200							17,800	92,200													
F3. Trash Capture at Orchard and Park	$ 29,200	$ 151,600								29,200	151,600												
F1., F2., F4., Trash Capture in Gilsizer Slough at Lincoln Road	$ 64,200	$ 333,900										64,200	333,900										
F6. Trash Capture in Live Oak Canal at Franklin Road	$ 11,600	$ 60,100												11,600	60,100								
E2. Standards for Gilsizer Slough	$ 20,000	--													20,000								
Cumulative Available Capital Funds	--	--	$ 82,100	$ (15,900)	$ (26,900)	$ (559,900)	$ 1,300	$ (412,000)	$ 62,200	$ 40,800	$ (10,800)	$ 35,800	$ (198,100)	$ 88,400	$ 108,300	$ 208,300	$ 308,300	$ 408,300	$ 508,300	$ 608,300	$ 708,300	$ 808,300	$ 908,300
Grants or Loans Needed	--	--	$ -	$ 15,900	$ 26,900	$ 559,900	$ -	$ 412,000	$ -	$ -	$ 10,800	$ -	$ 198,100	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
O&M Costs																							
Annual Available O&M Funds	--	--	$ 50,000	$ 50,000	$ 50,000	$ 50,000	$ 50,000	$ 50,000	$ 50,000	$ 50,000	$ 50,000	$ 50,000	$ 50,000	$ 50,000	$ 50,000	$ 50,000	$ 50,000	$ 50,000	$ 50,000	$ 50,000	$ 50,000	$ 50,000	$ 50,000
E3. Trash Capture Master Plan	--	--																					
A7. Detention Basin East of WWTP	--	$ 4,000			4,000	4,000	4,000	4,000	4,000	4,000	4,000	4,000	4,000	4,000	4,000	4,000	4,000	4,000	4,000	4,000	4,000	4,000	4,000
A4. Shanghai Bend Detention Basin	--	$ 24,800					24,800	24,800	24,800	24,800	24,800	24,800	24,800	24,800	24,800	24,800	24,800	24,800	24,800	24,800	24,800	24,800	24,800
A1. Gilsizer North Detention Basin	--	$ 26,800							26,800	26,800	26,800	26,800	26,800	26,800	26,800	26,800	26,800	26,800	26,800	26,800	26,800	26,800	26,800
E1. Standards for Detention Basins	--	--																					
F5. Trash Capture at Jefferson Ditch	--	$ 4,000									4,000	4,000	4,000	4,000	4,000	4,000	4,000	4,000	4,000	4,000	4,000	4,000	4,000
F3. Trash Capture at Orchard and Park	--	$ 6,000										6,000	6,000	6,000	6,000	6,000	6,000	6,000	6,000	6,000	6,000	6,000	6,000
F1., F2., F4., Trash Capture in Gilsizer Slough at Lincoln Road	--	$ 6,000												6,000	6,000	6,000	6,000	6,000	6,000	6,000	6,000	6,000	6,000
F6. Trash Capture in Live Oak Canal at Franklin Road	--	$ 6,000														6,000	6,000	6,000	6,000	6,000	6,000	6,000	6,000
E2. Standards for Gilsizer Slough	--	--																					
Total Cumulative O&M Costs			$ -	$ -	$ 4,000	$ 4,000	$ 28,800	$ 28,800	$ 55,600	$ 55,600	$ 59,600	$ 65,600	$ 65,600	$ 71,600	$ 71,600	$ 77,600	$ 77,600	$ 77,600	$ 77,600	$ 77,600	$ 77,600	$ 77,600	$ 77,600
Additional Source of O&M Funds Needed			$ -	$ -	$ -	$ -	$ -	$ -	$ 5,600	$ 5,600	$ 9,600	$ 15,600	$ 15,600	$ 21,600	$ 21,600	$ 27,600	$ 27,600	$ 27,600	$ 27,600	$ 27,600	$ 27,600	$ 27,600	$ 27,600

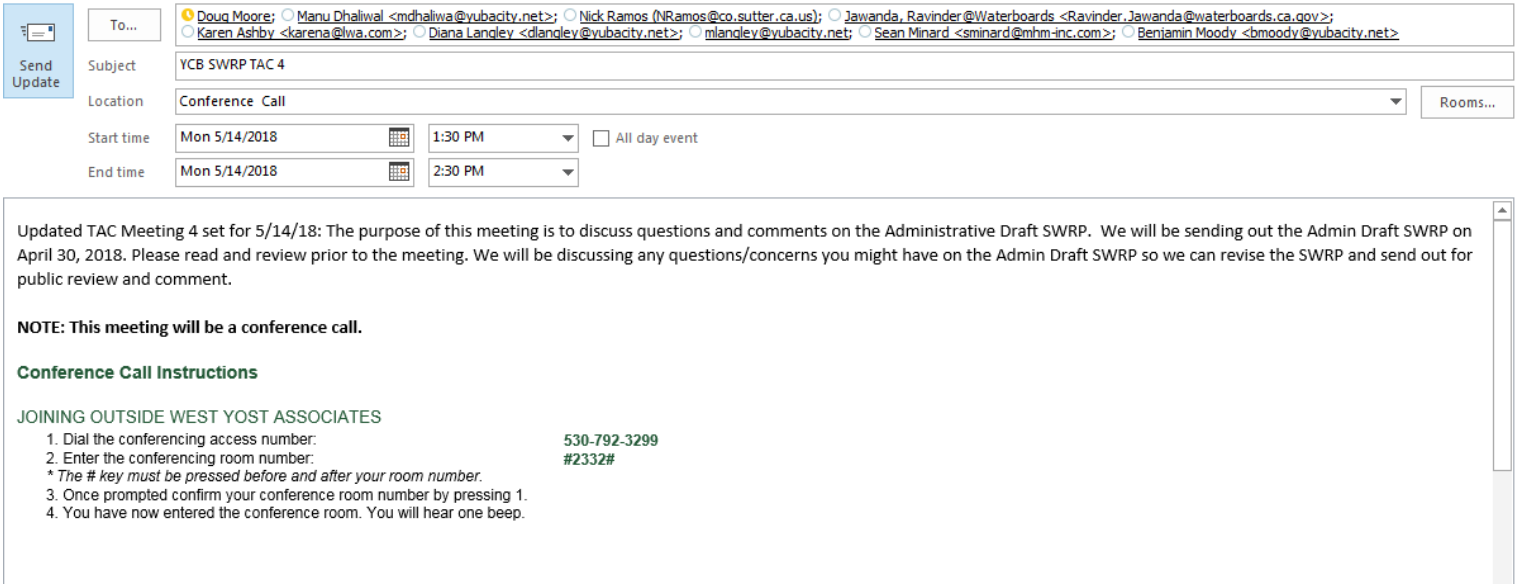
(THIS PAGE LEFT BLANK INTENTIONALLY)

Table 6-3. Project Implementation Schedule Summary		
SWRP Project	Planning, Year	Construction, Year
E3. Trash Capture Master Plan	2018	--
A7. Detention Basin East of WWTP	2018	2019
A4. Shanghai Bend Detention Basin	2020	2021
A1. Gilsizer North Detention Basin	2022	2023
F5. Trash Capture at Jefferson Ditch	2024	2025
E1. Standards for Detention Basins	2024	--
F3. Trash Capture at Orchard and Park	2025	2026
F1., F2., F4., Trash Capture in Gilsizer Slough at Lincoln Road	2027	2028
F6. Trash Capture in Live Oak Canal at Franklin Road	2029	2030
E2. Standards for Gislizer Slough	2030	--

(THIS PAGE LEFT BLANK INTENTIONALLY)

(THIS PAGE LEFT BLANK INTENTIONALLY)

TAC Meeting 4 Purpose



Send Update

To... Doug Moore; Manu Dhaliwal <mdhaliwa@yubacity.net>; Nick Ramos (NRamos@co.sutter.ca.us); Jawanda, Ravinder@Waterboards <Ravinder.Jawanda@waterboards.ca.gov>; Karen Ashby <karena@lwa.com>; Diana Langley <dlangley@yubacity.net>; mlangley@yubacity.net; Sean Minard <sminard@mhm-inc.com>; Benjamin Moody <bmoody@yubacity.net>

Subject: YCB SWRP TAC 4

Location: Conference Call — Rooms...

Start time: Mon 5/14/2018 1:30 PM — All day event

End time: Mon 5/14/2018 2:30 PM

Updated TAC Meeting 4 set for 5/14/18: The purpose of this meeting is to discuss questions and comments on the Administrative Draft SWRP. We will be sending out the Admin Draft SWRP on April 30, 2018. Please read and review prior to the meeting. We will be discussing any questions/concerns you might have on the Admin Draft SWRP so we can revise the SWRP and send out for public review and comment.

NOTE: This meeting will be a conference call.

Conference Call Instructions

JOINING OUTSIDE WEST YOST ASSOCIATES

1. Dial the conferencing access number: **530-792-3299**
2. Enter the conferencing room number: **#2332#**
   ** The # key must be pressed before and after your room number.*
3. Once prompted confirm your conference room number by pressing 1.
4. You have now entered the conference room. You will hear one beep.

(THIS PAGE LEFT BLANK INTENTIONALLY)

YUBA CITY BASIN STORM WATER RESOURCE PLAN TAC MEETING 4

Client:	**City of Yuba City**
Project:	**Yuba City Basin Storm Water Resource Plan**
Subject:	**Technical Advisory Kickoff Meeting**
Meeting Date/Time:	**May 14, 2018; 1:30 pm**
Location:	**Conference Call**
Summary by:	**Natalie Muradian**

INVITED ATTENDEES:

Present (Y/N)	Name	Representing	TAC Member (Y/N)
Y	Manu Dhaliwal	City - Storm Water Management	Y
N	Ben Moody	City – Storm Drainage Management	Y
N	Diana Langley	City – Public Works	Y
N	Matthew Langley	City – Parks and Grounds	Y
N	Nick Ramos	Sutter County – Development Services	Y
Y	Sean Minard	MHM – Engineering and Development Community	Y
Y	Ravinder Jawanda	State Water Board – Grant Manager	State Grant Contract Manager
Y	Natalie Muradian	West Yost	Consultant Team
Y	Doug Moore	West Yost	
Y	Karen Ashby	Larry Walker	

DISCUSSION TOPICS:

The purpose of this TAC meeting was to solicit comments and questions on the Administrative Draft SWRP.

- Ravi submitted a list of comments.
  - Ravi's comments were based on feedback from a colleague who has reviewed multiple SWRPs and also her review of the water code. She feels that addressing the comments will be beneficial for the document.
  - Ravi will send an Excel or Word version of the comments so Natalie can easily track the comments.
  - The SWRP appendices can be moved to the end of the document.
  - Primary and secondary benefits can be added to Table 5-6.
- Natalie mentioned that Nick previously submitted a minor grammatical correction.
- No comment from Sean during the meeting.

- Manu is reviewing the document and anticipates finishing by 5/17/18.
- Manu also sent the document to Elizabeth with the Regional Water Board, who anticipates sending comments by the end of May 2018.
- Natalie will create a tracking log of all comments received and how they are addressed for the TAC comments as well as public comments.

ACTION ITEM LOG:

No.	Subject	Action	Party	Date	Status
1	Manu's comments	Complete review and send comments to West Yost	Manu	5/17/18	In progress
2	Excel version of comments	Send Natalie a excel version of Ravi's comments	Ravi	5/14/18	In progress
3	Create comment tracking log	Natalie to create a comments tracking log.	Natalie	5/18/18	In progress