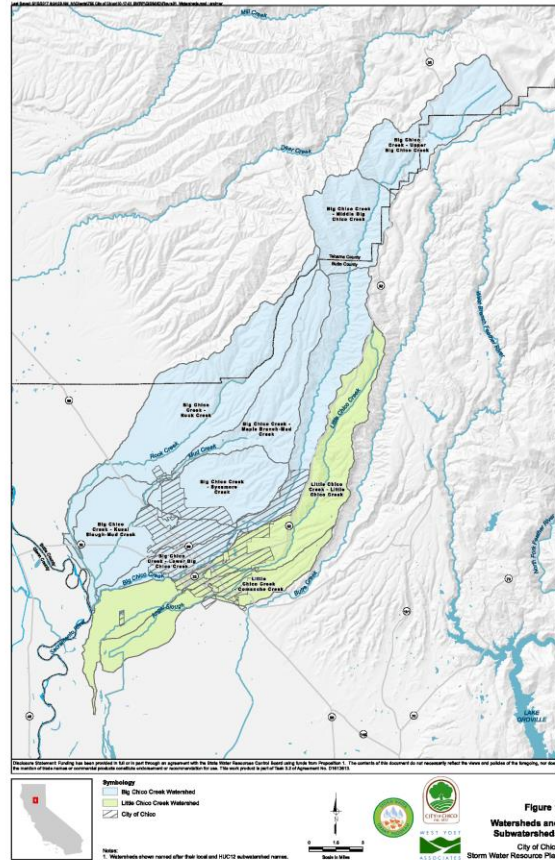


# UPDATING THE CITY'S STORMWATER PLANNING AND POLICIES AND IMPLEMENTATION PROJECTS (SWRP PROJECT P)

## General Project Information

This plan is an update to the City's existing storm water (SW) policies and regulations, to include:

- Water Quality:
  - Developing computer models of the City's storm drain piping systems, detention basins, and other drainage system that are capable of modeling water quality.
  - Evaluating implementation of low impact development (LID) for both demonstration sites and new development.
  - Addressing hydromodification from development by identifying street segments and parking lots that can be retrofitted into green streets or green parking lots using vegetated swales, vegetated buffer strips, bioretention planters, and mechanical treatment systems.
  - Developing water quality best management practices and water quality monitoring to improve storm water reuse opportunities and public education.
  - Updating the City's development standards to clearly identify what water quality improvements and facilities are needed, and how the improvements should be sized.
  - Identifying a clear process of review and approval for storm water improvements and facilities by the City.
  - Develop a program and budget that will utilize existing local storm water organizations (such as Butte Environmental Council, Stream Team, Friends of Bidwell Park, etc.) to help monitor project efficacy and water quality and provide public outreach and education events.
- Developing a program for water-wise and river friendly landscaping.
- Evaluating drainage and flood control through an update of the City's Storm Drainage Master Plan.
- Identifying and developing standards to be used for improving channel stabilization and riparian habitat.
- Evaluating opportunities for groundwater recharge and developing standards for when groundwater recharge should be implemented.
- Developing a program (or enhancing current efforts) to help reduce storm water, and environmental impacts from homeless encampment that leave trash, fecal waste along area waterways.



- Develop a program (or enhance current efforts) and budget to utilize citizen monitoring to evaluate project effectiveness, perform MS4 permit monitoring as appropriate, and monitor receiving waters to track cumulative effects of implementation projects for improving water quality.
- Identifying and estimating annual operations and maintenance (O&M) costs for the storm water improvements and facilities. Additionally, identifying and quantifying in-kind contributions associated with community group involvement and recommending city sponsorship as appropriate to promote community group activity and involvement.
- Identifying methods for collecting both capital and O&M costs, like the establishment of water quality zones of benefit or a community facilities district, that results in monthly storm water fees being paid by new development and existing City areas.
- Identifying existing education and outreach programs and building on existing programs to protect watershed health, improve water quality, and evaluate project effectiveness. Examples of existing programs include the Clean Water Science Ambassadors, Clean Creeks in the Classroom, and the Citizen Monitoring Program. Some topics for education include residential landscaping to conserve water, dry weather runoff capture, river-friendly landscaping, and residential pesticides and fertilizer management.
- **Watershed Area:** The Big Chico Creek watershed is approximately 134,159 acres and Little Chico Creek Watershed is approximately 42,091 acres.

### Benefits Resulting from this Project

- **Water Quality:** Water quality is expected to be improved because creating and implementing low impact development techniques will reduce storm water and dry weather runoff, as well as increase filtration and treatment of storm water runoff that will enhance water quality. Increased public awareness through their involvement in implementing storm water BMPS and effective monitoring will also result in improved water quality, and reduce overwater and pesticide runoff.
- **Water Supply:** Water supply is expected to be improved because updating or crating standards for and implementing infiltration areas will allow some flows to recharge groundwater, increasing water supply reliability. The implementation of natural water drainage and treatment, as well as educating the public on water conservation will aid in the conservation of water. Community education on water conservation
- **Flood Management:** Flood management is expected to be improved because the updated standards will result in reduced flooding problems by re-establishing natural hydrographs.
- **Environmental:** The environment is expected to be improved because creating and implementing revised standards will help reduce sediment and erosion, which will improve the receiving waters. Additionally, implementation of the updated standards will create/improve in-stream flows, streamside habitat, wetlands, and riparian habitat.
- **Community:** Community is expected to be improved as the proposed project is anticipated to include a public education component. The creation of recreation and public use areas will also improve the community by including existing stormwater education efforts to raise public awareness of sources of pollution and use of BMPs including training to facilitate their participation in stormwater project implementation.
- **Outreach and Education:** Identify existing education and outreach programs and will improve these existing programs to protect watershed health, including in disadvantaged communities. Examples of existing programs include the Clean Water Science Ambassadors, Clean Creeks in the Classroom,

and the Citizen Monitoring Program. Some topics for education include residential landscaping to conserve water, dry weather runoff capture, and residential pesticides and fertilizer management.

### Project Costs

- **Estimated Plan Preparation Cost:** The estimated cost of preparing this plan is to be determined. This cost does not include the costs of designing and constructing the improvements that will be identified in the plan, n does it include storm water quality development impact fees.

### Project Photographs



**Photograph 1. Potential for a green street project area. Corner of Salem Street and West 5<sup>th</sup> Street facing northwest.**

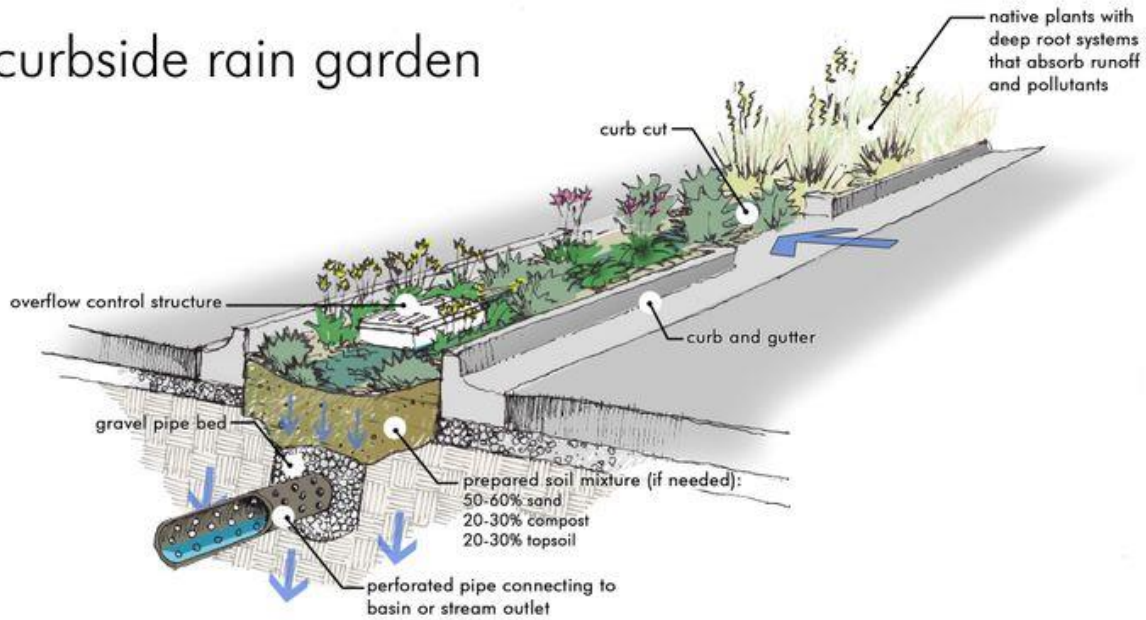


**Photograph 2. Bank erosion on Big Chico Creek along Bidwell Avenue. Facing south. Possible site for adding erosion control and bank stabilization.**



**Photograph 3. Example of a bioswale in an Oregon parking lot.**

# curbside rain garden



**Diagram of the position of a rain garden.  
MJLARSONSITE 2014 ( Portland's Bioswales Give a  
New Look to Water Management Practices)**

## Initial Projects Included

This project includes the following initial projects in whole or in part:

- SWRP 15 - Bank Slope Reduction and Stabilization
- SWRP 20 - Green Streets and Parking Lots
- SWRP 22 - Outreach and Maintenance of Parks
- SWRP 24 – Waterwise and Habitat and River Friendly Landscape Program
- SWRP 26 – Bidwell Park and Greenway Integrated Storm Water, Ground Water Recharge, and Recycled Water Project
- SWRP 29 – LID Technical Design Manual and Demonstration Project
- SWRP 37 – City of Chico Storm Water Capture and Reuse Project
- SWRP 51 – Identification and Evaluation of Groundwater Recharge
- SWRP 56 – Diversion Channels
- SWRP 57 – Storm Water Detention Basins
- SWRP 58 – Updating the City's Storm Water Plan (to Make it Proactive)
- SWRP 63 – Update the City's Storm Water Policies and Regulations
- SWRP 66 – Create Bioswales at Storm Drain Outfalls
- SWRP 71 – Bidwell Park Stormwater Management Project (Green Infrastructure LIDs, Floodplain Improvement, and Ground Water Recharge)
- SWRP 78 – Revised Urban Landscape Water Conservation and Pesticide Reduction Project
- SWRP 81 – Revised Chico Green Streets and Low Impact Development Implementation Project
- SWRP 82 – The Stream Team NSV IRWM Projects
- SWRP F – Storm Water Public Outreach, Education, and Involvement Program