

PROP. 84 REMOVING BARRIERS TO LID: MUNICIPAL CODE UPDATE ASSISTANCE

CASE STUDY: CODE UPDATES IN ARCATA

OCTOBER 7, 2015

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Arcata is a city located in Humboldt County immediately adjacent to Humboldt Bay. The City is approximately 280 miles north of San Francisco via Highway 101 which extends north and south through the City.

As of the 2010 Census, Arcata's population was 17,231. This was an increase of approximately 3.5% from the City's 2000 Census population count of 16,651.

The majority of new development within the City is comprised of small projects or the redevelopment of previously disturbed sites.

The City is an active participant in the North Coast Stormwater Coalition. This coalition of the cities of Arcata, Eureka, Fortuna, Trinidad, and the County of Humboldt have been engaged in stormwater planning and coordination of compliance efforts under the Phase II NPDES Municipal Stormwater Permit.

Arcata was selected, along with the other participants of the North Coast Stormwater Coalition, for assistance by the project team. The project team's work selection of Arcata served as an important example of a municipality where the majority of the new construction would be through redevelopment activities.

The City of Arcata and its partners within the North Coast Stormwater Coalition also experience climate and rainfall conditions significantly different than the other participants from Round 1 of the *CASQA Prop. 84 Removing Barriers to LID* project.

Arcata's climate is dominated by marine influences associated with Humboldt Bay and the Pacific Ocean. On average, Arcata experiences 40 to 50 inches of rain per year. Northerly winds create an upwelling of cold ocean water that results in foggy conditions throughout the year. Average high temperatures throughout the year range from 53° F to 62° F. This climate, which varies significantly from the other participants of the Round 1 assistance, allowed the team to confirm the applicability of its bioretention plant list (and other resources) to the conditions in Humboldt County.

IDENTIFYING BARRIERS

GAP ANALYSIS

With the assistance of a Proposition 84 grant to CASQA, the project team (AHBL, Inc. and the Low Impact Development Initiative (LIDI)) assisted the City of Arcata in conducting a gap analysis of its codes and standards. The project team utilized the Municipal Regulatory Update Assistance Program (MRUAP) gap analysis template developed by AHBL for LIDI to identify barriers to the use of LID practices within the City's landscape related codes. The project team also looked for opportunities to integrate LID practices into the City's street standards.

Upon review of the City's code, barriers to the use of LID practices were identified, and opportunities to improve suggested. The City has many regulations that support the use of LID practices. The City's BMP manual allows runoff to be discharged to landscaped areas, vegetated swales and detention ponds. The Planned Unit Development procedure allows for the clustering of buildings utilizing flexible site design criteria.

Few barriers to the use of LID practices were found in the City's code. For the most part, the code was either in support of the use of stormwater management within landscaped areas, or did not contain language that explicitly prohibits it. The main opportunity for the City of Arcata was amending their code to not be silent to the use of LID practices, but encourage it.

Incorporating LID goals into site design criteria for planned developments was an opportunity identified by project staff. The project team also identified the need for stormwater standard details that depict alternative edging conditions as an alternative to continuous curbs that prohibit the flow of stormwater from streets to bioretention facilities within the right-of-way (ROW).

After completing the gap analysis, the project team held a meeting/training session with City staff to discuss gaps found and opportunities for incorporating LID into the City's codes and standards.

To review the gap analysis template that was used by the City of Arcata, please see:

https://www.casqa.org/sites/default/files/downloads/20140328_gap_analysis_user_guide_%28final_draft%29.docx

AMENDING CODES & STANDARDS

Discussions with City staff following the completion of the gap analysis resulted in amendments to several of the City's codes and standards. The adoption of the proposed amendments will fulfill the requirement of completing amendments to the landscape code before the end of the second year of the NPDES Permit.

The amendments include updates to landscape-related codes and standards that remove barriers to the use of LID practices and remove ambiguity within the City's regulations as to the design of landscape-related BMPs such as bioretention.

Following the code updates, a meeting was held with the City of Arcata to discuss the code amendments. The project team presented the draft code amendments to Community Development, Environmental Services, Planning and Public Works staff to discuss which LID strategies the City wanted to explore. Final code amendments were then delivered to the City based on the input gathering during the code update meeting.

LANDSCAPING STANDARDS (§9.34)

The City regulates landscaping for all land uses requiring a minor use permit, use permit, planned development permit, grading permit, variance or application for design review in all zoning districts except for the agricultural and resource districts. A minimum of ten percent of the site area is required to be landscaped pursuant to design, planting material, irrigation and maintenance requirements. Landscapes are not required to be drought tolerant, but should minimize water demand.

The amendments to the City’s landscape code require that new landscapes for over 2,500 square feet conform to the City’s new Water Efficient Landscaping ordinance.

PLANNED DEVELOPMENT PERMIT (§9.72.070)

Planned Developments, sometimes called planned unit developments in other municipal codes, provide flexibility for developers to use site plan approaches that will result in designs that are superior to that which would be achieved through strict adherence to land use and zoning standards.

At their heart, planned development chapters seek to employ the types of site design techniques that typify LID – minimization of site disturbance, minimization of impervious surface coverage, and vegetation retention – or the methods for optimizing site layout identified in Section E.12.e (ii)(a)¹ of the City’s NPDES permit.

The project team, with City staff input, proposed a focused amendment to the City’s Planned Development Permit chapter (§9.72.070) that added the use of landscape-based stormwater management practices as an amenity which would warrant an exception to the requirements of the City’s Land Use Code (§9.72.070.H.8).

STORMWATER MANAGEMENT (MUNICIPAL CODE TITLE VII, CHAPTER 5)

Within the second year of the effective date of the NPDES permit, the City was required to address post-construction stormwater runoff from new development and redevelopments that disturb one or more acres. The City’s existing stormwater ordinance did not address post-construction requirements or the use of alternative compliance for sites that are unable to retain or infiltrate the required amount of stormwater due to site constraints.

The addition of post-construction requirements to the stormwater ordinance ensures that the City is able to meet the NPDES permit requirements of implementing site design measures for sites creating or replacing between 2,500 square feet and 5,000 square feet of impervious surface and reporting on the compliance of developments to the State Water Board.

¹ NPDES General Permit for Waste Discharge Requirements for Storm Water Discharges from Small Municipal Separate Storm Sewer Systems, Order No. 2013-0001-DWQ

WATER EFFICIENT LANDSCAPING (MUNICIPAL CODE TITLE VII, CHAPTER 6)

The adoption of a water efficient landscape ordinance is not required under the NPDES permit, but has recently been mandated by the State through the Governor’s Executive Order B-29-15. Municipalities may choose to adopt the model ordinance, or their own locally adopted ordinance. The City’s Water Efficient Landscaping Ordinance (WELO) builds upon the State’s model; however, it has been customized to assist in meeting the City’s goals and objectives in regards to the use of LID practices.

Under the City’s existing landscaping regulation, applicants are required to minimize water demand, through the use of drought tolerant plantings. The ordinance developed for the City builds upon these requirements, and provides metrics by which the City can evaluate landscaping plans for their water efficiency.

BIORETENTION STANDARD DETAILS

In order to implement the use of LID practices within the City, there is a need for design standards and details to ensure proper construction and installation. Standard plans for bioretention facilities were developed for the City based on those produced for the Central Coast Regional Water Quality Control Board as a part of the Municipal Regulatory Update Assistance Program.

Standard plans were developed for bioretention facilities (with variations for side -sloped or planter boxes, bioretention facilities within the landscape strip adjacent to travel lanes or on -street parking and within a parking lot), pervious pavements, edge conditions such as curb inlets and flat curbs, overflow structures and planting palates for landscaping frequently inundated areas of bioretention facilities.

PLANTING LISTS SPECIFIC TO ARCATA

In addition to the opportunities for amending codes to allow for the use of LID practices in landscaped areas, City staff also identified the importance of requiring the use of native vegetation in landscape-based LID facilities, as well as conventional facilities.

The project team had previously developed a planting list for frequently inundated areas of bioretention facilities (termed “Zone A” of the bioretention swale, the bottom of the facility that would frequently be inundated with 6 inches or more of stormwater) that would thrive in the climates of all of the participating municipalities. However, as some of the plantings recommended for bioretention facilities were not native to the City, the list was altered to remove non-native species, and incorporate additional native-species.

The planting list is included with the City’s bioretention standard plans, which will make utilizing LID practices easier for applicants, by providing the design details for their construction and planting palates in one location.

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CASE STUDY: FROM A TO Z, ADDRESSING ALL BARRIERS TO LID IN GONZALES

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Gonzales is a city in Monterey County that is located approximately 16 miles southeast of Salinas. The City is surrounded by prime agricultural land in the heart of the 90-mile long Salinas Valley between the Sierra de Salinas and Gabilan Mountains. The valley has some of the most fertile soils in California making agriculture the area's strongest economic industry.

Gonzales' population grew slowly from the 1950's through the 1970's, increasing from 1,821 to 2,891 residents. During the 1980s, Gonzales began to rapidly grow due to the availability of affordable housing. By 2008, the City had 8,455 residents. Significant additional growth is anticipated to occur over the next twenty years. By 2035, Gonzales will have an estimated 24,000 residents.

As a NPDES Phase II permittee, the growth expected to occur in Gonzales will result in significant opportunities to integrate low impact development (LID) practices into new and redevelopment projects. CASQA's project team selected Gonzales as a project participant because the City had a variety of municipal codes and standards that inhibited the use of LID practices within the large projects that are slated to occur. As described more fully below, the CASQA project team performed the following tasks:

- Identified barriers to the use of LID practices within landscape-related codes and standards
- Prepared amended code language for City Council adoption
- Prepared amended engineering standard plans
- Assisted City planning staff with local adoption of the codes and standards by the Gonzales City Council

IDENTIFYING BARRIERS

The State of California's Phase II National Pollutant Discharge Elimination System (NPDES) Permit requires that permittees implement low impact development standards (LID) to reduce runoff, treat storm water, and provide baseline hydromodification management to the extent feasible to meet sizing criteria for storm water retention and treatment.

The NPDES Permit acknowledges that many permittees may have codes and standards that place impediments to the use of LID practices. To that end, within the first year of the effective permit date, permittees must conduct a review of existing codes and standards, with a priority on landscape-related codes. The goal of this analysis is to correct gaps and impediments impacting effective implementation of post-construction requirements. Within the second year of the effective date of the permit, the permittee shall complete any changes to the landscape code to effectively administer post-construction requirements.

GAP ANALYSIS

With the assistance of a Proposition 84 grant to CASQA, the project team [AHBL, Inc. and the Low Impact Development Initiative (LIDI)] assisted the City of Gonzales in conducting a gap analysis of its codes and standards. The project team utilized the Municipal Regulatory Update Assistance Program (MRUAP) gap analysis template developed by AHBL for LIDI to identify barriers to the use of LID practices within the City’s landscape related codes. The project team also looked for opportunities to integrate LID practices into the City’s street standards.

Upon review of the City’s code, barriers to the use of LID practices were identified, and opportunities to improve suggested. In many ways, the City’s code is aligned with the goals and objectives of LID. Stormwater retention areas are permitted within landscape areas, and flexible site design criteria are available to developers within planned unit developments, allowing for the clustering of buildings and consolidation of open space. However, some barriers to the use of LID practices were identified.

Some of the barriers to the use of LID practices found are common impediments found in many local codes and ordinances. Street sections and stormwater details require the use of continuous curbs and closed conveyance stormwater collected in catch basins and conveyed via pipe into the storm drains. Native vegetation is often required to be retained within open space and park districts; however there are no provisions to manage open spaces in other districts in its natural condition.

Figure 1: Gap Analysis Performed for Gonzales

Benchmark / Objective	Code Reference and Summary of Existing Standards	Impediment / Opportunity to Improve
Parking Lot Runoff		
(a) Is the use of bioretention islands and other stormwater practices allowed within landscaped areas and/or setbacks? 	§12.120.100.F Pavement Edge And Planter Protection: Landscaped areas and pavement edges in all multiple-family, commercial, and industrial zones shall be protected from damage and deterioration by the placement of six inch (6") high, securely anchored, continuous curbs or equivalent arterials which have a minimum width of six inches (6"). (Ord. 2000-03, 8-7-2000).	Amend language and prepare details that depict barrier curb treatments that will allow stormwater to flow from parking lot areas to bioretention facilities.

After completing the gap analysis, the project team held a meeting/training session with City officials to discuss gaps found and opportunities for incorporating LID into the City's codes and standards. In addition to amending its codes, the City also decided to adopt LID/Complete Street sections.

To review the gap analysis template that was used by the City of Gonzales, please see:

https://www.casqa.org/sites/default/files/downloads/20140328_gap_analysis_user_guide_%28final_draft%29.docx

AMENDING THE CODES

The results of the gap analysis, aided by meetings over the course of nine months, led to proposed amendments to the City's codes and standard drawings. The adoption of the proposed amendments will fulfill the requirement of completing any changes to the landscape code during the second year of the effective date of the NPDES Permit.

The amendments include updates to landscape-related codes and standards that remove barriers to the use of LID practices and remove ambiguity within the City's regulations as to the design of landscape-related BMPs such as bioretention.

Following the code updates, a meeting was held with the City of Gonzales to discuss the code amendments. The project team presented the draft code amendments to Community Development and Public Works staff to discuss which LID strategies the City wanted to explore.

Final code amendments were then delivered to the City based on the input gathering during the code update meeting.

STREET TREE AND TREE PROTECTION

One gap identified between the City's code and the goals and principles of LID was the absence of a tree preservation ordinance. Provisions were added to the City's street tree ordinance to designate specific trees as protected trees that may not be removed and shall be maintained in good health. The addition of this ordinance works to minimize native vegetation loss and provide stormwater treatment and flow control.

WATER EFFICIENT LANDSCAPING AND GENERAL LANDSCAPE REQUIREMENTS

In 2009, the State adopted a Model Water Efficient Landscaping Ordinance for municipalities to adopt by reference or amend. In 2015, Governor’s Executive Order B-29-15 required implementation and enforcement of local ordinances, with reports due by the end of the year.

The City’s Water Efficient Landscaping Ordinance (WELO) builds upon the State’s model, adopting many sections by reference to ensure that the City’s code is up-to-date with all future amendments, as well as customizing the ordinance to meet the City’s specific needs and objectives in regards to the use of LID practices. The ordinance developed for the City builds upon its current requirements for landscaping plans to utilize drought tolerant plant materials and water saving irrigation techniques and provide metrics by which the City can evaluate landscaping plans for their water efficiency.

The City’s existing landscaping ordinance specifies the minimum landscaped area required for each zoning district. These landscaped areas represent a significant drain on California’s water resources. The amendments to the City’s landscape code require that new landscapes over a certain size (500 square feet) conform to the City’s new Water Efficient Landscaping ordinance. By making this easy code amendment, the City has now provided a one-stop shop for users to determine which landscaping provisions they need to comply with.

Figure 2: Amendments to Landscaping Standards

12.124.030 CONFORMANCE WITH WATER EFFICIENT LANDSCAPE STANDARDS:

In addition to the criteria found in Chapter 12.124, new construction and rehabilitated landscapes that meet the following criteria shall also conform to the requirements of Chapter 10.24:

1. New construction projects with a landscape area greater than 500 square feet requiring a building permit, design review or other discretionary use permit; or
2. Rehabilitated landscapes with an aggregated landscape area equal to or greater than 2,500 square feet requiring a building permit, design review or other discretionary use permit.

STORMWATER QUALITY MANAGEMENT AND DISCHARGE CONTROL

As a condition of the Phase II NPDES permit, the City of Gonzales needed to incorporate post-construction requirements into its municipal code for new development and redevelopment projects that disturb one or more acres. City did not have existing stormwater management regulations. The project team prepared a stormwater ordinance for the City including language for addressing post-construction runoff from applicable development projects and alternative compliance for sites that are unable to meet the post construction requirements.

Figure 3: Draft Stormwater Management Ordinance

10.24.150 POST-CONSTRUCTION REQUIREMENTS.

The primary objective of these Post-Construction Stormwater Management Requirements (hereinafter, Post-Construction Requirements) is to ensure the reduction of pollutant discharges to the Maximum Extent Practicable and preventing stormwater discharges from causing or contributing to a violation of receiving water quality standards in all applicable development projects that require approvals and/or permits issued by the City.

DEVELOPMENT PERMIT

Requiring native vegetation to be retained to the maximum extent feasible within the floodway helps to minimize stormwater impacts resulting from nearby development. Plants and vegetation help to remove pollutants that may otherwise be discharged to streams and wetlands. The City’s code currently does not have any provisions to require native vegetation to be retained within the floodway. To ensure that the City’s codes meet the NPDES permit requirement of minimizing native vegetation loss, the submittal requirements for projects within the floodway was amended to require the location of native vegetation to be shown on development plans.

IMPLEMENTING STANDARDS

BIORETENTION STANDARD DRAWINGS

In order to implement the use of LID practices within the City, there is a need for design standards and details to ensure proper construction and installation. Standard drawings for bioretention facilities were developed for the City based on those produced for the Central Coast Regional Water Quality Control Board as a part of the Municipal Regulatory Update Assistance Program.

Standard drawings were developed for bioretention facilities (with variations for side-sloped or planter boxes, bioretention facilities within the landscape strip adjacent to travel lanes or on-street parking and within a parking lot), pervious pavements, edge conditions such as curb inlets and flat curbs, overflow structures and planting palettes for landscaping frequently inundated areas of bioretention facilities.

To review the bioretention standard plans prepared for the City of Gonzales, please see:

https://www.casqa.org/sites/default/files/downloads/bioretention_details_-_city_of_gonzales.pdf

COMPLETE GREEN STREET SECTIONS

The amendments also removed barriers to the use of LID practices within right-of-ways (ROW), landscaped areas, and parking lots. The LID/Complete Street standard drawings provide design guidance and specifications for implementing LID practices within city ROW. The designs provide minimum standards for those who construct stormwater facilities.

Prior to the development of the LID/Complete Street sections, roads built in the City of Gonzales were required to conform to road sections adopted in the City's General Plan. Total right-of-way width for these streets ranges from 56 feet for local streets, to 132 feet for major arterials with Class I bike paths. Travel lanes are a minimum of 10 feet on local streets, and 12 feet on major arterials. A median is required on major arterials, and a minimum of 20 feet is required behind the curb. Local streets require parking on both sides of the street, with 10 feet of ROW behind the curb for a planter, sidewalk, and utilities.

As the roads in Gonzales are currently developed, there is very little room to accommodate LID practices within the ROW, and the current road sections result in a barrier to their use.

The LID/Complete Street sections provide design guidance and specifications for implementing the use of bioretention and green stormwater infrastructure within the ROW. Combined, the street sections and standard plans provide minimum standards for those who incorporate stormwater facilities into project plans.

Figure 4: Existing Local Street Section

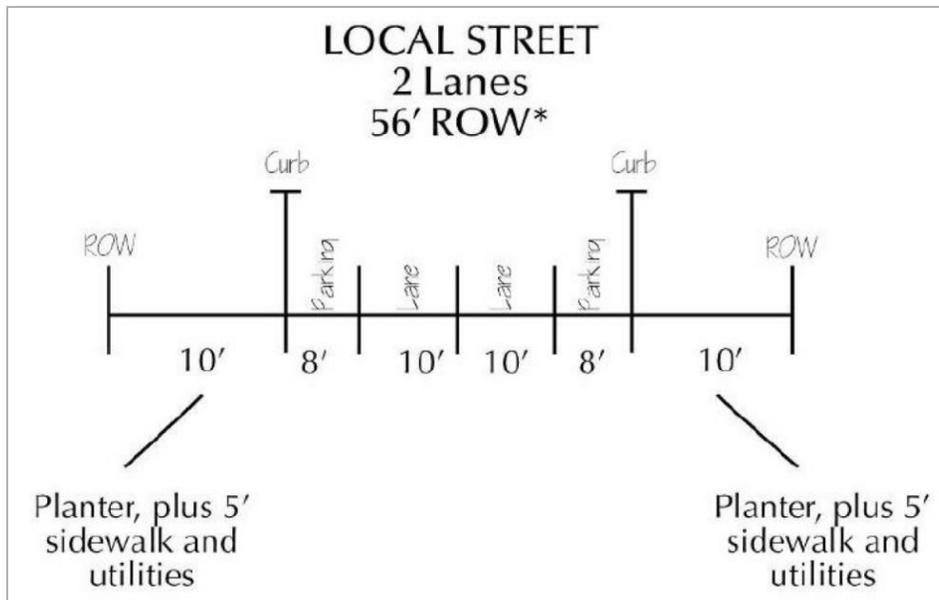
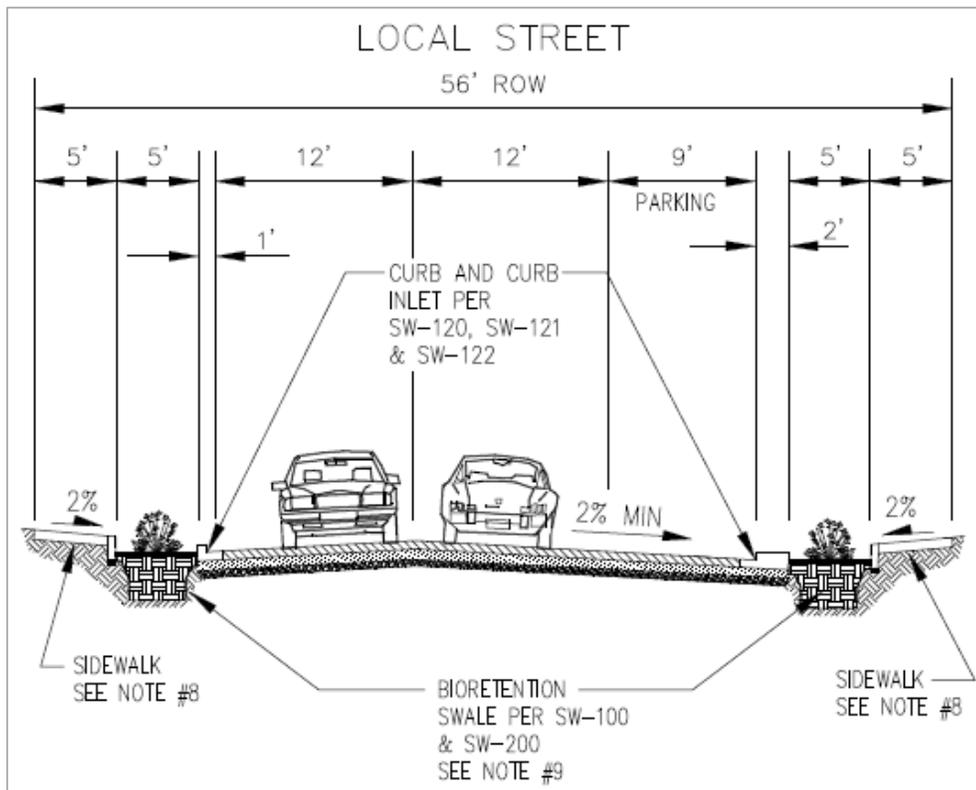


Figure 5: Proposed LID Alternative Local Street Section



To review the complete green street sections prepared for the City of Gonzales, please see: https://www.casqa.org/sites/default/files/downloads/road_sections_-_city_of_gonzales.pdf

ADOPTING THE CODES AND STANDARDS

After completing the draft revisions to the City’s codes and engineering standards, the project team assisted City staff with the preparation of a staff report that summarized the findings and conclusions associated with the legislative action. The staff report also established the purpose behind the amendments to Gonzales’ codes and documented the manner by which stakeholders and other individuals were solicited to participate in the project.

The City adopted Resolution No. 2015-19, the amendment of the Gonzales Public Works Department Design Standards and Standard Specifications by adding stormwater infrastructure details, including street standards on June 15, 2015.

On July 6, 2015, the City adopted Ordinance No. 2015-83, amending Chapters 9.16 (Street Trees), 12.124 (Landscaping); 14.04 (Floodplain Management), and adding Chapters 10.24 (Water Efficient Landscaping Design Requirements) and 10.28 (Stormwater Quality Management and Discharge Control).