

USER GUIDE & TEMPLATE: Municipal Landscape Gap Analysis Tool for Planning & Development Review Standards and Procedures

Prepared for: Central Coast Low Impact Development Initiative
centralcoastlidi.org



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Intent:

The State Water Resources Control Board (State Water Board) adopted a statewide general permit for Small MS4s in order to efficiently regulate storm water discharges (General Permit No. CAS000004). Section E.12 of the General Permit for Waste Discharge Requirements (WDRs) for Storm Water Discharges from Small MS4s (Permit) requires permittees to administer a post-construction storm water management program that includes low impact development (LID) runoff standards for regulated projects. Section E.12.J directs permittees to review their local planning and permitting process to assess any gaps or impediments impacting effective implementation of the post-construction requirements.

The Permit prioritizes the analysis of the landscape code, which is described as that portion of the municipal code detailing landscaping requirements and revisions which should be implemented to protect environmental quality. This initial emphasis is established through the requirement that permittees conduct an analysis of the landscape code to correct gaps and impediments impacting effective implementation of post-construction requirements within the first year of the effective date of the Permit (Section E.12.J(ii)(a)).

This document is intended to assist permittees with the review of those portions of municipal codes detailing landscaping requirements and considerations which should be implemented to protect environmental quality.

Using Landscape Areas for Stormwater Management

Water resources engineers have come to understand the value that landscape areas can have for stormwater management. The concepts and principles of low impact development (LID) emphasize conservation of vegetated areas and native soils to mimic a site's pre-development hydrology. Additionally, created or engineered landscapes such as bioretention also support LID and water quality objectives. In 2011, a Municipal LID Gap Analysis Tool was created for the Central Coast Regional Water Board and the Central Coast Low Impact Development Initiative as part of the Municipal Regulatory Update Assistance Project (MRUAP). The MRUAP provided assistance to municipalities related to code updates to support LID implementation. One of the resources created for the MRUAP was a municipal code gap analysis template that allowed a systematic and comprehensive approach in reviewing municipal regulations for LID barriers and opportunities for improvement. The landscape portion of the gap analysis template was updated to support statewide Permit compliance. The Municipal Landscape Gap Analysis Tool allows review of the municipal regulatory structure (e.g. codes and ordinances) related to conserved and created landscapes in the following five areas:


1. Vegetation Conservation
2. Open Space Management
3. Rooftop Runoff
4. Open Space/Cluster Design Requirements
5. Street and Parking Lot Standards

The organization of the template is on a continuum from conserved (e.g. open space) to created landscape areas (e.g., landscape strips) and can be used to evaluate the comprehensive use of landscaping for stormwater management rather than a more narrow evaluation of a locally-adopted landscape or water-tolerant landscape chapter. Each subsection includes questions for the permittee to consider when reviewing its codes and standards. We have denoted with double asterisks (**) specific gap analysis elements that most likely reside in a formal municipal "landscape code." To most cost-effectively support a stormwater management program, we advise conducting review of all the landscape-related elements to identify LID implementation impediments.

Using the Municipal Landscape Gap Analysis Tool

The Municipal Landscape Gap Analysis Tool is in the form of a table. The table has three columns as depicted below. The first column lists an LID benchmark or objective. The second column provides space for permittees to reference existing code and summarize existing standards within adopted code that pertain to the objective. The third column provides space for permittees to identify if an impediment exists or there is an opportunity to improve existing code language to better address the objective. This column would include suggested amendments to existing codes and standards to improve implementation of the post-construction standards. The following is an example response:

Example

Benchmark / Objective	Code Reference and Summary of Existing Standards	Impediment / Opportunity to Improve
PARKING LOT RUNOFF		
<p>(a) Is the use of bioretention islands and other stormwater practices allowed within landscaped areas and/or setbacks?</p> <p><i>(Center for Watershed Protection, 1998)</i></p> 	<p>21.05.050.E.2.e Landscaping shall be protected with raised planting surfaces, depressed walks, or curbs. Mowing strips shall be provided between turf and shrub areas.</p> <p>21.10.230.B.2.b.iv Parking lots should be divided into a series of connected smaller lots utilizing raised landscape strips and raised walkways.</p>	<p>The existing standards specify designs that are impediments to use the landscape areas for stormwater management.</p> <p>Need to allow the elevations of parking lot landscaping to be designed to accept stormwater flows.</p> <p>Need technical details and specifications to support stormwater management in landscape strip areas (e.g., curb cuts, bioretention plant lists, soil specifications, etc.).</p>

Municipal Landscape Gap Analysis Tool Subsections

The following section provides additional context to the questions and the areas within a permittee's codes and standards where applicable standards may reside. Potential opportunities are also presented that permittees may consider to improve codes and standards.

(1) Vegetation Conservation

- (a) *Do regulations require or encourage the preservation of natural vegetation at development sites? (Center for Watershed Protection, 1998)*

Code Reference Location

Regulations that address vegetation retention at development or redevelopment sites are often found in the zoning code, particularly in the landscape chapter or site design requirements. Additional retention requirements may be specified in planned unit development standards, subarea plans, design standards, and clearing and grading regulations.

Opportunity to Improve

Incorporate natural vegetation preservation standards into code based on land use and intensity. Define natural (or native) vegetation and soils and include a plant list which defines which plants are considered native or near native species. Consider minimum tree density, minimum canopy cover, minimum vegetation retention requirements, replanting requirements, soil amendment standards, management plan specifications, and maintenance requirements.

- (b) *If forests or specimen trees are present at development sites, must some of the stand be preserved? (Center for Watershed Protection, 1998)*

Code Reference Location

Tree conservation regulations may reside in the zoning code. These standards, where they exist, may be found in landscape chapters or standards exclusively dedicated to trees. Tree preservation standards may also be addressed in design standards and performance criteria found in planned unit development regulations.

Opportunity to Improve

Consider language emphasizing the benefits of retaining trees or replacing trees where retention is infeasible. Include tree retention and replanting standards in the code language. Provide a tree species table in the code. Tree conservation standards can be based on a variety of criteria including tree unit credit systems and canopy coverage, which may be adjusted based on development type.

- (c) *If there is a stream buffer ordinance in the municipality, does the ordinance specify that at least part of the stream buffer be maintained with native vegetation? (Center for Watershed Protection, 1998)*

Code Reference Location

Ordinances pertaining to stream buffers are often found in critical areas ordinances, floodplain ordinances, or environmental regulations.

Opportunity to Improve

Consider stream buffer standards that require the conservation of native vegetation. The buffer width should be of sufficient width to protect the habitat and water quality values of the stream.

(2) Open Space Management

- (a) *Are mechanisms in place to manage open space in perpetuity?*

Code Reference Location

Tools to ensure that open space areas are managed in perpetuity may be found in policies and practices that do not reside in the local municipal code. These mechanisms may include standard easement or covenant language that is routinely attached to development permits and recorded against the title of the property. Sometimes this language can be found in appendices to drainage manuals and standard details.

Opportunity to Improve

Where standard language does not exist, consider collecting template language that can be applied to relevant development permits where open space is intended to be conserved. The language should describe the party responsible for managing the open space, the nature of applicable management practices (if any), the frequency of required actions, and the remedies if management does not occur consistent with the conditions. If management of the open space is to occur by private parties, consider reserving a public easement that will allow the permittee to remedy deficiencies.

- (b) *Are open space areas required to be consolidated into larger units? (Center for Watershed Protection, 1998)*

Code Reference Location

Design preferences and standards for open space areas may be found in locally-adopted site design standards and planned unit development or other performance design standards.

Opportunity to Improve

Consider standards that require the consolidation of open spaces into larger units as a way to encourage clustering and impervious surface minimization.

- (c) *Does a minimum percentage of open space have to be managed in a natural condition? (Center for Watershed Protection, 1998)*

Code Reference Location

Discretionary land use approvals often require a minimum percentage of the development site be managed in a natural condition. Site design requirements and planned unit development or other performance subdivision standards often stipulate that a percentage of a development site be maintained as open space. Sometimes, this open space is further defined as to be maintained for recreational purposes, buffering between uses, or conserved in a natural condition.

Opportunity to Improve

Consider provisions in the code to encourage and/or require the conservation of open space in a natural condition.

- (d) *Are allowed uses in open space in areas defined? (Center for Watershed Protection, 1998)*

Code Reference Location

Allowed uses and activities within open space areas are found in a variety of areas. In open space zones, the allowed uses would be found in a permitted or conditionally permitted use table. Allowed uses in open space areas that may occur on a development site may also be found in landscape chapters, definitions, and the review and approval criteria for various discretionary permits.

Opportunity to Improve

Consider adding language that would allow stormwater management practices to occur within open space areas as long as the primary use for the open space is not compromised.

- (e) *Can open space be managed by a third party using land trusts or conservation easements? (Center for Watershed Protection, 1998)*

Code Reference Location

The ability for open space to be managed by a third party may be found in local environmental policies, as part of developer agreements, or as part of planned unit development or other performance design criteria.

Opportunity to Improve

Consider options that would allow the use of land trusts and conservation easements by third parties as a way of ensuring protection of open space areas in a manner that minimizes burdens on local staff. This may include assembling templates and draft agreements to support this approach.

(3) Rooftop Runoff

- (a) *Can rooftop runoff be discharged into yard areas? (Center for Watershed Protection, 1998)*

Code Reference Location

The opportunity to discharge stormwater into yard areas may be found in local stormwater design manuals, locally-adopted regional stormwater design manuals, and municipal code chapters related to stormwater management.

Opportunity to Improve

Consider code language that allows stormwater from non-pollution generating surfaces to be discharged into yard areas.

- (b) *Do current grading or drainage requirements allow for temporary ponding of stormwater on front yards or rooftops? (Center for Watershed Protection, 1998)*

Code Reference Location

This regulation is very specific and may not be addressed directly in existing code or stormwater plans. If this is the case, are there regulations within the code that preclude temporary ponding of stormwater in front yards or rooftops? If so, that would be an impediment to the use of lawn areas for the temporary ponding of stormwater.

Opportunity to Improve

Consider amending existing codes to remove barriers that would preclude the temporary ponding of stormwater in front yards.

- (c) *Are vegetated roofs allowed? Do criteria exist to allow designers to receive credit for landscaping, stormwater, etc. for the use of vegetated roofs?*

Code Reference Location

Vegetated roofs are generally described in building codes or local design standards. The California Green Building Code (Appendices A4 and A5) identifies vegetated roofs as voluntary residential and nonresidential measures that municipalities may adopt. Local design standards that require steep roof pitches may preclude vegetated roof designs.

Opportunity to Improve

Consider amendments to local building codes to encourage the use of vegetated roofs by allowing the rooftop space to satisfy passive open space requirements provided the space accessible. Consider amendments to local design standards that require steep roof pitches or specify roofing materials that do not allow vegetated roof designs.

(4) Open Space/Cluster Design Requirements

- (a) *Does your municipality have open space/cluster design regulations? (Center for Watershed Protection, 1998)*

Code Reference Location

Open space and cluster design regulations can reside in various locations within a municipality's land use controls. Regulations are likely found in zoning chapters covering planned unit development or other performance design criteria, site design guidelines, and subarea plans that address open space and cluster design regulations within smaller defined areas of a municipality.

Opportunity to Improve

If your municipality does not have open space/cluster design regulations, consider adopting standards that encourage clustered development patterns and conservation of open space. These standards can be tied to a variety of land use application types.

- (b) *Is land conservation or impervious cover reduction a major goal or objective of the open space/cluster design regulations? (Center for Watershed Protection, 1998)*

Code Reference Location

Goals and objectives of open space/cluster design regulations may be found in the zoning code, planned unit development regulations, design guidelines, and/or subarea plans discussed above.

Opportunity to Improve

Consider elevating stormwater management among the site design goals for an open space/cluster site design by encouraging the conservation of open space and reduction of impervious surface coverage as essential design objectives.

- (c) *Are the entitlement criteria for open space/cluster design more stringent than for standard subdivision design?*

Code Reference Location

The entitlement process for open space/cluster developments is typically found in the zoning code or planned unit development sections of the municipal code.

Opportunity to Improve

Consider adopting an entitlement process for open space/cluster developments that is no more procedurally stringent or challenging than a non-cluster development.

- (d) *Are flexible site design criteria available for developers that utilize open space/cluster design options (setbacks, road widths, lot sized)? (Center for Watershed Protection, 1998)*

Code Reference Location

Flexible site criteria may be located in a planned unit development or other performance design section of the zoning code. Flexible site design criteria may also reside in design guidelines or in bulk and dimensional standards.

Opportunity to Improve

Allow for design flexibility within the code. Examples include reduced setbacks, road widths, and lot sizes for cluster designs that conserve open space.

(5) Street Width

- (a) *Is the minimum pavement width allowed for streets in low density residential developments that have less than 500 daily trips (ADT) between 18 and 22 feet? (Center for Watershed Protection, 1998)*

Code Reference Location

Street pavement width standards are found in a variety of places including design criteria documents, standard plans for public street widths, grading regulations, and subdivision ordinances. Street pavement width requirements may not be based on ADT.

Opportunity to Improve

Consider adopting standard plans for public street widths or updating street pavement width requirements to allow low density residential streets to be less than 22 feet if they have less than 500 daily trips.

- (b) *At higher densities, are parking lanes also allowed to serve as traffic lanes? (Center for Watershed Protection, 1998)*

Code Reference Location

Provisions may allow within traffic codes that allow for parking to be used for traffic during peak hours.

Opportunity to Improve

Opportunity may exist to restrict parking during AM or PM peak hours to facilitate traffic flow while not widening the pavement width.

- (c) *Is a single, shared travel lane to serve traffic flowing in both directions permitted in low volume single family residential neighborhoods?*

Code Reference Location

Provisions that allow a single shared travel lane to serve traffic flowing in both directions for low volume single family residential neighborhoods may be found within design criteria documents, grading regulations, design standards for private roads and subdivision ordinance. New standard plans and road sections may not allow new roads to be designed as a single lane to be shared by traffic flowing in both directions but existing roads within the municipality may use this layout.

Opportunity to Improve

Consider adopting standard plans and design standards for single lane roads that are shared by traffic flowing in both directions. In some instances, these roads may be acceptable in areas where this type of traffic flow is the norm and special provisions for exceptions may be made within the code.

(6) Street Length

- (a) *Do street layout standards promote the most efficient street layouts that reduce overall street lengths and impervious surfaces? (Center for Watershed Protection, 1998)*

Code Reference Location

This principle does not have an exact code reference from which to draw. The concept of creating the most efficient street layout includes site design requirements such as frontage, side setbacks and clustering of homes. The comprehensive plan may provide recommendations for new development to be created in a way that minimizes overall street lengths and impervious surfaces. Erosion control chapters of the municipal code may also require that roads be constructed in a way that is the least environmentally damaging.

Opportunity to Improve

Consider requiring that new roadways be constructed in a way that minimizes overall street lengths and creates the least amount of impervious surfaces possible. Reducing lot frontage requirements and clustering of lots can help to reduce overall street length.

(7) Right of Way Use

- (a) *Does code allow for utilities to be placed under paved section of the ROW? (Center for Watershed Protection, 1998)*

Code Reference Location

This would typically be found in chapters of the municipal code relating to utilities. Franchise agreements may also specify whether or not utilities may be placed under paved sections of the ROW.

Opportunity to Improve

Consider allowing utilities to be placed beneath the paved section of the ROW. Doing so allows for reduced ROW widths and can create additional space for stormwater facilities.

(8) Cul-De-Sacs

- (a) *Does the minimum allowable cul-de-sac radius exceed 35 feet? Is the minimum radius greater than 45 feet? (Center for Watershed Protection, 1998)*

Code Reference Location

Street design requirements are typically found in local public works engineering standards. Additionally, design requirements may also be found within the local fire code.

Opportunity to Improve

If the minimum allowable cul-de-sac radius exceeds 35 feet, consider reducing it provided the turn-around radius is large enough for local emergency vehicles.

- (b) *Do adopted street sections allow for open treatment and conveyance of stormwater within landscape strips?*

Code Reference Location

Street design requirements are typically found in local public works engineering standards.

Opportunity to Improve

If open conveyance and treatment is not allowed within landscape features, consider amendments that would allow streetside landscaping to be used for stormwater conveyance and treatment.

- (c) *Can a landscape island be created within a cul-de-sac? (Center for Watershed Protection, 1998)*

Code Reference Location

Street design requirements are typically found in local public works engineering standards.

Opportunity to Improve

Consider adopting street standards that provide designs which integrate landscape areas into the terminus of the cul-de-sac. In addition to the aesthetic qualities, integrating landscaping into the terminus of cul-de-sacs will result in reduced impervious surface coverage and may have the potential to serve stormwater management functions.

(9) Street-side Bioretention

- (a) *Are curb and gutters required for most residential street sections? (Center for Watershed Protection, 1998)*

Code Reference Location

Curb and gutter requirements are most likely found within a public works road design manual or design and construction standard details, and may also be found within the subdivision chapter of the land use code.

Opportunity to Improve

Consider adopting standard details for curb and gutters and requiring the use of curb and gutters within residential street sections. Pervious surface options may also be explored where curb and gutters are required.

- (b) *Do adopted street sections allow for open treatment and conveyance of stormwater within landscape strips?*

Code Reference Location

The design of the landscape strips and medians within street rights-of-way is typically described in local public works engineering standards and details or local landscape codes.

Opportunity to Improve

Consider adopting street standards to allow for treatment and conveyance of stormwater within landscape strips. Remove barriers that would require the use of bioretention within public-rights-of-way to require the approval of variances or design deviations. Consider adopting design templates that allow for desired street tree rhythm while managing stormwater.

(10) Land Conservation Incentives

- (a) *Are there any incentives for developers or landowners to conserve non-regulated land (e.g., open space designs, density bonuses, stormwater credits, etc.)? (Center for Watershed Protection, 1998)*

Code Reference Location

Incentives for developers or landowners to conserve land are typically found in the land use code either as flexibility built into planned unit developments, or included outright in municipal code chapters relating to LID or stormwater management. Comprehensive plans may lay the groundwork for these incentives by indicating conservation of land and clustering as goals.

Opportunity to Improve

If the code does not currently provide incentives for conservation of land and clustering, consider including these incentives either as flexibility in density, setback and height restrictions for planned unit developments that utilize land conservation techniques in their site plans, or as outright incentives in an LID or stormwater ordinance.

- (b) *Is flexibility to meet regulatory conservation restrictions (e.g., density compensation, buffer averaging, transferable development rights, offsite mitigation, etc.) offered to developers? (Center for Watershed Protection, 1998)*

Code Reference Location

Flexibility to meet regulatory conservation restrictions are usually found within critical areas ordinances of the municipal code. Critical areas ordinances often include language for density compensation, buffer averaging, transferable development rights and offsite mitigation should onsite mitigation not be feasible.

Opportunity to Improve

If flexibility to meet regulatory conservation restrictions does not currently exist within the code, consider incorporating language that provides developers the ability to meet conservation restrictions.

(11) Structured Parking

- (a) *Are there any incentives for developers to provide parking within garages rather than surface parking lots? (Center for Watershed Protection, 1998)*

Code Reference Location

Incentives for providing parking within garages rather than surface parking lots are typically found in the land use or zoning code section of the municipal code within the off-street parking requirements chapter. Incentives may also be included in the site, architectural or landscape design review chapters of the land use or zoning code.

Opportunity to Improve

Consider including incentives for developers to provide parking within garages rather than surface parking lots. Parking structures can incorporate green roofs to retain and filter stormwater runoff.

(12) Parking Ratios

- (a) *Do maximum parking standards exist in addition to minimum standards?*

Code Reference Location

Maximum parking standards would likely be found in the land use or zoning code section of the municipal code in a parking standards table within the off-street parking requirements chapter. These standards may also be found within individual zoning district code sections.

Opportunity to Improve

Consider adopting maximum parking standards in addition to minimum parking standards to reduce impervious surface coverage.

- (b) *Is the minimum parking ratio for single family homes (per home) less than or equal to 2 spaces? (Center for Watershed Protection, 1998)*

Code Reference Location

Parking ratios are typically found in the land use or zoning code section of the municipal code within the off-street parking requirements chapter. These ratios may also be found within individual zoning district code sections.

Opportunity to Improve

Consider amending required parking ratios for single family homes to be less than or equal to 2 spaces to reduce impervious surface coverage.

- (c) *Is the minimum parking ratio for a professional office building (per 1,000 sf of gross floor area) less than 3 spaces? (Center for Watershed Protection, 1998)*

Code Reference Location

Parking ratios are typically found in the land use or zoning code section of the municipal code within the off-street parking requirements chapter. These ratios may also be found within individual zoning district code sections.

Opportunity to Improve

Consider amending required parking ratios for professional office buildings to be less than 3 spaces per 1,000 sf of gross floor area.

- (d) *Is the minimum required parking ratio for a shopping center (per 1,000 sf gross floor area) less than 4.5 spaces? (Center for Watershed Protection, 1998)*

Code Reference Location

Parking ratios are typically found in the land use or zoning code section of the municipal code within the off-street parking requirements chapter. These ratios may also be found within individual zoning district code sections.

Opportunity to Improve

Consider amending required parking ratios for shopping centers to be less than 4.5 spaces per 1,000 sf of gross floor area.

(13) Parking Codes

- (a) *Are model shared parking agreements provided? (Center for Watershed Protection, 1998)*

Code Reference Location

If model shared parking agreements are available they are often found on the municipalities planning or development services department website.

Opportunity to Improve

Consider making shared parking agreements available to developers in order to encourage the use of shared parking and the reduction in total number of parking spaces and impervious surface coverage.

- (b) *Are parking ratios reduced if shared parking arrangements are in place? (Center for Watershed Protection, 1998)*

Code Reference Location

Parking ratios for shared parking would likely be found in the land use or zoning code section of the municipal code within the off-street parking requirements chapter and may be titled “parking alternatives” or “shared parking requirements”. These ratios may also be found within the municipality’s general plan or an adopted shared parking model.

Opportunity to Improve

Consider providing reduced parking requirements when shared parking is utilized. A shared parking model that demonstrates the percentage of parking spaces necessary for each use and the parking ratios for each use can help developers calculate the minimum parking spaces required for a mixed use development.

- (c) *If mass transit is provided nearby, may the parking ratio be reduced? (Center for Watershed Protection, 1998)*

Code Reference Location

If present, code language that allows for a reduction in parking ratios would likely be found in the land use or zoning code section of the municipal code within the off-street parking requirements chapter.

Opportunity to Improve

Consider adding language that allows for a reduction in the number of required parking spaces should the use be located within a specified distance to a bus or mass transit stop.

(14) Parking Lot Runoff

- (a) *Is a minimum percentage of a parking lot required to be landscaped? (Center for Watershed Protection, 1998)*

Code Reference Location

The percentage of a parking lot that is required to be landscaped is often found in the design criteria within the landscape or parking requirements chapters of a municipal code.

Opportunity to Improve

Where missing, consider requiring a percentage of parking lots to be landscaped. Landscaping can be in specified the form of islands and perimeter landscape. It can be described as a percentage of the overall parking area or based on the number of stalls.

- (b) *Is the use of bioretention islands and other stormwater practices allowed within landscaped areas and/or setbacks? (Center for Watershed Protection, 1998)*

Code Reference Location

The uses and activities allowed within landscape areas may reside in the landscape chapter of the municipal code. The stormwater management chapter may also specify the nature of allowed stormwater management features and may be silent to the use of landscape areas for stormwater management. There may also be instances where the stormwater management standards specify design solutions that do not include the use of landscape areas.

Opportunity to Improve

Where landscaping within parking areas is already required, consider language that will allow the use of landscape areas for stormwater management practices. This may involve amendments to local landscape and/or stormwater management chapters within the municipal code.

(15) Parking Lots

- (a) *Is the minimum stall width for a standard parking space less than 9 feet? (Center for Watershed Protection, 1998)*

Code Reference Location

Minimum dimensions for parking spaces are typically found in the land use or zoning code section of the municipal code within the off-street parking requirements chapter under parking space or facilities design.

Opportunity to Improve

Consider amending minimum standards for parking space stall width to be less than 9 feet.

- (b) *Is the minimum stall length for a standard parking space less than 18 feet? (Center for Watershed Protection, 1998)*

Code Reference Location

Minimum dimensions for parking spaces are typically found in the land use or zoning code section of the municipal code within the off-street parking requirements chapter.

Opportunity to Improve

Consider amending minimum standards for parking space stall length to be less than 18 feet.

- (c) *Does your code allow compact parking spaces?*

Code Reference Location

Code provisions that allow for compact parking spaces are typically found in the land use or zoning code section of the municipal code within the off-street parking requirements chapter.

Opportunity to Improve

Consider adopting provisions that allow a percentage of spaces to be designed for compact cars. Compact car spaces should be 8 feet wide and no more than 16 feet in length.

- (d) *Are at least 30% of the spaces in parking lots permitted to be designed as compact parking spaces?*

Code Reference Location

The percent of parking spaces that are permitted to be designed as compact parking spaces are typically found in the land use or zoning code section of the municipal code within the off-street parking requirements chapter.

Opportunity to Improve

Consider adopting provisions that allow at least 30 percent of parking spaces in parking lots to be designed as compact parking spaces.

- (e) *Can pervious materials be used for parking areas? (Center for Watershed Protection, 1998)*

Code Reference Location

Regulations that allow pervious materials to be used for parking areas are found in a variety of areas. Landscaping standards, off-street parking requirements, urban runoff pollution and water efficient landscape regulations may all include provisions that allow for pervious materials to be used in parking areas.

Opportunity to Improve

Consider adding language that allows parking areas to be paved with pervious materials.

(16) Driveways

- (a) *Is the minimum driveway width of a one-lane driveway 9 feet or less? Is the minimum width for a two-lane driveway 19 feet or less? (Center for Watershed Protection, 1998)*

Code Reference Location

Minimum driveway widths are typically specified within off-street parking and loading codes, subdivision codes, site design standards, or fire codes.

Opportunity to Improve

If the minimum driveway width of a one-lane driveway is greater than 9 feet, or if the minimum driveway width for a two-lane driveway is greater than 19 feet, consider reducing this to minimize impervious surfaces and reduce runoff.

- (b) *Can pervious materials be used for single family home driveways? (Center for Watershed Protection, 1998)*

Code Reference Location

Driveway materials for single family homes are typically specified within off-street parking and loading codes, or site design standards.

Opportunity to Improve

Consider allowing pervious materials to be used for single family home driveways as long as they meet all engineering standards and maintenance needs.

- (c) *Can a “two track =” or “Hollywood driveway” design be used for single family driveways? (Center for Watershed Protection, 1998)*

Code Reference Location

The ability to utilize “two track” or “Hollywood” driveway designs for single family driveways is typically specified within off-street parking and loading codes or site design standards.

Opportunity to Improve

Consider allowing alternative driveway designs such as “two track” or “Hollywood” driveways as a method of reducing impervious surface coverage and reducing runoff.

- (d) *Are shared driveways permitted in residential developments? (Center for Watershed Protection, 1998)*

Code Reference Location

If shared driveways are permitted within residential developments, they are typically specified in the subdivision code, off-street parking and loading code, access and circulation code, or street standards.

Opportunity to Improve

Consider allowing shared driveways within residential developments on lots that have been subdivided into no more than 10 lots and would not adversely affect circulation to neighboring properties. Maintenance provisions should be included that require the driveway to be maintained per municipal standards.

(17) Sidewalks

- (a) *Can sidewalks be as narrow as 4 feet? (Center for Watershed Protection, 1998)*

Code Reference Location

Minimum sidewalk requirements are typically found in engineering standard details or street design standards.

Opportunity to Improve

Consider allowing sidewalks to be as narrow as 4 feet in areas where greater accessibility needs are not a concern, such as local residential streets. The minimum requirement for ADA accessibility is 4 feet provided passing spaces are provided every 200 feet.

- (b) *Are sidewalks required on both sides of residential streets? (Center for Watershed Protection, 1998)*

Code Reference Location

Requirements for sidewalks to be located on both sides of residential streets are typically found within engineering standard details or street design standards.

Opportunity to Improve

Consider allowing sidewalks to be located on only one side of a residential street, provided the design of the street meets ADA requirements.

- (c) *Can sidewalks be made from pervious materials?*

Code Reference Location

Sidewalk materials are typically specified within engineering standard details or street design standards.

Opportunity to Improve

Consider allowing sidewalks to be made from pervious materials provided they meet all engineering standards and maintenance needs.

(18) Buffer Systems

- (a) *Is there a stream buffer ordinance in the community? (Center for Watershed Protection, 1998)*

Code Reference Location

Stream buffer ordinances are often found in local sensitive areas standards, floodplain standards, or ecological and biological resources performance standards.

Opportunity to Improve

Consider incorporating stream buffer standards which require a sufficient width to protect the habitat and water quality values of the stream.

- (b) *Is expansion of the buffer to include freshwater wetlands, steep slopes or the 100-year floodplain required? (Center for Watershed Protection, 1998)*

Code Reference Location

Stream buffer ordinances are often found in local sensitive areas standards, floodplain standards, or ecological and biological resources performance standards.

Opportunity to Improve

If a stream buffer ordinance is in place, consider expanding the buffer to include freshwater wetlands, steep slopes, or the 100-year floodplain.

- (c) *Does the stream buffer ordinance specify that at least part of the stream buffer be maintained with native vegetation? (Center for Watershed Protection, 1998)*

Code Reference Location

Stream buffer ordinances are often found in local sensitive areas standards, floodplain standards, or ecological and biological resources performance standards.

Opportunity to Improve

Consider stream buffer standards that require the conservation of native vegetation. The buffer width should be of sufficient width to protect the habitat and water quality values of the stream.

(d) *Does the stream buffer ordinance outline allowable uses? (Center for Watershed Protection, 1998)*

Code Reference Location

Stream buffer ordinances are often found in local sensitive areas standards, floodplain standards, or ecological and biological resources performance standards.

Opportunity to Improve

Consider outlining what types of uses and development are permitted within the stream buffer, such as water-dependent facilities and existing buildings or structures.

(e) *Does the ordinance specify enforcement and education mechanisms? (Center for Watershed Protection, 1998)*

Code Reference Location

Stream buffer ordinances are often found in local sensitive areas standards, floodplain standards, or ecological and biological resources performance standards.

Opportunity to Improve

Consider specifying penalties and remedies for any person who violates a provision of the stream buffer ordinance.

(19) Setbacks and Frontages

(a) *Are irregular lot shapes (pie-shaped, flag lots) allowed in the community? (Center for Watershed Protection, 1998)*

Code Reference Location

Standards relating to permitted lot shapes would typically be found in density and dimensions regulations or development standards.

Opportunity to Improve

Consider specifying that irregular shaped lots such as pie-shaped or flag lots are permitted to allow for clustering. Land conservation techniques, such as the clustering of lots can reduce total road lengths and impervious surface coverage.

(b) *Is the minimum requirement for front setback in residential zones less than or equal to 20 feet? (Center for Watershed Protection, 1998)*

Code Reference Location

Setback requirements would typically be found in density and dimensions regulations or development standards. Minimum requirements for front setbacks in residential zones may also be stipulated in specific sections of the zoning code describing the zoning designations.

Opportunity to Improve

Consider reducing the minimum requirement for front setbacks in residential zones. Smaller setbacks in residential zones provide for less impervious surface coverage by driveways and walkways.

- (c) *Is the minimum requirement for rear setback in residential zones less than or equal to 25 feet? (Center for Watershed Protection, 1998)*

Code Reference Location

Setback requirements would typically be found in density and dimensions regulations or development standards. Minimum requirements for front setbacks in residential zones may also be stipulated in specific sections of the zoning code describing the zoning designations.

Opportunity to Improve

Consider reducing the minimum requirement for rear setbacks in residential zones. Smaller rear setbacks in residential zones can allow for tighter design layouts and flexibility in siting homes.

- (d) *Is the minimum requirement for side setback in residential zones less than or equal to 8 feet? (Center for Watershed Protection, 1998)*

Code Reference Location

Setback requirements would typically be found in density and dimensions regulations or development standards. Minimum requirements for side setbacks in residential zones may also be stipulated in specific sections of the zoning code describing the zoning designations.

Opportunity to Improve

Consider reducing the minimum requirement for side setbacks in residential zones. Smaller side setbacks in residential zones allow for narrower frontages and reduce total road lengths and impervious surface coverage.

- (e) *Is the minimum lot frontage in residential zones less than or equal to 60 feet?*

Code Reference Location

Frontage requirements would typically be found in density and dimensions regulations or development standards. Minimum requirements for lot frontage in residential zones may also be stipulated in specific sections of the zoning code describing the zoning designations.

Opportunity to Improve

Consider reducing the minimum lot frontage in residential zones. Narrower lot frontages in residential zones can reduce total road lengths and impervious surface coverage.

(20) Stormwater Outfalls

- (a) *Can stormwater be directly discharged into jurisdictional wetland without pretreatment? (Center for Watershed Protection, 1998)*

Code Reference Location

Regulations that require pretreatment of stormwater that is discharged into a jurisdictional wetland are typically found within local stormwater design manuals, locally-adopted regional stormwater design manuals, and municipal code chapters related to stormwater management.

Opportunity to Improve

Consider incorporating code language that requires pretreatment of stormwater prior to being discharged into a jurisdictional wetland. Pretreatment methods can include any stormwater BMPs such as bioretention swales or detention ponds.

- (b) *Does a floodplain management ordinance that restricts or prohibits development within the 100-year floodplain exist? (Center for Watershed Protection, 1998)*

Code Reference Location

Floodplain management ordinances are found within the municipal code.

Opportunity to Improve

If a 100-year floodplain exists within the municipality, and a floodplain management ordinance does not currently exist, consider adopting one that restricts or prohibits development within the 100-year floodplain.

- (c) *Is stormwater required to be treated before it is discharged? (Center for Watershed Protection, 1998)*

Code Reference Location

Requirements relating to stormwater treatment are typically found within local stormwater design manuals, locally-adopted regional stormwater design manuals, and municipal code chapters related to stormwater management.

Opportunity to Improve

If stormwater is not currently required to be treated before it is discharged, consider incorporating code language within a stormwater ordinance that requires stormwater to be treated. Consider requiring a Stormwater Pollution Prevention Plan (SWPPP) for construction or industrial activities that contains information on BMPs that will control and treat stormwater before it is discharged.

- (d) *Are there effective design criteria for stormwater best management practices? (Center for Watershed Protection, 1998)*

Code Reference Location

Stormwater best management practices are typically found within local stormwater design manuals and locally-adopted regional stormwater design manuals.

Opportunity to Improve

If your community does not have a stormwater management manual, consider adopting one. Stormwater management manuals provide guidance and design criteria for controlling the quantity and quality of stormwater. Best management practices are typically identified within the stormwater management manual. Ensure these facilities are designed correctly by providing design criteria within the stormwater management manual.

(21) Potential Thresholds

- (a) *Are there reviewable methods of determining and inspecting compliance with water quality standards?*

Code Reference Location

Methods for determining and inspecting compliance with water quality standards are found in various locations, within local stormwater design manuals, locally-adopted regional stormwater design manuals, and municipal code chapters related to stormwater management or water quality, city handouts, forms and maintenance agreements.

Opportunity to Improve

Consider including methods for ensuring compliance with water quality standards within the municipal code. Develop protocols for owners or staff to inspect facilities and determine they are in compliance.

- (b) *Have hydromodification standards been adopted?*

Code Reference Location

If hydromodification standards exist, they are typically located in the local stormwater design manuals, locally-adopted regional stormwater design manuals, or hydromodification management plans.

Opportunity to Improve

Consider adopting hydromodification standards to reduce degradation of natural water channels.

- (c) *Does the hydromodification control standard require the management of runoff generated from the site's impervious areas be contained on site?*

Code Reference Location

Hydromodification control standards are typically found within local stormwater design manuals, locally-adopted regional stormwater design manuals, municipal code chapters related to stormwater management, and hydromodification plans.

Opportunity to Improve

The stormwater ordinance should require that runoff generated from impervious surfaces be contained on site. Consider specifying best management practices for containing the runoff in the stormwater management manual.

- (d) *Are runoff controls clearly specified?*

Code Reference Location

Runoff controls are typically required within municipal code chapters related to stormwater management and specified within local stormwater design manuals and locally-adopted regional stormwater design manuals.

Opportunity to Improve

If runoff controls are not explicitly required, consider specifying in the municipal code that they are required to reduce pollutants in stormwater runoff from construction activities. Construction site best management practices can be included in the stormwater management manual.

- (e) *Are mandatory source control measures defined?*

Code Reference Location

Source control measures are typically defined in local stormwater design manuals, locally-adopted regional stormwater design manuals.

Opportunity to Improve

If mandatory source control measures are not defined, consider defining them within the stormwater management manual. Providing a list of source control measures help developers to design their sites to prevent pollutants from coming into contact with stormwater runoff.

- (f) *Do drainage policies, standards and details allow for infiltration of stormwater or separation of directly-connected impervious areas?*

Code Reference Location

Drainage policies are typically found municipal code chapters related to stormwater management. Standards and details that allow for infiltration of stormwater are usually kept with other public works standard plans and details.

Opportunity to Improve

Consider amending drainage policies to allow stormwater to pond and infiltrate rather than requiring it to be discharged. Standard details and plans should also reflect the ability to pond and infiltrate stormwater on site through the use of stormwater swales and rain gardens.

- (g) *If stormwater management is required, which redevelopment projects are required to meet the standard? What are the applicability thresholds for other development types?*

Code Reference Location

Redevelopment thresholds are typically located in municipal code chapters related to stormwater management.

Opportunity to Improve

If the thresholds for stormwater management for redevelopment projects are not outlined, consider including them within the municipal code. These thresholds should be consistent with permit requirements.

- (h) *Is there a maximum impervious area for specific land use or zones?*

Code Reference Location

Maximum impervious area requirements are typically found in zoning chapters covering development requirements or other performance design criteria and site design guidelines.

Opportunity to Improve

Consider including a maximum impervious area for specific land uses or zones within the zoning code. Maximum impervious area requirements allow flexibility in site design provided that low impact development practices are utilized such as pervious pavements and green roofs.

- (i) *Are “end of the pipe” facilities (proprietary stormwater quality treatment devices) allowed to be installed as stand-alone treatment?*

Code Reference Location

“End of the pipe” facilities are typically permitted to be installed as stand-alone treatments, or as a component of a stormwater management hierarchy, in local stormwater design manuals and locally-adopted regional stormwater design manuals. Public works standard plans may also provide details for construction of the facilities.

Opportunity to Improve

Consider allowing the installation of “end of the pipe” facilities as a component of a stormwater management hierarchy, or as a stand-alone treatment. Source and on-site runoff controls and treatment may not be enough to reduce total pollutant loads, especially when the stormwater is of poor quality and infiltration would impair good groundwater. “End of the pipe” facilities are usually implemented to manage the runoff from larger drainage areas and treat the stormwater at the outlet of drainage systems, just before it reaches the receiving streams or waters.

- (j) *Do databases exist which can send out inspection reminders for the long-term maintenance of stormwater BMPs?*

Code Reference Location

If your municipality has a database that can send out inspection reminders for the long-term maintenance of stormwater BMPs this is typically tied into the tracking system for maintenance and public works.

Opportunity to Improve

If a database does not exist, consider implementing one or modifying the existing database to allow long-term maintenance of stormwater BMPs to be tracked. Inspection reminders should be sent out annually to the party responsible for inspecting the facilities, as indicated on the maintenance agreement.

- (k) *Is a stormwater pollution prevention plan or other permit required as a condition of development?*

Code Reference Location

A Stormwater Pollution Prevention Plan (SWPPP) is typically required in municipal code chapters related to stormwater management for new development or redevelopment activities. A SWPPP outlines BMPs that will be utilized to reduce pollutants in stormwater runoff as a result of construction activities. A SWPPP is typically required to be submitted with construction or building-related permits.

Opportunity to Improve

If a SWPPP is not required as a condition of development, consider specifying within the stormwater code that one must be submitted as a condition of any land use entitlement and/or construction or building related permit.

- (l) *Are maintenance agreement templates for stormwater quality facilities included in your engineering standards?*

Code Reference Location

Maintenance agreement templates are typically found with engineering standard details on the development services or public works website or over the counter. Typically maintenance agreements are required to be submitted along with building and other permits.

Opportunity to Improve

Consider requiring owners to sign complete maintenance agreement for any stormwater facilities installed on their property as a part of the permitting process.

(22)Other

- (a) *Is stormwater quality a topic of the pre-applicant conference? Is a representative knowledgeable in stormwater obliged to attend? Is a stormwater management plan required as part of the preliminary plan review process?*

Code Reference Location

A pre-application conference is not always required, but is usually available if an applicant requests one. Some municipalities require a pre-application meeting for large and complex projects. All aspects of the project, including stormwater, are typically discussed. If the city has a stormwater manager or qualified stormwater professional, this person may attend the conference. A stormwater management plan is typically required in municipal code chapters related to stormwater management, however it may not be required for the preliminary plan review and is typically required at the plan check phase prior to issuance of a building permit.

Opportunity to Improve

If stormwater is not a topic of the pre-application conference, consider including it and requiring a stormwater representative to be in attendance. Consider requiring a stormwater management plan to be submitted as a part of the preliminary plan review process.

- (b) *Do applicants' CEQA Initial Studies include analyses of the potential for discharge of stormwater pollutants from areas of material storage, vehicle or equipment fueling, vehicle or equipment maintenance (including washing), waste handling, hazardous materials handling or storage, delivery areas, loading docks or other outdoor work areas?*

Code Reference Location

The California Environmental Quality Act requires an Initial Study to be conducted to determine whether or not the project has the potential to have significant detrimental impacts on environment and whether or not an Environmental Impact Report (EIR) will be required to analyze the potential impacts, mitigations and alternatives that can decrease or eliminate those impacts. An initial study checklist exists for CEQA that includes questions relating to the discharge of stormwater pollutants and negative impacts to water quality. The requirement for projects to comply with CEQA is typically found in the development or environmental review section of the land use code.

Opportunity to Improve

If code language does not currently exist requiring an environmental review to be conducted in accordance with CEQA, incorporate this language into the code. Require applicants to fill out the CEQA Initial Study Checklist as a condition of development to determine if the project is exempt from CEQA or requires an EIR.

Gap Analysis Framework prepared from the following sources:

- Alameda Countywide Clean Water Program. (2013). C.3 Stormwater Technical Guidance: A handbook for developers, builders and project applicants. Version 4.0. <https://www.cleanwaterprogram.org/c3-guidance-table.html>
- Carlson, Wayne E., Medrud, Brad, Wulkan, Bruce & Holly Williams. (2012). Integrating LID into Local Codes: A Guidebook for Local Governments. Olympia, WA: Puget Sound Partnership. http://www.psp.wa.gov/downloads/LID_Guidebook/20120731_LIDguidebook.pdf
- Center for Watershed Protection. (1998). Codes and Ordinances Worksheet. Ellicott City, MD. <https://owl.cwp.org/mdocs-posts/codes-ordinance-worksheet/>
- Santa Clara Valley Urban Runoff Pollution Prevention Program. (July 9, 2003). Site Design Guidance for Review of Local Standards. Sunnyvale, CA. http://www.scvurppp-w2k.com/permit_c3_docs/071103_Site_Design_Guidance_for_Review_of_Local_Standards.pdf





Central Coast Low Impact Development Initiative
 Darla Inglis, Ph.D.
<http://centralcoastlidi.org>


Jurisdiction Name THE E.12.J IMPEDIMENT ANALYSIS TOOL

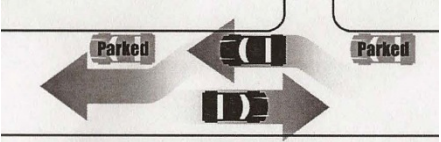
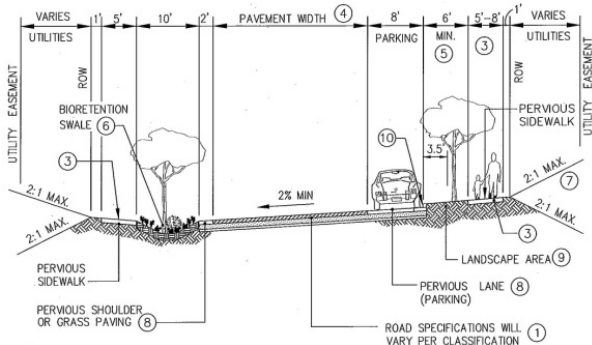


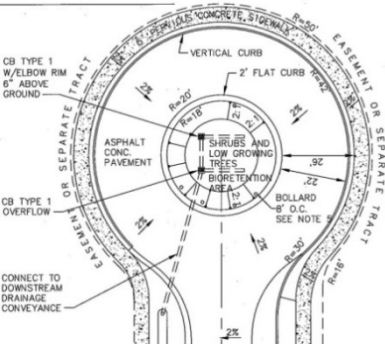
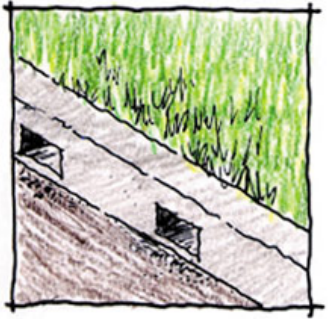
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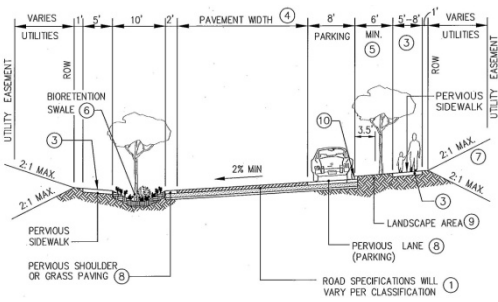
Benchmark / Objective	Code Reference and Summary of Existing Standards	Gap Between Existing Standard and Benchmark / Opportunity to Improve
(1) VEGETATION CONSERVATION		
<p>(a) Do regulations require or encourage the preservation of natural vegetation at development sites?</p> <p><i>(Center for Watershed Protection, 1998)</i></p> 		
<p>(b) If forests or specimen trees are present at development sites, must some of the stand be preserved?</p> <p><i>(Center for Watershed Protection, 1998)</i></p>		
<p>(c) If there is a stream buffer ordinance in the municipality, does the ordinance specify that at least part of the stream buffer be maintained with native vegetation?</p> <p><i>(Center for Watershed Protection, 1998)</i></p>		
(2) OPEN SPACE MANAGEMENT		
<p>(a) Are mechanisms in place to manage open space in perpetuity?</p>		

Benchmark / Objective	Code Reference and Summary of Existing Standards	Gap Between Existing Standard and Benchmark / Opportunity to Improve
<p>(b) Are open space areas required to be consolidated into larger units?</p> <p><i>(Center for Watershed Protection, 1998)</i></p>		
<p>(c) Does a minimum percentage of open space have to be managed in a natural condition?</p> <p><i>(Center for Watershed Protection, 1998)</i></p>		
<p>(d) Are allowed uses in open space areas of residential developments defined?</p> <p><i>(Center for Watershed Protection, 1998)</i></p>		
<p>(e) Can open space be managed by a third party using land trusts or conservation easements?</p> <p><i>(Center for Watershed Protection, 1998)</i></p>		
(3) ROOFTOP RUNOFF		
<p>(a) Can rooftop runoff be discharged to yard areas?</p> <p><i>(Center for Watershed Protection, 1998)</i></p>		
<p>(b) Do current grading or drainage requirements allow for temporary ponding of stormwater on front yards or rooftops?</p> <p><i>(Center for Watershed Protection, 1998)</i></p> 		
<p>(c) Are vegetated roofs allowed? Do criteria exist to allow designers to receive credit for landscaping, stormwater, etc. for the use of vegetated roofs?</p>		


Benchmark / Objective	Code Reference and Summary of Existing Standards	Gap Between Existing Standard and Benchmark / Opportunity to Improve
(4) OPEN SPACE / CLUSTER DESIGN REQUIREMENTS		
<p>(a) Does your municipality have open space/cluster design regulations?</p> <p><i>(Center for Watershed Protection, 1998)</i></p> 		
<p>(b) Is land conservation or impervious cover reduction a major goal or objective of the open space/cluster design regulations?</p> <p><i>(Center for Watershed Protection, 1998)</i></p>		
<p>(c) Are the entitlement criteria for open space/cluster design more stringent than for standard subdivision design?</p>		
<p>(d) Are flexible site design criteria available for developers that utilize open space/cluster design options (setbacks, road widths, lot sized)?</p> <p><i>(Center for Watershed Protection, 1998)</i></p>		
(5) STREET WIDTH		
<p>(a) Is the minimum pavement width allowed for streets in low density residential developments that have less than 500 daily trips (ADT) between 18 and 22 feet?</p> <p><i>(Center for Watershed Protection, 1998)</i></p>		
<p>(b) At higher densities, are parking lanes also allowed to serve as traffic lanes?</p> <p><i>(Center for Watershed Protection, 1998)</i></p>		

Benchmark / Objective	Code Reference and Summary of Existing Standards	Gap Between Existing Standard and Benchmark / Opportunity to Improve
<p>(c) Is a single, shared travel lane to serve traffic flowing in both directions permitted in low volume single family residential neighborhoods?</p> 		
(6) STREET LENGTH		
<p>(a) Do street layout standards promote the most efficient street layouts that reduce overall street lengths and impervious surfaces?</p> <p><i>(Center for Watershed Protection, 1998)</i></p>		
(7) RIGHT OF WAY USE		
<p>(a) Does code allow for utilities to be placed under paved section of the ROW?</p> <p><i>(Center for Watershed Protection, 1998)</i></p>		
(8) CUL-DE-SACS		
<p>(a) Does the minimum allowable cul-de-sac radius exceed 35 feet? Is the minimum radius greater than 45 feet?</p> <p><i>(Center for Watershed Protection, 1998)</i></p>		
<p>(b) Do adopted street sections allow for open treatment and conveyance of stormwater within landscape strips?</p> 		

Benchmark / Objective	Code Reference and Summary of Existing Standards	Gap Between Existing Standard and Benchmark / Opportunity to Improve
<p>(c) Can a landscape island be created within the cul-de-sac?</p> <p><i>(Center for Watershed Protection, 1998)</i></p>  <p>The diagram illustrates a circular cul-de-sac with a central landscape island. Key features include: <ul style="list-style-type: none"> Vertical Curbs: A 2' flat curb and a 2' vertical curb. Pavement: Asphalt concrete pavement on the island and concrete storage for overflow. Vegetation: Shrubs and low-growing trees in a bioretention area. Structures: A bollard 8' O.C. (On-Center). Drainage: Connections to downstream drainage conveyance. Other Labels: Easement or separate tract, separate tract, and various radii (R=20, R=30). </p>		
(9) STREET-SIDE BIORETENTION		
<p>(a) Are curb and gutters required for most residential street sections?</p> <p><i>(Center for Watershed Protection, 1998)</i></p>  <p>The diagram shows a cross-section of a street-side bioretention system. It features a concrete curb and gutter on the left, leading to a vegetated area with grass and soil. The system is designed to manage stormwater runoff from the street.</p>		

Benchmark / Objective	Code Reference and Summary of Existing Standards	Gap Between Existing Standard and Benchmark / Opportunity to Improve
<p>(b) Do adopted street sections allow for the use of open treatment and conveyance of stormwater within landscape strips?</p> 		
(10) LAND CONSERVATION INCENTIVES		
<p>(a) Are there any incentives for developers or landowners to conserve non-regulated land (e.g., open space designs, density bonuses, stormwater credits, etc.)?</p> <p><i>(Center for Watershed Protection, 1998)</i></p>		
<p>(b) Is flexibility to meet regulatory or conservation restrictions (e.g., density compensation, buffer averaging, transferable development rights, offsite mitigation, etc.) offered to developers?</p> <p><i>(Center for Watershed Protection, 1998)</i></p>		
(11) STRUCTURED PARKING		
<p>(a) Are there any incentives for developers to provide parking within garages rather than surface parking lots?</p> <p><i>(Center for Watershed Protection, 1998)</i></p>		
(12) PARKING RATIOS		
<p>(a) Do maximum parking standards exist in addition to minimum standards?</p>		
<p>(b) Is the minimum parking ratio for single family homes (per home) less than or equal to 2 spaces?</p> <p><i>(Center for Watershed Protection, 1998)</i></p>		

Benchmark / Objective	Code Reference and Summary of Existing Standards	Gap Between Existing Standard and Benchmark / Opportunity to Improve
<p>(c) Is the minimum parking ratio for a professional office building (per 1,000 sf of gross floor area) less than 3 spaces?</p> <p><i>(Center for Watershed Protection, 1998)</i></p>		
<p>(d) Is the minimum required parking ratio for shopping center (per 1,000 sf gross floor area) less than 4.5 spaces?</p> <p><i>(Center for Watershed Protection, 1998)</i></p>		
(13) PARKING CODES		
<p>(a) Are model shared parking agreements provided?</p> <p><i>(Center for Watershed Protection, 1998)</i></p>		
<p>(b) Are parking ratios reduced if shared parking arrangements are in place?</p> <p><i>(Center for Watershed Protection, 1998)</i></p>		
<p>(c) If mass transit is provided nearby, may the parking ratio reduced?</p> <p><i>(Center for Watershed Protection, 1998)</i></p>		
(14) PARKING LOT RUNOFF		
<p>(a) Is a minimum percentage of a parking lot required to be landscaped?</p> <p><i>(Center for Watershed Protection, 1998)</i></p>		

Benchmark / Objective	Code Reference and Summary of Existing Standards	Gap Between Existing Standard and Benchmark / Opportunity to Improve
<p>(b) Is the use of bioretention islands and other stormwater practices within landscaped areas and/or setbacks allowed?</p> <p><i>(Center for Watershed Protection, 1998)</i></p> 		
(15) PARKING LOTS		
<p>(a) Is the minimum stall width for a standard parking space less than 9 feet?</p> <p><i>(Center for Watershed Protection, 1998)</i></p>		
<p>(b) Is the minimum stall length for a standard parking space less than 18 feet?</p> <p><i>(Center for Watershed Protection, 1998)</i></p>		
<p>(c) Does your code allow compact parking spaces?</p>		
<p>(d) Are at least 30% of the spaces in parking lots permitted to be designed as compact parking spaces?</p>		
<p>(e) Can pervious materials be used for parking areas?</p> <p><i>(Center for Watershed Protection, 1998)</i></p>		

Benchmark / Objective	Code Reference and Summary of Existing Standards	Gap Between Existing Standard and Benchmark / Opportunity to Improve
(16) DRIVEWAYS		
<p>(a) Is the minimum driveway width of a one-lane driveway 9 feet or less? Is the minimum width for a two-lane driveway 18 feet or less?</p> <p><i>(Center for Watershed Protection, 1998)</i></p>		
<p>(b) Can pervious materials be used for single family home driveways?</p> <p><i>(Center for Watershed Protection, 1998)</i></p>		
<p>(c) Can a "two track" or "Hollywood driveway" design be used for single family driveways?</p> <p><i>(Center for Watershed Protection, 1998)</i></p>		
<p>(d) Are shared driveways permitted in residential developments?</p> <p><i>(Center for Watershed Protection, 1998)</i></p>		
(17) SIDEWALKS		
<p>(a) Can sidewalks be as narrow as 4 feet?</p> <p><i>(Center for Watershed Protection, 1998)</i></p>		
<p>(b) Are sidewalks required on both sides of residential streets?</p> <p><i>(Center for Watershed Protection, 1998)</i></p>		
<p>(c) Can sidewalks be made from pervious materials?</p>		
(18) BUFFER SYSTEMS		
<p>(a) Is there a stream buffer ordinance in the community?</p> <p><i>(Center for Watershed Protection, 1998)</i></p>		
<p>(b) Is expansion of the buffer to include freshwater wetlands, steep slopes or the 100-year floodplain required?</p> <p><i>(Center for Watershed Protection, 1998)</i></p>		

Benchmark / Objective	Code Reference and Summary of Existing Standards	Gap Between Existing Standard and Benchmark / Opportunity to Improve
<p>(c) Does the stream buffer ordinance specify that at least part of the stream buffer be maintained with native vegetation?</p> <p><i>(Center for Watershed Protection, 1998)</i></p>		
<p>(d) Does the stream buffer ordinance outline allowable uses?</p> <p><i>(Center for Watershed Protection, 1998)</i></p>		
<p>(e) Does the ordinance specify enforcement and education mechanisms?</p> <p><i>(Center for Watershed Protection, 1998)</i></p>		
(19) SETBACKS AND FRONTAGES		
<p>(a) Are irregular lots shapes (pie-shaped, flag lots) allowed in the community?</p> <p><i>(Center for Watershed Protection, 1998)</i></p>		
<p>(b) Is the minimum requirement for front setback in residential zones less than or equal to 20 feet?</p> <p><i>(Center for Watershed Protection, 1998)</i></p>		
<p>(c) Is the minimum requirement for rear setback in residential zones less than or equal to 25 feet?</p> <p><i>(Center for Watershed Protection, 1998)</i></p>		
<p>(d) Is the minimum requirement for side setback in residential zones less than or equal to 8 feet?</p> <p><i>(Center for Watershed Protection, 1998)</i></p>		
<p>(e) Is the minimum lot frontage in residential zones less than or equal to 60 feet?</p>		
(20) STORMWATER OUTFALLS		
<p>(a) Can stormwater be directly discharged into jurisdictional wetland without pretreatment?</p> <p><i>(Center for Watershed Protection, 1998)</i></p>		

Benchmark / Objective	Code Reference and Summary of Existing Standards	Gap Between Existing Standard and Benchmark / Opportunity to Improve
<p>(b) Does a floodplain management ordinance that restricts or prohibits development within the 100-year floodplain exist?</p> <p><i>(Center for Watershed Protection, 1998)</i></p>		
<p>(c) Is stormwater required to be treated before it is discharged?</p> <p><i>(Center for Watershed Protection, 1998)</i></p>		
<p>(d) Are there effective design criteria for stormwater best management practices?</p> <p><i>(Center for Watershed Protection, 1998)</i></p>		
(21) POTENTIAL THRESHOLDS		
<p>(a) Are there reviewable methods of determining and inspecting compliance with water quality standards?</p>		
<p>(b) Have hydromodification standards been adopted?</p>		
<p>(c) Does the hydromodification control standard require the management of runoff generated from the site's impervious areas be contained on site?</p>		
<p>(d) Are runoff controls clearly specified?</p>		
<p>(e) Are mandatory source control measures defined?</p>		
<p>(f) Do drainage policies, standards and details allow for infiltration of stormwater or separation of directly-connected impervious areas?</p>		
<p>(g) If stormwater management is required, which redevelopment projects are required to meet the standard? What are the applicability thresholds for other development types?</p>		
<p>(h) Is there a maximum impervious area for specific land uses or zones?</p>		

Benchmark / Objective	Code Reference and Summary of Existing Standards	Gap Between Existing Standard and Benchmark / Opportunity to Improve
(i) Are "end of the pipe" facilities (proprietary stormwater quality treatment devices) allowed to be installed as stand-alone treatment?		
(j) Do databases exist which can send out inspection reminders for the long-term maintenance of stormwater BMPs?		
(k) Is a stormwater pollution prevention plan or other permit required as a condition of development?		
(l) Are maintenance agreement templates for stormwater quality facilities included in your engineering standards?		
(22) OTHER		
(a) Is stormwater quality a topic of the pre-applicant conference? Is a representative knowledgeable in stormwater obliged to attend? Is a stormwater management plan required as part of the preliminary plan review process?		
(b) Do applicants' CEQA Initial Studies include analyses of the potential for discharge of stormwater pollutants from areas of material storage, vehicle or equipment fueling, vehicle or equipment maintenance (including washing), waste handling, hazardous materials handling or storage, delivery areas, loading docks or other outdoor work areas.		

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- Alameda Countywide Clean Water Program. (2013). C.3 Stormwater Technical Guidance: A handbook for developers, builders and project applicants. Version 4.0. <https://www.cleanwaterprogram.org/c3-guidance-table.html>
- Carlson, Wayne E., Medrud, Brad, Wulkan, Bruce & Holly Williams. (2012). Integrating LID into Local Codes: A Guidebook for Local Governments. Olympia, WA: Puget Sound Partnership. http://www.psp.wa.gov/downloads/LID_Guidebook/20120731_LIDguidebook.pdf
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- Santa Clara Valley Urban Runoff Pollution Prevention Program. (July 9, 2003). Site Design Guidance for Review of Local Standards. Sunnyvale, CA. http://www.scvurppp-w2k.com/permit_c3_docs/071103_Site_Design_Guidance_for_Review_of_Local_Standards.pdf