Alameda Countywide Clean Water Program

Contra Costa Clean Water Program

Fairfield-Suisun Urban Runoff Management Program

Marin County Stormwater Pollution Prevention Program

Napa County Stormwater Pollution Prevention Program

San Mateo Countywide Water Pollution Prevention Program

Santa Clara Valley Urban Runoff Pollution Prevention Program

Sonoma County Water Agency

Vallejo Sanitation and Flood Control District

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December 1, 2010

Bruce Wolfe, Executive Officer
California Regional Water Quality Control Board
San Francisco Bay Region
1515 Clay Street, Suite 1400
Oakland, CA 94612

Subject: Special Projects Proposal / LID Treatment Reduction Credits MRP Provision C.3.e.ii.(2)

Dear Mr. Wolfe:

This letter and attachment are submitted on behalf of all 76 permittees subject to the requirements of the Municipal Regional Stormwater NPDES Permit (MRP).

MRP Provision C.3.e.ii.(2) states:

When considered at a watershed scale, certain types of smart-growth, high-density and transit-oriented development can either reduce existing impervious surfaces or create less "accessory" impervious areas and automobile-related pollutant impacts. Incentive LID [Low Impact Development] treatment reduction credits approved by the Regional Water Board may be applied to these types of Special Projects.

Regarding these Special Projects, Provision C.3.e.ii.(2) requires the permittees to submit a report containing the following information:

- Identification of the types of projects proposed for consideration of LID treatment reduction credits and an estimate of the number and cumulative area of potential projects during the remaining term of this Permit for each type of project;
- Identification of institutional barriers and/or technical site-specific constraints to providing 100% LID treatment onsite that justify the allowance for non-LID treatment measures onsite;
- Specific criteria for each type of Special Project proposed, including size, location, minimum densities, minimum floor area ratios, or other appropriate limitations;
- Identification of specific water quality and environmental benefits provided by these types of projects that justify the allowance for non-LID treatment measures onsite;
- Proposed LID treatment reduction credit for each type of Special Project and justification for the proposed credits. The justification shall include identification and an estimate of the specific water quality benefit provided by each type of Special Project proposed for LID treatment reduction credit; and

- Proposed total treatment reduction credit for Special Projects that may be characterized by more than one category and justification for the proposed total credit.

Through the Bay Area Stormwater Management Agencies Association (BASMAA), the permittees have worked with each other, with your staff, and with staff of the Association of Bay Area Governments (ABAG) and the Metropolitan Transportation Commission (MTC) as this proposal was developed.

The permittees developed an informational slide show and presented it to members of your staff on April 1, 2010. This initial discussion was followed up by informal discussions throughout the ensuing months. Regional Water Board staff also attended an October 27, 2010 meeting with BASMAA, ABAG, and MTC. At this meeting, participants discussed the types of projects proposed for consideration of LID treatment reduction credits, institutional barriers and technical site-specific constraints to providing 100% LID treatment onsite, and the water quality and environmental benefits provided by these types of projects. In particular, Regional Water Board staff discussed with the permittees and with MTC and ABAG staff how the types of "smart growth" projects that are proposed as "special projects" contribute to regional efforts to promote more sustainable urban growth patterns within the San Francisco Bay Area.

The 76 municipal permittees vary considerably with regard to current and future development patterns, and also vary with regard to experience implementing LID. BASMAA has found it challenging to define proposed "special projects" categories that will apply regionally and where institutional barriers and site-specific constraints may require the use of alternatives to the LID treatment measures allowed by MRP Provision C.3.c.

In the attached proposal, BASMAA has defined four categories of projects (designated Categories A, B, D, and E) that we estimate would, all together, create approximately 33 acres of impervious area, or 1% of the total impervious area projected to be created or replaced by Regulated Projects under Provision C.3 during the remaining permit term. BASMAA has also defined a fifth category of projects (designated Category C), which aims to facilitate transit-oriented development (TOD) projects as described in the permit. BASMAA has found it difficult to reach consensus on a proposed category delineation that incorporates TOD projects that merit additional options for treatment and that also limits the size and extent of projects that would fall within the proposed category. Category C in the attached proposal places various restrictions on the geographic location and project characteristics, including a requirement that surface parking constitute no more than 10% of the post-project impervious area. We estimate projects in this category would comprise between 5% and 15% of the total impervious area projected to be created or replaced by Regulated Projects under Provision C.3, creating between 168 and 503 acres of impervious area during the remaining MRP term.

Working through BASMAA, the permittees have developed a proposal that addresses the permit provision and the need to support sustainable growth strategies across the region. The applicability of the proposal has been substantially restricted to ensure that it is implemented as the exception rather than the rule. Under our proposal, these projects would be strongly encouraged to use the Provision C.3.c. LID measures and would also be allowed the option of

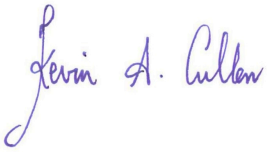
installing tree-box-type high-rate biofilters or below-ground vault-based high-rate media filters to treat runoff.

We look forward to working with your staff to further our mutual understanding of this proposal and its consequences, to possibly refine one or more project categories, and to articulate the appropriate Special Projects categories in a draft permit amendment for consideration by your Board.

We certify under penalty of law that this document was prepared under our direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on our inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of our knowledge and belief, true, accurate, and complete. We are aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

James Scanlin, Alameda Countywide Clean Water Program

Tom Dalziel, Contra Costa Clean Water Program



Kevin Cullen, Fairfield-Suisun Urban Runoff Management Program

Matt Fabry, San Mateo Countywide Water Pollution Prevention Program

Adam Olivieri, Santa Clara Valley Urban Runoff Pollution Prevention Program

Lance Barnett, Vallejo Sanitation and Flood Control District

Attachment: Special Projects Proposal

cc: Tom Mumley, Regional Water Board
Shin-Roei Lee, Regional Water Board
Dale Bowyer, Regional Water Board
Sue Ma, Regional Water Board
BASMAA Board of Directors

Bay Area
Stormwater Management
Agencies Association

Special Projects Proposal

Provision C.3.e.ii.

Submitted to the

California Regional Water Quality Control Board

San Francisco Bay Region

1 December 2010

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0 · Overview and Summary

The San Francisco Bay Water Board adopted the Municipal Regional Stormwater NPDES Permit (Municipal Regional Permit, or MRP) on 14 October 2009. MRP Provision C.3.c.i.(2)(b) requires new development and redevelopment projects to treat 80% of average annual runoff using Low Impact Development (LID) treatment measures, beginning December 1, 2011. In the MRP, the Water Board defines LID treatment as infiltration, evapotranspiration, harvesting and reuse, or biotreatment. Development projects where it is not possible to use any of these methods would not be built.[1]

Developments where none of the methods prescribed by the Water Board are possible will include smart growth, high density, and transit oriented development. Nearly all smart growth, high-density, and transit-oriented development currently planned is in areas where low-permeability clay soils limit infiltration. Further, it is characteristic of smart growth, high-density, and transit-oriented development projects that they have less landscape space available, are more economically marginal, more difficult to finance, and require additional and harder-to-obtain permit approvals. The Water Board's prescribed methods of compliance typically require significant space within the development site, increase project complexity, and introduce additional uncertainty regarding development permit approvals, project financing, and insurance.

MRP Provision C.3.e.ii. states that, when considered at a watershed scale, certain types of smart-growth, high-density and transit-oriented development can either reduce existing impervious surfaces or create less "accessory" impervious areas and automobile-related pollutant impacts. These types of "Special Projects" may be eligible for "LID treatment reduction credits."

The permittees propose that certain categories of land development projects ("Special Projects") be allowed to meet stormwater treatment requirements by selecting tree-box-type high-rate biofilters and vault-based high-rate media filters in addition to the options of infiltration, evapotranspiration, harvesting and reuse, or biotreatment.

[1] Permittees may allow a Regulated Project to provide alternative compliance by treating a portion of the runoff with infiltration, evapotranspiration, harvesting and reuse, or biotreatment onsite and also build or pay for a parallel project using these measure to treat an amount of runoff equivalent to the remainder at another site.

Water Board approval of the proposed "Special Project" categories and proposed credits would allow some portion of the smart-growth, high-density and transit-oriented development projects that would otherwise not be built to go forward during the duration of the current permit term.

Special Projects categories are proposed as follows:

A. Maximum One Acre, Lot-Line-To-Lot-Line - Projects creating or replacing no more than one acre of impervious surface area with permanent structures extending effectively lot-line-to-lot-line[2] as part of a municipality's stated objective to preserve or enhance a pedestrian-oriented type of urban design, and located in a municipality's designated central business district, downtown core area or downtown core zoning district, neighborhood business district or comparable pedestrian-oriented commercial district, or historic preservation site and/or district.

B. Maximum Two Acres, Higher Density, No Surface Parking - Projects creating or replacing no more than two acres of impervious surface area with no surface parking areas (other than incidental parking required for emergency vehicle access, ADA accessibility, passenger and freight loading zones) to achieve a smart-growth type of urban design. These projects shall have the following minimum development requirements:

- Residential projects shall have a minimum of 30 dwelling units per acre (DU/AC).
- Commercial projects shall have a minimum Floor Area Ratio (FAR) of 2:1.
- Mixed Use projects shall have a minimum Floor Area Ratio (FAR) of 2:1.

C. Transit Oriented Development - Non-auto-oriented projects[3] with less than 10% of total post-project impervious area dedicated to at-grade surface parking (including incidental

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[2] "Effectively lot-line-to-lot-line" is defined as having at least 85% coverage of the entire site by permanent structure(s). The remaining 15% portion of the site is intended to allow for Emergency Vehicle Access (EVA) lanes, parking garage entrances, trash collection service access lanes, public utility easements, pedestrian connections that link multiple properties, etc. that may be required as part of a project.

[3] Auto-oriented uses include: stand-alone surface parking lots; car dealerships; auto and truck rental facilities with onsite surface storage; fast-food restaurants, banks and pharmacies with drive-through lanes; gas stations; car washes; auto repair and service facilities; and other industrial or auto-related uses unrelated to the concept of a transit-oriented development.

parking required for emergency vehicle access, ADA accessibility, and passenger and freight loading zones), and located within a ½ mile radius of an existing or planned transit hub[4] and/or located within an area designated as a transit village under a municipality's general plan or a specific plan or priority development area (PDA) as defined by ABAG. Runoff from surface parking areas (at a minimum) must be treated with LID treatment measures.

D. Retrofit of Existing Development - Portions of sites which are not being developed or redeveloped but must be retrofitted to meet treatment requirements per Provisions C.3.b.ii.(1)(c), C.3.b.ii.(3)(a), and C.3.b.ii.(4)(b), from which stormwater cannot be conveyed by gravity flow to the portion of the site that is being developed or redeveloped.

E. Street Widening with Additional Lanes - Widening of existing streets or roads with additional traffic lanes located within a municipality's developed area, where said streets and roads are constrained by the built-out status of existing adjacent properties and/or existing utilities or where the ultimate right-of-way width for said street or road has been designated in a municipality's adopted General Plan.

It is estimated the projects in Categories A, B, D, and E will produce 33 acres of new or replaced impervious area during the remaining permit term, or 1.0% of the total new or replaced impervious surface in Regulated Projects as defined in MRP Provision C.3.b. The amount of new or replaced impervious surface in projects in Category C is estimated to be between 168 and 503 acres, or 5% to 15% of the total new or replaced impervious surface in Regulated Projects as defined in MRP Provision C.3.b. The permittees propose to track implementation of Special Projects and submit, with Annual Reports in 2014, a tally of actual use of each type of treatment method and a comparison with these predictions.

Allowing these "Special Projects" to be built will facilitate viable smart growth, infill and transit-oriented development—development that would otherwise likely be directed to the suburban fringe. Facilitating smart growth in this manner is consistent with regional, state and federal plans and policies, including the Bay Area's Sustainable Communities Strategy, the California Local Government Commission's Ahwahnee Water Principles and principles espoused in USEPA's publication "Protecting Water Resources with Smart Growth." Smart growth, infill, and transit-oriented development increase population

[4] "Transit hub" is defined as a rail, light rail, or commuter rail station, ferry terminal, or bus transfer station served by 3 or more bus routes.

density and improve access to transit, both of which reduce annual auto mileage per capita and consequently reduce automobile-related runoff pollution and greenhouse gas emissions. These types of development also preserve open space and make efficient use of previously developed land and existing infrastructure.

1 · Introduction

This submittal fulfills the requirements of Provision C.3.e.ii.(2) of the Municipal Regional Stormwater NPDES Permit (Municipal Regional Permit, or MRP). Provision C.3.e.ii.(2) states:

1. When considered at a watershed scale, certain types of smart-growth, high-density and transit-oriented development can either reduce existing impervious surfaces or create less "accessory" impervious areas and automobile-related pollutant impacts. Incentive LID treatment reduction credits approved by the Water Board may be applied to these types of Special Projects.
2. By December 1, 2010, the Permittees shall submit a proposal to the Water Board containing the following information:
   - Identification of the types of projects proposed for consideration of LID treatment reduction credits and an estimate of the number and cumulative area of potential projects during the remaining term of this Permit for each type of project;
   - Identification of institutional barriers and/or technical site-specific constraints to providing 100% LID treatment onsite that justify the allowance for non-LID treatment measures onsite;
   - Specific criteria for each type of Special Project proposed, including size, location, minimum densities, minimum floor area ratios, or other appropriate limitations;
   - Identification of specific water quality and environmental benefits provided by these types of projects that justify the allowance for non-LID treatment measures onsite;
   - Proposed LID treatment reduction credit for each type of Special Project and justification for the proposed credits. The justification shall include identification and an estimate of the specific water quality benefit

provided by each type of Special Project proposed for LID treatment reduction credit; and

- Proposed total treatment reduction credit for Special Projects that may be characterized by more than one category and justification for the proposed total credit.

MRP Provision C.3.c.i.(2)(b) states the 76 San Francisco Bay Area municipalities subject to the MRP (permittees) must:

> Require each Regulated Project to treat 100% of the amount of runoff identified in Provision C.3.d. for the Regulated Project's drainage area with LID treatment measures onsite or with LID treatment measures at a joint stormwater treatment facility.

Provision C.3.c.i.(2)(b) goes on define LID treatment measures as "harvesting and re-use, infiltration, evapotranspiration, or biotreatment."

In response to these permit requirements, the Bay Area Stormwater Management Agencies Association (BASMAA) Development Committee convened a Special Projects Work Group to develop the Special Projects proposal. The Work Group:

- Identified and defined candidate Special Projects categories, with input from their planning, public works, and other departments;
- Met with and obtained feedback from the development industry, Water Board staff, and regional planning agencies including the Association of Bay Area Governments (ABAG) and Metropolitan Transportation Commission (MTC); and
- Worked to develop a proposal that could be approved by consensus among the member agencies.

The permittees propose certain categories of land development projects ("Special Projects") be allowed the option of two additional methods of stormwater treatment:

1. *Tree-box-type high-rate biofilters.* Many of these facilities have been installed under the stormwater treatment requirements currently in effect. The biofilter design was developed by LID proponents specifically for urban applications where space is at a premium. Maximum surface loading rates range up to 100 inches per hour, allowing these facilities to treat the amount of runoff identified in Provision C.3.d. in a space less than 1% of the tributary impervious area.
2. *Vault-based high-rate media filters.* As with the tree-box filters, many facilities of this type have been installed under

the requirements currently in effect. The vault-based design allows for short-term storage of flows and filtration, typically through an array of cartridges that must be replaced periodically. Because the vaults can be installed beneath pavement or within structures, space requirements are minimal. We include in this category conventional sand filters based on design criteria in the California Stormwater Quality Association (CASQA) Stormwater BMP Handbooks, although our experience is that project proponents have rarely proposed conventional sand filters for Bay Area development projects.

The two methods have proven capable of providing good stormwater treatment. Both remove fine particles and particle-bound pollutants and produce consistent effluent quality. Data are inconclusive on whether effluent quality produced by these methods is as good or better than effluent quality from a bioretention facility. Bioretention is considered superior because of its robust design, low maintenance requirements, and self-renewing characteristics and because a portion of the influent flow is infiltrated or evapotranspirated where site and project conditions allow.

The permittees do not propose partial reductions ("treatment reduction credits") as suggested in the permit. Instead, the permittees propose categories of smart growth, infill, and transit-oriented projects that would be allowed additional options for runoff treatment. This proposal is designed to provide these projects certainty that they can meet the permit's treatment requirements. No preconceived credit system can anticipate project-specific conditions that, in our experience, determine the extent of LID that can be implemented.

The permittees will:

- Restrict the use of tree-box-type high-rate biofilters or vault-based high-rate media filters to the stated categories of projects.
- Strongly encourage proponents of "special projects" to implement infiltration, evapotranspiration, harvesting and reuse, or biotreatment as preferred over tree-box-type high-rate biofilters or vault-based high-rate media filters.
- Commit to gathering and analyzing data on development projects approved during two fiscal years while the policy is in effect (FY 2012-2013 and FY 2013-2014) so that the use of tree-box-type high-rate biofilters and vault-based high-rate media filters can be assessed in the context of overall

implementation of Regulated Projects during that same period.

This proposal seeks to balance water quality goals with sustainable development strategies for the Bay Area by ensuring that certain critical smart growth, high density and transit oriented development projects have options for meeting the stormwater treatment requirements. Water quality in San Francisco Bay and its tributaries will benefit if smart growth is facilitated. There will also be ancillary benefits to air quality, global climate, and public health. Environmental benefits are discussed in more detail in Section 4.

2 · Identification and Justification of Project Types

Areas served by MS4s operated by the 76 municipalities under the MRP range from rural ranchland to small towns to bedroom suburbs to edge cities to high-density urban areas struggling to revitalize. The project types (categories) listed below reflect the diversity of development patterns within the San Francisco Bay Area.

Projects in these categories support a "smart growth" development pattern, characterized by infill of and higher density in existing urbanized areas and a corresponding reduction in the need for development in outlying areas.

For projects in these categories, none of the four permit-prescribed LID options—infiltration, evapotranspiration, harvesting and reuse, or biotreatment—can be counted on to be feasible in every case. Infiltration is feasible on some of these project sites, but infeasible on others because of non-infiltrative soils and proximity of structures. Green roofs (evapotranspiration) may be implementable for some projects, but are not universally applicable due to cost, structural requirements, limitations in roof slope and other architectural features, and obstacles related to financing and insurance. Many permittees' Green Building programs encourage green roofs. Building industry stakeholders have reported a number of factors, including code requirements, financing, and liability issues, can influence the viability of a green roof for a particular project.

Rain water capture and storage for later use ("harvesting and reuse") may be implementable for some projects, but is not universally applicable because such projects require a consistent, year-round daily water demand, large cisterns for storage, and involve the costs and uncertainty related to implementing reuse at this scale. Rainwater harvest and reuse

may conflict with recycled water programs in which some cities have invested and which those cities continue to expand.

Biotreatment will be implementable on many projects, but is not feasible on every portion of every project because of limitations on space, conflicts with underground parking, utilities, and adjacent development, and conflicts with urban design objectives.

2.1 Project Category A—Maximum One Acre, Lot-Line-To-Lot-Line

Projects creating or replacing no more than one acre of impervious surface area with permanent structures extending effectively lot-line-to-lot-line[5] as part of a municipality's adopted objective to preserve or enhance a pedestrian-oriented type of urban design, and located in a municipality's designated central business district, downtown core area or downtown core zoning district, neighborhood business district or comparable pedestrian-oriented commercial district, or historic preservation site and/or district.

This category is similar to a current policy in effect for Contra Costa County and the 19 cities and towns within the County. In March 2007, those municipalities adopted a policy effectively requiring LID for all development projects, but allowing lot-line-to-lot-line projects an acre or smaller additional choices of stormwater treatment facilities.

The category is intended to accommodate individual small projects that are proposed in the context of revitalizing existing downtowns and other pedestrian-oriented commercial districts. The context of these individual parcels is such that landscaped bioretention facilities—although desirable on the neighborhood scale—cannot always be accommodated on the same individual parcel that contains the project.

Many of the Bay Area's existing downtown areas were built before World War II; some are the center of characteristic "streetcar suburbs." Many have one-to-two-story buildings that extend from lot line to lot line along the street frontage where the property abuts the public right-of-way. To maintain or replicate the historic pedestrian-friendly character of these neighborhoods, buildings typically take up most or all of the lot and their design may preclude incorporating landscape areas for stormwater treatment. The definition of this category includes a

[5] "Effectively lot-line-to-lot-line" is defined as having at least 85% coverage of the entire site by permanent structure(s). The remaining 15% portion of the site is intended to allow for Emergency Vehicle Access (EVA) lanes, parking garage entrances, trash collection service access lanes, public utility easements, pedestrian connections that link multiple properties, etc. that may be required as part of a project.

15% allowance for emergency vehicle access, public utility easements, and other pedestrian, vehicular, and service needs consistent with this urban design context.

The 1-acre threshold for this category encompasses typical lot sizes in these neighborhoods. As with the other project definitions, bioretention will be included on many projects below this threshold; however, the "special projects" allowance is needed because it is possible one or more projects proposed somewhere within the 76 regulated municipalities during the permit term would require a choice of additional options for stormwater treatment.

Projects meeting this definition are highly desirable for achieving smart growth, as they are located in dense urban infill areas with existing infrastructure and transportation networks. However, they are typically financially marginal. Construction on a constricted site is more expensive than on a comparable site in a less-dense area. Costs of planning, design, approvals, and contractor mobilization are typically a higher proportion of overall project costs than on larger projects. The socioeconomic character of the surrounding neighborhoods may limit expected rental income or sales value of the finished project. Having additional options for meeting stormwater treatment may be critical to the financial viability of the development project.

2.2 Project Category B—Maximum Two Acres, Higher Density

Projects creating or replacing no more than two acres of impervious surface area with no surface parking areas (other than incidental parking required for emergency vehicle access, ADA accessibility, passenger and freight loading zones) to achieve a smart-growth type of urban design. These projects shall have the following minimum development requirements:

- *Residential projects shall have a minimum of 30 dwelling units per acre (DU/AC).*
- *Commercial projects shall have a minimum Floor Area Ratio (FAR) of 2:1.*
- *Mixed Use projects shall have a minimum Floor Area Ratio (FAR) of 2:1.*

This category was developed to address the development needs and patterns in large cities focused on downtown revitalization. The 2-acre threshold was identified based on an analysis of lot sizes within these target areas. The targeted type of development typically requires building coverage of all or nearly all of the site and includes structured parking, which is typically located beneath buildings. Minimum Floor Area Ratios and Dwelling

Units/Acre were incorporated into the category definition to ensure that projects achieve smart growth strategies and goals while further increasing the ancillary environmental benefits that they provide.

The category aims to accommodate high densities essential to the success of downtown and neighborhood businesses, to meet regional housing goals, and to achieve the sense of urban vitality that is only possible through continuous street frontage. Accordingly, the category definition does not include projects with surface parking.

2.3 Project Category C—Transit Oriented Development

Non-auto-oriented projects[6] with less than 10% of total post-project impervious area dedicated to at-grade surface parking (including incidental parking required for emergency vehicle access, ADA accessibility, and passenger and freight loading zones), and located within a ½ mile radius of an existing or planned transit hub[7] and/or located within an area designated as a transit village under a municipality's general plan or a specific plan or priority development area[8] (PDA) as defined by ABAG. Runoff from surface parking areas (at a minimum) must be treated with LID treatment measures.

This category is consistent with the needs of cities that are planning high-density transit-oriented development near BART stations, light rail stations, commuter rail stations, or other transit hubs. The category accommodates planned developments that are not restricted by parcel size and that seek to maximize the proportion of site area devoted to transit-oriented residential and commercial uses.

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[6] Auto-oriented uses include: stand-alone surface parking lots; car dealerships; auto and truck rental facilities with onsite surface storage; fast-food restaurants, banks and pharmacies with drive-through lanes; gas stations; car washes; auto repair and service facilities; and other industrial or auto-related uses unrelated to the concept of a transit-oriented development.

[7] "Transit hub" is defined as a rail, light rail, or commuter rail station, ferry terminal, or bus transfer station served by 3 or more bus routes.

[8] Priority Development Areas (PDAs) are locally-identified, infill development opportunity areas within existing communities, where there is local commitment to developing more housing along with amenities and services to meet the day-to-day needs of residents in a pedestrian-friendly environment served by transit. To be eligible to become a PDA, an area has to be within an existing community, near existing or planned fixed transit or served by comparable bus service, and planned for more housing.

In lieu of a lengthier or more complex definition of transit oriented development, this category identifies three geographic criteria and two site characteristics. The three geographic criteria are proximity to a transit hub or inclusion in a transit village or priority development area (PDA). The site characteristics are the limitation of surface parking to 10% of post-development impervious area and the exclusion of auto-oriented land uses.

2.4 Project Category D—Retrofit of Existing Development

Portions of sites which are not being developed or redeveloped but must be retrofitted to meet treatment requirements per Provisions C.3.b.ii.(1)(c), C.3.b.ii.(3)(a), and C.3.b.ii.(4)(b), from which stormwater cannot be conveyed by gravity flow to the portion of the site that is being developed or redeveloped.

Provision C.3.b.ii.(1)(c) states:

> Where a redevelopment project… results in an alteration of *more than 50%* of the impervious surface of a previously existing development that was not subject to Provision C.3, the entire project consisting of all existing, new, and/or replaced impervious surfaces must be included in the treatment system design (i.e., stormwater treatment systems must be designed and sized to treat stormwater runoff from the entire redevelopment project.

In March 2007, the 20 Contra Costa municipalities adopted a LID treatment policy similar to that in the October 2009 MRP. The March 2007 policy allows additional choices of treatment facilities for lot-line-to-lot-line projects creating or replacing an acre or less of impervious area (see Category A) and projects under the "50% rule" requiring retrofit of existing impervious areas.

The allowance of additional options for treatment facilities on retrofit areas was based on the permittees' experience implementing LID on development projects. For example, expansion of a church campus involved a new parking lot and church building, and these new impervious areas were made to drain to newly constructed bioretention facilities. An existing part of the church campus in the rear portion of the property was not being changed, but came under the "50% rule" in Contra Costa municipalities' stormwater NPDES permit. Drainage from this already built area was conveyed via an existing pipe through the property connecting to the municipal storm drain in the street fronting the property. Directing flow from this pipe to bioretention was impracticable because of the depth of the pipe; instead, flow is routed through subsurface sand filters.

Although infiltration, evapotranspiration, harvesting and reuse, or bioretention will be implemented where feasible on portions of sites that are not being developed or redeveloped but must be retrofitted to meet treatment requirements, site constraints such as existing grades and locations of existing utilities will make it infeasible on other sites. Most municipalities are opposed to the construction of pump stations to move stormwater from the portion of the site that must be retrofitted to the treatment facilities on the newly developed portion of the site, due to operation and maintenance requirements, reliability during storms, and liability concerns. To further delimit this special project definition, this category includes the restriction that the areas receiving treatment by vault-based media filters must be where stormwater cannot be conveyed by gravity flow to the portion of the site that is being developed or redeveloped.

2.5 Project Category E—Street Widening with Additional Lanes

Widening of existing streets or roads with additional traffic lanes located within a municipality's developed area, where said streets and roads are constrained by the built-out status of existing adjacent properties and/or existing utilities or where the ultimate right-of-way width for said street or road has been designated in a municipality's adopted General Plan.

The need to create and maintain an efficient transportation network is a key component of Smart Growth development, and it is often necessary to expand roadways within urban areas to provide adequate transportation capacity to redeveloping areas.

Permittees have found implementation of stormwater treatment particularly challenging within existing street rights-of-way. Typical barriers to implementation include:

- The need to match slopes, elevations, and drainage of adjacent streets and private properties.
- Consistency with access and safety for vehicular, bicycle, and pedestrian traffic, including requirements of the Americans with Disabilities Act.
- Underground utilities and minimum separation requirements specified by code.
- Maintenance and protection from unauthorized access and vandalism.

In many cases, harvesting and reuse of runoff from streets is contraindicated because of the potential for spills of vehicle fluids or other toxic materials and the distribution of these materials throughout the plumbing system within buildings.

Evapotranspiration is rarely possible because it would require extensive surface area that is not usually available on roadway projects in developed areas. Bioretention is sometimes possible, but only where slopes, drainage patterns, and available space permit.

Tree-box-type high-rate biofilters are designed for street-side applications and substantially expand the amount of street widening projects where runoff can be effectively treated. Vault-based media filters require frequent maintenance but, because they can be located beneath streets and sidewalks, are feasible on many projects where bioretention is not possible.

3 · Number and Cumulative Area of Potential Projects

Following discussions with Water Board staff, the permittees estimated the number of projects and total impervious area of the projects that might be built during the remaining permit term that would be eligible to select tree-box-type high-rate biofilters and vault-based high-rate media filters to treat runoff.

The permittees also compared this amount of impervious area to the impervious area that might be built during the remaining permit term for which runoff would receive treatment by infiltration, evapotranspiration, harvesting and reuse, or biotreatment. The following sections describe the data collection and analysis procedures and results.

3.1 Data Collection and Review—Retrospective Analysis

BASMAA requested its member program representatives to obtain data from member municipalities. The request asked for a list of all projects subject to C.3 for two to four recent fiscal years, the impervious area created or replaced for each project, and the proposed special project categories (based on Categories A through E above) which would apply to each project. In addition, the request asked for the area retrofitted under the "50% rule" (Category D).

For projects in Category C—Transit Oriented Development (TOD)—the data collection and analysis are not complete because consensus within BASMAA on the category definition had not been achieved by the time the data were collected and the retrospective analysis was done.

The TOD category definition used for data collection and analysis was as follows:

> *Projects with no surface parking areas* (other than incidental parking required for emergency vehicle access, ADA accessibility, passenger and freight loading zones),

located within a ½ mile radius of an existing or planned transit hub or located within an area designated as a transit village under a municipality's general plan or a specific plan or priority development area as defined by ABAG.

Data were also collected and reviewed for a category defined the same way but not restricted as to surface parking.

After this review and analysis was completed, the BASMAA Development Committee reached consensus on an intermediate category definition (the proposed Category C), which would incorporate projects with surface parking not exceeding 10% of the post-project impervious area. The category was also restricted to non-auto-related uses.

The commercial land uses that are commonly part of TOD (for example convenience stores or cafes) may require a small amount of dedicated surface parking area.

The data for Project Category D, Retrofit of Existing Development, was not used in this analysis. Very few projects were reported to have met the definition.

Data for all projects subject to the C.3 requirements collected from 30 cities and towns and one County unincorporated area are used in this analysis. The reporting cities and towns represent 64% of the population of all the cities and towns that are MRP permittees. The reporting cities and towns are evenly distributed, with respect to population, among the cities and towns that are MRP permittees. Some of the smaller cities had no C.3-applicable projects approved during the previous four fiscal years.

The resulting data set is 631 reported projects subject to the C.3 requirements covering the period July 2006 through June 2010.

3.2 Data Collection and Review—Prospective Analysis

Permittees were asked to supply available information on projects that may be approved during the remaining MRP term that would meet the geographic criteria of Category C (that is, are within ½ mile of an existing or planned transit hub or within a transit village or PDA).

The permittees responded with information on approximately 86 prospective projects. However, information on the amount of impervious area to be created or replaced was available for only some of the projects, because many of the prospective projects are in early stages of design. The information was reviewed for examples of the types of development planned and for a sense of

the extent of transit-oriented development "in the pipeline" but was not analyzed for the purposes of estimating a total amount of forthcoming development within this category.

Permittees were also asked to provide information on planned projects that would be within proposed project Category E (Street Widening with Additional Lanes). All responders except the County of Santa Clara reported no planned projects that met this project category. The County of Santa Clara reported two small intersection improvement projects, each slightly exceeding the 10,000-square-foot threshold, on county expressways.

3.3 Analysis of Retrospective Data

The data for 631 past projects was analyzed to estimate the total impervious area associated with each of the proposed project categories.

In addition to totaling the impervious area associated with each proposed category, the differential and incremental amount for projects meeting more than one category was also estimated. For example, the impervious area associated with projects that meet Category B but do not meet Category A was determined.

Finally, the total impervious area for all proposed categories (taking into account that the categories are not exclusive and many projects are in more than one category) was calculated.

For each of these totals, the amount of impervious area associated with a project category or categories was evaluated as percentage of the total reported impervious area associated with development projects subject to MRP Provision C.3. over the past four years.

3.4 Projections for Remaining MRP Term

For each of Categories A and B, the reported total impervious area associated with projects approved during 2006-2010 was multiplied by 1.55 to arrive at a rough estimate of the associated impervious area that would be created or replaced during the remaining permit term. This accounts for the 64% representation of the total population of permittees. An adjustment was made for period length, as the three years remaining in the permit term following the advent of the requirements (December 2011 through November 2014) is 75% of the 4-year period covered by the data. The data represents both the relatively active period from July 2006 through June 2008, and the relatively inactive period for land development from July 2008 through June 2010. This carries the implicit presumption that the coming years will see a recovery that will roughly mirror the recent slump. Any

error associated with this assumption is probably on the conservative side with regard to impact (that is, it currently appears unlikely that building in 2013 and 2014 will return to 2007 and 2006 levels). Further, because of the success of smart growth strategies, future building is likely to produce less impervious area, per unit of housing or retail, than past building.

For reasons noted elsewhere in this proposal, projections for Category C are estimated as a range.

For projects in Category D—Retrofit of Existing Development—although reporting was somewhat unclear, it is apparent that only a few, if any, such projects are likely to be built during the remaining permit term. For projects that are in this category, the amount of impervious surface to be retrofit is typically small. Nevertheless, the category is important as the feasibility of one or more smart growth, high-density, or transit-oriented developments could depend on having the options of tree-box-type high-rate biofilters and vault-based high-rate media filters to apply to portions of development project that had been previously built.

For purposes of incorporating this project category in the projections, it was estimated that the total amount of existing impervious area that would be retrofitted and subject to this MRP requirement will be two acres.

For Category E—Street Widening with Additional Lanes—based on the information supplied by municipalities, it was estimated that the total amount of impervious area built and subject to this MRP requirement will be one acre.

Results of the analysis are shown in Table 1.

Table 1. Impact of Proposed "Special Projects"

	2006-2010 Data				Projected 2011-2014
	Number of Projects	Square Feet Impervious Area	Acres	Percent of Total Impervious Area Subject to C.3	Impervious Area Subject to C.3 (Acres)
All C.3 Projects	631	125718969	2886	100%	3355
Category A	15	365677	8	0.29%	10
Category B	32	1007036	23	0.80%	27
Category B but not A	22	745302	17	0.59%	20
Category C					168 - 503
Category D					2
Category E					1

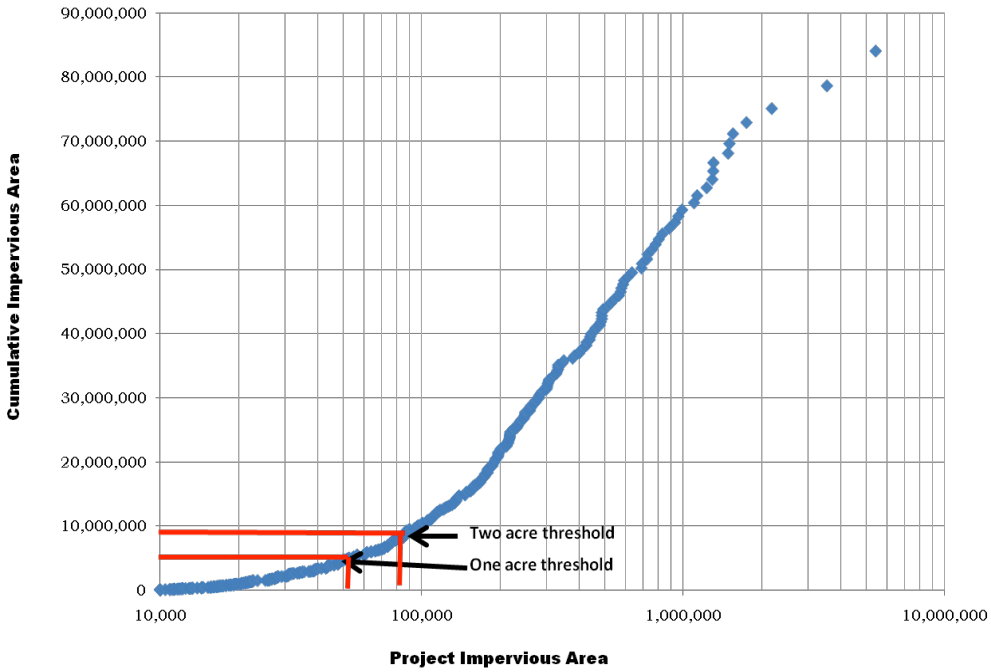
Table 1 shows that if the Water Board allowed "smart growth" projects that cannot implement infiltration, evapotranspiration, harvesting and reuse or biotreatment to use tree-box type high-rate biofiltration and vault-based high-rate media filtration, impacts would be limited in the context of the total impact of Regulated Projects under Provision C.3. These impacts will be more than offset by environmental benefits realized by reductions in vehicle emissions achieved.

With respect to categories A and B, Table 1 shows that a 1-acre or 2-acre project size threshold effectively limits the total amount of impervious area for which runoff could be treated by tree-box-type high-rate biofilters or vault-based high-rate media filters.

Further insight can be gleaned from an examination of Figure 1, which shows a continuous plot of project size threshold vs. cumulative impervious area, based on the 2006-2010 data analyzed. The 99 projects creating or replacing an acre or less of impervious area accounted for only 3.4% of the total impervious area created or replaced by all 631 projects subject to C.3 requirements. The 289 projects that created or replaced two acres or less of impervious area accounted for only 8.5% of the total impervious area created or replaced by all 631 projects subject to C.3 requirements.

Figure 1

Effect of Project Size Thresholds on Cumulative Impervious Area Addressed by Regulation



The criterion limiting surface parking is also an effective constraint. Although the amount of impervious area represented by Category C projects (if limited to those projects with no surface parking) is substantially greater than for Category B and Category A projects, it still amounts to a small proportion of total projects.

Without this constraint, considerably more new and replaced impervious area would be included within Category C.

For example, if projects with surface parking (other than incidental parking required for emergency vehicle access, ADA accessibility, passenger and freight loading zones) are excluded from Category C, then the total square footage of impervious surface for 2006-2010 projects reported is 5.5 million square feet, or 128 acres. This is about 4.4% of the total impervious surface area subject to Provision C.3.

For comparison, consider if Category C included all projects within ½ mile of radius of an existing or planned transit hub, or within an area designated as a transit village, or in a priority development area—regardless of the amount of surface parking. Then the collected data show that the total square footage for 2006-2010 projects reported is 25.6 million square feet, or 587

acres. This is approximately 20% of the total impervious surface area for all projects reported.

The proposed Category C is middle ground between excluding projects with surface parking or including projects with surface parking. It incorporates projects with up to 10% of the post-project impervious area devoted to surface parking.

It was not possible to re-categorize all 631 reported projects and re-analyze the data to determine the total impervious area represented by the proposed Category "C".

San Jose was among the limited number of cities providing robust data for the proposed Category "C". San Jose's analysis of their own data showed projects within this revised category created or replaced 18% of the total impervious surface area created or replaced by San Jose projects subject to Provision C.3 during 2006-2010. Review of data from the remaining Santa Clara County permittees (other than San Jose) revealed that the revision of Category C (to allow up to 10% of post-project impervious area to be devoted to surface parking) brought in no additional projects other than those incorporated in the original category definition (with no surface parking allowed). During 2006-2010 Menlo Park approved seven projects that are within a ½ mile radius of a transit hub, or within an area designated as a transit village, or are in a priority development area. All seven projects had more than the proposed 10% limit on surface parking, and would therefore be excluded from the proposed Category C. Similarly, Dublin approved four projects that are within a ½ mile radius of a transit hub, or within an area designated as a transit village, or are within a priority development area. Three of the four had more than the proposed 10% limit on surface parking, and would therefore be excluded from the proposed Category C.

The information available suggests that—for Category C—it may not be valid to extrapolate data from a few cities to draw conclusions about the permittees' jurisdictions as a whole. For example, more densely developed, transit-oriented cities may be affected differently by Category C than less densely developed, less transit-oriented cities. Further, for this project category 2006-2010 data may not be predictive of the character of future development, perhaps because of a trend toward more, larger, and more compact transit-oriented developments. For this reason, the estimate of the number or cumulative area of potential projects during the remaining term of the MRP for Category C is given as a range, estimated to be between 5% and 15% of the total amount of impervious area created or replaced

by projects subject to Provision C.3. This comes to between 168 and 503 acres during the remaining permit term.

4 · Environmental Benefits of Smart Growth

Projects that will qualify as Special Projects under this proposal will support the success of smart growth strategies in the Bay Area. Smart growth strategies in turn will achieve significant water quality benefits; support federal, state and regional policies; and are expected to offset any potential for increases in pollutant loading that may result from allowing the use of tree well filters and media filters at special projects.

4.1 Smart Growth Benefits Water Quality

Research has demonstrated that smart growth, high density and transit oriented development provide water quality and related environmental benefits, including:

- Reduction of impervious surfaces
- Reduction of vehicle emissions, which have been identified as contributing to water pollution
- Preservation of open space
- Reuse of previously developed land and existing infrastructure
- Reduced greenhouse gas emissions

4.1.1 Reduction of Impervious Surfaces.

Higher density development results in less impervious surface per unit of housing and/or commercial space. This means that for *the same amount of development*, implementing higher densities produces *less impervious cover and less runoff* than low-density development. The US EPA's publication *Protecting Water Resources with Higher Density Development* (EPA 2005), reports the results of an analysis in which EPA modeled three development scenarios of different densities at three different scales: one-acre level, lot level, and watershed level. Among other findings, this analysis demonstrated:

- The higher-density scenarios generate less stormwater runoff per house at all scales (one acre, lot, and watershed); and
- For the same amount of development, higher-density development produces less runoff and less impervious cover than low-density development.

4.1.2 Impervious Surface at the Watershed Scale.

This EPA report affirms the MRP's statement that, "When considered at the watershed scale, certain types of smart growth, high density, and transit-oriented development can either reduce existing impervious surfaces, or create less 'accessory' impervious area…." However, EPA also found that high density development reduces impervious surfaces not only at the watershed scale, but at one-acre and lot scales as well.

Impervious Surface Reduction at the One-acre Scale. To compare the amount of impervious surface created by developments of different levels of density at the one-acre scale, EPA modeled the impacts of a one-acre lot that accommodated one house (low density), 4 houses (medium density), or 8 houses (high density). EPA found the medium and high density scenarios, respectively, produced 67 and 74 percent less annual runoff per house than the low density scenario.

Impervious Surface Reduction at the Lot Scale. EPA's analysis of lot-scale impacts also modeled three different scenarios: 8 houses built on 8 acres (low density), 8 houses built on 2 acres (medium density), and 8 houses built on one acre (high density). While each of these scenarios provided the same number of houses, the medium and low density scenarios respectively produced 25 and 278 percent more runoff than the high density scenario.

The types of high-density developments that are described by the proposed special projects criteria can be expected to produce less impervious surface per unit of housing or commercial space than lower density developments.

4.1.3 Reduction of Vehicle Emissions.

The MRP's statement that, "certain types of smart growth, high density, and transit-oriented development can … create less … automobile-related pollutant impacts," is supported by a considerable amount of research, included the reference documents described below.

Reduced Vehicle Usage in Compact Communities. According to a study by the Natural Resources Defense Council (Holtzclaw, 1994) doubling residential or population density reduces annual auto mileage per capita by 20 to 30 percent. More recently, numerous studies of methods to reduce greenhouse gas emissions have identified compact, transit-oriented design as means to reduce vehicle miles traveled by 30% or more. For example, a 2009 study for the City of Dublin (Fehr and Peers Transportation Consultants, 2009) found that transit-oriented developments can generate 25-50% reduction in vehicle trips due to increased transit use by residents. Another Bay Area

regional study also demonstrated that people living close to transit facilities log fewer miles in the cars that they do own — these households produce about half of the vehicle miles of travel of their suburban and rural counterparts (ABAG et al. 2009).

Winkelman et al. (2008) estimate that, overall, smart growth and smart transportation choices can reduce the amount Americans need to drive by 10 percent per capita from 2005 levels.

Automobile Pollution and Water Quality. The importance of reducing automobile use as a means of protecting water quality is well documented and evident in MRP requirements to engage in efforts to control auto-related sources of pollution, such as copper in vehicle brake pads. Research from the UCLA Institute of the Environment's Southern California Coastal Water Research Project (Stolzenbach 2006), presented at a 2006 workshop on atmospheric deposition, sponsored by the State Water Resources Control Board (SWRCB) and the Air Resources Control Board (ARCB), identified vehicle traffic as a predominant source of organic pollutants in water. At the same workshop, research was presented on the multi-partner Lake Tahoe Atmospheric Deposition Study (McCauley 2006) and the development of TMDLs for Lake Tahoe (Smith 2006). Both presentations identified vehicle emissions as a source of nitrogen pollution in Lake Tahoe.

The proposed special project categories are project types that will help communities implement high density, smart growth and transit oriented development, which can be expected to reduce automobile usage and vehicle emissions impacts to water quality, in comparison with low density projects that do not afford convenient use of public transit and other alternative modes of transportation. The linkage between motor vehicle use and water quality impacts makes it imperative that the LID treatment requirements of the MRP not be so stringent as to create obstacles to the development of projects that will reduce the use of personal automobiles.

4.1.4 Preservation of Open Space.

One of the key environmental benefits of high density, smart growth, infill and transit oriented development is the preservation of open space. EPA's 2005 report, *Protecting Water Resources with Higher-Density Development*, demonstrates that, for a given amount of growth, higher density development consumes less land than low density development.

Open Space Threatened by Development. The US Forest Service reports that nationally almost 6,000 acres of open space are

converted to developed uses every day (USDA 2007). The Greenbelt Alliance's 2006 report, *At Risk: The Bay Area Greenbelt*, found that, at the time of the study, there were 401,500 acres of San Francisco Bay Area greenbelt lands at risk of sprawl development. That included 125,200 acres at risk within a 10-year timeframe (classified as high-risk land), and 276,200 acres at risk within a 30-year timeframe (classified as medium-risk land). Greenbelt Alliance estimated that, if current development patterns were to continue, roughly one out of every 10 acres in the entire Bay Area could be paved over in the ensuing thirty years.

Water Quality Benefits of Open Space. Open space lands play an important role in protecting surface and ground water quality, as well as provide many other benefits such as flood control, wildlife habitat, clean air, and recreation opportunities. Watersheds with more forest cover have been shown to have higher groundwater recharge, lower stormwater runoff, and lower levels of nutrients and sediment in streams than do areas dominated by urban or agricultural uses (USDA 2009).

Challenges to Infill Development. Dense, compact, infill "smart growth" development is a key strategy to protect the Bay Area's remaining open space from the imminent threats of development, as described in the Greenbelt Alliance's 2009 publication, *Grow Smart Bay Area*. However, there are often significant challenges to redirecting development to the urban core, including deteriorated infrastructure, patterns of disinvestment and abandonment, a lack of supporting facilities and services such as grocery stores and convenience retail, the complexity of doing market studies in untested markets, and obtaining competitive financing in a risky or untested environment (Farris 2001).

4.1.5 Use of Developed Land and Infrastructure.

In addition to preserving open space, directing development to land near developed or previously developed sites makes efficient use of the resources that have already been invested in these locations. Roadway infrastructure is one of the key components that typically is already in place in urban areas with vacant or underutilized land (sometimes called "grayfields" or, where environmental contamination is a concern, "brownfields). This is in contrast to the need to construct new roadways to serve "greenfield" development on the suburban fringe.

Pollutants from Roadways. Research findings presented at SWRCB's and ARCB's 2006 workshop on atmospheric deposition highlight the water quality benefits of avoiding new roadway

construction, where possible. One of the key findings reported from the Southern California Coastal Water Research Project was that the major source of contaminants to the atmosphere is resuspended dust, primarily from roads (Stolzenbach 2006).

By implementing projects meeting the special projects criteria described in this proposal, communities will not only help preserve undeveloped land on the urban fringe, but will reduce the pressure to develop new roadways and other infrastructure needed by greenfield development.

4.2 Reduction of Greenhouse Gases.

No discussion of the environmental benefits of smart growth, infill and transit oriented development can be complete without addressing its role in strategies to reduce the generation of greenhouse gases in the effort to curb climate change.

Transportation and Climate Change. It has been well-documented that the US is the largest emitter worldwide of the greenhouse gases (GHGs) that cause global warming (Ewing, et al. 2007, IRAB 2009). Transportation accounts for a full third of US CO_2 emissions, and recent trends show this share is increasing (Ewing et al. 2007). In California, transportation accounts for 40 percent of all energy consumed in the state, and almost all of this energy is derived from petroleum (IRAB 2009). In 2006, Californians used almost 16 billion gallons of gasoline, making it the third largest consumer in the world, behind the entire United States and Canada (IRAB 2009).

Greater Fuel and Vehicle Efficiency is Not Enough. While GHG generation by transportation is being addressed, in part, by the development of more efficient vehicles (such as hybrid cars) and lower-carbon fuels (such as biodiesel fuel), research compiled by Ewing et al. (2007) shows that the GHG decreases projected to be achieved by vehicle- and fuel-efficiency will be outpaced by continuing growth in vehicle miles traveled per capita and per registered vehicle. This growth in VMT has been steady since 1980 and reflects the dominance of sprawl-type development that continues to increase the need for Americans to drive farther to conduct activities of daily living (Ewing et al. 2007). These data point to an urgent need for more smart growth development that will help reverse, or at least slow, the trends of increasing vehicle miles traveled.

At this point in time, reductions in GHGs are not expected to prevent climate change, given evidence that it is already occurring (IRAB 2009); however, reductions in GHG emissions may reduce the severity of some of the potential effects of climate change, which would be expected to benefit San Francisco Bay.

Climate Change Impacts to San Francisco Bay. The San Francisco Bay Joint Venture's 2008 report, *Wetland Restoration and Projected Impacts from Climate Change*, describes how earlier melting of the Sierra snow pack is expected to result in higher floodwaters during winter and reduced flows during late spring and summer. These changes are anticipated to amplify seasonal and spatial shifts in estuarine salinity patterns, impacting wetland plant establishment, productivity, and reproduction. In addition, tidal marshes would have to accumulate substantial sediment to counteract sea-level rise or be subjected to longer periods of tidal inundation.

While the Joint Venture and others are developing adaptive strategies to address climate change-induced alterations to wetland inundation and salinity regimes, the impacts on plant communities and the ecological function of tidal marshes, GHG reduction strategies, such as changing the development patterns of the region, may help avoid some of the more severe impact scenarios.

However, as demonstrated in Section 3.0, despite federal, state, regional and local efforts to encourage smart growth, infill, and transit oriented development, these types of projects continue to be a small minority of the development that is shaping the future of the Bay Area. As described in the Preservation of Open Space section, above, many projects in these categories face significant economic and institutional hurdles. MRP permittees are committed to implementing LID treatment where feasible; however, the flexibility of allowing some non-LID treatment, where it is needed, will be an important tool to help make some of these smart growth projects a reality.

4.3 Relationship to Federal, State and Regional Plans and Policies

The benefits of smart growth to water quality are well-recognized at federal, state and regional levels, as demonstrated in the policies, plans, and guidance documents described below.

4.3.1 Federal Smart Growth Guidance

While there are many and varied federal guidance documents on smart growth, this discussion is limited to the following smart growth principles identified in USEPA's 2004 publication, "Protecting Water Resources with Smart Growth:

1. Mix land uses.
2. Take advantage of compact building design.
3. Create a range of housing opportunities and choices.
4. Create walkable neighborhoods.

5. Foster distinctive, attractive communities with a strong sense of place.
6. Preserve open space, farmland, natural beauty, and critical environmental areas.
7. Strengthen and direct development toward existing communities.
8. Provide a variety of transportation choices.
9. Make development decisions predictable, fair, and cost effective.
10. Encourage community and stakeholder collaboration in development decisions.

The permittees' "Special Projects" proposal directly supports these principles.

Category A would allow the construction of lot-line-to-lot-line projects on small sites (compact building design, Principle #2) in existing downtowns (Principle #7) where public transportation is already available (Principle #8). Importantly, the category allows preservation of a continuous building frontage and streetscape as part of municipalities' plans to preserve and enhance walkable neighborhoods (Principles #4 and #5).

Category B would allow construction of high-density residential and mixed use (Principles #1, #2, and #3) developments as part of the redevelopment of existing urban areas (Principle #7). The aim of this category is to support bringing sufficient residential density to support thriving neighborhoods (Principles #4 and #5).

Category C supports transit-oriented development (Principles #3, #4, and #8).

Category D, by allowing additional choices for treating runoff from existing development which must be retrofit in connection with redevelopment of another portion of the same site, would partially redress, for a few critical projects, this current Water Board policy that penalizes projects on previously developed sites as compared to projects on previously undeveloped sites (Principle #7 and Principle #9).

Category E, by allowing additional treatment options for road widening projects such as left turn lanes in existing urban areas, supports needed transportation improvements in existing communities (Principle #7).

4.3.2 State Smart Growth Policies and Guidance

California Senate Bill 375 (SB 375) of 2008 aims to reduce greenhouse gas emissions by integrating planning processes for

transportation, land use, and housing. The legislation requires that each of California's 18 regional planning agencies develop a Sustainable Communities Strategy to accommodate the next 25 years of population growth while reducing greenhouse gas emissions. The Bay Area's Sustainable Communities Strategy, administered by the Metropolitan Transportation Commission (MTC) and the Association of Bay Area Governments (ABAG), will focus on the kinds of infill and transit-proximate development within existing communities that are characteristic of the Special Projects to achieve SB 375's mandates.

Another statewide initiative related to smart growth is the California Local Government Commission's Ahwahnee Water Principles, which include Community Principle #1:

> Community design should be compact, mixed use, walkable, and transit oriented so that automobile-generated urban runoff pollutants are minimized and the open lands that absorb water are preserved to the maximum extent possible.

4.3.3 Regional Smart Growth Policies and Plans

ABAG's FOCUS program is a regional development and conservation strategy that promotes a more compact land use pattern for the Bay Area. It unites the efforts of four regional agencies into a single program that links land use and transportation by encouraging the development of complete, livable communities in areas served by transit, and promotes conservation of the region's most significant resource lands. FOCUS' Priority Development Areas are locally-identified, infill development opportunity areas within existing communities. They are generally areas of at least 100 acres where there is local commitment to developing more housing along with amenities and services to meet the day-to-day needs of residents in a pedestrian-friendly environment served by transit. Success of FOCUS hinges on the type of development included in the Special Project categories. Accordingly, Priority Development Areas are used as one of the location criteria for Category C.

4.4 Balancing Water Quality and Other Environmental Objectives

Overly restrictive NPDES regulations, as expressed in MRP Provision C.3.c's narrow definition of LID, can inadvertently disadvantage smart growth in currently developed areas and correspondingly advantage sprawl-type development on outlying, previously undeveloped land. As noted in the Congress for the New Urbanism's July 15, 2010 letter to the EPA, "….suburban areas can meet the rules more easily due to their lack of site

constraints and their ability to address rainwater runoff volume issues by growing lot sizes."

While infiltration and bioretention are typically the lowest-cost and most predictable options among the means and methods of compliance prescribed by the Water Board, both of these options are easier, less-expensive, and more predictably feasible on developments on previously undeveloped land. In comparison, harvesting and reuse and green roofs (to achieve evapotranspiration on densely built sites) are costly and for most Permittees and developers represent new approaches constrained by unknown feasibility, permitting, and liability issues. Provisions requiring redevelopment projects to retrofit existing development if 50% or more of previously constructed impervious area is altered are also a particularly strong disincentive to redevelopment projects.

The myriad environmental benefits that compact, high density infill development can yield should be facilitated by allowing greater flexibility in treating stormwater runoff. The use of space-efficient tree well, sand filter and mechanical vault filtration systems in development projects that meet local or regional sustainable growth objectives represents the necessary balance between water quality and other environmental objectives.

Adoption of the Special Projects would partially correct the current tilt and bring Water Board policy closer into line with the federal, state, and regional emphasis on smart growth, high-density, and transit-oriented development.

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