
San Francisco Bay Regional Water Quality Control Board

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Sonoma-Marin Area Rail Transit
Attn: Bill Gamlen, Chief Engineer
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Petaluma, CA 94954

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Subject: Water Quality Certification for the Sonoma-Marin Area Rail Transit Initial Operating Segment-1 South Track Rehabilitation Project, Marin and Sonoma Counties

Dear Mr. Gamlen:

We have reviewed the application submitted by the Sonoma-Marin Area Rail Transit District (SMART or Applicant) for the Initial Operating Segment-1 (IOS-1) South Track Rehabilitation Project (Project) to be conducted from the Haystack Landing Bridge in Petaluma at milepost (MP) 37.02, at its northern limit, to the Marin Civic Center Station in San Rafael at MP 19.30, at its southern limit (Application). The Application was submitted by the Applicant pursuant to section 401 of the Clean Water Act Water Act (CWA) (33 USC 1341). Accordingly, the Applicant has also applied for a U.S. Army Corps of Engineers (USACE) Individual Permit pursuant to CWA section 404 (33 USC 1344). I hereby issue conditional certification for the Project, pursuant to CWA section 401 (Certification).

SMART was formed to create a safe, reliable commuter rail service along the historic Northwestern Pacific Railroad (NWPRR) corridor. To accomplish this, SMART plans to rehabilitate 70 miles of the NWPRR corridor between the City of Cloverdale and the ferry terminal in the City of Larkspur. Financial, logistical, and planning constraints required SMART to rehabilitate the corridor in phases, hereinafter referred to as Initial Operating Segment-1 (IOS-1), Initial Operating Segment-1B (IOS-1B), and Initial Operating Segment-2 (IOS-2). IOS-1 includes rehabilitation of the track between the City of Santa Rosa at MP 55.50 and the Marin Civic Center in the City of San Rafael at MP 19.30. IOS-1B includes rehabilitation of currently operational mainline track between MP 59.9, at Airport Boulevard, and MP 55.5, at Guerneville Road, in the City of Santa Rosa. IOS-2 includes rehabilitation of non-operational mainline track between MP 19.3 and MP 16.9 in San Rafael. Future phases will be developed as opportunities arise for the sections of track north of IOS-1B and south of IOS-2.

IOS-1 was subdivided into the following three distinct projects: 1) the IOS-1 North Track Rehabilitation Project, extending south between the Guerneville Road Station in Santa Rosa to the Haystack Landing Bridge; 2) the Haystack Landing Bridge Replacement Project, located at the lower Petaluma River crossing; and 3) the IOS-1 South Track Rehabilitation Project (the Project), extending south from the Haystack Landing Bridge to the proposed Marin Civic Center Station in San Rafael.

On August 8, 2012, we certified the portion of the IOS-1 North Project within the Region 2 jurisdictional boundary (CIWQS Place ID 784413) extending southward from MP 39.4, south of Cotati, to MP 38.5 in Petaluma. On June 17, 2013, we amended the water quality certification for the IOS-1 North Project to include the replacement of the Cinnabar Bridge at the upper Petaluma River crossing at MP 39.74.

We received the Application for the IOS-1 South Project on June 21, 2013. On July 26, 2013, we notified the Applicant that the Application was incomplete, and we informally requested more information on August 12, 2013. On September 9, 2013, we received the Sea Level Rise Vulnerability Assessment and Adaptation Strategy for IOS-1 South (SLR Strategy). We received a draft conceptual Mira Monte Marina Wetlands Project Mitigation and Monitoring Plan (draft MMP) and the IOS-1 South Project Description Addendum on October 11, 2013 (Supplemental Information Packet No. 1). On November 8, 2013, we requested additional information, and on December 12, 2013, we received a revised MMP and draft mitigation ratio calculator (Supplemental Information Packet No. 2). We received a revised SLR Strategy on January 16, 2014, the final MMP (MMP) on January 22, 2014, and the Tree Mitigation Proposal for SMART IOS-1 Projects on January 23, 2014 (Supplemental Information Packet No. 3). On February 4, 2014, we received a second addendum to the Project description with revised calculations of the impacts resulting from station construction and preparation of staging areas (Supplemental Information Packet No. 4); thereby completing the Application. The initial Application and all supplemental information packets have been posted to the Water Board's website for a 21-day public review. All comments received during that period were considered in the development and issuance of the Certification.

Project Description

The Project as proposed will rehabilitate the existing NWPRR corridor extending south from MP 37.02, just south of the Haystack Landing Bridge in Petaluma, to MP 19.30, the proposed Marin Civic Center Station on the west side of the Highway 101 crossing in San Rafael. The Project will involve track rehabilitation and construction, systems and communications improvements, bridge rehabilitation and replacement, culvert modification and replacement, preparation of temporary staging areas, and construction of passenger rail stations. Detailed descriptions of each Project element are provided below.

Track Rehabilitation and Construction

This work will involve the rehabilitation of 17.72 miles of existing track and construction of 1.47 miles of new track within SMART's right-of-way. Track rehabilitation will require expansion of the existing rail guideway from 16 feet to 22 feet in width to meet federal and

State rail standards. Two to four feet of the existing ballast and sub-ballast will be replaced with new ballast and sub-ballast materials, requiring the addition of 3,400 cubic yards of new sub-ballast and 75,000 cubic yards of ballast material to be distributed along the length of the Project. Most of the existing wooden ties and rail will be removed and replaced with new concrete ties and rail. The majority of the rail will be raised slightly in elevation with new ballast to create a smooth track. Existing ballast will be reused onsite but may be redistributed to other portions of the track. The rehabilitated track will be kept along the existing centerline for most of the Project length; however, the track will deviate up to several feet in some locations to reduce curvature, allowing increased commuter train speeds. The 1.47 miles of new track will be constructed along the Hamilton Passing Siding segment in the City of Novato to occur between MP 24.5 and MP 26.7. The new track will be spaced approximately twelve feet apart on the east side of the existing track. Track rehabilitation will also involve the construction of 14 permanent retaining walls at various locations and the rehabilitation or replacement of drainage ditches along the entire length of the Project.

Systems and Communications Improvements

These improvements will involve the installation of a duct bank, consisting of two 2-inch and four 1.5-inch fiberglass ducts containing fiber optic data cables for systems control and communications. The duct bank will be installed three feet beneath the surface of the ballast, twelve feet west and parallel to the centerline of the track, and along the entire length of the project. If three feet of ballast cover is not available at a specific site, then the cables will be encased within a fiberglass conduit measuring 6" in diameter. Pull boxes will be placed not more than 2,000 meters apart and will be installed at grade on level ground. The ducts will connect to each pull box near the bottom of each box. At stream crossings, the duct bank will be brought to the surface and travel over the top of the culverts or attached to the bottom chords of the bridges.

Bridge Rehabilitation and Replacement

This work will involve the rehabilitation or replacement of fifteen bridges. Two bridges will be replaced at cattle crossing underpasses and do not involve wetlands or other waters of the State (Waters). The remaining thirteen bridges occur at stream crossings and will require the following:

Unnamed tributary to Petaluma River (MP 35.54) bridge work will require the replacement of all ties and minor repairs of existing pile support bracing and abutments, deck curb joints, railings, walkway, outriggers, stringers, ballast retainers, and guard timbers.

Schultz Slough (MP 34.21) bridge work will require minor repairs of existing hand posts, walkway panels, and bent caps, and the addition of steel plates and timber ballast retainers. It will also involve clearing debris built up at bent number four in the channel.

San Antonio Creek (MP 33.5) bridge work will require replacing the existing 80-foot, wooden single track bridge over 30 piles with a precast single track bridge over 15 piles. Stream flows are expected to be very low at the time of construction. Gravel bags will be placed in the creek bed upstream and downstream of the work area and a trickle flow-through pipe will be used to divert water around the work area by gravity before

demolition. The bridge will be lifted in large pieces and placed away from the construction area for further dismantling. A metal sleeve will be placed over the existing piles and driven down until its top edge is three feet below the surface. Then, the existing piles will be knocked with a crane against the sleeve until they break off at a depth of three feet. New steel piles will be driven into the dewatered creek bed and the new precast bridge placed on top.

Unnamed tributary to San Antonio Creek (MP 31.74) bridge work will require replacement of 35 ties and minor repairs of existing pile support bracing and abutments, ties, stringers, railings, walkways, and wingwall.

Basalt Creek (MP 29.31) bridge work will require minor repairs of existing pile support bracing and abutments, railings, walkway, guard timbers, and ties.

Rush Creek (MP 28.77) bridge work will require minor repairs of existing pile support bracing and abutments, handrails, walkway outriggers, guard timbers, ties, ballast retainers, and wingwall.

Novato Creek (MP 26.93) bridge work will require replacement of the existing bridge with a steel open deck bridge. Seventy-five piles and four concrete piers will be removed and replaced with 18 steel piles configured to be in line with the channel. The site will be temporarily dewatered by installing aquadams at the upstream and downstream ends of the bridge site and diverting flows around the area through a pipe before demolition. Removal of the existing piles will be the same as described for San Antonio Creek above. Bridge construction will take place using cranes on mats in the adjacent dewatered channel. New steel piles will be driven into the dewatered creek bed.

Hanna Ranch Slough (MP 26.04) bridge work will require replacement of a 42-foot, wooden single track bridge over 15 piles with a precast double track bridge over 24 steel piles. The site will be dewatered in the same manner as described above for San Antonio Creek. The bridge will be lifted in large pieces and placed away from the construction area for further dismantling. Removal of the existing piles will be the same as described for San Antonio Creek above. New steel piles will be driven into the dewatered creek bed and the new precast bridge placed on top.

San Jose Creek (MP 24.81) bridge work will require replacement of a 60-foot, wooden double-track bridge atop 20 twelve-inch piles with a precast double-track bridge atop 6 twenty-inch steel piles. The site will be dewatered in the same manner as described above for San Antonio Creek. The bridge will be lifted in large pieces and placed away from the construction area for further dismantling. Removal of the existing piles will be the same as described for San Antonio Creek above. New steel piles will be driven into the dewatered creek bed and the new precast bridge placed on top.

Unnamed tributary to Pacheco Creek (MP 24.36) bridge work will involve minor repairs to existing pile support bracing, abutments, cable railing, stringers and bolt chords, planks, and ties.

Pacheco Creek (MP 23.96) bridge work will require the replacement of a 35-foot wooden bridge with three ten-foot wide by three-foot high concrete box culverts. The site will be temporarily dewatered by installing gravel bag coffer dams at the upstream and downstream ends of the bridge site. A diversion pipe will be installed to divert flows through the dewatered area before demolition. After bridge removal, the existing concrete lining in the creek bottom will be demolished and replaced by the concrete box culverts overlain by track.

Miller Creek (MP 22.09) bridge work will require the replacement of a 54-foot wooden bridge atop ten piles with a precast concrete bridge atop 12 steel piles. The site will be dewatered in the same manner as described above for San Antonio Creek. Heavy equipment will be operated from uplands at both end of the bridge and a temporary wooden platform will provide a clear span over the channel to provide access to work crews. The existing bridge will be lifted in one piece and placed away from the construction area for further dismantling. Removal of the existing piles will be the same as described for Gallinas Creek below. New steel piles will be driven into the dewatered creek bed and the new precast bridge placed on top.

Gallinas Creek (MP 20.90) bridge work will require the replacement of a 282-foot wooden bridge atop 80 twelve-inch wooden piles with a precast bridge atop 64 twenty-inch steel piles. Water diversion will not be necessary. Demolition of the existing bridge will take place using cranes operating on wetland protection mats in the adjacent wetlands. A metal sleeve will be placed over the existing piles and driven down until its top edge is three feet below the surface. During low tide, the existing piles will be knocked with a crane against the sleeve until they break off at a depth of three feet. Piles and all bridge components will be lifted in large pieces and placed away from the construction area for further dismantling. The existing concrete piers in the active channel will remain. Bridge construction will take place using cranes on mats in the adjacent wetlands. Additionally, a 4-foot by 8-foot temporary floating work deck will be floated into place for crews to work from while the piles are being positioned. A total of eight piles will be installed within open water. These piles will be isolated from water using 72-inch diameter sleeves during pile driving.

Culvert Installation, Extension, and Replacement

Culvert work will require the extension or replacement of 61 of the 89 existing culverts and the addition of 57 new culverts (including 2 box culverts that will serve as cattle undercrossings rather than drainage features). Most culverts will include rock aprons at the openings that are sized relative to the size of pipe or box. If water is present at a given site, the culvert will be temporarily plugged or the water will be temporarily dammed using gravel bags and visqueen material or aquadams. Flowing water will be diverted through the guideway with a pipe and siphon, pipe with gravity flow, or temporary ditch cut through the guideway. Ballast and/or subgrade will then be excavated where necessary and culvert bedding installed. The new culvert or culvert extension will then be installed followed by backfilling around and over the culvert or culvert extension.

Staging Area Preparation

During construction, any developed areas or upland areas supporting ruderal vegetation within the right-of-way may be used as staging areas. Additionally, six locations along the Project length will be prepared for temporary use as equipment and material staging areas. Staging areas at MPs 22.2, 24.6, 25.7, 26.1, 30.0, and 32.8 will have a combined area of approximately 21.5 acres. Moreover, the sites identified for passenger rail stations will be utilized for temporary staging. Preparation of the sites for temporary staging will involve clearing and grubbing, leveling, and installation of stormwater best management practices and erosion control measures.

Passenger Rail Station Construction

This work will involve the construction of the following three passenger rail stations:

Marin Civic Center Station (MP 19.6) will be constructed adjacent to the south fork of Gallinas Creek, directly beneath and immediately west of the Highway 101 overpass in the City of San Rafael. This station will be approximately 0.91 acre in size and will include a single track platform, a passenger drop-off lane, bus pullouts, bicycle facilities, parking lot, landscaping, and onsite stormwater treatment controls.

Hamilton Station (MP 23.7) will be constructed east of Highway 101 between Main Gate Road and North Hamilton Parkway in southern Novato. This station will be approximately 4.55 acres in size and will include a 270-foot single track platform, an access road, a passenger drop-off lane, bus pullouts, bicycle facilities, parking lot, landscaping, and onsite stormwater treatment controls.

Atherton Station (MP 28.8) will be constructed at the Rush Creek crossing between the Atherton Ave. interchange at Highway 101 and Rush Landing Road in northern Novato. This station will be approximately 2.90 acres in size and will include a single track platform, bus pullouts, bicycle facilities, parking lot, landscaping, and onsite stormwater treatment controls.

Impacts

Climate Change Impacts

The purpose of the Project is to provide a safe, reliable, and environmentally sustainable alternative mode of transportation. A continued rise in sea level, however, poses a threat to these goals. Furthermore, the Project has the potential to contribute to water quality and wetland impacts associated with sea level rise by acting as hydraulic constrictions and logistical constraints to adaptation measures that would not otherwise exist.

Indirect Impacts

Approximately 38.7 acres of wetlands, creeks, ponds, and tidal sloughs have been identified within the Project limits and could be indirectly impacted. During construction, indirect impacts could potentially result from ground disturbing activities that increase erosion and sedimentation and from accidental discharges of debris, green waste, and both hazardous and non-hazardous materials. After construction, exposed soils, improper culvert installation, and the addition of impervious surfaces could indirectly impact water

quality by increasing pollutant discharges and altering stormwater flows (i.e., hydromodification impacts).

More specifically, polychlorinated biphenyls (PCBs) are known to be present in caulking materials used in structures constructed between 1950 and 1979. Given the age of the bridges, any caulking materials used to construct or maintain them during that time period may contain PCBs. During demolition and dismantling activities, any caulking materials should be segregated, tested, and disposed of properly to prevent any impacts to human health and the environment.

Furthermore, management of vegetation on the railroad prism and gangways after construction may result in unintended discharges of herbicides and pesticides into adjacent Waters.

Direct Impacts

As described in the Application and Supplemental Information Packets, the Project will permanently impact 2.3 acres and 393 linear feet of wetlands, creeks, tidal sloughs, and riparian habitat. In addition the Project will temporarily impact 6.1 acres and 2,843 linear feet of wetland, creek, and slough habitat.

Permanent impacts to wetlands, creeks, and tidal sloughs will result from the conversion of these habitats to hardscape as a result of track rehabilitation and construction, bridge replacement, culvert installation and modification, and station construction. In addition, permanent impacts to riparian habitat will result from the removal of six willow thickets and fifteen individual riparian trees with trunk diameters of five inches or greater at breast height. They will be removed from sixteen creek and culvert locations that will be maintained free of trees, thereafter, pursuant to fire and railroad safety guidelines. As a result, these riparian woodlands will permanently be converted to riparian grasslands.

Temporary impacts to wetlands, creeks, and tidal sloughs will result from water diversion and dewatering systems, vegetation removal, placement of wetland mats, installation of temporary steel trestles, placement of silt curtains at wetland edges, and temporary storage of equipment and materials in staging areas.

Table 1 below provides the acres and linear feet of impacts to each water body type resulting from each Project element.

Table 1: Summary of Impacts to Waters of the State

Project Element	Water Body Type ¹	Permanent Impacts (Acres)	Permanent Impacts (LF)	Temporary Impacts (Acres)	Temporary Impacts (LF)
Track Work	CSMA	0.218		0.310	
	TW	0.064		0.019	
	CFMA	0.560		0.033	
	CFSW	0.359		0.040	
<i>Subtotal</i>		<i>1.201</i>		<i>0.402</i>	
Culverts	CSMA	0.205			
	CFMA	0.188			
	CFSW	0.306			
	PW-P	0.002			
	TW	0.013			
<i>Subtotal</i>		<i>0.714</i>			
Bridges					
Gallinas Creek	CSMA	0.002	2	0.167	59
Miller Creek	PW-C	0.0003	2	0.022	26
San Antonio Creek	TW	0.0004	2	0.056	40
Pacheco Creek ²	PW-C	0.038	46	0.022	50
San Jose Creek	PW-C	0.0003	4	0.022	26
Hanna Ranch Slough	PW-C	0.0006	5	0.037	42
Novato Creek	PW-C	0.002	2	5.214	2600
<i>Subtotal</i>		<i>0.0436</i>	<i>63</i>	<i>5.540</i>	<i>2843</i>
Safety Clearance	WRH	0.12	330		
<i>Subtotal</i>		<i>0.12</i>	<i>330</i>		
Stations	CFMA	0.183			
	CFSW	0.035			
<i>Subtotal</i>		<i>0.218</i>			
Staging Areas	CFSW	0		0.138	
TOTAL		2.3	393	6.1	2843

Note:

CSMA Coastal Salt Marsh
CFMA Coastal Freshwater Marsh
CFSW Coastal Freshwater Seasonal Wetland
PW-C Perennial Water – Creek
PW-P Perennial Water – Pond
TW Tidal Water
WRH Woody Riparian Habitat

1 For the purposes of this Certification, the following assumptions and modifications were made to the wetland types and impacts presented in the original Application:

- a) Tidal Water (TW) are unvegetated tidal sloughs, except at San Antonio Creek where TW is a tidally-influenced creek reach;

- b) Perennial Water and Open Water (PW/OW) were broken into PW-C for perennial streams and PW-P for perennial freshwater ponds;
 - c) CSMA and Coastal Brackish Marsh are combined into CSMA;
 - d) Coastal Freshwater Seasonal Wetland (CFSW) includes both vegetated and open water components of seasonal wetlands; and
 - f) Woody riparian habitat (WRH) was created and added to the table by Water Board staff.
- 2 Impacts associated with the Pacheco Creek crossing were deducted from Culverts impacts in the original Application and added to Bridges impacts in this table.

Mitigation

Climate Change Adaptation Strategy

The SLR Strategy provides a technical and scientific understanding of changes to the hydrology of creeks and wetlands resulting from continuing sea level rise and identifies potential adaptation measures that would avoid and minimize hydraulic constrictions, discharges, and the loss of wetlands. As described in the SLR Strategy, the periodic reviews will monitor SMART system performance to smaller event flooding to protect from repeated flooding damage, review available scientific information on sea level rise data and projections, review SMART system vulnerability in light of available data at that time, identify a long term plan of improvements in the context of the SMART capital improvement program, and identify opportunities for partnership with other local and regional parties for sea level rise adaptation. The SLR Strategy, as proposed, calls for a review of the document every ten years; however, the SLR Strategy needs to be reviewed every five years to be considered adequate. Furthermore, the SLR Strategy documents the Applicant's commitment to cooperate on a long term basis with stakeholders in good faith to identify regional solutions to the challenges of sea level rise. Water Board staff is prepared to work with the Applicant and other local entities to identify long term regional sea level rise adaptation measures.

Avoidance and Minimization of Impacts

In general, the Applicant will avoid and minimize indirect, as well as direct, impacts to Waters by complying with the requirements of the statewide General Permit for Discharges of Storm Water Associated with Construction Activity (Construction General Permit Order 2009-0009-DWQ as amended) and implementing the appropriate best management practices (BMPs) described in its stormwater pollution prevention plan, integrated pest management plan, and its track operation and maintenance plans. Additionally, there will be implementation of the "*Contaminated materials handling and disposal plan for ties and treated timbers*" to prevent discharges, assuring that treated timber ties and bridge piles will be removed, handled, and disposed of properly. The Applicant will also avoid and minimize impacts by restricting, to the maximum extent feasible, work near Waters to the dry period between September 1 and November 15.

More specifically, the Applicant proposes to avoid and minimize impacts to Waters during track rehabilitation and construction by: (1) utilizing the existing track alignment; (2) reducing the width of the ballast prism, as much as possible, up to the point that the safe operation of the track will be affected (only at that point will impacts to Waters become unavoidable); (3) constructing 14 retaining walls to limit the area filled by track ballast; (4) replacing 65,000 creosote-treated timber ties with concrete ties, which will prevent

ongoing discharges of creosote pollutants; and (5) performing as much work as possible from the track itself to avoid disturbing the streambeds and adjacent wetlands.

The Applicant also proposes to avoid and minimize impacts to Waters during bridge and culvert rehabilitation and replacement by: (1) installing wetland mats (in the case of Gallinas Creek) to preserve and protect wetland root systems; (2) changing the orientation of bridge bents (in the case of Novato Creek) to be more in line with the direction of stream flow; (3) replacing 195 creosote-treated timber piles with steel piles, which will prevent further discharges of creosote pollutants; (4) dewatering streams during construction to avoid working in wetted streams; (5) installing debris catchers beneath bridges to prevent falling material from entering Waters; (6) isolating piles from open water with metal sleeves during pile removal; (7) removing bridge components in large pieces to be further dismantled away from Waters; (8) installing new bridge abutments behind existing bridge abutments to avoid encroaching on Waters; and (9) installing temporary steel trestles and temporary floating platforms to allow access to bridge areas without working directly in streambeds.

Moreover, the Applicant proposes to avoid and minimize impacts to Waters during staging area preparation and station construction by: (1) eliminating locations with extensive Waters from consideration as stations or staging areas; (2) shifting boundaries and reducing the size of stations or staging areas to exclude Waters; and (3) fencing off and protecting Waters that cannot be excluded from station and staging area boundaries.

Furthermore, impacts associated with post-construction stormwater will be avoided by installing appropriate BMPs in accordance with the Post-Construction Stormwater Treatment Plans designed to avoid and minimize pollutant discharge and hydromodification impacts.

Lastly, impacts resulting from post construction vegetation and pest management will be avoided and minimized by implementing the appropriate BMPs described in a Maintenance of Way Plan, which will include vegetation management and integrated pest management specifications that describe measures to minimize the use of pesticides and herbicides. The Applicant will also employ methods to contain pesticides and herbicides when their application is necessary, including, but not limited to, methods that prevent discharges from overspraying or entrainment of pesticides in runoff.

Proposed Compensation for Impacts

To compensate for unavoidable permanent and temporary impacts to wetland, creek, pond, and tidal slough habitat, the Applicant has purchased the 54-acre Mira Monte Marina property for salt marsh and tidal channel restoration, enhancement, and preservation. This property is located between the Petaluma River to the east and the SMART railroad corridor to the west and between the Redwood Landfill to the north and the Burdell Mitigation Bank to the south. The Applicant will restore a minimum of 5.1 acres of tidal salt marsh by: (1) removing fill and grading to reestablish a topographically-diverse intertidal marsh plain, (2) creating new tidal channels to connect the restored marsh areas to existing tidal channels, and (3) planting a variety of native salt marsh

species at appropriate intertidal elevations. The Applicant will also enhance a minimum of 10.9 acres of muted tidal marsh by performing limited grading, removing invasive species, replanting with native species, and removing berms, culverts, and a flap gate to restore full tidal exchange.

A minimum of 3.0 acres of the restoration and 3.4 acres of the enhancement described above will be provided as compensation for the current Project with the remaining acres of restoration and enhancement to be held in reserve as compensation for impacts resulting from future SMART projects.

In addition to the compensation for unavoidable impacts to wetland, creek, pond and tidal slough habitat, the Applicant will compensate for unavoidable permanent impacts to 330 linear feet and 0.12 acre of impacts to riparian habitat by restoring a minimum of 660 linear feet and 0.25 acre of native woody riparian habitat to be installed within one year from the time of the impacts.

EcoAtlas: It has been determined through regional, State, and national studies that tracking of mitigation/restoration projects must be improved to better assess the performance of these projects, following monitoring periods that last several years. In addition, to effectively carry out the State's Wetlands Conservation Policy of no net loss to wetlands, the State needs to closely track both wetland losses and mitigation/restoration project success. Therefore, we require that the applicant use the California Wetlands Form to provide Project information related to impacts and mitigation/restoration measures (see Condition No. 11 of the Certification). An electronic copy of the form and instructions can be downloaded at:

<http://www.waterboards.ca.gov/sanfranciscobay/certs.shtml>. Project information concerning impacts and mitigation/restoration will be made available at the web link: <http://ecoatlas.org/regions/ecoregion/bay-delta/projects>.

California Environmental Quality Act (CEQA): SMART, as lead CEQA agency, certified a Final Environmental Impact Report (EIR) on July 21, 2006, certified a Supplemental EIR (SEIR) on July 16, 2008, and filed a Notice of Determination (NOD) with the State Clearinghouse (SCH No. 20021122033) on November 16, 2011, pursuant to CEQA guidelines.

The Water Board, as a responsible agency under CEQA, has considered the EIR and SEIR and finds that the Project's significant environmental effects that are within the Water Board's purview and jurisdiction have been identified and will be mitigated to less-than-significant levels. Specifically, significant impacts pertaining to wetland and aquatic habitat and water quality will be mitigated to less-than-significant levels through implementation of mitigation measures identified in the EIR, SEIR, and this Certification.

Certification: I hereby issue an order certifying that any discharge from the referenced Project will comply with the applicable provisions of sections 301 (Effluent Limitations), 302 (Water Quality Related Effluent Limitations), 303 (Water Quality Standards and Implementation Plans), 306 (National Standards of Performance), and 307 (Toxic and Pretreatment Effluent Standards) of the CWA, and with other applicable requirements of State law. This discharge is also regulated under State Water Resources Control Board Order No. 2003 - 0017 - DWQ, "General Waste Discharge Requirements for Dredge and Fill Discharges That Have Received State Water Quality Certification," which requires compliance with all conditions of this Certification. The following conditions are associated with this Certification:

1. The Project shall be constructed in conformance with information provided in the Application dated June 21, 2013, as amended by Supplemental Information Packet Nos. 1 through 4. Any changes to information provided in the amended Application or any supporting documents received with the amended Application must be submitted to the Water Board and receive written approval from the Water Board's Executive Officer before the changes are implemented.
2. The Water Board shall be notified in writing within five working days (working days are Monday – Friday) of the commencement of ground disturbing activities with details regarding the construction schedule.
3. To adapt to sea level rise impacts, the Applicant shall implement the SLR Strategy and perform formal periodic reviews of the SLR Strategy every five years. The Applicant shall also cooperate with public and private stakeholders to identify long-term regional adaptation measures that would avoid and minimize hydraulic constrictions, creek erosion and sedimentation, and the loss of wetlands along the length of the Project as a result of continued sea level rise.
4. BMPs shall be implemented to minimize and control erosion and sedimentation during construction as described in the Water Quality Management Plan, submitted on March 26, 2012, and in accordance with the Construction General Permit (Order No. 2009-0009-DWQ as amended by Order Nos. 2010-0014-DWQ and 2012-0006-DWQ; NPDES No. CAS000002). Disturbance or removal of vegetation shall be minimized. The sites shall be stabilized through incorporation of appropriate BMPs, including the successful reestablishment of native vegetation, to enhance wildlife habitat values and to prevent and control erosion and sedimentation.
5. Prior to the start of construction, the Applicant shall provide the Water Board with the "Contaminated materials handling and disposal plan for ties and treated timbers" (Contaminated Materials Management Plan) that will be implemented to prevent discharges of contaminated materials during demolition activities. The Contaminated Materials Management Plan shall, at a minimum, include the types of contaminated materials to be removed, timing of removal, and methods of removal and disposal to be implemented. Disturbance of contaminated materials

shall not commence until the Applicant has received written approval of the Contaminated Materials Management Plan from the Executive Officer.

6. During construction, the Applicant shall prevent the establishment and spread of aquatic invasive species during construction using methods equivalent to the methods described in the U.S. Department of the Interior's Technical Memorandum No. 86-68220-07-05, 2010 Edition. This document can be downloaded at the following website:
<http://www.usbr.gov/mussels/prevention/docs/EquipmentInspectionandCleaningManual2010.pdf>.
7. All temporary dewatering methods shall be designed to have the minimum necessary impacts to waters of the State to isolate the immediate work area. All dewatering methods shall be installed such that natural flow is maintained upstream and downstream of the project area. Any temporary dams or diversions shall be installed such that the diversion does not cause sedimentation, siltation, or erosion upstream or downstream of the project area. All dewatering methods shall be removed immediately upon completion of Project activities.
8. Groundwater shall not be discharged to waters of the State. If groundwater is encountered during construction, it will be discharged to an upland location where it cannot flow into waters of the State. BMPs that may be used include: storage tanks, sediment desilting basins, and water filters. Additionally, BMPs such as the use of sprinklers, washed gravel, sand bags, straw, and/or silt fences will be used as necessary to control velocity of the land discharge and erosion.
9. Prior to commencing construction of the passenger rail stations, the Applicant shall submit the Stormwater Control Plans (SCPs) for the passenger rail stations to the Water Board. The SCPs shall specify low impact development (LID) measures that will be designed and implemented in accordance with Attachment A, Post-Construction Stormwater Requirements, which is consistent with the Small MS4 requirements for Marin County.
10. To avoid and minimize impacts from vegetation management associated with train operations, the Applicant shall provide a Maintenance of Way Plan (Plan) that addresses vegetation management to the Water Board within 120 days and receive written approval of the Plan from the Executive Officer prior to commencing construction of the passenger rail stations. The Plan shall include appropriate integrated pest management measures to minimize the use of pesticides and herbicides and methods that will be employed to contain pesticides and herbicides when their application is necessary, including, but not limited to, methods that prevent discharges from overspraying or entrainment of pesticides in runoff. Any revisions to the approved Plan must be submitted to the Water Board and receive written approval from the Executive Officer before the changes are implemented.

11. The Applicant is required to use the standard California Wetlands Form to provide Project information describing impacts to waters of the State and restoration measures within 30 days from the date of this Certification. An electronic copy of the form can be downloaded at: <http://www.waterboards.ca.gov/sanfranciscobay/certs.shtml>. The completed form shall be submitted electronically to habitatdata@waterboards.ca.gov or shall be submitted as a hard copy to both (1) the Water Board (see the address on the letterhead), to the attention of EcoAtlas and (2) the San Francisco Estuary Institute, 4911 Central Avenue, Richmond, CA 94804, to the attention of EcoAtlas.
12. To mitigate for temporary impacts to wetland and riparian vegetation, the Applicant shall revegetate disturbed areas with native plant species. To accomplish this, the Applicant shall prepare and implement a Revegetation Plan that, at a minimum, includes methods for reestablishing native riparian vegetation and removing invasive plant species, and success criteria and monitoring methods for determining whether revegetation is successful. The Applicant shall submit a draft Revegetation Plan to the Water Board within two weeks from the start of construction. Within 60 days from the start of the construction, the Applicant shall submit a final Revegetation Plan for the Executive Officer's approval. The Applicant shall mitigate temporary impacts to wetlands and riparian vegetation by implementing the approved Revegetation Plan. Any revisions to the approved Revegetation Plan, including changes to the success criteria or timelines, must be submitted to the Water Board and receive written approval from the Executive Officer before the changes are implemented.
13. To mitigate for permanent impacts to riparian habitat, the Applicant shall enhance 660 linear feet and 0.25 acre of riparian habitat within one year of approval of this Certification in accordance with a Tree Mitigation Proposal for SMART IOS-1 Projects, and as described in the IOS-1 South Second Project Description Addendum. The Applicant shall submit a final Tree Mitigation Plan to the Water Board within 60 days of this Certification for the Executive Officer's approval. Any revisions to the approved Tree Mitigation Plan, including changes to the success criteria or timelines, must be submitted to the Water Board and receive written approval from the Executive Officer before the changes are implemented.
14. To assess the success of the riparian vegetation restoration, the Applicant shall monitor vegetation at the site for a minimum of ten years. Monitoring shall include a combination of photo documentation from at least six fixed points and estimations of native riparian canopy cover using transects, quadrats, or another quantitative method. Performance criteria shall include minimum cover of native riparian canopy and maximum absolute cover of highly invasive non-native species listed in Tier 1 of the Water Board's Fact Sheet for Wetland Projects. The Fact Sheet can be obtained at <http://www.waterboards.ca.gov/sanfranciscobay/certs.shtml> or by contacting Water Board staff at (510) 622-2300.

The criteria for absolute plant cover shall be the following:

- Year 1: at least 20 percent native riparian canopy cover; no more than 5 percent cover of Tier 1 invasive species
- Year 2: at least 40 percent native riparian canopy cover; no more than 5 percent cover of Tier 1 invasive species
- Year 3: at least 50 percent native riparian canopy cover; no more than 5 percent cover of Tier 1 invasive species
- Year 4: at least 60 percent native riparian canopy cover; no more than 10 percent Tier 1 invasive species
- Year 5: at least 70 percent native riparian canopy cover; no more than 10 percent cover of Tier 1 invasive species
- Year 7: at least 75 percent native riparian canopy cover; no more than 15 percent Tier 1 invasive species
- Year 10: at least 80 percent native riparian canopy cover; no more than 15 percent cover of Tier 1 invasive species

15. To mitigate for permanent impacts to wetlands, creeks, and other waters of the State as well as temporal losses in function associated with temporary impacts to wetlands, creeks, and other waters of the State, the Applicant shall restore 3.0 acres and enhance 3.4 acres of tidal salt marsh within one year of the start of construction in accordance with the MMP received on January 22, 2014.

16. In accordance with the MMP received on January 22, 2014, the Applicant shall provide a qualitative assessment of the success of the salt marsh restoration and enhancement mitigation in accordance with the latest version of the California Rapid Assessment Method (CRAM) for Estuarine Wetlands Field Book. A pre-construction CRAM assessment shall be performed to document baseline conditions and post-construction CRAM assessments shall be performed in Years 1, 3, and 5 and shall achieve a score of 90 or greater by Year 5.

17. The Applicant shall quantitatively assess the success of the salt marsh restoration and enhancement mitigation in accordance with the MMP received on January 22, 2014. Monitoring of salt marsh vegetation shall include a combination of photo documentation and estimations of absolute cover as described in the MMP. Performance criteria shall include minimum cover of native salt marsh vegetation, maximum cover of highly invasive non-native species listed in Tier 1 of the Water Board's Fact Sheet for Wetland Projects, and native species richness.

The criteria for absolute wetland plant cover and species richness compared to the reference site (located on the 24.55-acre Mira Monte Marina Wetlands parcel on the Sonoma side of the county line) shall be the following:

- Year 1: greater than 20 percent of the absolute cover of native species at the reference site; less than 20 percent absolute cover of Tier 1 invasive

species; greater than 60 percent of the native species richness found at the reference site

- Year 2: greater than 30 percent of the absolute cover of native species at the reference site; less than 20 percent absolute cover of Tier 1 invasive species; greater than 60 percent of the native species richness found at the reference site
- Year 3: greater than 70 percent of the absolute cover of native species at the reference site; less than 15 percent absolute cover of Tier 1 invasive species; greater than 65 percent of the native species richness found at the reference site
- Year 4: greater than 70 percent of the absolute cover of native species at the reference site; less than 10 percent absolute cover of Tier 1 invasive species; greater than 70 percent of the native species richness found at the reference site
- Year 5: greater than 90 percent of the absolute cover of native species at the reference site; less than 5 percent absolute cover of Tier 1 invasive species; greater than 75 percent of the native species richness found at the reference site

18. The Applicant shall monitor the physical and hydrologic conditions of the tidal marsh restoration and enhancement mitigation in accordance with the MMP received on January 22, 2014. Monitoring shall include: (1) an assessment of hydric soil indicators annually for five years at a minimum of six locations within the restored areas, (2) an assessment of sediment deposition and erosion annually for five years, measured with topographic surveys at permanently established transects at a 100-meter interval, (3) an assessment of channel morphology in each re-established or re-habilitated tidal channel annually for five years, measured with topographic surveys at the channel mouth and every 100 meters upstream, (4) a qualitative hydrologic assessment of the re-established and rehabilitated wetlands annually for five years to determine the presence of unobstructed versus restricted exchange of tidal waters, and (5) a wetland delineation in Year 5 to confirm that the mitigation acreage requirements have been met.

19. Monitoring reports shall be submitted by December 31 of each monitoring year. The reports shall include monitoring data, photographs of the site from fixed photo-monitoring stations and annual survey information to observe changes over time and document whether performance criteria are being achieved for both the riparian and wetland mitigation. If the criteria are not met, the report shall identify remedial measures to be undertaken and extend the monitoring period as warranted. These reports shall be submitted either by uploading them to the EcoAtlas website at <http://www.ecoatlas.org/regions/waterboard/san-francisco-bay-area/projects> or via mail. If these reports are submitted by uploading them to EcoAtlas, the Applicant shall notify the Water Board that the reports have been

uploaded via email to Paul Modrell at paul.modrell@waterboards.ca.gov or the then-current Water Board staff member assigned to SMART projects.

20. Within 180 days of the date of this Certification, the Applicant shall submit a draft long-term management plan that includes all appropriate details to manage the mitigation sites after the final success criteria have been met. As specified in the MMP, the long-term management plan shall be developed using the USACE template. It shall also include goals and objectives for maintaining the site in perpetuity, monitoring methods for assessing whether these goals and objectives are being achieved, management actions to achieve these goals, and schedules for activities. Activities addressed in this plan shall include, but not be limited to, invasive plant management, invasive predator control, and infrastructure management. This plan must be of sufficient detail to feed into the Property Analysis Record (PAR) or equivalent analysis that will be used to derive the financial assurance amount for the conservation easement.
21. Within one year of the date of this Certification, the Applicant shall submit proof of financial assurance adequate to ensure long-term management of the mitigation sites. This may consist of a bond, certificate of deposit, endowment, or other appropriate instrument. Along with the proof of financial assurance, the Applicant shall submit the PAR or equivalent analysis that provides the information necessary to demonstrate that the amount in the financial assurance completely covers all activities needed to manage the mitigation sites in perpetuity.
22. Within one year of the date of this Certification, the Applicant shall submit a copy of the Conservation Easement for the Mira Monte Mitigation Site (Conservation Easement) to the Water Board. The language of the Conservation Easement shall follow the USACE, CDFW, and/or USFWS templates for conservation easements and shall identify the third-party entity to whom the easement would be granted. The easement shall grant access rights to Water Board staff and include, at a minimum, provisions and responsibilities of the Applicant and the designated land trust organization, including, but not limited to, implementation of the long-term management plan specified in Condition 20 above, and any future transfers of the easement or fee interest that may be anticipated. The easement should also specify the purposes for which it is established and should include a list of prohibited activities that are inconsistent with the maintenance of the mitigation site. The Final Easement shall not be recorded with the County until after the Executive Officer has provided written approval of (1) the language of the Conservation Easement and (2) the holder of the easement. However, the Final Easement shall be recorded with the County within two years of the date of this Certification.
23. The Applicant shall manage and dispose of caulking materials properly depending upon their PCBs concentrations to prevent any impacts to human health and the environment. Any caulking material found during demolition shall be segregated and analyzed for PCBs. The Applicant is required to submit PCBs analytical results and materials manifest to the Water Board upon final disposal.

24. This Certification action is subject to modification or revocation upon administrative or judicial review, including review and amendment pursuant to section 13330 and section 3867 of the California Water Code (CWC), Title 23 of the California Code of Regulations (23 CCR).
25. Certification is not intended and shall not be construed to apply to any activity involving a hydroelectric facility and requiring a FERC license or an amendment to a FERC license unless the pertinent certification application was filed pursuant to 23 CCR. Subsection 3855(b) and that application specifically identified that a FERC license or amendment to a FERC license for a hydroelectric facility was being sought.
26. Certification is conditioned upon total payment of the full fee required in State regulations (23 CCR section 3833) and owed by the Applicant. The fee for the Project, \$11,964, was paid in full to the State Water Resources Control Board on June 21, 2013.

This Certification applies to the Project as proposed in the application materials. Please be advised that failure to implement the Project as proposed is a violation of this Certification. Violation of water quality certification is a violation of state law and is subject to administrative civil liability pursuant to CWC section 13350. Failure to meet any condition of a certification may subject you to civil liability imposed by the Water Board to a maximum of \$5000 per day of violation or \$10 for each gallon of waste discharged in violation of the certification. Also, any requirement for a report made as a condition to this Certification is a formal requirement pursuant to CWC section 13267 (see Condition Nos. [2](#), [3](#), [5](#), [9](#), [10](#), [11](#), [19](#), [20](#), [21](#) and [22](#)), and failure to submit, late or inadequate submittal, or falsification of such technical report(s) is also subject to civil liability.

Should new information come to our attention that indicates a water quality problem with this Project, the Water Board may issue Waste Discharge Requirements pursuant to 23 CCR section 3857.

If you have any questions, please contact Paul Modrell of my staff at 510-622-5686 or paul.modrell@waterboards.ca.gov.

Sincerely,

Bruce H. Wolfe
Executive Officer

Cc: SWRCB, DWQ, Stateboard401@waterboards.ca.gov
DFW, Tim Dodson, Timothy.Dodson@wildlife.ca.gov
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ICF International, Leslie Allen, Leslie.Allen@icfi.com

Attachment A

Post-Construction Stormwater Requirements Derived from the Marin County Phase II Municipal Separate Storm Sewer System (MS4) General Permit

I. Design Measures

The Applicant shall implement one or more of the following site design measures to reduce project site runoff:

- (a) Stream Setbacks and Buffers - a vegetated area, including trees, shrubs, and herbaceous vegetation, that exists or is established to protect a stream system, lake, reservoir, or coastal estuarine area;
- (b) Soil Quality Improvement and Maintenance - improvement and maintenance of soil through soil amendments and creation of microbial community;
- (c) Tree Planting and Preservation - planting and preservation of healthy, established trees that include both evergreens and deciduous, as applicable;
- (d) Rooftop and Impervious Area Disconnection - rerouting of rooftop drainage pipes to drain rainwater to rain barrels, cisterns, or permeable areas instead of the storm sewer;
- (e) Porous Pavement - pavement that allows runoff to pass through it, thereby reducing the runoff from a site and surrounding areas and filtering pollutants;
- (f) Green Roofs - a vegetative layer grown on a roof (rooftop garden);
- (g) Vegetated Swales - a vegetated, open-channel management practice designed specifically to treat and attenuate stormwater runoff; and
- (h) Rain Barrels and Cisterns - system that collects and stores stormwater runoff from a roof or other impervious surface.

II. Low Impact Development (LID) Design Standards

Design and construction of the passenger rail stations shall achieve the following LID Design Standards:

(a) Site Assessment: At the earliest planning stages, the Applicant shall assess and evaluate how site conditions, such as soils, vegetation, and flow paths, will influence the placement of buildings and paved surfaces. The evaluation will be used to meet the goals of capturing and treating runoff and assuring these goals are incorporated into the project design. The Applicant shall consider optimizing the site layout through the following methods:

- 1) Define the development envelope and protected areas, identifying areas that are most suitable for development and areas to be left undisturbed.

- 2) Concentrate development on portions of the site with less permeable soils and preserve areas that can promote infiltration.
- 3) Limit overall impervious coverage of the site with paving and roofs.
- 4) Set back development from creeks, wetlands, and riparian habitats.
- 5) Preserve significant trees.
- 6) Conform the site layout along natural landforms.
- 7) Avoid excessive grading and disturbance of vegetation and soils.
- 8) Replicate the site's natural drainage patterns.
- 9) Detain and retain runoff throughout the site.

(b) Drainage Management Areas (DMAs): The Applicant shall provide a map or diagram dividing the developed portions of the project site into discrete DMAs and manage runoff from each DMA using Site Design Measures, Source Controls and/or Stormwater Treatment and Baseline Hydromodification Measures.

(c) Numeric Sizing Criteria for Stormwater Retention and Treatment: The Applicant shall design facilities to evapotranspire, infiltrate, harvest/use, and biotreat stormwater to meet at least one of the following hydraulic sizing design criteria:

1) Volumetric Criteria:

a) The maximized capture stormwater volume for the tributary area, on the basis of historical rainfall records, determined using the formula and volume capture coefficients in Urban Runoff Quality Management, WEF Manual of Practice No. 23/ASCE Manual of Practice No. 87 (1998) pages 175-178 (that is, approximately the 85th percentile 24-hour storm runoff event); or

b) The volume of annual runoff required to achieve 80 percent or more capture, determined in accordance with the methodology in Section 5 of the California Stormwater Quality Association's (CASQA's) Stormwater Best Management Practice Handbook, New Development and Redevelopment (2003), using local rainfall data.

2) Flow-based Criteria:

a) The flow of runoff produced from a rain event equal to at least 0.2 inches per hour intensity; or

b) The flow of runoff produced from a rain event equal to at least 2 times the 85th percentile hourly rainfall intensity as determined from local rainfall records.

(d) Site Design Measures: The Applicant shall implement Site Design Measures (as defined in Section I., Site Design Measures, and Section II.(a), Site Assessment), site layout and design measures, based on the objective of achieving infiltration, evapotranspiration, and/or harvesting/reuse of the 85th percentile 24-hour storm runoff event. Site design measures shall be used to reduce the amount of runoff, to the extent

technically feasible, for which retention and runoff is required. Any remaining runoff from impervious DMAs may then be directed to one or more bioretention facilities as specified below.

(e) Source Controls: The Applicant shall implement source control measures consistent with recommendations from the CASQA Stormwater BMP Handbook for New Development and Redevelopment or equivalent manual for the following:

- 1) Accidental spills or leaks
- 2) Interior floor drains
- 3) Parking Lots
- 4) Storage and maintenance areas
- 5) Indoor and structural pest control
- 6) Landscape/outdoor pesticide use
- 7) Refuse areas
- 8) Outdoor storage of equipment or materials
- 9) Vehicle and equipment cleaning
- 10) Vehicle and equipment repair and maintenance
- 11) Fuel dispensing areas
- 12) Fire sprinkler test water
- 13) Drain or wash water from boiler drain lines, condensate drain lines, rooftop equipment, drainage sumps, and other sources
- 14) Unauthorized non-storm water discharges
- 15) Building and grounds maintenance

(f) Stormwater Treatment Measures and Baseline Hydromodification Management Measures: After implementation of Site Design Measures, remaining runoff from impervious DMAs must be directed to one or more facilities designed to infiltrate, evapotranspire, and/or bioretain the amount of runoff specified in Section II.(c) above, Numeric Sizing Criteria for Stormwater Retention and Treatment. The facilities must be demonstrated to be at least as effective as a bioretention system with the following design parameters:

- 1) Maximum surface loading rate of 5 inches per hour, based on the flow rates calculated. A sizing factor of 4% of tributary impervious area may be used.
- 2) Minimum surface reservoir volume equal to surface area times a depth of 6 inches.
- 3) Minimum planting medium depth of 18 inches. The planting medium must sustain a minimum infiltration rate of 5 inches per hour throughout the life of the project and must maximize runoff retention and pollutant removal. A mixture of sand (60%-70%) meeting the specifications of American Society for Testing and Materials (ASTM) C33 and compost (30%-40%) may be used.

- 4) Subsurface drainage/storage (gravel) layer with an area equal to the surface area and having a minimum depth of 12 inches.
- 5) Underdrain with discharge elevation at top of gravel layer.
- 6) No compaction of soils beneath the facility, or ripping/loosening of soils if compacted.
- 7) No liners or other barriers interfering with infiltration.
- 8) Appropriate plant palette for the specified soil mix and maximum available water use.

(g) Alternative Designs — Facilities, or a combination of facilities, of a different design than in Section II.(f) may be permitted if all of the following measures of equivalent effectiveness are demonstrated:

- 1) Equal or greater amount of runoff infiltrated or evapotranspired;
- 2) Equal or lower pollutant concentrations in runoff that is discharged after biotreatment;
- 3) Equal or greater protection against shock loadings and spills; and
- 4) Equal or greater accessibility and ease of inspection and maintenance.

(h) Allowed Variations for Special Site Conditions: The bioretention system design parameters in Section II.(f) may be adjusted for the following special site conditions:

- 1) Facilities located within 10 feet of structures or other potential geotechnical hazards established by the geotechnical expert for the project may incorporate an impervious cutoff wall between the bioretention facility and the structure or other geotechnical hazard.
- 2) Facilities with documented high concentrations of pollutants in underlying soil or groundwater, facilities located where infiltration could contribute to a geotechnical hazard, and facilities located on elevated plazas or other structures may incorporate an impervious liner and may locate the underdrain discharge at the bottom of the subsurface drainage/storage layer (this configuration is commonly known as a “flow-through planter”).
- 3) Facilities located in areas of high groundwater, highly infiltrative soils, or where connection of an underdrain to a surface drain or to a subsurface storm drain are infeasible may omit the underdrain.

III. Hydromodification Management

The Applicant shall implement hydromodification management measures such that the post-project runoff from the passenger rail stations shall not exceed the estimated pre-project flow rate for the 2-year, 24-hour storm. Alternatively, the Applicant may use a geomorphically-based hydromodification standard or set of standards and analysis procedures designed to ensure that runoff from the passenger rail stations do not cause a decrease in lateral (bank) and vertical (channel bed) stability in receiving stream channels. The alternative hydromodification standard or set of standards and analysis

procedures must be reviewed and approved by the Executive Officer prior to construction of the passenger rail stations.

IV. Operation and Maintenance of Post-Construction Stormwater Management Measures

The applicant shall prepare a written Operations and Maintenance (O&M) plan (including inspection) for all LID and hydromodification structural control measures that includes the following:

- 1) The Applicant's signed statement accepting responsibility for the O&M of structural control measures;
- 2) Name and address of the passenger rail stations;
- 3) Specific description of the location (or a map showing the location) of the structural treatment systems and hydromodification controls;
- 4) Date(s) that the treatment systems and hydromodification controls are installed;
- 5) Description of the type and size of the treatment systems and hydromodification controls installed;
- 4) Responsible operators of the treatment systems and hydromodification controls;
- 5) Procedures for maintaining (including inspection) the treatment systems and hydromodification controls;
- 6) Procedures for documenting the dates and findings of inspections (routine and follow-up); and
- 7) Documentation of any problems and corrective actions taken.