## City of Berkeley Watershed Management Plan

## **Summary Table - Mitigation Monitoring Reporting Program**

## **30 October 2012**

| Mitigation<br>Measure<br>Number | Mitigation Measure   | Method of<br>Monitoring  | Time of<br>Monitoring  |
|---------------------------------|--|--|--|
|                                 | Basic Construction Mitigation Measures Required for ALL Proposed Projects  | The Public Works   | Equipment shall be   |
|                                 | 1. All exposed surfaces (e.g., parking areas, staging areas, soil piles, graded areas, and unpaved access roads) shall be watered two times per day.   | department shall incorporate these requirements into   | checked by a certified visible emissions evaluator prior to the                                |
|                                 | 2. All haul trucks transporting soil, sand, or other loose material off-site shall be covered.   | the contractor bid   | commencement of  |
|                                 | 3. All visible mud or dirt track-out onto adjacent public roads shall be removed using wet power vacuum street sweepers at least once per day. The use of dry power sweeping is prohibited.  | package(s) as well<br>as the construction<br>contract(s) for each                                  | any construction<br>activities associated<br>with the WMP. All                                 |
|                                 | 4. All vehicle speeds on unpaved roads shall be limited to 15 miles per hour (mph).  | respective   | other mitigations  |
|                                 | 5. All roadways, driveways, and sidewalks to be paved shall be completed as soon as possible. Building pads shall be laid as soon as possible after grading unless seeding or soil binders are used.   | Watershed Management Plan (WMP) project.   | included within this<br>measure shall be<br>implemented  |
| AIR-1                           | 6. Idling times shall be minimized either by shutting equipment off when not in use or reducing the maximum idling time to 5 minutes (as required by the California airborne toxics control measure Title 13, Section 2485 of California Code of Regulations [CCR]). Clear signage shall be provided for construction workers at all access points.                        | These mitigations shall also be included as notes on the construction                              | throughout the<br>duration of<br>construction by the<br>contractor. A                          |
|                                 | 7. All construction equipment shall be maintained and properly tuned in accordance with manufacturer's specifications. All equipment shall be checked by a certified visible emissions evaluator at least once prior to the commencement of construction activities, as well as once during any construction activities of a duration greater than or equal to six months. | plans for each WMP project. Additionally, the construction contractor shall                        | representative from<br>the Public Works<br>department shall<br>ensure compliance<br>with these |
|                                 | 8. A publicly visible sign shall be posted with the telephone number and the point of contact at the lead agency regarding dust complaints. This person shall respond and take corrective action within 48 hours. The Air District's phone number shall also be visible to ensure compliance with applicable regulations.  | conduct a pre-<br>construction<br>meeting to outline<br>the mitigations for<br>construction crews. | mitigations during at least two scheduled site visits.   |

| shall be phased to reduce the amount of disturbed surfaces at any one time.  6. All trucks and equipment, including their tires, shall be washed off prior to leaving the site.  7. Site accesses to a distance of 100 feet from the paved road shall be treated with a 6 to 12 inch compacted layer of wood chips, mulch, or gravel.  8. Sandbags or other erosion control measures shall be installed to prevent silt runoff to public roadways or surface water features from sites with a slope greater than one percent.  9. The idling time of diesel powered construction equipment shall be limited to a two minute maximum. After this period the engine must be turned off.  10. The project shall develop a plan demonstrating that the off-road equipment (more than 50 horsepower) to be used in the construction project (i.e., owned, leased, and subcontractor vehicles) would achieve a project wide fleet-average 20 percent NO <sub>x</sub> reduction and 45 percent PM reduction compared to the most recent California Air Resources Board (CARB) fleet average. Acceptable options for reducing emissions include the use of late model engines, low emission diesel products, alternative fuels, engine retrofit technology, after treatment products, addon devices such as particulate filters, and/or other options as such become available.  11. Low VOC (i.e., ROG) coatings shall be used beyond the local requirements. | Mitigation<br>Measure<br>Number | Mitigation Measure   | Method of<br>Monitoring  | Time of<br>Monitoring  |
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| Technology for emission reductions of NO <sub>x</sub> and PM.  | Number                          | Additional Construction Mitigation Measures Required for Projects with Construction Emissions Potentially Exceeding the Threshold  1. All exposed surfaces shall be watered at a frequency adequate to maintain minimum soil moisture of 12 percent. Moisture content shall be verified daily by lab samples or moisture probe.  2. All excavation, grading, and/or demolition activities shall be suspended when average wind speeds exceed 20 mph.  3. Wind breaks (e.g., trees, fences) shall be installed on the windward side(s) of actively disturbed areas of construction. Wind breaks should have at maximum 50 percent air porosity. Vegetative ground cover (e.g., fast-germinating native grass seed) shall be planted in disturbed areas as soon as possible and watered appropriately until vegetation is established.  5. The simultaneous occurrence of excavation, grading, and ground-disturbing construction activities shall not occur, except with explicit approval of the Bay Area Air Quality Management District (BAAQMD). Activities shall be phased to reduce the amount of disturbed surfaces at any one time.  6. All trucks and equipment, including their tires, shall be washed off prior to leaving the site.  7. Site accesses to a distance of 100 feet from the paved road shall be treated with a 6 to 12 inch compacted layer of wood chips, mulch, or gravel.  8. Sandbags or other erosion control measures shall be installed to prevent silt runoff to public roadways or surface water features from sites with a slope greater than one percent.  9. The idling time of diesel powered construction equipment shall be limited to a two minute maximum. After this period the engine must be turned off.  10. The project shall develop a plan demonstrating that the off-road equipment (more than 50 horsepower) to be used in the construction project (i.e., owned, leased, and subcontractor vehicles) would achieve a project wide fleet-average 20 percent NO <sub>x</sub> reduction and 45 percent PM reduction compared to the most recent California Air Resources Board (CARB) fl | Monitoring  The Public Works department shall incorporate these requirements into the contractor bid package(s) and the construction contract(s) for each respective WMP project. These mitigations shall also be included as notes on the construction plans for each project. Additionally, the construction contractor shall conduct a preconstruction meeting to outline the mitigations for | Monitoring  All associated mitigations in this measure shall be implemented throughout the duration of construction activities. A representative from the Public Works department shall ensure compliance with these mitigations during at least two scheduled |

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| AIR-3                           | Dust from construction activities shall be controlled by following BAAQMD Rules and Regulations to reduce construction dust and diesel particulate emissions. Adherence to these rules and regulations would minimize the exposure of sensitive receptors to less than significant levels.  1. All piles of debris, soil, sand or other loose materials shall be covered at night and during rain events with plastic at least one-eighth millimeter thick and secured to the ground.  2. All active construction areas shall be watered at least twice daily, and all piles of debris soil, sand, or other loose materials shall be watered or covered.  3. All trucks hauling soil, sand, and other loose materials shall be covered or shall be required to maintain at least 2 feet of freeboard (i.e., the minimum required space between the top of the load the top of the trailer).  4. All visible soil material shall be swept from streets (preferably with water sweepers) and carried from the site. | The Public Works department shall incorporate these requirements into the contractor bid package(s) and the construction contract(s) for each respective WMP project. These mitigations shall also be included as notes on the construction plans for each project. Additionally, the construction contractor shall conduct a preconstruction meeting to outline the mitigations for construction crews. | All associated mitigations in this measure shall be implemented throughout the duration of construction activities. A representative from the Public Works department shall ensure compliance with these mitigations during at least two scheduled site visits. |

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| BIO-1                           | The City shall conduct biological resource surveys and monitoring prior to and during project related construction activities.  1. Prior to the commencement of any construction activity, the City shall perform protocol level biological surveys for special status species within the vicinity of the proposed project location. Such surveys shall be performed by a qualified biologist.  2. The implementation of the proposed project shall be timed to avoid the most impactful seasons (e.g., nesting bird season, spawning season, as well as the rainy season).  3. The implementation of the proposed project shall be designed in such a way as to avoid impacts to sensitive habitats. Any adverse impact to sensitive habitats shall be mitigated through restoration or replacement.  4. A qualified biologist shall be present during all construction activities to ensure that construction crews adhere to the appropriate mitigation measures and minimize adverse impacts to terrestrial and/or aquatic plants, wildlife, and habitat. | The City Biologist or a contracted Cityapproved biologist (funded by the Public Works department) shall conduct protocol level surveys, provide design recommendations, and monitor all construction activities associated with each WMP project. If a sensitive habitat and/or species may be affected during construction the City shall further consult with the appropriate agency (e.g., California Department of Fish and Game [CDFG] or United States Fish and Wildlife Service [USFWS]). | Biological survey results and design recommendations shall be provided during the planning phase of each WMP project. Biological monitoring shall occur throughout the duration of construction activities. A biweekly monitoring report shall be submitted to the City for review. |

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| BIO-2                           | Construction related Best Management Practices (BMPs) shall be enforced to reduce adverse impacts to biological resources.  1. The project shall incorporate control measures for minimizing terrestrial and aquatic pollution to the maximum extent feasible. These measures shall be included in a draft project construction plan, which shall be subject to approval by a qualified biologist.  2. BMPs shall include but not be limited to erosion control measures (e.g., bank stabilization) and pollution control measures (e.g., designated parking for construction vehicles). | For each WMP project construction plans shall be reviewed by the City Biologist or a contracted City-approved biologist (funded by the Public Works department). Additionally, the construction contractor shall conduct a preconstruction meeting to explain these approved mitigations to construction crews. | A construction plan shall be approved by a City-approved biologist during the design phase for each WMP project. BMPs included in the plan shall be monitored by an approved biologist throughout the duration of construction (see BIO-1). A bi-weekly monitoring report shall be submitted to the City for review. |

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| CULT-1                          | A historical and cultural records search would be conducted prior to the commencement of any construction activity. Should excavation be proposed through a known potentially significant site, then the City would immediately consult with the California State Historic Preservation Office. In the event that the site is of known cultural significance, an approved archeologist shall monitor all construction activities throughout the duration of the project. Should an archaeological resource be encountered during any project construction activities, the construction contractor shall halt construction in the vicinity of the find and immediately notify the City of Berkeley. Construction activities shall be redirected and a qualified archaeologist, in consultation with the City, shall: 1) evaluate the archaeological deposit to determine if it meets the California Environmental Quality Act (CEQA) definition of a historical or unique archaeological resource; and, 2) make recommendations about the treatment of the deposit, as warranted. If the deposit does meet the CEQA definition of a historical or unique archaeological resource, then it shall be avoided to the extent feasible by project construction activities. If avoidance is not feasible, then adverse effects to the deposit shall be mitigated as specified in CEQA Guidelines section 15126.4(b) (for historic resources) or CEQA section 21083.2 (for unique archaeological resources). This mitigation may include, but is not limited to, a thorough recording of the resource on Department of Parks and Recreation Form 523 records, or archaeological data recovery excavation. If data recovery excavation is warranted, CEQA Guidelines section 15126.4(b)(3)(C), which requires the preparation of a data recovery plan prior to data recovery excavation, shall be followed. If the significant identified resources are unique archaeological resources, mitigation of these resources shall be subject to the limitations on mitigation measures for archaeological resources identified in CEQA secti | For each WMP project a City-approved Archeologist shall conduct a historical and cultural records search. If historical or archeological resources are documented in the vicinity of a proposed WMP project location. The Archeologist shall be contracted to further evaluate and make recommendations regarding the find. | A records search shall be conducted prior to any construction activities. The remaining mitigations in this measure, including any future consultation shall occur during construction activities; however, construction shall be halted if cultural or historical resources are encountered (see CULT-2 and CULT-3). |

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| CULT-2                          | If paleontological resources are encountered during any site preparation or grading activities, all work within 75 feet of the discovery shall be redirected until a qualified paleontologist has assessed the discoveries and made recommendations. Paleontological resources include fossil plants and animals, and evidence of past life such as trace fossils and tracks. If the paleontological resources are found to be significant, adverse effects to such resources shall be avoided by project activities to the extent feasible. If project activities cannot avoid the resources, the adverse effects shall be mitigated. In accordance with CEQA Guidelines Section 15126.4(b)(3), mitigation may include data recovery and analysis, preparation of a final report, and the formal transmission or delivery of any fossil material recovered to a paleontological repository, such as the University of California Museum of Paleontology (UCMP). Upon completion of project activities, the final report shall document methods and findings of the mitigation and be submitted to the City of Berkeley and a suitable paleontological repository. | The Public Works department shall incorporate the requirement to halt work into the construction contract(s) for the respective WMP projects. These mitigations shall also be included as notes on the construction plans for each project. Additionally, the construction contractor shall conduct a preconstruction meeting to outline the mitigations for construction crews. | This mitigation measure shall be implemented throughout the duration of construction. |

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| CULT-3                          | If human remains are encountered during any construction activities, work within 25 feet of the discovery shall be redirected and the Alameda County Coroner notified immediately. At the same time, an archaeologist shall be contacted to assess the situation and consult with the appropriate agencies. If the human remains are of Native American origin, the Coroner must notify the Native American Heritage Commission within 24 hours of this identification. The Native American Heritage Commission would identify a Most Likely Descendant (MLD) to inspect the site and provide recommendations for the proper treatment of the remains and associated grave goods. Upon completion of the assessment, the archaeologist shall prepare a report documenting the methods and results, and provide recommendations for the treatment of the human remains and any associated cultural materials, as appropriate and in coordination with the recommendations of the MLD. The report shall be submitted to the City of Berkeley and the Northwest Information Center. | The Public Works department shall incorporate the requirement to halt work into the construction contract(s) for the respective WMP projects. These mitigations shall also be included as notes on the construction plans for each project. Additionally, the construction contractor shall conduct a preconstruction meeting to outline the mitigations for construction crews. | This mitigation measure shall be implemented throughout the duration of construction. |

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| GEO-1                           | The contractor shall be responsible for and conduct all aspects of the work within the requirements of BMC Chapter 17.08 – Preservation and Restoration of Natural Watercourses (Creek Ordinance), and any other creek protection requirements by other agencies. Portions of work involving a creek channel shall not be permitted between 15 October and 15 April, or other dates as may be stipulated in applicable permits. Any work between the creek banks shall be conducted to not create conditions, which would allow erosion, and shall be fully restored to at least the same erosion resistant condition as before the work. Complying with the requirements of creek protection shall include, but not be limited to: scheduling work around any time periods prohibiting work within creek limits; installing erosion control measures and employing appropriate BMPs for controlling erosion; monitoring, updating and modifying BMPs (to the satisfaction of the City Geologist and City Biologist) to meet the requirements for changing site conditions to comply with erosion control and creek protection; and, replanting creek banks to reestablish erosion resistance and bank stability. | The Public Works department shall incorporate these requirements into the construction contract(s) for the respective WMP projects. These mitigations shall also be included as notes on the construction plan for each project. Additionally, the construction contractor shall conduct a preconstruction meeting to outline the mitigations for construction crews. | This mitigation measure shall be implemented throughout the duration of construction. The implementation of BMPs shall be monitored by a Cityapproved biologist and documented in a bi-weekly report to the Public Works department. Additionally, a representative from the Public Works department shall ensure compliance with these mitigations during at least two scheduled site visits. |

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| HAZ-1                           | Prior to the commencement of construction activities, the City shall draft a project construction plan, which shall incorporate control measures aimed at minimizing incidental hazardous materials spills to the maximum extent feasible. Measures shall include designated parking for heavy equipment and construction vehicles. Additionally, the project construction plan shall include a required monthly inspection of construction equipment for projects lasting longer than 6 months in duration. Further, the project construction plan shall include additional measures (e.g., the use of drip pans) for projects in the vicinity of sensitive habitats or aquatic environments. | For each WMP project, construction plans shall include standard control measures to minimize and remediate incidental hazardous spills. These mitigations shall be included as notes on the construction plans for each WMP project. Additionally, the construction contractor shall conduct a preconstruction meeting to outline the mitigations for construction crews. | For construction activities lasting longer than 6 months, monthly inspection reports shall be submitted to the Public Works department for review. Additionally, a representative from the Public Works department shall ensure compliance with these mitigations during at least two scheduled site visits. |

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| HYDRO/<br>WQ-1                  | 1. Contractor shall comply with Federal, State, City, and other local agencies' regulations that prohibit non-stormwater discharges from construction sites. Pollutants (any substance, material, or waste other than rainfall derived stormwater) discharged to storm drains shall be strictly prohibited. Contractors and City forces shall use BMPs as required by the Municipal Regional Stormwater Permit (MRP) and source control techniques on the site(s) at all times, regardless of time of year or rainfall conditions, in order to prevent the discharge of pollutants.  2. Contractor shall prepare a Plan showing the locations of all storm drains, storm drain culverts, creeks, creek culverts, catch basins, inlets, outlets, and other features through which stormwater flows. This plan shall identify each point of entry and show how each entry point would be protected from pollutants. The plan shall include a protocol for allowing drainage to flow properly during rainfall events while still preventing the pollutants from entering the storm drains, creeks, and Bay.  3. Contractor shall designate an individual, approved by the City, available at all times of sufficient authority to halt work and implement BMPs and source control measures for the Contractor and all sub-contractors, suppliers, and other personnel that may be at the Work, to prevent pollutant discharges from the Work. This individual shall be the point of contact for all matters of the Work regarding stormwater pollution.  4. The Plan shall include and show locations and describe protocols for implementing and maintaining the following but not limited to material storage, dewatering operations, pavement saw-cutting operations, pavement operations, concrete operations, grading and excavation operations, spill prevention and control, vehicle and equipment cleaning, vehicle and equipment operation and maintenance, litter control, dust control, pavement cleaning, construction waste management, standard details of BMPs per the MRP, and training for all employees, subcon | For each WMP project, the construction plans shall include measures to eliminate (to the maximum extent feasible) nonstormwater discharges from the construction sites. Additionally, the construction contractor shall conduct a preconstruction meeting to outline the mitigations for construction crews. | This mitigation measure shall be implemented throughout the duration of construction. A representative from the Public Works department shall ensure compliance with these mitigations during at least two scheduled site visits. |
| HYDRO/<br>WQ-2                  | The proposed project will ensure that all GI improvements are properly maintained, such that they don't contribute to increased flooding or pooling of water. In particular Hydrodynamic Separator Units (HSUs) will be inspected and cleaned out after each substantial storm event to prevent mosquito breeding or the organic breakdown and re-suspension of pollutants.  | The Public Works<br>department shall<br>maintain HSUs such<br>that no ponding or<br>mosquito breeding<br>occurs.   | The HSUs shall be inspected and cleaned out after each substantial storm event.   |

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| Measure                         | 1. Hours of construction shall be limited to 8 a.m. to 6 p.m. on weekdays and 9 a.m. to noon on Saturdays; no work shall occur on Sundays or Federal holidays. The Noise Control Officer may approve up to 10 days of extended working hours upon written request to accommodate special conditions, such as but not limited to extended concrete pours.  2. Contractors shall develop a site-specific noise reduction program prepared by a qualified acoustical consultant to reduce construction noise impacts to the maximum extent feasible, subject to review and approval of the Noise Control Officer. The noise reduction program should include, but shall not be limited to, the following measures:  - Equipment and trucks used for project construction shall utilize the best available noise control techniques (e.g., improved mufflers, equipment redesign, use of intake silencers, ducts, engine enclosures, and acoustically attenuating shields or shrouds, wherever feasible).  - Impact tools (e.g., jack hammers, pavement breakers, and rock drills) used for project construction shall be hydraulically or electrically powered wherever possible to avoid noise associated with compressed-air exhaust from pneumatically powered tools. However, where use of pneumatic tools is unavoidable, an exhaust muffler on the compressed-air exhaust shall be used; this muffler can lower noise levels from the exhaust by up to about 10 decibels (dBA). External jackets on the tools themselves shall be used where feasible, which could achieve a reduction of 5 dBA. Quieter procedures shall be used, such as drills rather than impact equipment, whenever feasible.  - Stationary noise sources shall be located as far from sensitive receptors as possible, and they shall be muffled and enclosed within temporary sheds, or insulation barriers or other measures shall be incorporated to the extent feasible. Signs shall be posted at the construction site that include permitted construction days and hours, a day and evening contact number for the job site, and a day and eve |                         |                       |
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| TRAF-1                          | In addition to the considerations outlined in the Pedestrian Master Plan, the City shall ensure that bulbouts would not extend beyond the parking lane into the through lanes of the roadway to the degree that they would eliminate through travel lanes or narrow travel lanes below minimum widths as described in State and Federal guidelines as adopted by the City of Berkeley.  If the City determines that removing or narrowing through travel lanes is necessary to accommodate GI measures and improve safety, then a level of service (LOS) and queuing analysis shall be prepared. These analyses would determine whether the project would cause a significant impact per the City's adopted LOS thresholds, as set forth in the City of Berkeley Guidelines for Development of Traffic Impact Reports, or would result in queuing that could affect traffic operations. If the proposed project results in a significant impact to LOS or results in queuing that could affect traffic operations at adjacent intersections, the City shall pursue one of the two following outcomes for each affected site: 1) the site design shall be modified to reduce the impact below the City's adopted LOS threshold, as set forth in the City of Berkeley Guidelines for Development of Traffic Impact Reports, or the prevailing LOS for the existing condition; or, 2) the City shall make findings, pursuant to Policy T-18 in the General Plan, that significant beneficial pedestrian impacts and/or other beneficial impacts would reduce the adverse LOS/intersection operation impact to a less-than-significant level. It is expected that significant beneficial pedestrian impacts and/or other beneficial impacts would reduce the adverse LOS/intersection operation impact to a less-than-significant level. | During the planning phase for each WMP project the City of Berkeley Transportation Division shall prepare LOS and queuing analyses for projects that would result in the removal or narrowing of travel lanes. | If determined necessary, LOS and queuing analyses would be conducted during the Project planning phase. Further, the Transportation Division shall also make design recommendations during this period in order to reduce the potential impacts to levels below the City's adopted LOS threshold. |

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| TRAF-2                          | Prior to the commencement of construction activities the City would draft a construction plan which would include a traffic mitigation plan. This plan would include information regarding any potential road closures or substantial increases in vehicle delay within the vicinity of the proposed project. Where necessary the plan would outline route detours in order to minimize traffic congestion to the greatest extent feasible.  Additionally, at least two weeks prior to the commencement of construction the City would provide temporary signage in order to inform the public of any potential increases in delay. | For each WMP project the construction plans shall include a traffic mitigation plan which would include notes and information regarding any temporary detours, road closures, or potential delay increases. Additionally, the construction contractor shall conduct a preconstruction meeting to outline all traffic mitigations for construction crews. | The construction plans associated with each WMP project shall be approved by the Transportation Division during the design phase for each project. Signage shall be posted by the Public Works department at least two weeks prior to the commencement of any construction activities. |