

Prepared for

City of Sunnyvale Environmental Services Department

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SMaRT Station[®] Implementation Plan and Timeline

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1. INTRODUCTION

1.1 Purpose

This report serves as the Implementation Plan and Timeline for the selected Best Management Practice (BMP) alternative for the Sunnyvale SMaRT Station's stormwater management system upgrade.

1.2 Background

The SMaRT Station is a nine acre Materials Recovery Facility (MRF) facility operated by Bay Counties Waste Services for the cities of Sunnyvale, Mountain View, and Palo Alto that has been in operation since October 1, 1993. The SMaRT Station receives municipal solid waste (MSW), green waste, and recyclables from the cities of Sunnyvale, Mountain View, and Palo Alto; processes MSW to remove recyclable materials; prepares recyclables for secondary markets; and transfers the remaining waste to the Kirby Canyon Landfill in San Jose. The facility also serves as a public drop-off center for recyclables and certain universal waste items for local residents. Figure 1 is a site map with the various areas identified.

The SMaRT Station has been covered under the Industrial General Permit (IGP) since 2003. The SMaRT Station will obtain NOI coverage under the revised IGP (Order No. 2014-0057-DWQ) that becomes effective on July 1, 2015.

The City of Sunnyvale (the City) as owner of the SMaRT Station has entered into a Stipulation and Settlement Agreement (Settlement Agreement) with San Francisco Baykeeper, effective October 10, 2013. Per the Settlement Agreement, the City must develop and implement Best Management Practices (BMPs) designed to comply with the narrative effluent and receiving water limitations of the revised IGP, including BMPs set forth in the Settlement Agreement.

In accordance with the Settlement Agreement, the City conducted a Feasibility Study that included (1) the proposed designation of permanent representative discharge monitoring locations for all future industrial stormwater monitoring ("Final Designated Discharge Points"), and (2) a preliminary analysis and estimate of all necessary financial, construction, timing, and permitting considerations required to fully implement each BMP alternative identified to address the constituent(s) that have exceeded the Settlement Agreement's Target Levels in the facility's discharge monitoring. The Feasibility Study examined the following structural BMPs:

- Roofing all or prioritized areas of the SMaRT Station to prevent exposure of materials to stormwater runoff;
- Segregation, pretreatment, and/or diversion of stormwater runoff to the City's Water Pollution Control Plant (WPCP); and

- Treatment of industrial stormwater prior to discharge to receiving waters or to the City's WPCP.¹

The recommended alternatives were evaluated in terms of their ability to meet the Target Levels and future Numeric Action Levels (NALs); implementability (e.g., disturbance to site activities, permitting, and operation and maintenance requirements); and capital and long-term costs. Based on an evaluation of these criteria, the Feasibility Study recommended the segregation and diversion of flows based on a certain design storm from process areas to the WPCP. This is referred to as the Diversion Alternative.

1.3 Diversion Alternative Description

The WPCP Diversion alternative would divert stormwater flows from outside areas around the SMaRT Station and from roof drains in the northwest corner of the site, as illustrated in Figure 2. Runoff from the remaining roofed areas and from the employee parking area would continue to flow to the existing outfalls. Flows that exceed the design intensity of 0.18 inches/hr would also flow to existing outfalls. Peak hourly flow rates would be approximately 366 gallon/minute (0.53 million gallons/day rate). Based on an analysis of historic data, the daily average flows to the WPCP during diversion events would be 62,000 gallons/day (0.062 mgd) for days when there is flow. Diversion structures on each of the three outfall lines would divert flows to a separate drainage system, shown in red in Figure 2. The diverted flows would be routed to the WPCP influent via a gravity line that discharges to the sewer system in front of the WPCP.² The Diversion Alternative would retain existing BMPs, including dry sweeping of process areas and use of drain inlet filters as a means to minimize pollutants in the diversion stream.

Figure 2 also shows the proposed final discharge monitoring locations for the Diversion Alternative. One location on or adjacent to the diversion line would be used to monitor compliance with the City's WPCP pretreatment requirements. The other three monitoring locations would be used to monitor runoff from the roof area not diverted to the WPCP, and bypass of stormwater runoff not conveyed to the WPCP for treatment, which represents runoff flows above the design storm intensity of 0.18 inches per hour. Monitoring would be conducted at these three locations in accordance with the IGP monitoring requirements.

¹ Treatment of industrial stormwater prior to discharge to the City's WPCP is considered the same as pretreatment prior to diversion to the WPCP in this report.

² Should a gravity line to the WPCP prove infeasible, the alternative would use gravity lines for the on-site portion of the system, and a force main to convey the flow to the WPCP.

2. IMPLEMENTATION PLAN

This section describes activities required to implement the selected alternative. A suggested implementation timeline is provided in Figure 3. The actual duration of tasks could vary from that shown in Figure 3 as a result of unexpected conditions, conflicts with other projects in the area, difficulties encountered during construction, etc.

2.1 Pre-Design Activities

Several activities need to be initiated or continued in advance of the Design Process.

Coordinate with Other City Planning Efforts Regarding Diversion Pipeline Tie-In

Based on Feasibility study, it is assumed that the diversion line will be a gravity sewer in Carl Road rather than a force main within the WPCP fence line. The best location for a tie-in appears to be MH #15 (the main WPCP influent MH immediately south of the APS structure).³ The January 2015 30% design submittal for the new WPCP Primary Treatment Facilities shows no changes to facilities in the vicinity of MH #15. However, the City is considering possible modifications to the network of sewer lines and manholes in the Carl-Borregas area in connection with the overall WPCP Reconstruction effort, and such modifications could potentially impact MH #15. The City's Program Management Consultant for the WPCP Reconstruction is aware of the SMaRT Diversion project and the tentative identification of MH #15 as a tie-in point.

Coordinate with Pretreatment Program for Baseline Monitoring Report (BMR) Sampling

Depending on timing, the Pretreatment (PT) Program will either amend the SMaRT Station's existing no discharge Pretreatment Permit or issue a new permit. As part of that process, the Program will require Baseline Monitoring Report (BMR) sampling. Such sampling is normally performed on the facility's actual discharge stream. In this case, the actual discharge will only be available when construction is completed. The Feasibility Study discussed possible use of surrogate samples to meet the BMR requirements, but the issue was not fully resolved, and the study recommended ongoing coordination with Pretreatment staff on the BMR sampling issue.

Coordination with Other City Departments

The City's Finance Department Purchasing Division coordinates the processes of selecting design consultants and soliciting bids for construction. The project originator (Environmental Services Department) provides information to Finance regarding the designer's scope of work

³ MH #15 was reconstructed in 1993 as part of the Baylands Reclaimed Water Transmission Pipeline project (UW-92-1). See detail D on sheet 17. The abandoned 39" Sanitary Sewer Valley main that runs on from the vicinity of the SMaRT Station terminates (i.e. is plugged) approx. 5-ft east of MH #15.

and other project requirements. The Public Works Department will have responsibility for overall management of the construction process, including inspections. To ensure that the project is well coordinated with the WPCP reconstruction effort, the Public Works Department (and the Program Management consultant for the WPCP reconstruction, who reports to Public Works) should be involved early in the project, and provide input to the process of selecting the project's design consultant.

Develop a SWPPP Monitoring Implementation Plan

A SWPPP Monitoring Implementation Plan that conforms to requirements of the reissued Industrial General Permit (SWRCB Order 2014-0057-DWQ, effective July 1, 2015) should be developed and made available to the selected design engineer, to ensure that the design's facility modifications accommodate required future monitoring locations. The Plan should also address monitoring during the transition from current to post-diversion stormwater drainage configurations.

2.2 Design Phase

Selection of Design Engineering Firm

A qualified engineering firm needs to be selected to develop the conceptual alternative described in the Feasibility Study into complete engineering design suitable for bidding. The process typically involves the following steps:

- Develop and circulate a Request for Proposals (RFP)
- Conduct pre-proposal conference & site visit
- Receive and evaluate proposals (the evaluation may include interviewing top-rated proposers)
- Select Firm and Negotiate Contract
- Award Contract
- Issue Notice to Proceed

Engineering Design and Preparation of Construction Bid Documents

The engineering design effort would typically include the following elements and deliverables. (This is not intended to be an exhaustive description):

- Basis of Design Report. The BODR shall be equivalent to a 10% design and would include at a minimum the following:
 - Confirmation of design concepts and hydraulics
 - Identification and initiation of necessary geotechnical/ utility investigations
 - Identification and initiation of surveying & mapping

- Exploring potential role of the abandoned 39” Sanitary Sewer Valley main as the diversion line or as a casing pipe for smaller diversion line⁴
- Identification of how project will be classified under CEQA
- Determination if coverage under Statewide General Construction Permit is required
- Preliminary Site Plans showing SMaRT Station’s storm drain modifications, diversion and sampling structure(s), diversion pipeline preliminary alignment and hydraulic profile
- Updated project schedule and cost estimate

Geotechnical/utility investigations and surveying/mapping efforts would be initiated immediately following approval of the BODR

- 30% Design Submittal
 - Results of Geotechnical/ Utility Investigations
 - Progress report on CEQA work
 - Report on possible utilization of 39” sewer
 - Preliminary Plan Set with all underground utilities identified and proposed diversion pipeline alignment
 - Preliminary details of diversion structures
 - Preliminary specifications that identify all necessary technical specifications and Table of Contents that is reflective of the 100% document
 - Updated schedule and cost estimate
 - Review by City staff, local enforcement agency (LEA) and Bay Counties (SMaRT Station operator)
- 75% Design Submittal
 - Updated Plan Set with all demolition, site modifications, new structures & control devices, diversion pipeline plan and profile, and tie-in to manhole at WPCP shown.
 - Near- final specifications, including requirements for construction SWPPP
 - Completed CEQA documentation
 - Recommended revisions to City Special Provisions
 - Bid schedule
- 100% Design
 - Completed Plans and Specifications and other Bid Documents with all City comments addressed, prepared for final City review

⁴ This option has been discussed with the Program Management consultant for the WPCP reconstruction. Because the line runs under an area that will house the new primary treatment facilities, the line will likely be removed or rendered unusable as a result of foundation work for those facilities.

➤ Final Cost Estimate and Bid schedule

- Final Bid Documents

Each of the above stages would normally include a review meeting with City and Bay Counties (operator of the SMaRT Station) staff to discuss the submittal and solicit/document City comments. At the 30% design level, the project should be reviewed and approved by the Local Enforcement Agency for solid waste (Santa Clara County Department of Environmental Health). Throughout the design process, the designers should communicate with Bay Counties to ensure that coordination issues (e.g., truck routing during construction) are addressed in the project specifications.

2.3 Construction Phase

Bid & Award

Upon completion of design, the project can proceed to the construction bidding process. The timing of the bid process may be impacted by the Purchasing Division's project workload at that moment, as there are numerous Public Works projects scheduled for construction over the next several years. Elements of the bidding process include:

- Posting of bid notice. Bid invitations for Public Works projects are posted on the Onvia Demandstar web site, in the Sunnyvale Sun, and on various Bay Area Builder's Exchanges.
- Bid Opening and identification of apparent lowest responsive bid
- Verification that bidder is responsible
- Contract award by City Council
- City issuance of a Notice to Proceed

Pre-Construction Activities

- Pre-construction meeting
- Contractor develops and submits construction SWPPP
- Contractor or City develops NOI for General Construction Permit, City submits to SWRCB
- Contractor provides various project submittals to demonstrate compliance with the specifications; engineer (Public Works or design consultant) reviews submittal, and then approves, conditionally approves, or rejects. If rejected, contractor must re-submit.
- Secure any other permits
- Develop construction activities schedule in coordination with, and to limit interference with, SMaRT Station operations

Construction

The timing for construction may be limited under the contract so as to avoid conflicts with the WPCP reconstruction projects and/or with the peak winter rain period.

- Equipment mobilization
- Erosion control BMP implementation
- Construction of diversion structure(s)
- Construction of new storm drain lines (for roof leaders) and on-site diversion line(s)
- Construction of sewer line, manholes, sampling station and WPCP tie-in
- Repaving
- Testing and Final Inspections

2.4 Other Activities

Other activities required for final implementation of the project are identified below. The first two can be conducted in parallel with design and construction activities, the third is a post-construction activity.

2.5 Permitting by WPCP Pretreatment Program

The WPCP's Pretreatment Program will amend or reissue the SMaRT Station's Industrial Discharge Permit to reflect acceptance of the diversion flow by the WPCP. The SMaRT Station will need to complete the appropriate permit application and the BMR sampling discussed above. The permit will include a Monitoring and Reporting Program, along with other requirements. The Monitoring and Reporting Program will specify sampling constituents and frequencies for ongoing evaluation of compliance with the City's Local Limits. The specific constituents will be identified in part based on the results of the BMR. For flow monitoring, the Industrial Discharge permit may allow a surrogate method because of difficulties and reliability issues associated with open channel flow metering over such a wide range of potential flows. The Feasibility Study recommended that diversion flows be estimated based on continuous rainfall measurements. Other requirements of the PT Permit could include preparation of a Slug Control Plan, implementation of non-structural BMPs (e.g. housekeeping practices) in critical areas, and periodic self-monitoring reports.

2.6 Develop O&M Manual and Training Materials

The diversion system as envisioned in the Feasibility Study will be a passive gravity flow system, with few (if any) mechanical or electrical components other than the rain gauge. The O&M Manual for the system will therefore be a fairly simple document. The manual should include design criteria, a concise description (with supporting figures) of all drainage flows, inspection frequencies for diversion structures and BMPs (including the existing storm drain

source control BMPs, which will remain), procedures for calculating diversion flows from rainfall data, procedures for pretreatment sampling, etc. Development of the O&M Manual, and training of those responsible for its implementation, would typically be included in the Design Engineers' scope of work.

2.7 Engineering Support during Construction and Preparation of Record Drawings

Public Works projects in the City of Sunnyvale are administered through the DPW's Projects Administration section, which coordinates the overall construction effort and provides inspection services. In addition, the design engineer's contract normally calls for some level of technical support during the construction process to review contractor submittals, respond to contractor Requests for Information, assist the City in evaluating any contractor-proposed changes, unanticipated conditions, etc. Upon completion of the project, the design engineer prepares Record Drawings based on information provided by contractor regarding any field changes or other deviations from the bid documents.

3. REFERENCES

Geosyntec Consultants and EOA, Inc., 2014, SMaRT Station Feasibility Study. Prepared for City of Sunnyvale Environmental Services Department. December 11, 2014

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FIGURES



Legend

□ Sub-Drainage Areas

----- Drainage Area (to be verified)

- 1- MRF Operations
- 2- Offices
- 3- Greenwaste Outside Storage and Loading
- 4- Shop
- 5- Public Drop-Off Area
- 6- Used Oil with Secondary Containment Curb
- 7- Steel Hazmat Storage Building

- 8- Concrete Storage
- 9- Soil Storage
- 10- Loading Dock
- 11- Recycled Materials Storage Bins
- 12- Recycled Materials Storage Trailers
- 13- Overflow Baled Recyclable Storage
- 14- Exit Road



SMaRT Station Site Map

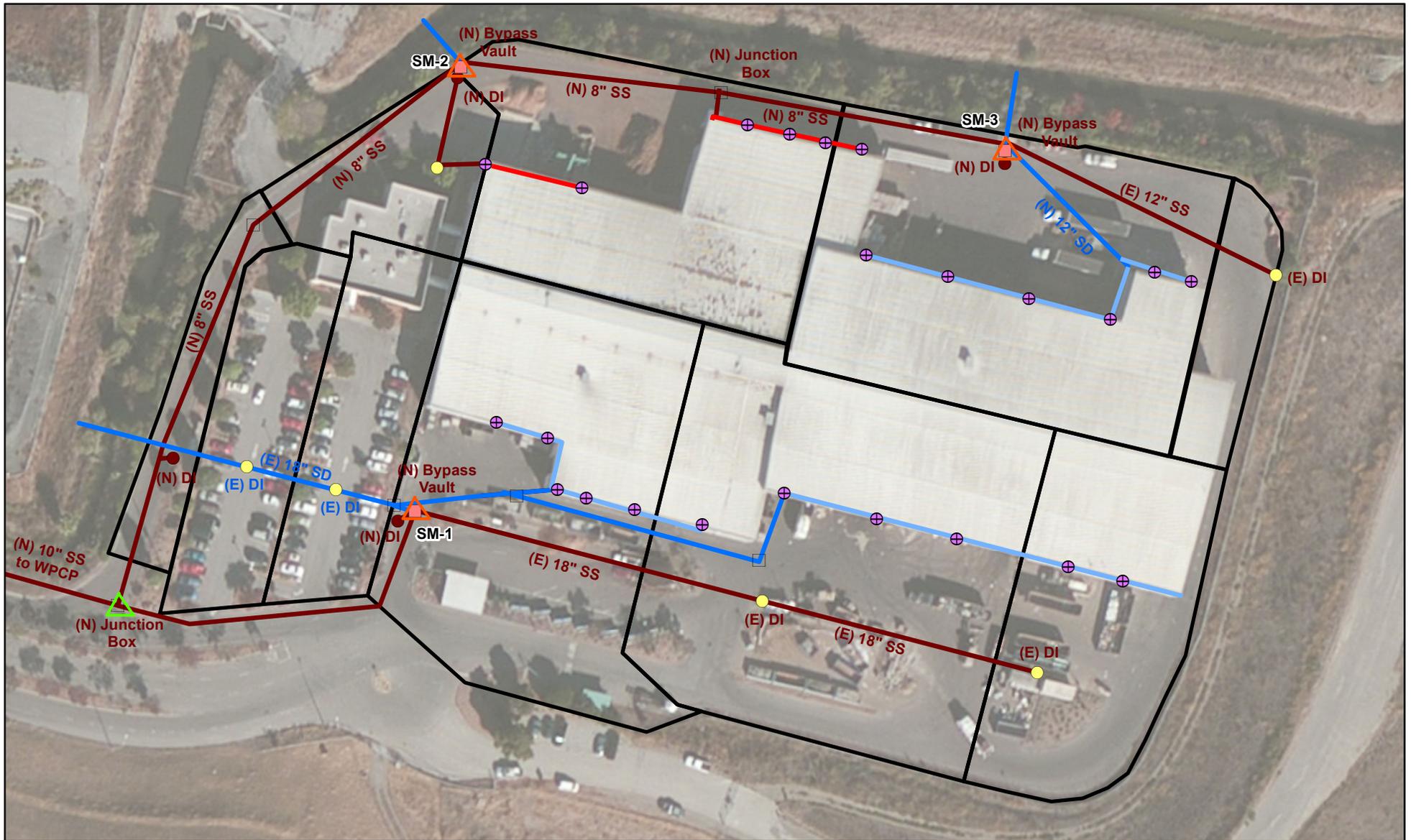
1111 Broadway
Oakland, California

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Figure
1

WW1940

October 2014



Legend

- | | | |
|----------------------------|--|--------------|
| Sub-Drainage Areas | Below-Grade Storm Drain (Bypass) | (N) New |
| Existing Downspouts | Below-Grade Sanitary Sewer (to WPCP) | (E) Existing |
| Existing Storm Drain Inlet | Roof Drain (Bypass) | |
| Bypass Structure | Roof Drain (to WPCP) | |
| Junction Box | Proposed WPCP Influent Sampling Location | |
| New Storm Drain Inlet | IGP Final Discharge Sampling Location | |



**SMaRT Station
Diversion Alternative (#1)**

1111 Broadway
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Figure

2

WW1940

April 2015

