



City of Sunnyvale

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REPORT TO COUNCIL

SUBJECT

Discussion and Possible Action Regarding the City's Long Term Trash Reduction Plan and Determination that Project is Exempt from CEQA

REPORT IN BRIEF

Trash in local waterways and in the marine environment degrades water quality, is harmful to wildlife, and is a growing concern for cities and among environmental groups and regulators. There are numerous paths by which litter can make its way to local waterways, out to the San Francisco Bay, and to the Pacific Ocean. The most common ways discarded items can reach waterways is by being directly deposited, blown by wind, or carried by rain water off streets and through the storm sewer system. The San Francisco Bay Regional Water Quality Control Board through the City's Municipal Regional Stormwater National Pollutant Discharge Elimination System Permit (Order R2 2009 0074) (Stormwater Permit) has set aggressive goals for local communities to significantly reduce the impact of litter in the environment. The Stormwater Permit specifies actions necessary to reduce the discharge of pollutants, including trash, into the municipal storm sewer system to protect local creeks and the Bay, and establishes targets for all permittees to reduce trash loading from the storm sewer system by 40 percent by 2014, 70 percent by 2017, and "100" percent or virtually eliminate the impact of litter by 2022. Specifically, the Stormwater Permit requires the City to submit, by February 1, 2014, a Long-Term Trash Load Reduction Plan (Long Term Plan) documenting how the City intends to meet the 2017 and 2022 trash reduction goals. This report provides an overview of the requirements, assessment of city-wide trash generating patterns, review of potential trash reduction actions, proposed methods for assessing the effectiveness of reduction actions, and the draft Long Term Trash Reduction Plan for the City Council's discussion and consideration.

BACKGROUND

Sunnyvale strives to be a clean and attractive city. However, accidental or intentional litter can make its way into our environment. Visible litter on our streets and in our community can degrade the aesthetics and quality of life in our neighborhoods. Litter is easily mobilized and can be washed through the City's storm sewer system or blown into local creeks and waterways, where it degrades water quality and is harmful to wildlife. This trash can flow into the San Francisco Bay and out to the Pacific Ocean. Research shows that the amount of plastic debris floating in our oceans is increasing and impacting marine wildlife. Furthermore, research shows that a large proportion of marine debris emanates from land-based sources.

Water quality regulators regard stormwater as the largest uncontrolled source of pollutants to creeks and the Bay, and trash has emerged as a critical pollutant impacting waterways and wildlife. Trash in its many forms, including but not limited to litter or illegal dumping, has become a significant issue for communities throughout the Bay Area, Southern California, and Statewide.

In 2009, the San Francisco Bay Regional Water Quality Control Board (Water Board) implemented stringent trash reduction requirements for communities through its regulation of storm sewer discharges. Sunnyvale's storm sewer system is regulated under the Municipal Regional Stormwater National Pollutant Discharge Elimination System Permit (Stormwater Permit) issued by the Water Board. The Stormwater Permit specifies actions necessary to reduce the discharge of pollutants, including trash, into the municipal storm sewer system to protect local creeks and the Bay, and establishes targets for all permittees to reduce trash loading from the storm sewer system by 40 percent by 2014, 70 percent by 2017, and "100" percent or virtually eliminate the impact of litter by 2022. The permit generally uses 2009 as the baseline year. Each permittee was required to submit a Short-Term Trash Load Reduction Plan by February 1, 2012, to document how the 2014 trash reduction goal would be met. Additionally, a Long Term Plan documenting how the City intends to meet the more challenging 2017 and 2022 trash reduction goals is required by February 1, 2014.

The City submitted its Short Term Trash Load Reduction Plan as required by the Permit. That plan specified the actions the City would be implementing, or had already implemented, to comply with the 40 percent trash load reduction goal. These actions included adopting an ordinance prohibiting single use plastic bags, prohibiting use of expanded polystyrene foam food containers, public education, reducing trash from uncovered loads, improving trash container management, sponsoring volunteer on-land cleanups, installing full trash capture devices, and conducting annual creek cleanups; their current status are summarized in Attachment 1 Status Summary of Short Term Trash Reduction Actions.

Working together through the Bay Area Stormwater Management Agencies Association (BASMAA), the Bay Area permittees developed a preliminary methodology for determining a community's baseline trash generation load and a methodology for tracking the amount of trash reduced as a result of various actions undertaken. In 2011, Cascadia Consulting Group, under contract with BASMAA sorted and measured trash and debris from more than 160 storm drain inlets that had been outfitted with full trash capture devices from a cross sampling of land uses across the Bay Area. Many of these sampling sites were located in the South Bay, specifically in Sunnyvale and San Jose. The data was analyzed and correlated to land use and income demographics to develop a model that cities used to estimate the amount of trash generated. A separate Trash Reduction Tracking methodology, also developed by BASMAA, was intended to serve as a consistent system by which the Water Board and Bay Area cities documented the trash reduction actions taken and accounted for reductions in trash, either through a quantified amount of trash collected or captured, or through an estimated trash reduction "credit" for harder to quantify actions such as product bans or public education. This tracking methodology was not completely accepted by the Water Board.

During the past year, City staff, along with other BASMAA communities, worked closely with Water Board staff to identify an acceptable alternative method for tracking and assessing progress and compliance with the 40 percent trash reduction goal. These discussions are on-going. Also through this collaborative process, the cities and the Water Board staff established a framework for preparing the Long Term Plans. The framework enables cities to take a strategic look at the community, to develop a deeper understanding of where the trash is, and to identify and prioritize resources and trash reduction actions based on where most trash is generated. Specifically, the framework includes:

- Mapping of trash generation within a community;
- Validating the map through in-field assessments and other investigation to identify of types of trash and sources;

- Prioritizing of actions in very high, high, and moderate trash generating areas;
- Implementing the priority actions; and
- Conducting monitoring and assessment of conditions after actions are taken.

EXISTING POLICY

General Plan Policy CC-1.5 and EM-13- Encourage residents to maintain clean neighborhoods by preventing unsightly accumulation of discarded materials and illegal dumping of municipal solid waste.

General Plan Policy CC-1.6- Maintain City neighborhoods as safe, healthy places to live.

General Plan Policy EM-8.3- Ensure that stormwater control measures and best management practices (BMPs) are implemented to reduce the discharge of pollutants in storm water to the maximum extent practicable.

General Plan Policy EM-8.6- Minimize the impacts from stormwater and urban runoff on the biological integrity of natural drainage systems and water bodies.

The City's General Plan describes a vision and values for our community which strive to make Sunnyvale:

- A regional leader in environmental sustainability. The City takes environmental preservation and protection seriously and considers how each action will affect Sunnyvale for future generations.
- A safe, secure and healthy place for all people. The health and safety of residents is a primary concern. Sunnyvale is a clean and attractive city with many opportunities for physical activity in a natural environment.
- A city managed by a responsible and responsive government. The City delivers quality services in a comprehensive, cost-effective manner.

ENVIRONMENTAL REVIEW

The proposed action is exempt from the requirements of the California Environmental Quality Act (CEQA) under Title 14 of the California Code of Regulations, Section 15308 (actions to assure the maintenance, restoration, enhancement, or protection of the environment).

DISCUSSION

Over the 101 years since incorporation, Sunnyvale has transitioned from an agricultural community to its current form as a desirable residential locale and strategically located high tech job center. Nearly all properties in Sunnyvale have development on them. According to the City's General Plan, residential areas account for the single largest land use in the city, amounting to 52 percent of the developed area. Industrial uses constitute 26 percent of the developed area. This land use pattern has some correlation to the trash generation patterns around the City, which is shown on the map in Attachment 2 Sunnyvale Trash Generation Map. The "Very High" and "High" trash generation areas are comprised of retail centers, highly traveled thoroughfares, or higher density pockets of the City. The "Moderate" trash generation areas are comprised mostly of industrial areas and other institutional land uses such as schools or churches. The "Low" trash generation areas are comprised of mostly of lower density residential areas. Using the trash generation methodology developed by BASMAA, trash generation areas in Sunnyvale are as follows:

<u>Trash Generation</u>	<u>Acres</u>	<u>Percent</u>
Very High (purple areas)	11	0.1
High (red areas)	882	7.3
Moderate (yellow areas)	4,145	34.3
Low (green areas)	7,038	58.3

Note that the “dotted” areas shown on the map are within the Sunnyvale boundaries but outside its jurisdictional control. These are typically freeways (managed by CalTrans) and expressways (managed by the County of Santa Clara).

Based on the mapped trash generation areas, in-field visual verifications of trash levels by staff, and input from City field crews, the City was divided into 14 Trash Management Areas (TMAs). These areas can represent contiguous geographic areas with similar land uses, areas where the storm sewer system enables utilization of infrastructure based systems to capture trash, or groups of similar types of land use that enable targeted actions. The TMAs are shown in Attachment 3 Sunnyvale Trash Management Areas. The goal of the Long Term Plan is to prioritize and implement actions in the identified TMAs that would turn the purple, red, and yellow areas on the map into green areas.

Recommended Trash Plan Elements and Actions

The strategy and components of the Long Term Plan align with the vision and the values of the City. Staff is recommending a plan that results in significant reductions in trash entering our community and our waterways by 2022, realizes multiple community benefits, and encompasses a comprehensive suite of cost-effective measures. These actions include:

- Strategic deployment of full or partial trash capture devices, which are infrastructure/capital projects that retrofit the storm sewer system with devices to catch trash that may flow through the system;
- Enhanced business engagement and inspections to improve trash and litter management practices of local businesses in industrial and retail areas throughout the City;
- Potential enhancements to the City’s Street Sweeping Program in targeted areas;
- Partnerships with local school districts; and
- Continued support of statewide legislative and regulatory policy that addresses commonly littered products.

Sunnyvale is almost entirely surrounded by the cities of Santa Clara, Cupertino, Los Altos and Mountain View and is at the crossroads of four of the South Bay’s major freeways and expressways, Highways 237 and 101, Lawrence Expressway and Central Expressway. Trash can be easily mobilized and can be carried from streets to waterways by stormwater or wind. Trash often crosses jurisdictional boundaries. Thus, collaboration with neighboring cities and other agencies such as CalTrans, CalTrain, and local school districts is critical. Staff will continue to actively collaborate and partner with these agencies where appropriate to enable more cost effective implementation.

Sunnyvale has already taken significant actions as described earlier to meet the 40 percent trash reduction goal. Meeting the long term goals of 70 percent and 100 percent reduction will be more challenging and will require the testing and implementation of new strategies as well as potential additional resource and capital investment by the City. The initial actions recommended by staff in the

Long Term Plan include a set of pilot actions such as an enhanced education and business inspection program, enhanced street sweeping with parking prohibitions or by increasing street sweeping frequency, and installing partial trash capture devices that block trash from entering the City's storm sewer system. These actions will be conducted as pilots alone or in combination, and implemented in a portion of TMA 1A (center stretch of El Camino Real) where a large full trash capture device will be constructed in 2014. Once constructed, the trash captured in the device will be monitored and the amount of trash captured will be quantified. Staff will then implement the pilot actions and continue to monitor and quantify the trash captured. This will provide the opportunity to evaluate the effectiveness of the pilot actions implemented upstream of the device in 2014-2015 and 2015-2016. Based on the findings of these pilots, full implementation of an appropriate suite of actions will be applied to other TMAs starting in 2016. An overview of the assessment of trash reduction actions by TMA which were analyzed for inclusion in the Draft Long Term Plan is presented in Attachment 4 Assessment of Trash Reduction Actions by Trash Management Area. The preliminary implementation timeline is presented in Attachment 5 Sunnyvale Long Term Trash Reduction Plan Schedule. The full Draft Long Term Trash Load Reduction Plan is included in Attachment 6.

Effectiveness Monitoring and Assessment

City staff and other water quality professionals and regulators are working to better understand the effectiveness that specific trash reductions actions can have in reducing the amount of trash in the environment and in water bodies. Given the flexibility in management actions afforded by the permit, regulators and other stakeholders are eager to see quantitative field measurement as a key component of determining success.

Countywide Pilot Assessment Strategy

The Long Term Plan includes a pilot assessment methodology that would be implemented on a countywide and city-specific basis during fiscal years 2014-2015 and 2015-2016. This pilot assessment methodology includes three main components: on-land visual assessments, control measure effectiveness evaluation, and receiving water condition assessments in local waterways. The on-land visual assessments in trash management areas are intended to establish initial conditions and detect improvements in the level of trash generated over time. Control measure effectiveness evaluations focus on documenting the magnitude and extent of the action taken and implementation results (assessment method will be based on trash sources and type of action being implemented such as tracking business compliance with litter prevention practices, pre- and post-implementation surveys, or other metrics demonstrating effectiveness). Receiving water condition assessment is proposed to track any changes in the waterways over the long term. The use of these in-creek assessments is typically complicated by the various contributing pathways for trash to enter a creek, including a municipal storm system but also including windblown and direct dumping pathways that are outside the storm system. The actual method of conducting receiving water condition assessments is currently being developed by the Santa Clara Valley Urban Runoff Pollution Prevention Program, with input from City staff. A standardized assessment methodology will be implemented after the pilot assessment strategy is implemented and lessons learned are incorporated.

Both the Pilot Assessment Strategy to be implemented by SCVURPPP and the Sunnyvale-specific pilots described earlier will leverage grant funding that has been awarded to BASMAA for the Tracking California's Trash project. The Project is funded through a Proposition 84 grant awarded by the State Water Resource's Control Board, which recognized the need for standardized trash assessment methods that are robust and cost-effective. This three-year project is in the planning

stage and will continue through 2016 as discussed above.

Currently, State and Regional Water Board staff view infrastructure retrofits with full trash capture devices as a gold standard of effectiveness. In their view, installation and adequate ongoing maintenance of full trash capture devices would achieve trash reduction for the treated areas and would not require any additional monitoring or assessments. While these devices are effective, they require significant capital investment and ongoing funding for maintenance and upkeep. Additionally, these devices generally do not improve community aesthetics or contribute to other community benefits. The Pilot Assessment Strategy and the City's proposed pilots will seek to demonstrate the effectiveness of a range of trash actions as compared to full trash capture devices. This would allow the City utilize a broader suite of trash actions that may be more cost-effective and that would support other community objectives.

Iterative Approach

The Long Term Trash Plan outlines the City's proposed roadmap to meeting the Water Board's aggressive long term trash reduction goals. As more experience is gained and lessons learned from implementation of the City's pilots and the Pilot Assessment Strategy, the City may adjust its Long Term Plan to ensure cost-effective implementation. Changes to the plan will be reported to the Water Board through the Stormwater Permit's required annual reporting process.

FISCAL IMPACT

There is no cost for the submittal of the Long Term Trash Plan. The Plan is being submitted to the Regional Water Quality Control Board with the express understanding that the costs of implementation are significant and that full funding has not yet been approved or identified by the City. The City has approximately \$5 million programmed in the first 10 years of the Wastewater Enterprise Capital Projects Budget for the installation of trash capture devices related to the storm sewer system. Staff estimates that using structural controls (trash capture devices) exclusively would cost more than \$7 million through Fiscal Year 2021/22, with an ongoing annual cost of \$700,000. Using a mix of structural, maintenance, and programmatic approaches could be significantly lower. Staff is continuing to refine cost estimates and to evaluate potential revenue sources. The cost of implementing any of the additional programs identified in the Plan may impact one or more of the City's utility enterprises, which are funded by user fees.

PUBLIC CONTACT

Public contact was made by posting the Council agenda on the City's official-notice bulletin board outside City Hall, at the Sunnyvale Senior Center, Community Center and Department of Public Safety; and by making the agenda and report available at the Sunnyvale Public Library, the Office of the City Clerk and on the City's website.

ALTERNATIVES

1. Authorize the City Manager to submit the Long Term Trash Reduction Plan to the Regional Water Quality Control Board by February 1, 2014 as required by the Regional Stormwater Permit.
2. Direct staff to consider and integrate other trash reduction measures as determined by Council.
3. Other action as determined by Council.

STAFF RECOMMENDATION

Alternative 1: Authorize the City Manager to submit the Long Term Trash Reduction Plan to the Regional Water Quality Control Board by February 1, 2014 as required by the Regional Stormwater

Permit.

SUSTAINABILITY COMMISSION RECOMMENDATION

The Sustainability Commission discussed the Draft Long Term Trash Reduction Plan at its meeting on January 21, 2014. The Commission voted to support Alternative 1 of the staff report to authorize the City Manager to submit the Long Term Trash Reduction Plan to the Regional Water Quality Control Board by February 1, 2014 as required by the Regional Stormwater Permit with more emphasis on working with high trash generating businesses, such as retail or fast food restaurants, and schools during the implementation of the plan.

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Reviewed by: John Stufflebean, Director, Environmental Services Department

Reviewed by: Grace Leung, Director, Finance Department

Approved by: Robert A. Walker, Interim City Manager

ATTACHMENTS

1. Status Summary of Short Term Trash Reduction Actions
2. Sunnyvale Trash Generation Map
3. Sunnyvale Trash Management Areas
4. Assessment of Trash Actions by Trash Management Area
5. Sunnyvale Long Term Trash Reduction Plan Schedule
6. Draft Sunnyvale Long Term Trash Reduction Plan
7. Draft Minutes of the Sustainability Commission January 21, 2014