



February 15, 2017

Mohammed Nuru  
Director  
San Francisco Public Works  
1 Dr. Carlton B. Goodlett Pl. Room 348  
San Francisco, CA 94102

Dear Mr. Nuru,

In agreement with Recology's rate application, we are submitting this proposal requesting the approval to use RY17 Tier 3 & 4 Zero Waste Incentive funds for Recycle Central<sup>®</sup> enhancements. The RY17 Tier 3 & 4 disposal targets are 268,424 and 224,646 tons respectively. As of January 1, 2017 Recology disposed of 203,000 tons, setting the pace to miss both targets within the next 3 months. Since Recology does not anticipate meeting the year's Tier 3 and 4 disposal targets, we are requesting approval to apply those incentive funds, equaling an estimated \$3,247,569, to Recycle Central<sup>®</sup> equipment enhancements. The request for these funds is separated into two categories; The first is for the remaining costs of the recent large Recycle Central<sup>®</sup> upgrade and the second for additional Recycle Central<sup>®</sup> equipment improvements. If approved, Recology is also requesting the ability to begin the work on the second category of projects at the time the tier goals are missed, even if that occurs before July 1, 2017.

For the first requested category, Recology has completed an approximate \$11.3 million upgrade to the sort lines and equipment at the Recycle Central<sup>®</sup> MRF. Approximately \$9.2M of the project was funded through Zero Waste Incentive funds from prior years and Recology is proposing the remaining \$2.1M project balance be funded through the RY17 Tier 3 and 4 funds that become available July 1, 2017.

For the requested second category, Recology is proposing the remaining \$1.1M of the RY17 Tier 3 and 4 funds be used for additional Recycle Central<sup>®</sup> equipment improvements. Each of these proposed improvements and their benefits are explained in more detail in the following paragraphs.

**Drum Feeder:** The Recycle Central<sup>®</sup> upgrade, which completed in September 2016, installed a drum feeder for the new sort lines to meter the inbound material for more efficient and effective sorting. After seeing the success of that drum feeder, Recology proposes to add a second drum feeder to the remaining B1 sort line. The facility has seen a significant improvement in downstream sorting efficiency because the drum feeder is able to keep the burden depth of the material at an optimal level for material sorting. Additionally, a drum feeder for the B1 line would allow both infeed systems to be charged with 15-20 minutes' worth of recyclable material, allowing the loader operators to perform other critical duties during processing.

**Cross Belt Magnet:** The proposed new cross belt magnet would be added to the glass cleaning equipment, giving the system the ability to remove additional batteries and small pieces of metal. Removing these items improves the quality of the glass commodity as well as recovering additional metals for recycling.

**Container Silo Bypass System:** The new container silo bypass system will allow for the continued recovery of bottles, cans, etc. in the event of unexpected equipment failure. Currently, if either the baler infeed or baler fails, the existing container storage silos house the material until the equipment is back up and running. Those silos have a limited capacity and fill up within a couple of shifts. Once those silos are full, the whole system must shut down until all the equipment is fully functional. That downtime causes a significant backup of material, which then must be pushed through the system at a higher volume in order to catch up. This results in recoverable material being lost as residual because the material handlers and optical sorters can't target and successfully extract all the intended recyclables. With this new bypass system, the facility can avoid those shutdowns. The container line can still run as intended and, in the event of a failure, the containers can be diverted to an independent baler, and continue to be baled and shipped as usual.

**Master Control System Upgrade:** Recology proposes to include a new Master Control System (MCS), inclusive of a Programmable Logic Center (PLC) upgrade, for the remaining lines. Upgrading these elements would effectively give that older system the same “brain” as the new systems. Currently, there is an electronic handshake required between the two control systems in order to start the plant’s operations. The updated MCS can globally run the new lines, but the important functions for the older lines such as motor starts/stops, motor and belt speeds and angles, storage hopper door functions, and fault detection, still all live with the older MCS. Essentially, two completely independent computer systems are needed in order to operate the plant, which leads to a loss of approximately 20 minutes per shift. Additionally, the older MCS has proprietary programming and Recology is not granted access, meaning modifications and troubleshooting are currently impossible without the physical presence of the vendor. As a result, when there is faulty activity between the old system and the new upgraded lines, the whole plant suffers until the old system issue is resolved by a third party. Lastly, technology has drastically improved in the last 12 years and the replacement parts for the older MCS are no longer manufactured. With this upgrade, it will eliminate the risk of an indefinite shutdown due to running an unsupported system, increase recovery because the older equipment becomes more effective, increase the plant’s throughput by avoiding unnecessary downtime, and allow the Recycle Central® employees to focus on their roles contributing to the recovery of materials.

The most critical aspects of these proposed upgrades are the avoided downtime and increased equipment consistency, both of which will not only preserve the diversion that’s achieved today, but also avoid the risk of increased landfilled tons due to long term shutdowns. In addition, these enhancements are also anticipated to improve overall recovery, leading to the potential increase of up to 500 tons annually.

**Cost Summary:** Below are two tables, the first summarizing the Recycle Central® project costs and the second summarizing the requested project funding breakdown:

**Table 1: Project Cost Summary**

Funding Source	Total	Notes
Recycle Central Upgrade Balance	\$2,104,598	
Drum Feeder	\$221,945	Please see attached quotes
Cross Belt Magnet	\$39,680	Please see attached quotes
Container Silo Bypass System	\$118,555	Please see attached quotes
Master Control System Upgrade	\$833,875	Please see attached quotes
<b>Total Project Costs</b>	<b>\$3,318,653</b>	

**Table 2: Requested Project Funding Breakdown**

Funding Source	Total	Notes
Zero Waste Incentives, Tiers 3 & 4, RY17	\$3,247,569	Requested
Recology Funding	\$71,084	
<b>Total Project Costs</b>	<b>\$3,318,653</b>	

**Project Timeline:** Below is a table outlining the timeline for the proposed project from when the notice to proceed is given.

Project Item	Timing
Equipment Order	6-8 weeks
Fabrication	2-3 weeks
Installation	3-4 weeks
Testing	1-2 weeks
<b>Total Time</b>	<b>4 months</b>

Please let me know if you have questions or require additional information. Thank you for your consideration.

Sincerely,

Mark J. Arsenault  
Vice President and Group Manager  
Recology

cc: Julia Dawson  
Robert Haley