April 2, 2020

Alaric Degrafinried
Interim Director, San Francisco Public Works
1 Dr. Carlton B. Goodlett Pl. Room 348
San Francisco, CA 94102

Re: Request to withdraw Zero Waste Incentive (ZWI) funds from the 2019 and 2020 Rate Years for the purposes of upgrading the Construction and Demolition recycling equipment to increase throughput, improve material recovery and product quality at the iMRF facility.

Dear Mr. Degrafinried:

On May 12, 2017, the City and County of San Francisco Public Works Department completed the review of Recology's Refuse Rate Application and issued the Director's Report and Recommended Orders on the Application. In the Directors Report a 4 Tier Zero Waste Incentive (ZWI) was established. Tiers 1 & 2 set forth disposal targets and it was determined that if the Recology Companies failed to meet the targets as established, the incentive funds would be rebated back to the ratepayers. Furthermore, the Zero Waste Incentive for Tiers 3 and 4 targets were much more challenging to achieve and, upon failing to reach the targets, Recology could request to utilize those ZWI funds for new programs that reduce disposal. Recology is proposing to utilize the ZWI funds from RY 19 and RY20 to fund the modernization of the existing Construction and Demolition (C&D) facility with the intent of increasing throughput and diversion.

Past ZWI Projects
To date, Recology has on three separate occasions requested and received ZWI funds, which have significantly enhanced the operations at Recycle Central®, improved throughput, allowed for the recovery of new items and enhanced our ability to further our progress towards zero waste.

The first ZWI funds were utilized in RY16 to modernize Recycle Central® by adding crucial system enhancements to our commingled recyclable sorting system. The upgrade to the commingled recycling processing system, added much needed capacity and improved the equipment utilized for separating material types. The enhancements created a more modern comprehensive recovery system that increased the facility's throughput and recovery rate and provided the ability to target new materials. The enhancements were completed on time, on budget and without significant facility downtime.

During RY17, the second ZWI proposal funded the installation of a new metering drum system on our back-up line with new infeed hoppers on the original commingled lines, a new cross belt magnet for

enhanced recovery of ferrous items out of the glass stream, a container system bypass line to improve plant functionality and an upgrade to the plant-wide Master Control System (MCS) at Recycle Central®. The upgrades performed to the commingled line during the last rate year significantly improved the plant's functionality and efficiency. The updated MCS allowed Recology to run the new lines and the old lines from one interconnected system. The upgrade also allowed us the ability to add important functions for the older lines (i.e. control motor starts/stops, adjust motor and belt speeds, control storage hopper door functions, and provide fault detection). Additionally, the new MCS has eliminated the risk of an indefinite shutdown due to running an outdated and unsupported plant control system.

During Rate year 18, the third ZWI proposal funded Recycle Central® facility enhancements that increased recovery despite challenging market conditions. The upgraded automated container sorting system and optical sorting equipment upgrades allowed for more effective sorting of containers and has allowed Recology to effectively separate PET clamshells from PET bottles, greatly improved the recovery of HDPE and aluminum containers. In addition to the mechanical aspects of the upgrades the electronic data collection system with material characterization capabilities have allowed us to better understand and improve plant performance and material quality.

Recology has been continuously striving to achieve a high recovery rate at Recycle Central® and we believe that we have made great strides in improving the facility to accommodate programmatic tonnage increases in tonnage driven by the roll out of the smaller 16 gallon trash carts, quality control standards imposed by our new markets and ultimately the creation of better quality recycled commodities that set our product apart from our industry peers in these times of unstable and reduced market demand. At this point in time Recology believes that it would be prudent to invest the Rate Year 19 and 20 ZWI funds into the Tunnel Beatty Construction and Demolition sorting line located at the Recology SF iMRF. Our on-going challenge has been to effectively sort the existing C&D material and maintain reasonable diversion levels on our existing processing system while keeping up with the high volume and inbound material variability. Essentially the operational burden being placed on the existing equipment exceeds its original design parameters because the composition of the C&D has changed since the sorting system was put into service.

In the late 1980's Recology San Francisco, doing business as Sanitary Fill Company, did a floor sort of inbound debris boxes to recover wood and metal. The floor sort was conducted on the eastern side of the transfer station. The hillside was modified to make a rudimentary load out facility to accommodate the transportation of the sorted commodities to the scrap yards and wood markets. Soon after the Sanitary Fill management team initiated the process of constructing the first C&D sorting line in the same location as the floor sort operation. The new line represented the best available technology at the time and with the exception of a vibrating screen to remove fines from the material and an electromagnet to remove small metal objects from the fines, all of material recovery was accomplished via manual sorting. The materials sorted at that time were: wood, metal, fines and concrete/mixed inerts. In 2001 The San Francisco Companies submitted a rate application to the City of San Francisco to enclose and expand the C&D facility. The project was approved by the Rate Board and the facility was dubbed the iMRF (integrated Material Recovery Facility) and construction was initiated pursuant to the Rate Order. The project was comprised of constructing a 45,000-square foot building east of the Transfer Station. It anticipated utilizing the air space adjacent to the Sanitary Fill Shop to create additional floor space for material storage and formalized the overhead loadout carved into the hillside with a modern loadout with scales to maximize payload and over the road safety. Directly adjacent to the existing C&D sorting line a nearly identical line was constructed to double the facilities throughput and diversion. A bunker for the recovery of mixed

paper was added along with an additional bunker for the recovery of large mixed plastic items typically associated with C&D projects. A wood grinder was installed along with two overhead Peerless Storage hoppers directly to the east of the building to facilitate the storage and loading of the wood chips and C&D fines. At the time, the new iMRF was a state of the art facility with a design capacity of 500 tons per day of throughput and was able to tout recovery rates in the mid 70% plus range. Unfortunately, given the nature of the C&D material currently being utilized in modern construction we are not experiencing such robust throughput and our average diversion is in the 50% range. As with many other aspects of our business the construction industry is employing many new building products and techniques that were not contemplated when the facility was originally constructed. Examples of the changes in the construction industries methods are: the use of lightweight foam for non-structural architectural elements of a building, moving away from cladding building in plywood for sheer strength and utilizing various gypsum based exterior rated wall board products, plastic pipe as opposed to galvanized or copper pipe, and using laminates or composite wood products in lieu of virgin timber products for structural elements.

In addition to the changes in the construction industry, the Green Building Council has revamped their green building certification process which requires more contractors to produce single commodity source separated loads of easy to recycle material for larger jobsites in lieu of comingled C&D loads. This means that the comingled C&D loads that we do receive are comprised of smaller, lighter more difficult to sort items as opposed to the traditional wood and metal rich loads that we were accustomed to receiving.

The Recology SF management team believes that in order to improve the recovery rate and deal with the material employed in construction as well as the increased volume, we need to look at making additional improvements to our processing system. Pursuant to the 2017 Directors Report, Recology is submitting this proposal requesting the approval to use RY19 and RY20 Tier 3 & 4 Zero Waste Incentive funds to modernize the iMRF C&D sorting line, with the purpose of increasing the throughput and significantly improving the recovery rate of the facility.

The RSF iMRF modernization project will consist of 4 major phases: 1. The renovation of the eastern C&D sorting line that was constructed in 2003; 2. The removal of the original obsolete sorting line that was installed in 1987; 3. Installation of a material size reduction system and mechanical size and density separation, and; 4. The installation of a fully autonomous sorting system with minimal manual QC.

1. **Renovation of the Eastern C&D Sorting Line and Electrical Upgrades**

The existing C&D line that was constructed in 2003 has exceeded its useful service life. The conveyor belt infeed system is worn out and in need of a complete overhaul. The loading hopper belt guides and supports need to be rebuilt and chain link belt system and drive sprockets need to be completely replaced. In order to continue to process material on the existing line Recology will refurbish the conveyor frame and belt guides and install a new steel chain link belt and all of the associated support and running gear required to operate the conveyor. In anticipation of the renovation project, provisions will be made to the electrical system to accommodate for modern variable speed drive technology and the significantly larger service load associated with the new equipment. The renovated line will operate in a similar fashion as it does today, except that all residue from the manual sorting operation will be sent to an automated state of the art C&D system for further processing. The existing facility has a main service panel capable of handling 2000 amps. Currently the panel is fed by a 700amp service. The proposal contemplates a total amp requirement in excess of 1200 amps. In order to meet the requirements of the new equipment, a second 700amp service will be brought into the existing iMRF building from the West side of the Transfer Station.

2. **Removal of the Obsolete Sorting Line and Associated Equipment**

The first sorting line installed during the late 80's was completely rebuilt and modified to accommodate additional commodities when the iMRF was constructed. At this point the sorting line has outlived its service life. In lieu of repairing the old sorting line, it will be removed along with the finger screen to make space for the installation of new sorting equipment, conveyors and the automated sorting system.

3. **Material Size Reduction, Mechanical Size and Density Separation**

Size Reduction of C&D Feedstock

In modern C&D operations it is customary to employ large scale mechanical size reduction to C&D feedstock prior to subjecting the feedstock to modern size and density separation. This proposal will allow Recology to install two size reducers on the C&D sorting line. The concept that is being used in a modern C&D facility is to manually sort the C&D material with the intention of recovering all large, easy to sort items that can be pulled off the sorting line prior to size reduction. Once the easy to sort material has been liberated from the material stream it is necessary to subject what is left over to a size reduction process that will allow for enhanced mechanical sorting by either size density or by other mechanical means. In order to accomplish the size reduction process, it has been determined that the combination of two rotary sheer shredders would need to be used. The first shredder (a Coarse Cut Shredder) will perform the task of grinding the C&D material into a uniform and manageable 12 inch minus size that would be capable of going into a secondary shredding (a Fine Cut Shredder) system that would then reduce the unprocessed material into a 6 inch minus material. Once the C&D material had been sized reduced to a uniform size we would then employ a series of mechanical sorts that would further separate the C&D material into its constituent components based upon size and density.

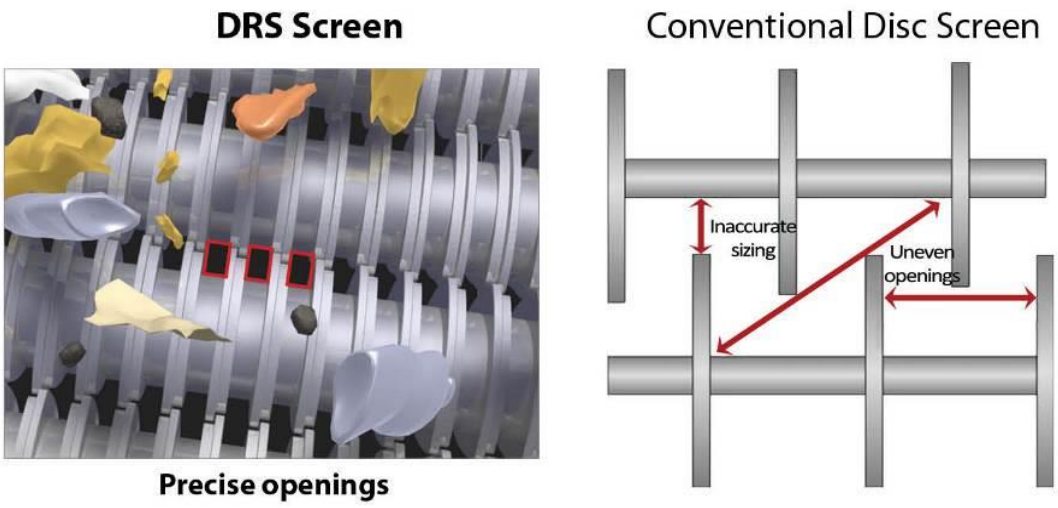
Mechanical Separation of C&D by Size

The first mechanical sorting process utilized would be a Debris Roll Screen (DRS) to precisely size the feedstock. The DRS imparts an aggressive wavelike agitation to the C&D material, and the waterfall effect on both screen decks further agitate and turn material to ensure effective separation – as in the case of dirt and gravel on top of a piece of wood – the wood tumbles and turns over the waterfall drop. The patented gear timing paired with variable speed drives allow for fine tuning to adjust to variable material conditions. The discs are designed so that as one disc tip is moving downward, the reciprocating disc tip kicks troublesome materials out of areas that are prone to jamming. The DRS have proven to be flexible enough to process any and all material included in this material stream. The DRS is extremely efficient, using the entire screen to size materials. This leads to a highly dependable low maintenance disc screen that effectively sizes high volumes of material with precise sizing, low energy consumption and with a high degree of production time.

Features & Benefits of a DRS:

- Excellent material agitation and separation
- The DRS disc screen allows for accurate sizing of material, reducing product loss
- Negative inclination, disc and shaft design minimizes material wrap, reducing downtime over the typical positively inclined screens employed in older C&D facilities
- Heavy-duty discs ensure long disc life and reduced maintenance over conventional disk screens

Top Down View of a DRS



Mechanical Separation of C&D by Density

Once the C&D material has been dimensionally classified by the DRS screen, we will then send the remaining unsorted material into a Double Drum Separator (DDS). The DDS equipment has been developed over the course of many decades and provides near perfect air separation based upon material density. Using a DDS post mechanical shredding and size separation is a common application for these types of drum and air-based density separators. DDS are highly dependable assets that boast excellent and proven separation that is highly tunable to a customer's material stream.

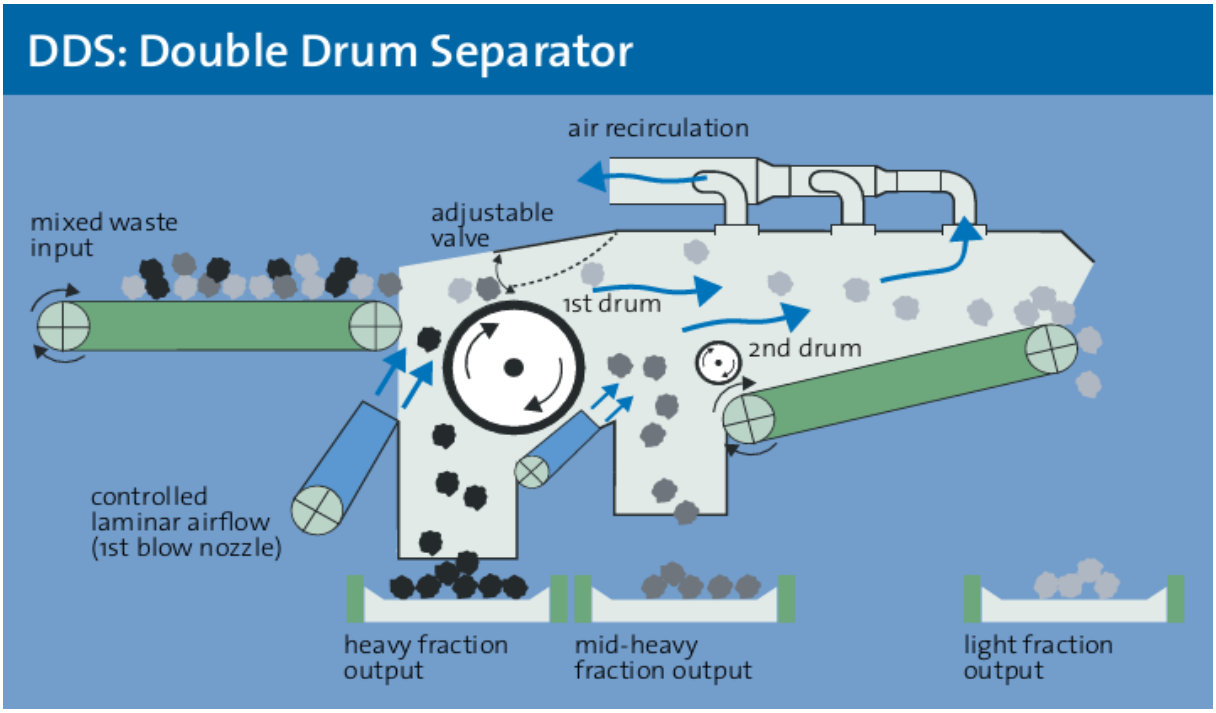
The DDS employs two counter rotating drums and both positive and negative laminar airflow that separates the inbound material stream into three fractions. The density-based separation creates the following fractions: a heavy fraction (aggregates), a mid-heavy fraction (wood and gypsum) and a light fraction (lightweight recyclables, including containers, plastics, paper and cardboard).

Features & Benefits of a DDS:

- High capacity drum separator can easily handle up to 50 tons per hour
- Low maintenance and few wear parts
- Low downtime
- Adjustable separation settings allow operator to create precise separation

Typical Density Separator

Inner workings of a Double Drum Separator (DDS)



4. **Fully Autonomous Sorting System**

Once the C&D material has been manually sorted, shredded, mechanically screened by size and then separated by material density, Recology intends to utilize a Fully Autonomous Sorting System (FASS) to further segregate the C&D into commodities for recycling. Autonomous material sorting systems represent an industry breakthrough in recycling technology and have been used in Material Recovery Facilities for several years now. The sorting technology uses artificial intelligence (AI) that identifies materials in a similar fashion as a person does, with sight (a camera system) and a neural network brain (AI). Up until now there was not a satisfactory application of the automated high volume mechanical sorting technology in a C&D facility. Large heavy lift mechanical sorters have recently been implemented in C&D recycling operations with marginally acceptable results. The units are expensive to acquire and operate, have relatively slow pick rates and have marginal accuracy as compared to a manual sorting line. By implementing a very precise screening and mechanical sorting operation on the front end of the C&D line Recology believes that it can improve recovery and throughput by employing small nimble mechanical sorters with high pick rates. Autonomous sorting technology has progressed to a point that the smaller units designed to sort cans, containers and bottles can be utilized in a C&D application in a highly dependable fashion. Recology is working very closely with its equipment vendors to integrate these mechanical sorters into its C&D operation. Recology SF will be the first C&D operation to actively employ small lightweight mechanical sorters on a C&D line in North America. Based upon the manufacturers specifications, the mechanical sorter that can sort material at a rate of up to 65 picks per minute per unit with a yield of approximately 90 to 80%.

In addition to the mechanical sorters, Recology intends to use an optical sorter to liberate wood from the mid fraction of the C&D stream and a second optical sorter to sort containers and paper from the light fraction of the C&D stream. The recovery of wood is difficult to accomplish with an optical sorter in a

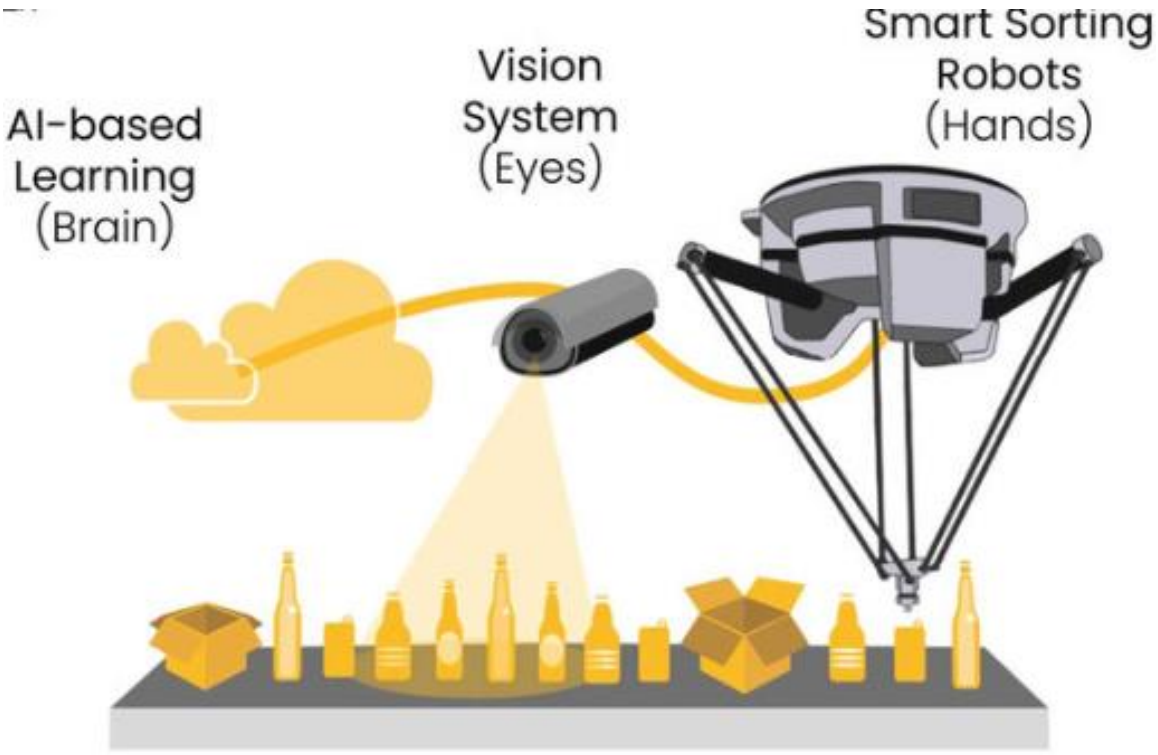
normal C&D setting but given that Recology will utilize size reduction technology prior to sorting it will be fairly easy to sort 6" minus dimensionally sized wood pieces with a purpose built optical sorter and a high-volume air sorting bar. Not only will the optical be able to sort sized dimensional wood, it will also be capable of differentiating between recyclable Grade A wood and nonrecyclable painted or treated Grade B wood. The introduction of an optical sorter in a C&D line to sort wood is a relatively new development brought about by recent advances to color detection technology within the optical reader. The second optical positioned on the light fraction line will function in a similar fashion as other optical units deployed within the recycling industry and will sort recyclables such as cans, bottles and paper. Unlike mechanical sorting systems the optical sorters can perform hundreds of sorts per minute with remarkable accuracy.

Features & Benefits of the FASS:

- Very high pick rate
- No complicated articulated grasping device to fail
- Consistent and predictable performance
- Significantly cheaper than larger heavy lift robots
- Increased data on material composition and performance
- Lower operating and repair costs
- Optical sorting will allow for recovery of containers
- Paper can be removed if quality is consistent with market expectations

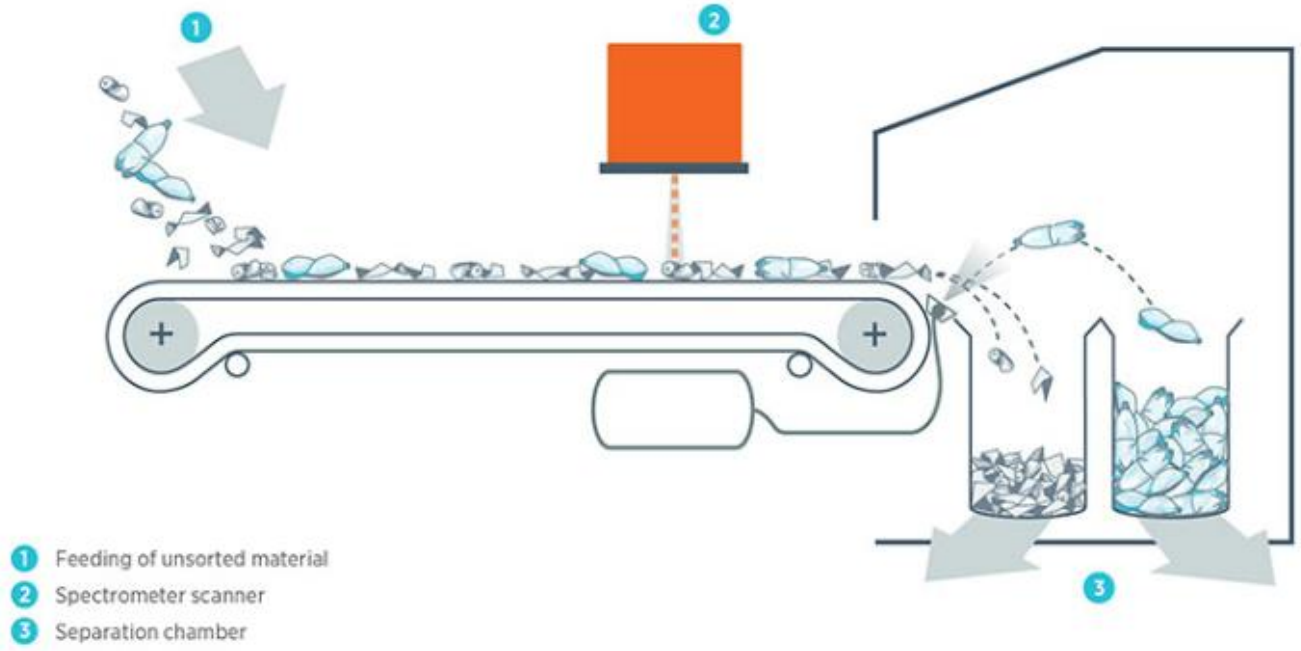
A Processing Line Utilizing Two FASS Systems

How Automated Sorting Works



An Optical Sorter

How an Optical Sorter Works



Funding Request

The C&D Facility Modernization Project, while intended to increase the material recovery and throughput, also serves other significant purposes for Recology SF. The nature and amount of the C&D material being sorted demands a large project that is relatively expensive as compared to recent ZWI withdrawal requests. The current estimated project budget is 8.16 million dollars. Recology acknowledged the value of the modernization early on and developed an approach whereby the approval of project would help serve our short-term diversion goals, provide us with invaluable experience operating a semi-automated C&D facility and allow us to procure equipment that will be incorporated in our future C&D Facility.

Employing high speed automated sorting technology has never been contemplated in the mixed C&D market until this point. Recology believes that this is the next logical step in integrating the new sorting technology into the C&D recycling industry and would like to be the first processing operation to utilize the automated sorters in a C&D MRF. Significant information will be gleaned from the operation of the modernized facility and technology will help inform the next steps on the road to Zero Waste. The knowledge gained will allow the Recology team to make more thoughtful equipment decisions in our new facility that will be based upon real world experience derived from processing the San Francisco C&D material stream. This information will help us not only with our equipment acquisition and installation decisions, but will allow us to make solid estimates of the proposed facility's mass balance, drive future recovery assumptions, fine tune mechanical yield loss calculations and ultimately enable us to design a better facility. The modernized facility will not only provide us with invaluable information and real-world experience but more importantly nearly all of the processing equipment purchased as part of this project can be used in the new C&D facility that will be constructed in future years. Recology estimates that 4.96 million dollars' worth of equipment has the potential to be re-used in a new C&D facility effectively reducing the new equipment acquisition requirement by that amount. Recology believes that this approach

will not only proportionally reduce future equipment acquisition costs but also represents an effective utilization of ratepayer dollars to acquire required equipment at current pricing levels and will incrementally impact future rate adjustments in a positive way.

Recology completed the RY18 ZWI modifications to Recycle Central ® at Pier 96 for less than what was anticipated. Recology would like to seek the City's approval to utilize the remaining ZWI funds set aside for RY18 to assist with the funding of this ZWI project. At this time Recology would also like to request that the RY19 well as the RY20 ZWI funds be put towards this project. The RY19 ZWI funds will provide adequate financial resources for Recology to modify the existing infrastructure within the iMRF and place binding sales orders with the equipment vendors for the required processing equipment. In July 2020 Recology is proposing to withdraw the RY20 ZWI funds to pay for the: installation of the equipment, satisfy the remaining balances due to the equipment vendors, commission the equipment and initiate operation of the facility by September 30, 2020. This ZWI request contemplates that Recology will not attain the current ZWI goals established within the San Francisco Rate Order for RY20 and that the City will allow the Company to withdraw the ZWI funds as part of this request to satisfy the equipment acquisition and installation balance due to our vendors. If by chance Recology were to achieve the ZWI goals by the end of RY20, we would then pledge that the withdrawal of the incentives funds would be utilized to close out this project without exception.

Supporting Documentation

Below are six tables that summarizes Recology SF's project costs, show the current iMRF facilities Mass Balance and Recovery Rate, project the future Mass Balance and Recovery Rate, demonstrate the anticipated Disposal Reductions, show the Project Funding Breakdown and establish the Project Timeline with a September 30, 2020 operational date. In addition to the following tables Attachment 1 shows the schematic level design of the modernized C&D facility. Schematic I: is the top down view of the existing C&D processing lines. Schematic 2: is the top down view of the proposed facility enhancements with all the new equipment called out in green and blue and material flow indicated with arrows. Schematic 3: represents the view of the proposed elevations of the equipment. Attachment 2 represents the material and process flow diagram.

Table 1: Project Cost Summary

Recology SF 2020 ZWI Equipment, Installation, Commissioning & Life Safety	
Facility & Existing Equipment Related Items	
TITUS MRF Services	
Infeed Conveyor Rebuild & Conversion for new C&D system	
Parts	$194,505.00
Labor	$80,950.00
Tax	$8,874.29
Total (Existing) Titus MRF Services	**$284,329.29**
Main Electric	
Pull new electrical service into existing iMRF electrical panels	
Parts	$37,500.00

Labor	$40,000.00
Tax	$1,710.94
Total Main Electric	**$79,210.94**
Walschon Fire Suppression Systems	
Modification of Passive Fire Suppression (per code req.)	
Design	$25,500.00
Installation	$181,188.00
Tax	$8,266.70
Total Walschon Fire	**$214,954.70**
Fire Rover	
Installation of Active Fire Suppression system	
Equipment (1 Double Riser Unit)*	$59,250.00
Installation & Commissioning	$59,250.00
Shipping *	$7,800.00
Tax*	$5,406.56
Total Fire Rover	**$131,706.56**
Total Facility & Equipment Related Items	**$710,201.49**

New Processing Equipment & Integration Services	
Titus MRF Services	
iMRF Processing Equipment installation & System Integration	
Structural Steel Package, Conveyors and Electrical*	$1,817,790.00
Two Keiser 100HP Compressors, tank and supply*	$220,000.00
Pellenc 2800 Mistral Fiber Sorting optical sorter*	$405,000.00
Labor	$1,110,865.00
Tax*	$111,452.29
Total (New) Titus MRF Services	$3,665,107.29
Total (Existing) Titus MRF Services (from above)	$284,329.29
Total (New) Titus	**$3,949,436.58**
Van Dyk Recycling Solutions	
Pellenc 2800 single HD air bar wood optical sorter*	$415,796.14
Tax*	$18,970.70
Total Van Dyk	**$434,766.84**
SSI Shredding Solutions	
Two Primax PR4400 Size Reducers with Required Options	
Primax PR4400 size reducer with 2" x 7" Cutting Table*	$575,000.00
Primax PR4400 size reducer with 2" x 11" Cutting Table*	$615,000.00
Required Options for installation*	$65,800.00
Commissioning & Start Up	$9,500.00
Shipping*	$17,000.00
Tax*	$57,295.88
Total SSI	**$1,339,595.88**

Bulk Handling Systems (BHS)	
Equipment*	$1,488,417.00
Labor, Commissioning & Start Up	$134,191.00
Shipping*	$33,500.00
Tax *	$67,909.03
Total BHS	**$1,724,017.03**
Total Processing Equipment & Integration	**$7,163,487.03**
Total Project Budget	**$7,873,688.53**
*** Items and costs that will be utilized in the future C&D Facility Modernization.** (Note - only half the cost of Structural Steel Package, Conveyors and Electrical)	**$4,961,040.30**

Table 2: Existing Mass Balance & Recovery Rate

Material	Percentage	TPH Recovered
Wood	7.21%	1.44
Grade B Wood	0.00%	0.00
Metals	11.06%	2.21
Concrete	1.09%	0.22
Cardboard	0.59%	0.12
Plastic/Paper	0.73%	0.15
Sheet Rock	1.48%	0.30
Fines	26.23%	5.25
Residue	51.61%	0.00
Totals	**100.00%**	**9.68**

Average TPH	**20**
Average Overall Recovery %	**48%**
Average Overall Recovery TPH	**9.68**

Table 3: Proposed Mass Balance & Recovery Rate Assumptions

Material	Percentage	TPH Processed	Yield *	TPH Recovered	TPH Loss
Wood	14.50%	5.08	95%	4.82	0.25
Grade B Wood	8.00%	2.80	85%	2.38	0.42
Metals	10.80%	3.78	95%	3.59	0.19
Concrete	7.00%	2.45	90%	2.21	0.25
Cardboard	0.90%	0.32	90%	0.28	0.03
Plastic/Paper	0.90%	0.32	90%	0.28	0.03

Sheet Rock	0.90%	0.32	90%	0.28	0.03
Fines	25.00%	8.75	100%	8.75	0.00
Residue	32.00%	11.20	100%		
Total	**100.00%**	**35**	**93%**	**22.60**	**1.20**

Average TPH Processed	**35**
Estimated Net Recovery Rate	**65%**

* Yield is the sorting efficiency, with mechanical and automated sorting losses taken into consideration.

Table 4: Proposed Recovery Rates and Disposal Reduction

Material	Current Recovery Percentage *	Current TPH Recovered	Proposed TPH Processed	Estimated Recovery Percentage**	Recovery Yield ***	Estimated TPH Recovered	New Net Tons Recovered
Wood	7.21%	1.44	5.08	15.50%	95%	4.82	3.38
Grade B Wood	0.00%	0.00	2.80	8.00%	85%	2.38	2.38
Metals	11.06%	2.21	3.78	11.80%	95%	3.59	1.38
Concrete	1.09%	0.22	2.45	9.00%	90%	2.21	1.99
Cardboard	0.59%	0.12	0.32	0.90%	90%	0.28	0.16
Plastic/Paper	0.73%	0.15	0.32	0.90%	90%	0.28	0.13
Sheet Rock	1.48%	0.30	0.32	0.90%	90%	0.28	-0.02
Fines	26.23%	5.25	8.75	28.00%	100%	8.75	3.50
Residue	51.61%	0.00	11.20	25.00%	100%		
Average TPH Processed		**20**	**35**				
Average Overall Recovery TPH		**9.68**				**22.60**	**12.92**
Average Daily Recovery TPD		**116.16**					**155.01**
Average Annual Recovery TPY		**30,201.60**					**40303.38**

* Estimated material composition based on typical C&D compositions. Current Recology data that shows 55% of residue is wood, aggregate, metals and fines that are in fact recoverable but not currently being recovered.

** All recovery estimates are based upon maximum design capacity and throughput. Actual results may differ due to the incoming composition of the material. Recovery assumptions are based upon two 8 hour shifts with 6 hours of production time each.

Table 5: Requested Project Funding Breakdown

Funding Source	Total	Notes
Zero Waste Incentives, Tiers 3&4, RY18	490,000.00	Remainder of approved funds for the Pier 96 AI Integration project
Zero Waste Incentives, Tiers 3&4, RY19	3,764,949.00	ZWI available for projects from 6/19 to 5/20
Zero Waste Incentives, Tiers 3&4, RY20	3,869,484.00	Projected future ZWI finding to be applied to the project
Total ZWI Funds Available	**8,124,433.00**	
Equipment Package Fully Operational	7,873,688.53	
Annual fire Monitoring Charge	26,520.00	
Maintenance Manager	211,000.00	
2 Service Technicians	417,000.00	Operating Engineers Local 3
Project Installation Contingency	250,000.00	
Total Budget	**8,778,208.53**	

Additional Recology Funding	**653,775.53**	Recology will cover all budget overruns associated with the project

Table 6: Project Timeline

Project Item	Timing
Submit Project Proposal to SFE	January 2020
Submit Project Proposal to SFPW	April 1, 2020
Obtain Project Approval	April 30, 2020
Equipment Orders Placed	May 1, 2020
Submit Building Permits	May 6, 2020
Start Facility Related Improvements	June 1, 2020
Fabrication of Equipment (12 Weeks Max)	May 1 to July 22, 2020
Delivery and Staging	July 31, 2020
Installation Started	August 3, 2020
Installation Completed (6 Weeks)	September 14, 2020
Commissioning Started	September 15, 2020
Commissioning Completed	September 28, 2020
Total Time	**34 Weeks**

Please let me know if you have questions or require additional information. Upon receiving approval Recology will take the necessary steps to: procure the new equipment, repair the existing equipment, permit and install the new C&D processing system. We fully expect that the project will be completed and fully operational by September 30th. of this year. Thank you for your consideration of this proposal.

Sincerely,

Recoverable Signature

X John Porter

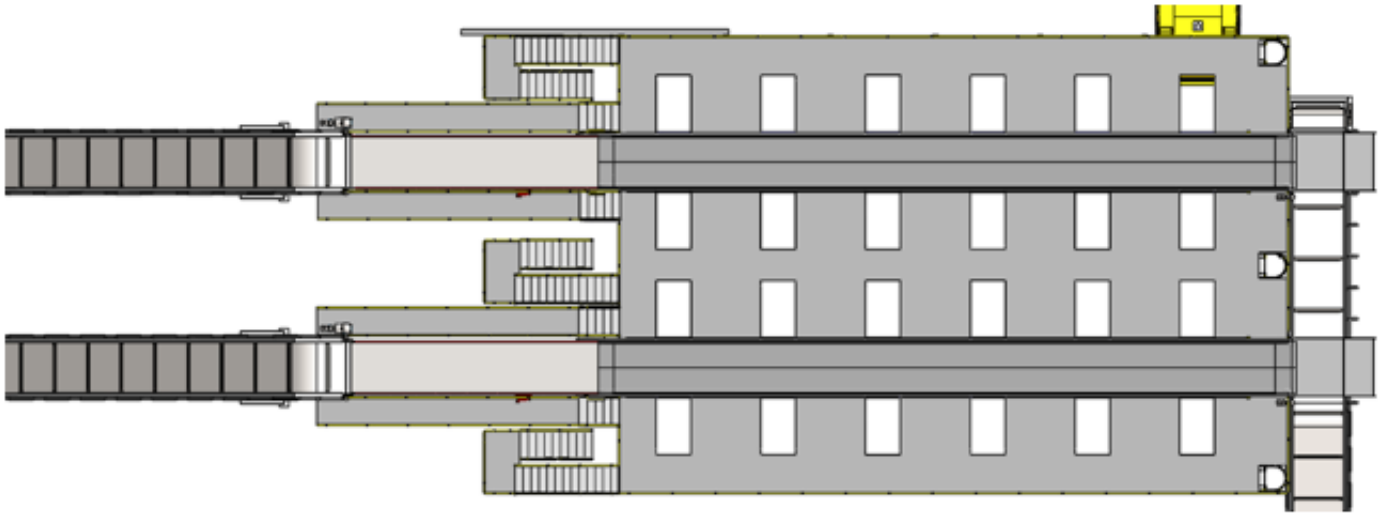
John F Porter
Vice President & Group Manager - San Franci...
Signed by: 71a004fa-b246-46dd-ac53-03b220145198

John F. Porter
Vice President and Group Manager

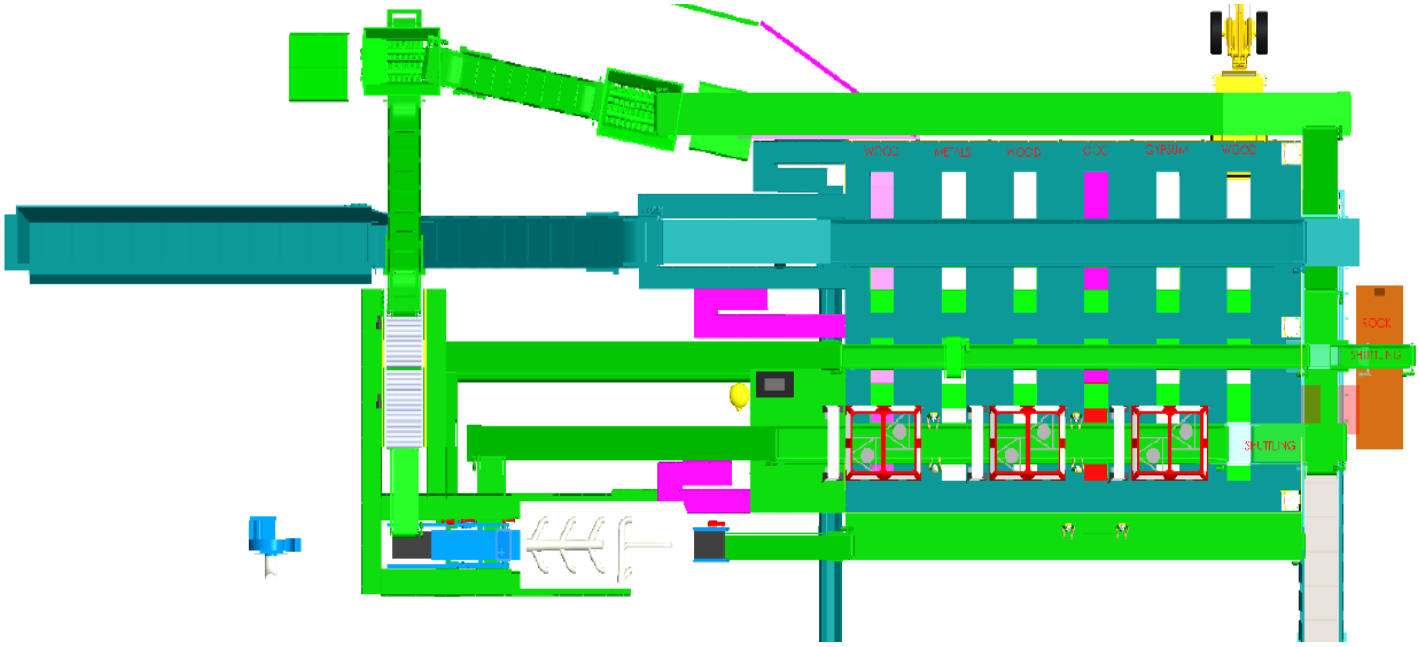
cc: Julia Dawson
Robert Haley

Attachment 1

Schematic I
Top down view of the existing C&D processing lines.

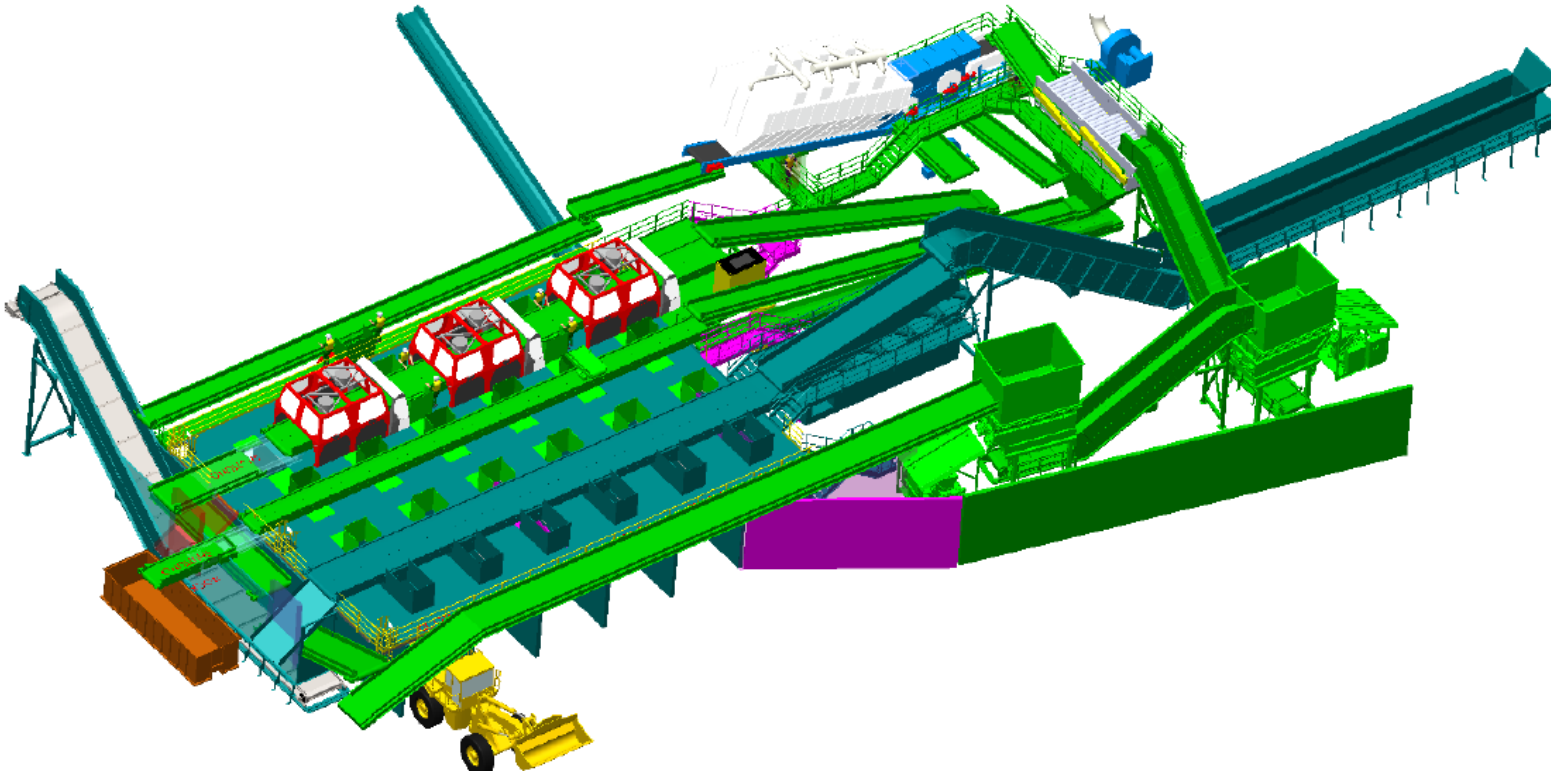


Schematic 2
The top down view of the proposed facility enhancements with all the new equipment called out in green, red and blue



Schematic 3

Represents the view of the proposed elevations of the existing and proposed equipment.



Attachment 2
Material and Process Flow Diagram