



March 7, 2017

Please find included in this packet the following information:

1. **Exhibit A:** Contingent Schedule 1 - MRF Cost Estimate from tab K of the 2017 Rate Application

Behind the MRF Cost Estimate you will find the equipment pricing details from BHS for the MRF system.

2. **Exhibit B:** Contingent Schedule 2 - Trash Processing Cost Estimate from tab K of the 2017 Rate Application

Behind the Trash Processing Cost Estimate you will find the equipment pricing details from Van Dyk Recycling Solutions and Titus Maintenance & Installation Services for the Trash Processing system.



Exhibit A

Cost Estimate iMRF Facility San Francisco, California



Item No.	TASK DESCRIPTION	ESTIMATED COSTS
1	Design	\$ 1,887,795
2		\$ -
3	Detailed Design Subtotal	\$ 1,641,561
4	Design Specs and Plans (8.5% of Building less Contractor Management & Fees)	\$ 1,616,561
5	Architectural (35% of Design Spec and Plans)	\$ 565,796
6	Civil (15% of Design Specs and Plans)	\$ 242,484
7	Structural (20% of Design Specs and Plans)	\$ 323,312
8	Mechanical (10% of Design Specs and Plans)	\$ 161,656
9	Electrical (Main Power, Building, Office & Site Lighting, Etc.) (10% of Design Specs and Plans)	\$ 161,656
10	Plumbing (5% of Design Specs and Plans)	\$ 80,828
11	Landscape (5% of Design Specs and Plans)	\$ 80,828
12	SWPPP	\$ 25,000
13	Design Contingency	\$ 246,234
14	Permitting	\$ 1,954,525
15	Zoning and Use Permit	\$ 500,000
16	Operating	\$ 250,000
17	Building & Safety (3% of Building and Construction excl. Equipment)	\$ 949,587
18	Permitting Contingency	\$ 254,938
19	Construction	\$ 37,084,766
20	Bid Process	\$ 50,000
21	Demolition and Dewatering	\$ 350,000
22	Civil	\$ 1,570,150
23	Earthwork (Scarifying, moisture conditioning and compacting)	\$ 43,960
24	Stormwater Management System	\$ 759,028
25	Asphalt Pavements	\$ 767,162
26	Inspections	\$ 300,000
27	Contingency	\$ 454,030
28	Concrete	\$ 11,543,875
29	Building Slabs	\$ 6,274,976
30	Piles	\$ 3,133,720
31	Concrete Pavements	\$ 211,200
32	Concrete Contingency	\$ 1,923,979
33	Buildings	\$ 22,816,711
34	C&D Building	\$ 9,517,433
35	Metal Frame	\$ 8,250,000
36	Doors	\$ 500,000



**Cost Estimate
iMRF Facility
San Francisco, California**



37	Push Walls	\$	367,433
38	Staff Area Improvements (Lockers, Bathrooms, Showers, Break Room, etc.)	\$	400,000
39	Container Repair Building	\$	250,000
40	Refurbishment of existing building	\$	250,000
41	Existing MRF Building Modificaitons	\$	200,000
42	Offices	\$	1,775,500
43	Frame	\$	1,170,000
44	Doors	\$	30,000
45	Fire Protection	\$	70,000
46	Office Furnishing and Communications	\$	82,500
47	Specialties	\$	8,000
48	Fireproofing, Waterproofing	\$	300,000
49	Scale House	\$	75,000
50	Scale House Furnishing and Communications	\$	40,000
51	Electrical	\$	2,037,500
52	Electrical Service to Facility	\$	200,000
53	Distribution	\$	1,837,500
54	Offices	\$	300,000
55	C&D Building	\$	675,000
56	Electrical Gear and Distribution to Equipment	\$	525,000
57	Container Repair Building (existing)	\$	-
58	Yard Lighting	\$	150,000
59	Back-Up Generator	\$	187,500
60	Plumbing	\$	425,000
61	Water	\$	425,000
62	Specialties & Misc.	\$	1,043,478
63	Fencing	\$	162,120
64	Landscaping	\$	431,358
65	Recology and City of San Francisco Signs	\$	50,000
66	Scales (Installation)	\$	120,000
67	Parking Stall Paint	\$	80,000
68	Traffic Control, Signs, Lights, Etc.	\$	100,000
69	Air Lines to Equipment and Throughout Building	\$	100,000
70	Contractor General Conditions, General Requirements & Fee (6% of Building and Construction excl. Equipment)	\$	2,848,761



**Cost Estimate
iMRF Facility
San Francisco, California**



71	Construction Management - Contractor (2% of Building and Construction excl. Equipment)	\$ 949,587
72	Total Building Contingency	\$ 3,769,452
73	Fixed Equipment	\$ 336,000
74	Truck Scales	\$ 280,000
75	Fixed Equipment Contingency	\$ 56,000
76	Management	\$ 1,293,750
77	Project Management	\$ 500,000
78	Construction Management - Owners Representative	\$ 500,000
79	Operation Start-Up	\$ 50,000
80	Project Closeout	\$ 75,000
81	Management Contingency	\$ 168,750
82	Subtotals for Buildings and Facilities	\$ 42,556,836
83	C&D Equipment	\$ 15,912,928
84	Contingency	\$ 2,075,599
85	Construction Installation of Equipment	\$ 4,922,510
86	Contingency	\$ 642,067
87	Grand Total	\$ 63,392,274
88	Contingency Total Included in Grand Total	\$ 9,591,049



**Recology San Francisco
San Francisco, California
iMRF System**

Budgetary Proposal # 16-0314-DV4
October 28, 2016





What's next.

Equipment Detail

October 28, 2016

Item #	Model #	Description	Width	Length	HP	Quantity
Equipment						
E003	DRS72-11-11-232	BHS Debris Roll Screen® - 5in Decline Screen: Decline Screen	72"		7.5,7.5	1
	DRSOC	DRS Overs Chute				1
	DRSUC2D	DRS Unders Chute (2 deck)				1
E004	DRS60-11-11-236	BHS Debris Roll Screen® - 2in Decline Screen: Decline Screen Screen Motor Count & Horsepower: 2 Motors, Horsepower = 5,5 Screen Dimensions: Screening Width = 60, Approximate Screen Length = 19 Qty of Decks	60"		5,5	2
		Shaft Qty 1st Deck				11
		Shaft Qty 2 nd Deck				11
		Shaft Qty 3rd Deck: N/A				
		Shaft Qty 4th Deck: N/A				
		IFO #1 Information: IFO #1 Dimension 1/2"x2-1/4"(32x57mm), Disc Type = 2-233 Steel Tri-Disc , Shaft t				
		IFO #2 Information: IFO #2 Dimension 1-1/4"x2-1/4"(51x57mm), Disc Type = 2-236 Steel Tri-Disc , Shaf				
		Screen Ships in: 20'Container				
	DRSOC	DRS Overs Chute				1
	DRSUC2D	DRS Unders Chute (2 deck)				1
E006	DRS50-19-201	BHS Debris Roll Screen® - 1in Screen Motor Count & Horsepower: 1 Motors, Horsepower = 5 Screen Dimensions: Screening Width = 50, Approximate Screen Length = 12 Qty of Decks	50"		5	1
		Shaft Qty 1st Deck				19
		Shaft Qty 2 nd Deck: N/A				
		Shaft Qty 3rd Deck: N/A				
		Shaft Qty 4th Deck: N/A				
		IFO #1 Information: IFO #1 Dimension 3/4"x1-3/8" (19x25mm), Disc Type = 2-201 Steel, Shaft Count fo				
		IFO #2 Information: IFO #2 Dimension N/A, Disc Type = N/A, Shaft Count for IFO#2 = N/A, Estimated Di				
		Screen Ships in: 20'Container				
	DRSOC	DRS Overs Chute				1
	DRSUC	DRS Unders Chute				1
E001		Vibratory Screen - 12in - Line #1			25	1
E002	Shredder	12in Overs Shredder - Line #1			2x200	1
E005	MAG-36	Fines Magnet Type of Magnet: Permanent Belt Orientation: Cross Belt Belt Type: Rubber Extension Required: Not Included Magnet Vendor Model Number: SP-6436-SC2			1	1
E007	SDS1200	Nihot Single Drum Separator #3 Infeed Conveyor: PIC 1200mm x 2750mm Splitter Drum Light Weight Conveyor LWC: 1200mm x 8250mm Recirculation Fan: RFI 60 Heavy Duty Design Extended Light Weight Conveyor 1000mm			40,12,5,3	1
E008	SDS1400	Nihot Single Drum Separator #1 Infeed Conveyor: PIC 1400mm x 2750mm Splitter Drum Light Weight Conveyor LWC: 1400mm x 9250mm Recirculation Fan: RFI 65 Heavy Duty Design Extended Light Weight Conveyor 1000mm			40,12,5,3	1





What's next.

Equipment Detail

October 28, 2016

Item #	Model #	Description	Width	Length	HP	Quantity
E009	SDS1000	Nihot Single Drum Separator #4 Infeed Conveyor: PIC 1000mm x 2750mm Splitter Drum Light Weight Conveyor LWC: 1000mm x 9250mm Recirculation Fan: RFI 55 Heavy Duty Design Extended Light Weight Conveyor 1500mm			30,12,5,3,	1
E010	SDS1400	Nihot Single Drum Separator #2 Infeed Conveyor: PIC 1400mm x 2750mm Splitter Drum Light Weight Conveyor LWC: 1400mm x 9250mm Recirculation Fan: RFI 65 Heavy Duty Design Extended Light Weight Conveyor 1500mm			40,12,5,3	1
E011	LPV120-2	Accelerator Air Curtain				1
E012	SpydIR-120R	NRT SpydIR® - Fiber	120"		0.5	1
E013	MDA-108ef	NRT MetalDirector™ Array - PET & Metals	96"			1
E014	SpydIR-108R	NRT SpydIR® - PET & Metals	108"		0.5	1
E015	MAG-42	Heavies Magnet Type of Magnet: Electro Magnet Belt Orientation: Cross Belt Belt Type: Armor Clad Extension Required: Not Included Magnet Vendor Model Number: SE-7422-SC2-AC			5	1
E017	AIR-1000	Air Compressor Air Compressors PKG Model No: AIR-1000 AC PKG Description: Air Compressor System 1000CFM KAE-988CSD100-SYS AC Pkg Tank Size: Dry Tank 2200 Gallon Air Piping: Included Air Compressor Qty Base Package Air Compressor Base Package Total HP				1 2 200
E018	NSF-4202-CL	Nihot Dust Collector #2			3	1
E019	MAG-54	12in Ferrous QC Magnet Type of Magnet: Electro Magnet Belt Orientation: Inline Belt Type: Armor Clad Extension Required: Not Included Magnet Vendor Model Number: SE-7615-SC1-24EXT-AC			7.5	1
E020	MAG-54	12in Unders Magnet Type of Magnet: Electro Magnet Belt Orientation: Inline Belt Type: Armor Clad Extension Required: Not Included Magnet Vendor Model Number: SE-7615-SC1-24EXT-AC			7.5	1
E021	NSF-4202-CL	Nihot Dust Collector #1			3	1
E022		Vibratory Screen - 12in - Line #2			25	1
E023	Shredder	12in Overs Shredder - Line #2			2x200	1
E031	Ducting	Pneumatic System Ductwork				1





What's next.

Equipment Detail

October 28, 2016

Item #	Model #	Description	Width	Length	HP	Quantity
Conveyors						
C001	SBI-72	Infeed Chainbelt - Line #1 Conveyor Type: Steelbelt Baler Infeed E-Stop Station(s) InFeed Chute Photo Eyes Support Bents	72"	54'	20	1 2 2
C002	HDS-72	12in Overs Sort Conveyor - Line #1 Conveyor Type: Sliderbed Support Bents Gravity Take Up Skirt Walls Conveyor Chute Large Conveyor Bend Super Duty Impact Zone Conveyor Hopper Conveyor Under Skirting Emergency Pull Cord	72"	173'	10	1
C003	HDS-60	OCC Collection Conveyor Conveyor Type: Sliderbed Support Bents Skirt Walls Conveyor Chute Large Super Duty Impact Zone	60"	47'	3	1
C005	HDS-60	Grade B Wood Collection Conveyor Conveyor Type: Sliderbed Support Bents Skirt Walls Super Duty Impact Zone	60"	72'	5	1
C006	HDS-60	Residue Collection Conveyor Conveyor Type: Sliderbed Support Bents Gravity Take Up Skirt Walls Conveyor Chute Large Super Duty Impact Zone	60"	121'	10	1
C007	HDS-60	Gypsum Collection Conveyor Conveyor Type: Sliderbed Support Bents Skirt Walls Super Duty Impact Zone	60"	50'	3	1
C010	IC-48	12in Unders Collection Conveyor Conveyor Type: Idler Support Bents Skirt Walls Stainless Steel Section	48"	52'	5	1
C011	IC-36	12in Ferrous QC Conveyor Conveyor Type: Idler Support Bents Skirt Walls Conveyor Chute Small Stainless Steel Section	36"	19'	3	1





What's next.

Equipment Detail

October 28, 2016

Item #	Model #	Description	Width	Length	HP	Quantity
C012	IC-48	Ferrous Loadout Conveyor Conveyor Type: Idler Support Bents Skirt Walls Stainless Steel Section Conveyor Hopper	48"	67'	5	1
C013	IC-48	12in Unders Transfer Conveyor #1 Conveyor Type: Idler Support Bents Skirt Walls Conveyor Chute Large Stainless Steel Section	48"	64'	5	1
C014	IC-48	12in Unders Transfer Conveyor #2 Conveyor Type: Idler Support Bents Skirt Walls Conveyor Chute Large Conveyor Bend	48"	45'	3	1
C015	IC-60	5in Unders Transfer Conveyor Conveyor Type: Idler Support Bents Skirt Walls Conveyor Chute Large	60"	49'	3	1
C016	IC-36	2in Unders Collection Conveyor Conveyor Type: Idler Support Bents Skirt Walls Conveyor Chute Small	36"	48'	3	1
C017	IC-36	2in Unders Transfer Conveyor Conveyor Type: Idler Support Bents Skirt Walls Conveyor Chute Small Stainless Steel Section	36"	78'	8	1
C018	HDS-48	5-12in Collection Conveyor Conveyor Type: Sliderbed Support Bents Skirt Walls Conveyor Chute Large Super Duty Impact Zone	48"	67'	5	1
C019	IC-48	2-5in Overs Collection Conveyor Conveyor Type: Idler Support Bents Skirt Walls Conveyor Chute Large Conveyor Hopper	48"	67'	5	1
C020	HDS-36	2-12in Heavies Collection Conveyor Conveyor Type: Sliderbed Support Bents Skirt Walls Conveyor Chute Small Super Duty Impact Zone	36"	48'	3	1





What's next.

Equipment Detail

October 28, 2016

Item #	Model #	Description	Width	Length	HP	Quantity
C021	HDS-48	2-5in Mid Heavies Collection Conveyor Conveyor Type: Sliderbed Support Bents Skirt Walls Conveyor Chute Large Super Duty Impact Zone	48"	22'	3	1
C022	HDS-48	5-12in Mid Heavies Collection Conveyor Conveyor Type: Sliderbed Support Bents Skirt Walls Conveyor Chute Large Super Duty Impact Zone	48"	22'	3	1
C023	HDS-48	5-12in Mid Heavies Sort Conveyor Conveyor Type: Sliderbed Support Bents Skirt Walls Conveyor Chute Large Conveyor Bend Super Duty Impact Zone Conveyor Under Skirting Emergency Pull Cord	48"	88'	8	1
C024	HDS-48	2-5in Mid Heavies Sort Conveyor Conveyor Type: Sliderbed Support Bents Skirt Walls Conveyor Chute Large Conveyor Bend Super Duty Impact Zone Conveyor Under Skirting Emergency Pull Cord Post Sort Conveyor End Enclosure	48"	88'	8	1
C025	HDS-36	2-12in Heavies Sort Conveyor Conveyor Type: Sliderbed Support Bents Gravity Take Up Skirt Walls Conveyor Chute Small Conveyor Bend Stainless Steel Section Super Duty Impact Zone Conveyor Under Skirting Emergency Pull Cord	36"	132'	10	1
C026	ACL-108	Accl Conveyor - PET & Metals Conveyor Type: Acceleration Support Bents Skirt Walls	108"	22'	10	1
C027	ACL-120	Accl Conveyor - Fiber Conveyor Type: Acceleration Support Bents Skirt Walls	120"	22'	10	1
C029	LPS-36	Recyclables Collection Conveyor Conveyor Type: Sliderbed Support Bents Skirt Walls Conveyor Chute Small	36"	34'	3	1





What's next.

Equipment Detail

October 28, 2016

Item #	Model #	Description	Width	Length	HP	Quantity
C032	LPS-36	Mixed Paper Collection Conveyor Conveyor Type: Sliderbed Support Bents Skirt Walls Conveyor Chute Small	36"	75'	5	1
C033	SBH-72	Metering Chainbelt - Line #1 Conveyor Type: Steelbelt Conveyor Hopper	72"	26'	15	1
C034	SBH-72	Metering Chainbelt - Line #2 Conveyor Type: Steelbelt Conveyor Hopper	72"	26'	15	1
C035	SBI-72	Infeed Chainbelt - Line #2 Conveyor Type: Steelbelt Baler Infeed E-Stop Station(s) InFeed Chute Photo Eyes Support Bents	72"	79'	25	1 2 2
C036	HDS-72	12in Overs Sort Conveyor - Line #2 Conveyor Type: Sliderbed Support Bents Gravity Take Up Skirt Walls Conveyor Chute Large Conveyor Bend Super Duty Impact Zone Conveyor Hopper Conveyor Under Skirting Emergency Pull Cord	72"	173'	10	1
C037	IC-48	12in Shredder Collection Conveyor Conveyor Type: Idler Support Bents Skirt Walls Conveyor Chute Large	48"	42'	3	1
C038	IC-48	12in Shredder Transfer Conveyor Conveyor Type: Idler Support Bents Gravity Take Up Skirt Walls Conveyor Chute Large Conveyor Bend	48"	184'	10	1
C039	HDS-60	Mixed Metals Collection Conveyor Conveyor Type: Sliderbed Support Bents Skirt Walls	60"	72'	5	1
C040	HDS-48	Aggregate Transfer Conveyor Conveyor Type: Sliderbed Support Bents Skirt Walls Conveyor Chute Large Super Duty Impact Zone	48"	92'	8	1
C041	HDS-60	Mixed Rigid Plastics Collection Conveyor Conveyor Type: Sliderbed Support Bents Skirt Walls Conveyor Chute Large	60"	54'	5	1





What's next.

Equipment Detail

October 28, 2016

Item #	Model #	Description	Width	Length	HP	Quantity
Structure						
S001	PLAT-SORT	12in Overs Sort Platform				1
		Platform Square Footage				1290
		Walkway				
		Throw Chute 24" x 24" Qty				12
		Throw Chute 48" x 24" Qty				16
		Throw Chute 72" x 36" Qty				12
S002	PLW	Post Sort Bunkers				1
S003	PUW	Wood Bunkers				1
S004	ST-MAG-C&D	12in Unders Magnet Structure				1
S005	ST-MAG-C&D	12in Ferrous QC Structure				1
S006	ST-MAG-C&D	Fines Magnet Structure				1
S007	PLW	Fines Bunkers				1
S008	PLAT-EQUIP	1in DRS Platform				1
		Platform Square Footage				143
		Caged Ladders				
S009	PLAT-EQUIP	5in DRS Platform				1
		Platform Square Footage				158
S010	PLAT-EQUIP	2in DRS Platform				1
		Platform Square Footage				158
S011	PLAT-EQUIP	5-12in SDS Platform				1
		Platform Square Footage				525
S012	PLAT-EQUIP	2-5in SDS Platform				1
		Platform Square Footage				563
S013	ST-MAG-C&D	Heavies Magnet Structure				1
S024	PLAT-SORT	Heavies Post Sort Platform				1
		Platform Square Footage				187
		Standard Landing Stairs				
		Throw Chute 72" x 36" Qty				3
S025	PLAT-SORT	5-12in Mid Heavies Sort Platform				1
		Platform Square Footage				591
		Throw Chute 60" x 30" Qty				2
		Throw Chute 72" x 36" Qty				6
S026	PLAT-SORT	2-5in Mid Heavies Sort Platform				1
		Platform Square Footage				681
		Standard Landing Stairs				
		Throw Chute 60" x 30" Qty				2
		Throw Chute 72" x 36" Qty				6
S027	PLAT-EQUIP	5-12in Fiber Optical Platform				1
		Platform Square Footage				123
S028	PLAT-EQUIP	2-5in PET & Metals Optical Platform				1
		Platform Square Footage				119

Item #	Model #	Description
By Customer		
B003		Finger Screen Base - Line #1 - By Customer
B004		Finger Screen Base - Line #2 - By Customer
B005		Wood Grinder-By Customer
B006		OCC Compactor-By Customer
B007		Mixed Paper Compactor-By Customer
B008		MRP Compactor-By Customer
B009		Residue Compactor-By Customer

Estimated Power Consumption

Total Estimated HP: 1393.0HP
Total Estimated kWh: 1044.8kWh Peak Load





What's next.

Equipment Detail

October 28, 2016

Item #	Model #	Description	Width	Length	HP	Quantity
			Estimated kWh @40%		417.9kWh	Running Load

BHS Paint Specification

Our standard BHS paint system will meet ISO 12944-5: 1998, corrosivity categories C2 and C3.

Our paint system consists of the following steps:

- Surface Preparation: ISO ST-2 thorough hand and power tool cleaning to remove unwanted and/or foreign matter.
- Primer: One coat of Rodda 733823x Low HAP Metal Primer II
- Topcoat: Two coats Rodda 758001x Quick Drying Equipment Enamel

The total paint system as described above will achieve 120 microns NDFT, 4.7 mils.

RAL color number to be confirmed upon order placement. Guards painted Signal Yellow (RAL 1003) unless otherwise specified.





What's next.

BHS Conveyor Specifications

October 28, 2016

Chainbelt Conveyor Specifications

Motor and drive:	Energy efficient motor with Class I gear reducer.
Shafting & Sprockets:	Head shaft is constructed from C1045 cold finished steel. Shafts are mounted in heavy-duty pillow blocks with cast iron housing. Two tail shafts are independent with two inserted roller bearings each.
Belt speed:	Variable – depending on application.
Belt:	350 PVC, mildly oil resistant belting approx. 1/4" thick, fastened to C6x8.2 channels between two (2) strands of 9" pitch chain.
Splice:	Fastened to channel cross member
Flights:	Angle iron flights 3/8" x 3" x 4" are aligned with 6" channels carry under the belt. The flights are bolted through the belt and carry channel. With the flights bolted to the carry bars and the carry channels welded to the chain side plates, the carry channels transmit the load directly into the two strands of chain. The belt is not used to transfer power at any time.
Load support:	Load support rails run the full length of the conveyor loading zone minimum and often the entire conveyor length to limit the deflection of the belt assembly. Under normal loads, the belt assembly does not come in contact with the support rails.
Load support at radius curves:	At radius curves BHS uses rolled flat bars lined with wear alloy 400 BHN flat bars for chain guides. These curved guides can be accessed via removable external panels for replacement of wear bars without having to disassemble the chain.
Chains:	9" pitch with two rows of 3/8" x 2" 1040 steel sidebars. The pins are 3/4" diameter, heat-treated steel running in a bushing inside the roller. Rollers are 3" diameter case hardened, with fit case hardened bushings.
Rails:	Chains are fully supported by ASCE rail.
Pit Plates:	Used where applicable, 1/2" thick steel.
E-Stop:	Emergency start/stop buttons, two (2) provided.
Structure:	The chassis and supports are fabricated from A36 steel. Load zone fabricated from 3/8" thick steel; all remaining areas will be 1/4" steel.
Sidewalls:	Steel sidewalls overlap edges of belt to contain material

Sliderbed Conveyor Specifications

Motor and drive:	Energy efficient motor with Class II gear reducer.
Shafting:	Head and tail shafts are constructed from C1045 cold finished steel.
Belt speed:	Variable – depending on application.
Belt:	330 3-ply, mildly oil resistant belting approx. 3/16" thick. Conveyors at a 15 degree incline or greater will have approx. 3/16" tall "V" pattern cleats.
Splice:	Flexco R2 stainless mechanical splice with plastic coated pin.
Head and tail pulleys:	Fastened to shaft with XTB style bushing. Keyed to head and tail shafts for positive power transfer. Drive pulleys are double keyed and idler pulleys are single keyed to shaft. Tail pulleys are wing type to allow material to escape and crowned or trapezoidal to help with belt tracking. Conveyor pulleys meet ANSI/CEMA standard B105.1-2009.
Emergency pull cord:	Included for sort conveyors.
Structure:	3/16" thick formed steel pan.
Sidewalls:	Edges of belt seal against troughed conveyor pan. Steel skirtwalls contain material.
Special features:	Special pan design with "release" areas on sides to liberate abrasives (glass conveyors). Vulcanized cleats as required (steep conveyors). Conveyors used for manually sorting are ergonomically designed with rolled edges. BHS belt scrapers supplied for most applications.

Idler Carry Conveyor Specifications

Motor and drive:	Energy efficient motor with Class II gear reducer
Shafting:	Head and tail shafts are constructed from C1045 cold finished steel
Belt speed:	Variable – depending on application
Belt:	330 3-ply, mildly oil resistant belting approx. 3/16" thick. Conveyors at a 15 degree incline or greater will have approx. 3/16" tall "V" pattern cleats.
Splice:	Flexco R2 stainless mechanical splice with plastic coated pin.
Head and tail pulleys:	Fastened to shaft with XTB style bushing. Keyed to head and tail shafts for positive power transfer. Drive pulleys are double keyed and idler pulleys are single keyed to shaft. Tail pulleys are wing type to allow material to escape and crowned or trapezoidal to help with belt tracking. Conveyor pulleys meet ANSI/CEMA standard B105.1-2009.
Structure:	3/16" thick formed steel pan
Sidewalls:	Steel sidewalls with adjustable rubber to the belt.
Troughing Idler:	Sealed bearing CEMA C rated Troughing Idlers are at 35 degrees to contain materials being conveyed.
Special features:	Vulcanized cleats as required (steep conveyors). BHS belt scrapers supplied for most applications. Thumpers can be added to return idlers if needed to assist removal of fine material from the belt.





What's next.

BHS Conveyor Specifications

October 28, 2016

Accelerator Specifications

Motor and drive:	Energy efficient motor with Class II gear reducer.
Shafting:	Head and tail shafts are constructed from C1045 cold finished steel.
Belt speed:	600 FPM. This may vary, depending on application.
Belt:	Mildly oil resistant belting.
Head and tail pulleys:	Fastened to shaft with XTB style bushing. Keyed to head and tail shafts for positive power transfer. Drive pulleys are double keyed and idler pulleys are single keyed to shaft. Conveyor pulleys meet ANSI/CEMA standard B105.1-2009.
Structure:	3/16" thick formed steel pan.





What's next.

System Integration

October 28, 2016

System Integration

Controls Package

Included

The BHS control panel will provide both automatic mode and maintenance mode control of the equipment. The panel will be constructed per the NEC code and fabricated in a UL Approved shop.

It will generally consist of the following components:

- Hoffman NEMA 12 rated enclosure
- Allen Bradley components mounted on removable back panel
- Lockable, fused disconnect for 460/3/60 service
- Power distribution block
- Control power transformer, 460VAC-240 -120VAC
- Indicating fuse holders for 120VAC control power circuits
- Fuses with indicating statuses for all ACVF drives and motor starters
- (Input) line reactors for each ACVF drive
- ABB drive for variable speed control required motors
- Output contractors for emergency stop isolation for each of the ACVF drives
- Master control relay for isolation of control power for emergency stop conditions, Category 1 circuit
- Allen Bradley Compact Logix PLC
- Wire duct for running control and power wire inside enclosure
- One 120VAC/1/60 outlet for computer power
- Numbered terminal strips for all connecting field wiring including motor leads
- Hardwired, lighted, emergency stop button on front of enclosure
- Color touch screen, operator interface panel (HMI) in remote enclosure
- Two-signal light and horn sets to annunciate starting of equipment
- One Internet VPN appliance used for remote internet access
- HMI allows for a single one button system start/stop in automatic mode
- HMI has a reset button which allows remote reset for each of the ACVF drives
- HMI displays alarm banner's and alarm history screen to assist in trouble shooting faults included
- HMI has access to all ACVF drives for maintenance purposes called drive interface which allows access to all parameters for each drive
- HMI can individually start and stop all motors in maintenance mode

SCADA (Supervisory Control and Data Acquisition)

Included

The BHS SCADA System is focused on the data acquisition aspect of SCADA, utilizing a PC-based system to interface with the Programmable Logic Controller (PLC) system to collect data, store it in a database, and allow access for reporting purposes.

It will collect data from the following places/items:

- Motor hours
- Motor start cycles
- Motor amps (when available)
- Motor speed
- All system alarms
- System start/stop events
- In-feed start/stop events
- Downtime
- Estimated Production
- BHS Screens
- Power Monitoring
- Motors

The SCADA System will provide the following reporting capabilities:

- Overall Equipment Efficiency
- Production Rate
- Staffing Chart Configuration/Verification
- Downtime Tracking
- Event Logging
- Equipment Power Tracking
- Preventive Maintenance Planning and Tracking





What's next.

System Integration

October 28, 2016

System Integration

Project Management, Start-up Assistance, and Training

Included

BHS Project Manager will manage our scope of the project including the following services:

Pre-Installation Services:

- Project Kick-Off Meeting
- General Arrangement Review
- Pre-Installation Visit from Project Manager

Installation Services:

- Contracting and Management of Electrical and Mechanical Installation Contractors
- On-Site Start-up and Commissioning Supervision

Training Services:

- On-Site Maintenance and Operations Training

System Engineering and Consultation

Included

Mechanical Installation - Non-Union - No Prevailing Wages

Included

Electrical Installation- Rigid Conduit - Non-Union - No Prevailing Wages

Included





What's next.

Equipment Detail - Option #1: (2) NRT wood optical sorters on 12" minus fractions

October 28, 2016

Item #	Model #	Description	Width	Length	HP	Quantity
Equipment and Conveyors						
E017	AIR-1500	Air Compressor Replaces item E017 on base if option is chosen Air Compressors PKG Model No: AIR-1500 AC PKG Description: Air Compressor System 1500CFM KAE-1482CSD100-SYS AC Pkg Tank Size: Dry Tank 2560 Gallon Air Piping: Included Air Compressor Qty Base Package				1 3
		Air Compressor Base Package Total HP				300
E028	SpydIR-72R	NRT SpydIR® - 2-5in Wood Ejection Valve Block Integrated Ejection Hood Splitter Roller and Drive Splitter Chute Electrical Control Panel	72"		0.5	1
E029	SpydIR-72R	NRT SpydIR® - 5-12in Wood Ejection Valve Block Integrated Ejection Hood Splitter Roller and Drive Splitter Chute Electrical Control Panel	72"		0.5	1
C021	HDS-48	2-5in Wood Collection Conveyor Replaces item C021 on base if option is chosen Conveyor Type: Sliderbed Support Bents Skirt Walls Conveyor Chute Large	48"	32'	3	1
C022	HDS-48	5-12in Wood Collection Conveyor Replaces item C022 on base if option is chosen Conveyor Type: Sliderbed Support Bents Skirt Walls Conveyor Chute Large Super Duty Impact Zone	48"	22'	3	1
C023	HDS-48	2-12in Wood Sort Conveyor Replaces item C023 on base if option is chosen Conveyor Type: Sliderbed Support Bents Skirt Walls Conveyor Chute Large Super Duty Impact Zone Conveyor Under Skirting Emergency Pull Cord Post Sort Conveyor End Enclosure	48"	47'	3	1
C024	HDS-48	2-12in Mid Heavy Defaults Sort Conveyor Replaces item C024 on base if option is chosen Conveyor Type: Sliderbed Support Bents Skirt Walls Conveyor Chute Large Super Duty Impact Zone Conveyor Under Skirting Emergency Pull Cord	48"	44'	3	1





What's next.

Equipment Detail - Option #1: (2) NRT wood optical sorters on 12" minus fractions

October 28, 2016

Item #	Model #	Description	Width	Length	HP	Quantity
		Post Sort Conveyor End Enclosure				
C042	ACL-72	Accl Conveyor - 2-5in Wood Conveyor Type: Acceleration Support Bents Skirt Walls	72"	18'	8	1





What's next.

Equipment Detail - Option #1: (2) NRT wood optical sorters on 12" minus fractions

October 28, 2016

Item #	Model #	Description	Width	Length	HP	Quantity
C043	ACL-72	Accl Conveyor - 5-12in Wood Conveyor Type: Acceleration Support Bents Skirt Walls	72"	18'	8	1
C044	HDS-48	2-12in Wood Transfer Conveyor Conveyor Type: Sliderbed Support Bents Skirt Walls Conveyor Chute Large Conveyor Hopper	48"	69'	5	1
C045	HDS-36	2-5in Mid Heavy Defaults Collection Conveyor Conveyor Type: Sliderbed Support Bents Skirt Walls Conveyor Chute Small	36"	22'	3	1
C046	HDS-36	5-12in Mid Heavy Defaults Collection Conveyor Conveyor Type: Sliderbed Support Bents Skirt Walls Conveyor Chute Small	36"	22'	3	1
C047	HDPC-48	2-12in Mid Heavy Defaults Transfer Conveyor Conveyor Type: Sliderbed Support Bents Skirt Walls Conveyor Chute Large	48"	47'	3	1

Item #	Model #	Description	Width	Length	HP	Quantity
Structure						
S003	PLW	Wood Bunkers Replaces item S003 on base if option is chosen				1
S025	PLAT-SORT	2-12in Wood Sort Platform Replaces item S025 on base if option is chosen				1
		Platform Square Footage				372
		Throw Chute 72" x 36" Qty				4
S026	PLAT-SORT	2-12in Mid Heavy Defaults Sort Platform Replaces item S026 on base if option is chosen				1
		Platform Square Footage				531
		Standard Landing Stairs				
		Throw Chute 24" x 24" Qty				6
		Throw Chute 60" x 30" Qty				6
S029	PLAT-EQUIP	2-5in Wood Optical Platform				1
		Platform Square Footage				198
S030	PLAT-EQUIP	5-12in Wood Optical Platform				1
		Platform Square Footage				198





What's next.

Equipment Detail - Option #2: (1) NRT MRP optical sorter on 5"-12" fraction

October 28, 2016

Item #	Model #	Description	Width	Length	HP	Quantity
Equipment and Conveyors						
E017	AIR-1150	Air Compressor Replaces item E017 on base if option is chosen Air Compressors PKG Model No: AIR-1150 AC PKG Description: Air Compressor System 1150CFM KAE-1130CSD125-SYS AC Pkg Tank Size: Dry Tank 2200 Gallon Air Piping: Included Air Compressor Qty Base Package				1 2
E030	SpydIR-96R	NRT SpydIR® - MRP Ejection Valve Block Integrated Ejection Hood Splitter Roller and Drive Splitter Chute Electrical Control Panel	96"		0.5	1 250
C027	ACL-120	Accl Conveyor - Fiber Replaces item C027 on base if option is chosen Conveyor Type: Acceleration Support Bents Skirt Walls	120"	18'	10	1
C032	LPS-36	Mixed Paper Collection Conveyor Replaces item C032 on base if option is chosen Conveyor Type: Sliderbed Support Bents Skirt Walls Conveyor Chute Small	36"	66'	5	1
C041	HDS-60	Mixed Rigid Plastics Collection Conveyor Replaces item C041 on base if option is chosen Conveyor Type: Sliderbed Support Bents Skirt Walls Conveyor Chute Large Super Duty Impact Zone	60"	82'	8	1
C048	HDS-72	5-12in Lights Collection Conveyor Conveyor Type: Sliderbed Support Bents Skirt Walls Conveyor Chute Large Super Duty Impact Zone	72"	30'	3	1
C049	LPS-36	Fiber Collection Conveyor Conveyor Type: Sliderbed Support Bents Skirt Walls Conveyor Chute Small	36"	15'	3	1
C050	ACL-96	Accl Conveyor - MRP Conveyor Type: Acceleration Support Bents Skirt Walls	96"	18'	10	1
C051	LPS-60	5-12in Lights Default Collection Conveyor Conveyor Type: Sliderbed Support Bents Skirt Walls Conveyor Chute Large	60"	29'	3	1





What's next.

Equipment Detail - Option #2: (1) NRT MRP optical sorter on 5"-12" fraction

October 28, 2016

Item #	Model #	Description	Width	Length	HP	Quantity
Structure						
S027	PLAT-EQUIP	5-12in Fiber Optical Platform				1
		Replaces item S027 on base if option is chosen				
		Platform Square Footage				214
		Non Caged Ladders				
S031	PLAT-EQUIP	MRP Optical Platform				1
		Platform Square Footage				204





What's next.

Pricing & Terms

October 28, 2016

Basic Description-key components

- Complete System includes equipment per layout 16-0314-20C1D
- Two main system infeed conveyor systems
- Two primary 12" + sort lines
- Two 12" Vibratory screens
- Two SSI Pri-Max reducers to size material to 12"
- DRSD 5" screen
- DRSD 2.5" screen
- Four Nihot SDS Air Density Separating systems
- FE magnets
- NRT Optical to recover plastics & metals from <5" light fraction
- NRT Optical to recover fiber from 5"-12" light fraction
- All conveyors as shown in layout
- All structure as shown in layout
- All platforms as shown in layout
- Controls for all equipment supplied by BHS
- Mechanical installation @ non-prevailing wages
- Electrical installation @ non-prevailing wages
- Rigid electrical conduit for wiring
- Project management, start-up and training
- Estimated freight to job site
- Excludes any compactors, drop boxes, SSI compactor for residue, wood shredder, any civil work

Budgetary price for system per layout 16-0134-20C1D	USD	\$11,486,471
5% Contingency	USD	\$574,324
Structural calculation allowance on full engineering package	USD	\$125,000
Option #1: (2) NRT wood optical sorters on 12" minus fractions	USD	\$959,233
Option #2: (1) NRT MRP optical sorter on 5"-12" fraction	USD	\$692,301
Budgetary price for system and all options listed above	USD	\$13,837,329

- Validity: This quote is valid for 30 days
- Shipping Terms: Prices as quoted are EXW factory. Estimated freight costs have been provided for budgeting purposes. Actual freight plus loading costs will be invoiced as charges occur.
- Delivery: To be determined based upon availability at time of order

Payment Terms for System:

- 35% Down payment due with signed order to begin General Arrangement drawing
- 25% Progress payment, due upon issuance of approval drawings.
- 20% Payment due 12 weeks from receipt of signed approval drawings
- 15% Payment due upon notice of first pending shipment. Payment to be received two weeks prior to shipment from BHS factory
- 5% Upon completion of installation and start-up, payment not to exceed 30 days from system start-up

Buyer's Responsibility:

- Storage and security of equipment upon arrival to site
- Any and all applicable taxes
- Concrete or other civil work including pits
- Construction or building permits
- Demolition or removal of existing equipment unless otherwise noted
- Design and supply of foundation(s) and embeds
- Air discharge vents through ceiling or walls for air compressors
- Incoming power feeds to the controls MCC unit(s) and any ancillary equipment requiring dedicated feeds
- Supply of any items indicated as "by customer", "not included", "existing", or "by others"
- Any required replacement, modification, repair, paint, or other upgrade work to items indicated as "by customer", "existing" or "by others" except as specifically noted

Recology San Francisco iMRF · BHS Budgetary Proposal 16-0314-DV4 · Reference Drawing 16-0314-20C1D





What's next.

Pricing & Terms

October 28, 2016

Sincerely,
Bulk Handling Systems (BHS)

A handwritten signature in blue ink that reads "Eric Winkler".

Eric Winkler
Sales Manager





What's next.

Conditions of Sale & Warranty

1. PRICES

A. TERM OF OFFER. Prices will be guaranteed for a period of thirty (30) days from date appearing on the proposal, and will be subject to revision should there be any changes in supplier's prices to BULK HANDLING SYSTEMS (hereinafter referred to as "BHS"). All prices are subject to change in the event BUYER requests modifications of the product or system.

B. TAXES. Unless otherwise indicated no Sales, Use, Retailers, Occupation, Service Occupation, Service Use or other similar taxes are included in the purchase price. The amount of any such taxes which are paid or payable, or assessed, in connection with any order, and which are not specifically stated as being included in the purchase price, shall be paid by BUYER to BHS or, if authorized by law, by BUYER directly to the taxing authority.

C. PAYMENT. Invoices are due upon presentation and will be submitted in accordance with the payment schedule as outlined in the proposal. All sums due under this contract shall bear a finance charge of one and one-half (1½%) per month, or the highest lawful rate, whichever is more, if not paid within ten (10) days of when due. Due date is deemed to be the date of the invoice. Upon BUYER's breach of this agreement, BHS may accelerate notice, require a letter of credit or make shipment under reservation.

2. SHIPMENT/COMPLETION

A. FORCE MAJEURE. BHS' best efforts will be made to meet promised shipping/completion dates. However, where change in shipping or completion dates is necessary, BHS will advise BUYER. The time of delivery named by us is the date for shipping from our plants or warehouses. We will not be liable for delays in delivery or completion caused by any reason beyond our control, including but not limited to, acts of God, casualty, civil disturbances, labor disputes, transportation or supply difficulties, any interruption of our facilities, or act of any governmental authority, and the time for delivery specified herein shall be extended during the continuance of such conditions and for a reasonable time thereafter.

B. RISK OF LOSS/SHIPPING TERMS. Unless otherwise agreed in writing: (1) We are not responsible for damage to or loss of products after delivery to the transportation company, however, we will cooperate in attempting to secure an adjustment when so requested; (2) All shipments to be installed by a party other than BHS are FCA our plant or warehouse from which the products are shipped; and (3) In the event of BHS installation, shipments shall be CIP or DAP job site.

3. SECURITY AGREEMENT. Until the purchase price is paid in full, BHS shall maintain a security interest in the goods sold. PURCHASER shall execute, upon request, such financial statements, continuations, terminations and other documents necessary to affect the intent of this paragraph.

4. ASSIGNMENT. This agreement may not be assigned or transferred by BUYER, without the prior written consent of BHS.

5. ARBITRATION. All disputes, differences or questions between the parties concerning the construction, interpretation and effect of this agreement or of any claims herein contained or the rights and liabilities of the parties, shall be settled by arbitration in accordance with the rules and regulations of the American Arbitration Association or the International Chamber of Commerce if the licensed territory is not part of the United States of America. The seat of arbitration shall be at Eugene, Oregon, USA, or the principal place of business of Buyer, as selected by BHS, or such other place as the parties may agree in writing. The decision of the arbitrators shall be binding and final and may be registered as a judgment or otherwise enforced in any court of competent jurisdiction. The fees and costs shall be shared equally by the parties; provided, however, the prevailing party shall be entitled to recover its cost of arbitration, its share of arbitration fees, reasonable and necessary expenses in presenting its case. Such fees and costs shall be determined by the arbitrators and shall become part of the arbitration record.

6. CANCELLATION. A contract or order may not be canceled, once it becomes final, unless BHS at its sole option agrees in writing to BUYER's cancellation of the contract. If BHS agrees, cancellation fees will be paid by the actual value of total job completion attained at the time of BUYER's notification to BHS of intention to cancel.

7. GOVERNING LAW/JURISDICTION. The situs of this contract is Eugene, Oregon, USA, and jurisdiction of any and all disputes shall be in Lane County, Oregon, except at the sole option of BHS. BHS may maintain any cause of action or cause of suit in a court of competent jurisdiction in which the BUYER is or was present during the existence of this contract. This agreement shall be considered as an Oregon contract and shall be interpreted and construed in accordance with the applicable laws of the State of Oregon and the United States of America.





What's next.

Conditions of Sale & Warranty

8. ATTORNEY'S FEES. In the event that it becomes necessary for BHS to enforce its rights in accordance with this agreement, or as a result of this agreement, the prevailing party shall be entitled to all reasonable attorney's fees, including fees on any appeal, costs of reasonable discovery, deposition, expert witness fees, and arbitration, trial or costs and disbursements allowed by law.

9. LEGALITY. If any term, clause or provision, of this agreement should be held or judged by a court or authority having jurisdiction over the parties or over this judgment to be illegal, invalid or unenforceable, this shall not affect the validity of any other term, clause or provision shall be deemed to be separable and to be deleted from this agreement.

10. BINDING EFFECT. This agreement shall be binding upon and inure to the benefit of the parties, their successors, and their assigns, to the extent this agreement is assignable by its terms, but neither party shall be relieved of its obligations hereunder by assignment of the agreement.

11. OSHA REQUIREMENTS. BUYER agrees that all safety devices and systems designed and/or suggested by BHS will be kept in good condition and repair after installation, and that, under no circumstances, will any safety system or device be removed, be allowed or permitted to be removed or made inoperable, without prior written consent of BHS. Safety related changes required by applicable governmental rules, regulations or law after execution of the agreement shall be the sole responsibility of BUYER and not that of BHS, and BUYER shall pay for increased cost and expense occasioned thereby. BUYER agrees to indemnify and hold harmless for any claim arising from breach of the provisions of this subparagraph. BUYER will, unless otherwise agreed in writing, install BHS equipment in accordance with applicable installation practices.

12. CONFLICT IN TERMS. BHS's failure to object to any provisions contained in the BUYER's purchase order or other communications which are in conflict with, or in addition to the provisions contained herein, shall not be deemed a waiver of the terms or conditions set forth herein, nor as acceptance of such BUYER's provisions.

13. WARRANTY. For a period of 12 months or 2,000 hours, whichever occurs first, following "Functional Operation" of BHS equipment, BHS warrants that its products will reasonably conform to the description contained in this agreement and they have been prepared, manufactured or produced in a good workmanlike manner, are free of defects of workmanship or materials, are of a standard quality or better as is common in the industry. This warranty is for parts only. At its option and expense, BHS will promptly repair or replace the products and/or component parts sold under this agreement, which do not conform to this warranty.

"Functional Operation" is defined as the date upon which the work is sufficiently complete such that our equipment is capable of operating for its intended purpose.

This warranty shall not apply to WEAR PARTS, or any product that has been subjected to misuse, misapplication, neglect (including but not limited to improper maintenance and storage), accident, improper installation, modification (including but not limited to use of unauthorized parts or attachments) that has not been authorized in writing and unauthorized adjustment or repair.

It is expressly agreed and understood that BHS's SOLE LIABILITY UNDER THIS WARRANTY, WHETHER IN CONTRACT, TORT OR OTHERWISE, AND BUYER'S SOLE REMEDY IS LIMITED TO THE REPAIR OR REPLACEMENT OF THE PRODUCTS, OR THE PARTS THEREOF. The parties agree that BHS WILL NOT BE LIABLE FOR any other injury, loss damage or expense, whether direct, incidental or consequential, including but not limited to loss of use, income, profit or production, in connection with the sale, installation, use of, inability to use, or the repair or replacement of BHS's products. THIS WARRANTY IS EXCLUSIVE AND IN LIEU OF ANY AND ALL OTHER WARRANTIES, EXPRESS OR IMPLIED.

BUYER shall notify BHS immediately of discovery of any defects, problems, malfunctioning or difficulties or indications thereof, and within ten (10) days of discovery, shall follow up with written notification. Any failure to immediately report, to give written notification, and to RETURN THE DEFECTIVE PARTS to BHS, shall subject BUYER to responsibility for any expense or damage that probably could have been prevented, and at the option of BHS may void this warranty. Wear parts are not included in warranty.





What's next.

BHS WORLD HEADQUARTERS | Eugene, Oregon USA | 866-688-2066 | sales@bhsequip.com | bulkhandlingsystems.com

BHS EUROPE | Amsterdam, The Netherlands | +31 (0) 20 58 220 30 | info@bhsequip.eu | bulkhandlingsystems.com



Exhibit B

Cost Estimate Trash Processing Facility San Francisco, California



Item No.	TASK DESCRIPTION	TOTAL COST (\$)
1	Design	\$ 214,047
2		
3	Detailed Design Subtotal	\$ 194,589
4	Design Specs and Plans (17% of Building Improvements less Contractor Management & Fees)	\$ 84,794
5	Architectural (35% of Design Spec and Plans)	\$ 29,678
6	Civil (15% of Design Specs and Plans)	\$ 12,719
7	Structural (20% of Design Specs and Plans)	\$ 16,959
8	Mechanical (10% of Design Specs and Plans)	\$ 8,479
9	Electrical (Main Power, Building, Office & Site Lighting, Etc.) (10% of Design Specs and Plans)	\$ 8,479
10	Plumbing (5% of Design Specs and Plans)	\$ 4,240
11	Landscape (5% of Design Specs and Plans)	\$ 4,240
12	SWPPP	\$ 25,000
13	Design Contingency	\$ 19,459
14	Permitting	\$ 230,973
15	Zoning and Use Permit	\$ 100,000
16	Operating	\$ 100,000
17	Building & Safety (2% of Building Improvements and Construction excl. Equipment)	\$ 9,976
18	Permitting Contingency	\$ 20,998
19	Building Improvements & Construction	\$ 498,790
20	Construction	\$ 108,790
21	Bid Process	\$ 20,000
22	Demolition	\$ 75,000
23	Inspections - 1% of Building Improvements Subtotal	\$ 3,900
24	Contingency	\$ 9,890
14	Concrete - Pit Pedestal	\$ 165,000
25	Building Slab Refurbishment	\$ 100,000
26	Concrete Pavements	\$ 50,000
27	Concrete Contingency	\$ 15,000
28	Miscellaneous Building Repair Improvements	\$ 225,000
29	Metal Frame Penetrations	\$ 100,000
30	Door Repairs	\$ 50,000
31	HVAC Repairs/Improvements	\$ 25,000
32	Staff Area, Electrical Room, Storage Room Improvements	\$ 50,000
33	Contractor General Conditions, General Requirements & Fee (7% of Building Improvements and Construction excl. Equipment)	\$ 34,915




**Cost Estimate
Trash Processing Facility
San Francisco, California**



34	Construction Management - Contractor (3% of Building Improvements and Construction excl. Equipment)	\$ 14,964
35	Total Building Improvement Contingency	\$ 27,488
36	Management	\$ 550,000
37	Project Management	\$ 175,000
38	Construction Management - Owners Representative	\$ 200,000
39	Operation Start-Up	\$ 100,000
40	Project Closeout	\$ 75,000
41	Management Contingency	\$ -
42	Subtotals for Building Improvements & Construction	\$ 1,571,178
43	Trash Processing Equipment & Installation	\$ 17,404,626
44	Contingency	\$ 1,582,239
45	Grand Total	\$ 18,975,804
46	Contingency Total Included in Grand Total	\$ 1,675,073



TO: Recology San Francisco 501 Tunnel Ave., San Francisco, CA 94134 Attn: Maurice Quillen		Date: 2/1/2017
Project Description: Recology - MSW System (2) 40tph Processing Lines		
Item #	Equipment Description	Price
10	SSI Primax (estimated - buy direct)	\$650,000.00
20	Feed conveyor - 135' Scraper inside conveyor	\$150,000.00 Included
30	Feed conveyor - 65'	\$ 65,000.00
40	<2" AWS Screen Unders conveyor	\$ 250,000.00 \$ 30,000.00
50	>2" overs conveyor to 3D trommel - 65' Scraper inside conveyor	\$ 65,000.00 Included
60	>12-16" 3D Trommel <12-16" unders conveyor	\$ 700,000.00 \$ 60,000.00
70	>12-16" overs postsort conveyor - 135'	\$ 125,000.00
80	SSI Primax (estimated - buy direct)	\$ 650,000.00
90	Feed conveyor - 90' Scraper inside conveyor	\$ 90,000.00 Included
100	Feed conveyor - 35'	\$ 35,000.00
110	<2" AWS Screen Unders conveyor	\$ 250,000.00 \$ 30,000.00
115	>2" overs conveyor to 3D trommel - 75' Scraper inside conveyor	\$ 75,000.00 Included



120	>12-16" 3D Trommel	\$ 700,000.00
	<12-16" unders conveyor	\$ 60,000.00
130	>12-16" overs postsort conveyor - 150'	\$ 125,000.00
140	<2" organics conveyor - 50'	\$ 50,000.00
	Scraper inside conveyor	Included
150	<2" cross belt magnet (estimate - buy direct)	\$ 60,000.00
160	<2" organics conveyor to organics annex - 175'	\$ 150,000.00
	Additional conveyor required to discharge in building (estimate)	\$ 125,000.00
	(Additional 125-150')	
170	Feed conveyor to 2nd AWS <2-3" - 65'	\$ 65,000.00
180	AWS <2-3"	\$ 250,000.00
	Unders conveyor	\$ 35,000.00
190	3-16" Wal Air Density Separator	\$ 375,000.00
210	Wal Air heavies discharge conveyor - 75'	\$ 75,000.00
	Magnet (buy direct - estimate)	\$ 55,000.00
	Heavies transfer conveyor - 60'	\$ 60,000.00
	Wal Air transfer conveyor - 65'	\$ 65,000.00
220	Wal Air Lights conveyor - 50'	\$ 45,000.00
	Scraper inside conveyor	Included
230	Feed conveyor to 2nd AWS <2-3" - 50'	\$ 50,000.00
240	AWS <2-3"	\$ 250,000.00
	Unders conveyor	\$ 35,000.00
250	3-16" Wal Air Density Separator	\$ 375,000.00
255	Wal Air lights conveyor - 100'	\$ 125,000.00
260	<2-3" AWS takeaway conveyor - 45'	\$ 40,000.00
	Scraper inside conveyor	Included
270	<2-3" AWS 2nd takeaway conveyor - 45'	\$ 40,000.00



	<2-3" magnet (estimate - buy direct)	\$	55,000.00
280	<2-3" eddy current (buy direct - estimate)	\$	75,000.00
285	NF transfer conveyor - 65'	\$	60,000.00
290	<2-3" Wal Air	\$	300,000.00
295	Fe transfer conveyors - 185'	\$	175,000.00
300	Wal Air lights feed conveyor to TITECH 50'	\$	45,000.00
	Scraper inside conveyor		Included
310	2.8m TITECH 1 to eject plastics	\$	425,000.00
320	Wal Air lights feed conveyor to TITECH 25' w splitter	\$	60,000.00
	2 feed conveyor to 2 plastics TITECH's - 100' combined	\$	80,000.00
325	2.8m TITECH 2 to eject plastics	\$	425,000.00
330	2.8m TITECH 3 to eject plastics	\$	425,000.00
335	Ejected plastics conveyor 1 - 35'	\$	35,000.00
340	Ejected plastics conveyor 2 - 50'	\$	40,000.00
350	Ejected plastics conveyor 3 - 65'	\$	50,000.00
360	Ballistic Separator 1	\$	300,000.00
365	Ballistic Separator 2	\$	300,000.00
370	Ballistic Separator 3	\$	300,000.00
375	3D/containers transfer conveyor - 135'	\$	125,000.00
385	2D/trash transfer conveyor - 45'	\$	50,000.00
390	2d/trash transfer conveyor - 100'	\$	90,000.00
400	Main residue transfer conveyor - 150'	\$	175,000.00
405	Main residue transfer conveyor - 100'	\$	125,000.00



410	>12-16" residue takeaway conveyor - 60'	\$ 65,000.00
420	Primary residue transfer conveyor to pit - 200'	\$ 185,000.00
500	Maintenance platforms and bunker walls	\$ 425,000.00
510	Switchbox sorting system	\$ 750,000.00
	Freight (includes duties and insurance)	\$ 400,000.00
	Installation and Training	\$ 1,000,000.00
	TOTAL - Delivered and Installed	\$ 12,975,000.00
	DISCOUNT - 5%	\$ (648,750.00)
		=====
	NET TOTAL AFTER DISCOUNT (Delivered & Installed)	\$ 12,326,250.00
<p>Note: Color = RAL 6024 (Traffic Green) Installation based on regular working hours during normal business days, unless specifically mentioned otherwise</p> <p>Excluded / Customer Responsibility: Renting of equipment, including cranes, crane operator(s), scissor lifts, forklifts, etc., (as needed). Bringing electricity to the switchboxes, including the e-stop control box. Bringing 110V power for tools to the jobsite. Manufacturing of the pits (and roof, if applicable) according to our blueprints Compressor for TITECH units (if applicable) unless otherwise specified. Running a telephone line and/or internet access to the TITECH unit (s) depending on equipment</p> <p>Delivery Time: Shipping in approx. 5 - 6 months Delivery time starts from date of signed approval drawing</p>		



TITUS MAINTENANCE & INSTALLATION SERVICES, INC.
 11080 Rose Avenue Fontana, CA 92337 Office: 909.357.3156 Fax: 909.357.3166 CL # 872945 (A)

Quote

DATE:

3/3/2017

TO:
Recology
 501 Tunnel Road
PH: 415-657-4040
 FX: 415 468-2280
ATTEN: Meghan Butler and Maurice Quillen
EMAIL: mquillen@recology.com
EMAIL: mbutler@recology.com

SHIP TO:
Recology
 Same as Bill to Address.

DESCRIPTION OF PROJECT:
Recology Trash Processing Project:
 SUPPLY AND INSTALL AS NOTED FOR NEW MSW FACILITY

Included in this proposal:

Item#	Scope of work and Description of Equipment	Equipment Cost	Tax	Miscellaneous	Totals
1	A-F Actions Required outside the Equipment Acquisition and Install to insure plant is Turn Key				
A	REMOVE EXISTING EQUIPMENT in existing Transfer station			\$ 375,000.00	\$ 375,000.00
B	Permit all equipment and handling systems associated with new facility				\$ 125,000.00
B1	Engineer Stamped Drawings for Equipment and Handling Systems				\$ 200,000.00
B2	Footing and/or slab needed to install MSW facility			\$ 500,000.00	\$ 500,000.00
B3	Electrical line diagram from MCC panels to all equipment			\$ 30,000.00	\$ 30,000.00
B3.1	Run Main power feed to new MCCs			\$ 215,200.00	\$ 215,200.00
B4	Coordination with Electrical contractor on pulling power from main to distribution panel or MCC panels			\$ 5,000.00	\$ 5,000.00
B5	Supply and install distribution panels as required and pull power from main to mcc panel			\$ 250,000.00	\$ 250,000.00
B6	Coordinate with special inspector for permit requirements			\$ 25,000.00	\$ 25,000.00
C	Misc Steel Package to install bunkers in VDB drawing and reinforce hoppers where loading MSW				\$ -
C1	Reinforce the new hoppers that loaders will be filling up to protect from wear and tear (two)			\$ 32,000.00	\$ 32,000.00



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C2	Bunkers designed to support a sort platform and hold material: ferrous metal, OCC, non ferrous metal, wood, and other based on drawings 13 feet height and 36 feet long	\$ 240,000.00	\$ -	\$ 48,000.00	\$ 288,000.00
D	Misc Steel Package to install chutes from conveyor end points to new handling Equipment as required				
D1	Transfer Conveyor for residual back to transfer station floor 200 feet long 60 inches wide to include supports and chutes as required	\$ 130,000.00	\$ -	\$ 26,000.00	\$ 156,000.00
D2	Transfer Conveyor for 3D containers back to existing silo 100 feet long 42 inches wide to include supports and chutes as required	\$ 65,000.00	\$ -	\$ 13,000.00	\$ 78,000.00
D3	Transfer Conveyor for Organics to an area to be determined 100 feet long 42 inches wide to include supports and chutes as required	\$ 65,000.00	\$ -	\$ 13,000.00	\$ 78,000.00
E	2 EACH 100HP KEASER AIR COMPRESSORS, COMPLETE WITH INTEGRATED AIR DRYER, TWO AIR FILTERS, AUTOMATIC WATER DRAIN, AND 620 GAL TANK.	\$ 177,712.65			\$ 177,712.65
E1	AIR COMPRESSOR INSTALLATION UP TO 150' OF PIPE ONLY PER OPTICAL SORTER.			\$ 163,125.00	\$ 163,125.00
E2	Lifting Equipment to unload and store Equipment prior to Install to include crane (2) 12K forklifts, (1) small forklift				\$ 88,100.00
E3	Rental Equipment needed for Install of Bollegragh Equipment and all the additional equipment noted in A, C, D, and E, and F			\$ 225,000.00	\$ 225,000.00
F	Lighting as required for operations (Presort Area), walkways, emergency walkways, emergency lighting as required and plugs in strategic places to insure access to power as required			\$ 45,000.00	\$ 45,000.00
G	Sprinklers as required			\$ 80,000.00	\$ 80,000.00



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H	Dust Mitigation as required based on areas where dust can be handled via misting systems Water moved to areas as required			\$ 185,000.00	\$ 185,000.00
I	Access and work platforms allowance designed to assist post construction to maintain facility once in place	\$ 85,000.00		\$ 35,000.00	\$ 120,000.00
J	Start up Training Maintenance and Operations (4 men 15 days) for A-H			\$ 55,000.00	\$ 55,000.00
	SUB TOTAL	\$ 762,712.65	0%	\$ 2,320,325.00	\$ 3,496,137.65
2	TOTAL to augment Equipment supply Vendor to a 100% turn key project				

DELIVERY:

UPPON APPROVAL OF DRAWINGS AND AFTER RECEIPT OF PO # AND DOWN PAYMENT 10-12 WEEKS, AND 3-5 MONTHS FOR THE BOLLEGRAAF EQUIPMENT.

TERMS:

45 % DOWN PAYMENT WITH PO #
 45% UPON SHIPMENT

10% NET 10 DAYS AFTER COMPLETION OF THE PROJECT.

VALIDATION:

THIS QUOTE IS GOOD FOR 60 DAYS

EXCLUSIONS:

THIS QUOTE IS BASE ON A FREE AND CLEAR AREA.
 CUSTOMER IS RESPONSIBLE FOR ANY BUILDING MODIFICATIONS.
 THIS QUOTE IS BASE ON NON UNION LABOR.
 CUSTOMER IS RESPONSIBLE FOR SALES TAX SEE AB199

The exclusions are based on working with new building and Equipment contractor to mitigate these costs

WE AT TITUS WOULD LIKE TO THANK YOU FOR THE OPPORTUNITY TO BID THIS WORK.

TITUS HAS EXTENSIVE EXPERIENCE WORKING WITH C&D, MSW, Greenwaste and SINGLE STREAM SEPARATION EQUIPMENT, PLANT MODIFICATIONS PROJECTS, BALER INSTALLATIONS, BALER RELINES, AND CONTAINER LINE RETROFITS.

WE ARE VERY EXCITED TO BE WORKING FOR YOU. PLEASE CALL ME IF YOU HAVE ANY QUESTIONS.

REFERENCE THIS PROPOSAL AT (951) 906-6017.

Sincerely,

Rick Perez
Vice President
Titus MRF Services

Insurance:



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GENERAL LIABILITY B YVJ-Z91-45782-022 8
WORKERS COMPENSATION WCJ-Z91-457582-031
AUTOMOBILE LIABILITY ASJ-Z91-457582-012
UMBRELLA LIABILITY XL 6604113

Approve By Please Print: _____

Signature: _____

Title: _____

Date: _____

Company: _____

PO: _____