September 17, 2019

Recycle Ann Arbor (RAA) is pleased to present this response to RFP 19-28 MRF Operations and Recyclables Processing. As the catalyst for recycling services in Ann Arbor dating back to 1977, RAA has led the way in promoting and serving the recycling cause in our community for almost four decades as our community's mission-driven recycler. RAA's sole purpose for existence is to "develop and operate innovative reuse, recycling and zero waste programs that improve the environmental quality of our community". We are local. We are environmental. We are non-profit. We are community built and community based. Profits are reinvested in the local community, increasing reuse, providing for construction/demolition waste recovery, offering recycling education programs and creating other cutting-edge zero waste programs for our community.

RAA has assembled an incredibly talented team that provides a depth of experience that will deliver the most dynamic and proactive services to the City of Ann Arbor. We are honored to include several letters of recommendation in support of our proposal for the redevelopment and operations of the Materials Recovery Facility in partnership with key service providers for a ten-year term. While we did put in a base proposal for transload for a five-year term, we believe that a locally owned and operated MRF provides the best stability and flexibility to the City, which will help Ann Arbor reach its sustainability goals. This is further detailed in Section C and in the Price Proposal.

The MRF redevelopment is also vitally important for capacity in this region. As you can see from our included letters, we have a broad base of supporters for this redevelopment. This capacity development allowed us to secure State-committed $800,000 which is reflected in the lower price to the City. Our proposal provides both low side protection, while still sharing revenues on the high side as markets rebound.

RAA acknowledges receipt of the RFP Addendum and Attachments A-H. We look forward to the next steps in the process.

Sincerely,

Bryan Ukena

Bryan Ukena, CEO

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A. Professional Qualifications

1.Organization Information
Recycle Ann Arbor (RAA) is the primary contractor on this proposal, located at 2420 South Industrial Highway, Ann Arbor, Michigan, 48104. Recycle Ann Arbor is a 501(c)3 non-profit corporation licensed to operate in the State of Michigan and headquartered at 339 East Liberty, Suite 300, Ann Arbor, Michigan, 48104.

2. History of the Firm
Founded in 1977, Recycle Ann Arbor is nationally recognized as a leader in providing community-based recycling services for over 40 years. Recycle Ann Arbor offers a variety of effective and convenient recycling programs to the residents and businesses of Ann Arbor, as well as surrounding communities in southeast Michigan. As a private not-for-profit organization, Recycle Ann Arbor is dedicated and experienced in providing education and innovative services in the collection, processing, and marketing of recyclable materials. RAA returns its financial earnings to the community through reinvestment in its mission. As such, RAA supports environmental initiatives that benefit the community through increased waste recovery, advocacy of environmental and sustainability related causes, and social justice.

Recycle Ann Arbor started Michigan's first, and the nation's fourth, curbside recycling program in 1978, and RAA currently operates the state's most comprehensive community Drop-Off Station, as well as the ReUse Center, the Ann Arbor Curbside Recycling program, Zero Waste Special Event Program, and the Recovery Yard. Additionally, Recycle Ann Arbor provides outreach and education services to all Ann Arbor residents and businesses who currently have curbside recycling or who want to further explore waste diversion solutions.

Recycle Ann Arbor has been processing recyclable materials since it began operations in 1978. In the early years, RAA transported and marketed its collected materials directly via Nelson Paper Company, Owens Illinois and other buyers. From 1983 to 1995, RAA operated a materials recovery facility (MRF) at the site of the current Drop-Off Station, under the auspices of the City of Ann Arbor, sorting, baling, crushing, and marketing source-separated and dual-stream materials. Today, RAA continues to sort, process and ship recyclables collected curbside and through its Drop-Off, Reuse Center and Recovery Yard (construction/demolition) operations. This amounts to over 12,000 tons processed per year through these combined operations, excluding reuse tons. In addition, RAA's staff, led by Bryan Ukena, has decades of experience successfully building, managing and operating MRFs across the country.

Recycle Ann Arbor is uniquely qualified to develop and manage the proposed, cutting-edge recycling facility that will maximize recovery, minimize contamination, and assist Ann Arbor in achieving its goals of sustainability and responsible resource management in the most economical effective way. RAA has been a contracting partner with the City of Ann Arbor to grow the City's recycling infrastructure and provide recycling services for over 38 years. RAA provides access to the local labor market, understands the culture and recycling

experience of our community and has decades of operational experience in all phases of recycling and waste services.

Compatibility with City's Standards, Goals, and Objectives.

Ann Arbor's Climate Action Plan, approved and adopted by Council in 2012, obligated the community to create a plan for reduction of carbon expenditure by 25% in 2025 and 90% in 2050. Subsequently, in 2013 the City went further when it adopted the Sustainability Action Plan with 38 indicators and 16 goals. This plan refined efforts to achieve the carbon goals by calling for increased recycling in both the residential and commercial sectors and officially calling for a Zero Waste plan. RAA supported these efforts at the time and does so now as we put forth a proposal that will help the City to further these goals. The Sustainability Action Plan made a commitment to provide each 6th grader in the City of Ann Arbor School District the opportunity to have a tour of the Ann Arbor Recycling Facility. Without the commitment to a local facility, like the one at Wheeler Center, this type of educational experience will be impossible. RAA will work with the City to educate residents, businesses and others about how to increase recovery and reduce waste overall by offering MRF tours in conjunction with the City. RAA also proposes to work with the City to educate and train residents and commercial participants in the recycling program about best practices and other means of increasing program participation and recovery of waste materials from the waste stream.

3. Key Management Personnel (See Appendix B for expanded resumes, additional information available upon request.)
Following is a listing of the executive and professional personnel by skill and qualification that will be employed in this work:

Bryan Ukena, CEO
Bryan has 30 years of experience that span a cross-section of public and private solid waste fields, including extensive operational experience in collections, transfer, and processing of recyclable, as well as administrative experience in design, financing, policy expertise. Prior to his appointment as CEO of RAA, Bryan served as Co-President of Eureka Recycling, the nation's largest non-profit recycler located in Minnesota, where he led the successful award of the processing contracts for the two largest cities, Saint Paul and Minneapolis. He led all aspects of the $10 million expansion of the Materials Recycling Facility, which processes over 110,000 tons per year of high-quality recyclables. Bryan led in the financing, design, construction and commissioning of MRFs in Northwest and South Arkansas. He also contributed to materials marketing and the operations of the Boulder, Colorado MRF, owned by Boulder County and operated by Eco-Cycle, the nation's second largest private non-profit recycler. Most recently Bryan was directly responsible for all aspects of the recycling collection and processing programs for the City of Milwaukee. Bryan will lead all of the efforts outlined in this proposal.

Bryan Weinert, Director of Strategy
Prior to his role at RAA, Bryan served for over twenty years as the City of Ann Arbor's Manager of Resource Recovery and Solid Waste Coordinator. He was the City's lead on the procurement, construction and opening of Ann Arbor's MRF in 1995. For fourteen

years, Mr. Weinert was the City's lead administrator, overseeing the MRF and Waste Transfer Station contract with RRS, FCR, Casella Waste and finally ReCommunity. He was also the chair of the Planning Committee for the recent update to the Washtenaw County Solid Waste Management Plan and previous Chair of the Michigan Recycling Coalition Board of Directors. Bryan will lead in building a collaborative partnership with the City, the County, and the newly forming Solid Waste Authority and potential commercial "merchant" customers. He will also lead in Community Engagement and the integration of the Collections and Processing systems.

Sean Adams, Director of Operations
Sean brings a wealth of knowledge and experience related to all operational aspects of public works projects. At RAA, Sean is responsible for all site operations including over-the-road semi drivers, material processors, mechanics and administrative staff. He has initiated multiple safety-focused site improvements to improve patron and staff safety, resulting in an injury free safety record to date. He was responsible for obtaining RAA's Recovery Yard licensure and has maintained the site in continuous compliance with federal, state and local ordinances and administrative rules, reporting to multiple compliance agencies. Sean was Chief Administrator of the Village of Lexington, MI where he was responsible for all day-to-day operations of the Village including a full-time Police Department, volunteer Fire Department, Public Works Department, Water/Sewerage Treatment Plant and the Lexington North Shore Mobile Home Park and as Assistant Superintendent and as DPW Supervisor for the City of Dearborn. He managed comprehensive residential and commercial sanitation/recycling services including curbside collection, organics, hazardous waste, roll-offs, municipal sanitation collection (special pick-ups, street cans, etc.) and commercial dumpster services. Sean will lead in project management of the MRF construction and (in both the Transload and MRF development proposal) he will direct the facility operations.

Tim Brownell, RAA Board
Tim will advise RAA on all start up and operational aspects of the MRF. This will include regular onsite visits to the MRF to meet with key management and operations staff. In his current role Tim oversees all operational aspects of a Monterey Regional Waste Management District, Monterrey, CA that includes a 2,500 ton/day municipal solid waste landfill, a 250 ton/day single-stream recycling MRF, a 225 ton/day construction and demolition recycling MRF, a reuse retail outlet ($900,000/yr. sales), a household hazardous waste facility, heavy equipment maintenance shop, and a 5 MW Landfill Gas-to-Energy power plant. Tim has over 20 years of experience in the operations of recycling including the development and expansion of a Minnesota MRF that is 400 tpd., 90,000 sq. ft.

Future Hire, MRF Manager (for MRF Development Proposal Only) - As part of the development of this project, RAA will perform a national search for a dedicated MRF manager with experience in recycling operations, material marketing, safety, customer service and quality assurance. RAA already has a lead on a key individual for this position. This individual will lead day-to-day management of the facility and its operations and interface with both RAA management and City staff.

Future Hire, Safety Supervisor -Will be responsible for ensuring that workers are properly trained regarding company-specific and Occupational Safety and Health Act, OSHA, safety requirements. This person will work with Rumpke in the MRF Development Option; Rumpke will not be involved in the Transload option.

4. Subcontractors/Other Professionals

Recycle Ann Arbor is the lead agent in this proposal and it has assembled a host of allies to support its efforts in some of the implementation phases of the services it proposes to supply the City. RAA is responsible for the overall management, operations, materials marketing, reporting, invoicing and communication with the City of Ann Arbor. RAA leads, manages and coordinates the roles of the following:

- **Pratt Industries** – Pratt is one of the world's largest privately held packaging, paper and recycling companies. They have chosen to align with RAA as part of their effort to "harvest the urban forest" as they develop a recycled paper feedstock for a new mill in northern Ohio that will accept 25,000 tons per month of recycled feedstocks. They will provide a committed market for fiber materials. With strong and long-term contracts provide both RAA and the City with an established source of revenue. Pratt 's commitment to this proposal and the future implementation reinforces RAA's long-term strategy to overcome the worldwide recycled commodity market collapse by focusing on high quality recycled material delivered to regional partners who will use that material to create a closed loop of economic activity within the region. This is an essential part of establishing a sustainable marketplace for recycled commodities now and in the future, which provides the City recycling program stability.

  Jeff Snyder has over 27 years in the paper recycling industry and designed two single stream facilities that operate at 21 ton/hour, 2000-4000 tons per month systems in Chattanooga, TN. and Atlanta, GA. He has managed all aspects of MRFs including maintenance, operability and production of high quality recyclables for the market place and will work with RAA to design, construct, commission and provide ongoing MRF operations support.

- **Rumpke Waste and Recycling Services** – Currently, Rumpke is providing processing services for the City's collected recyclables. This Ohio-based, family-owned business is a regional powerhouse centered in the greater Cincinnati area and has established itself as one of the ten largest waste and recycling companies in the US. In this proposal, they will provide advisory services to RAA including recycling facility startup, staffing recommendations, and safety planning, training and programming.

- **Resource Recycling Systems** – RRS, a locally headquartered recycling consulting firm will be supporting RAA throughout the implementation of its MRF. RRS, now the largest consulting firm solely focused on material recovery and sustainability in North America, will provide strategic and implementation collaboration with RAA. As part of the team that both founded RAA and implemented comprehensive recycling in the City of Ann Arbor, RRS is well positioned to assist RAA in redeveloping the recycling plant at Wheeler Center into a successfully reused asset for the City. RRS

will provide RAA with engineering, project management, strategic, and contract support as the key part of its team role. As participants in numerous state level initiatives for recycling and infrastructure funding, RRS will work with RAA to make sure that additional state funds are available for development of the facility and its programs. Specifically, this team includes

  - **Kerry Sandford:** Kerry Sandford is a senior engineer at RRS with over 40 years of experience in recycling and waste management programs. His extensive knowledge of material recovery facilities and material processing include system design, waste stream composition, feasibility analyses, cost modeling, as well as MRF equipment audit, selection, testing and maintenance. Kerry has been a key contributor to material flow testing – onsite at MRFs and in equipment lab settings and MRF design and construction at over 30 MRFs in US and Asia. Kerry is also a leader in the identification, vetting, and integration of cutting edge technologies into recycling processes. This includes a wide range of separation and material processing/handling technologies including robotics, density separation, optical sorting, conveyance, compaction, and cleaning.
  - **JD Lindeberg:** JD has over 30 years of experience developing material recovery and processing systems, business planning and plan development, project due diligence and risk management, capital project planning, and project financing. His training and experience as a professional engineer give an added dimension to his business background and provide insight into the development of award-winning projects. Recently his efforts have focused on increasing recovery through the innovative development and application of recovery technologies to increase overall recovery in response to both public and private demand for higher recycling rates.

- **MACHINEX** – Machinex has provided design and cost estimation services to RAA during the last eighteen months of recycling processing proposal development. As one of the largest providers of recycling processing/MRF equipment in North America, Machinex has prepared detailed reviews of the current facility, a series of upgrade designs, and prepared detailed cost estimates for its refurbishment. Upon the City's selection of the RAA team, Machinex will move quickly to finalize designs, manufacture and install equipment, and provide timely acceptance and startup assistance for the facility, as well as recommended maintenance scheduling.

- **The Ecology Center** – The Ecology Center is a nationally known environmental education and advocacy organization. As the parent corporation for RAA, it provides education services for recycling in the City, supports Zero Waste initiatives, and spreads the word regionally. The Ecology Center leadership has been instrumental in advocacy of stronger recycling programs throughout Michigan and within the City. The Ecology Center will continue its work promoting Zero Waste and preparing the City for greater levels of recovery as part of its Zero Waste commitment.

- **State of Michigan (EGLE)** – EGLE has already made a capital commitment of $800,000 to the renovation of the RAA MRF in Ann Arbor. In so doing they demonstrate the state's commitment to keeping recycling processing local and building the best possible regional recovery system possible. In addition, with other

monies, EGLE will continue to fund market development, education, and recovery efforts for deserving programs. RAA intends to leverage these resources in a manner that will jointly benefit RAA, the City of Ann Arbor, and the State of Michigan.

- **Republic Services** – (As main processor in the transload proposal and as back up in the MRF Redevelopment proposal). Under RAA's transload proposal, Republic Services will serve as the processor of the Ann Arbor facility's materials, with recyclables sorted and shipped out of their RRRASOC facility located at 20000 Eight Mile Road, Southfield, Michigan, 48075. This facility is 43.6 miles from the Ann Arbor MRF. Republic Services owns or operates 91 MRFs nationwide, the largest in the U.S. The RRRASOC/Republic Southfield facility opened in 2016 and is currently processing approximately 235 tons per day, with a total daily capacity of 305 tons. RAA will be delivering approximately 52 tons/day of Ann Arbor material to this facility. Residuals from the facility are sent to Republic's Carleton Farms Landfill.
    - Scott Cabauatan, Municipal Services Manager will lead on this for Republic. Scott has over 26 years of experience working with solid waste and environmental related programs. Prior to joining Republic, Scott spent 11 years working in local government where he held a variety of positions primarily in the public works/municipal services area of City operations where he had oversight of City's solid waste and recycling programs.

Together, this team of well-established organizations, highly skilled and experienced individuals, and dedicated community members bring something to this proposal and to the City that no other group can bring.

5. Safety and Training

Establishing and maintaining a safety culture is crucial to reducing risks associated with processing recyclables. RAA has a robust safety process employed throughout its five divisions. Safety measures include a safety/oversight investigation committee, quarterly facility walk-throughs, incident and near-miss reporting, accident investigation, lock-out/tag-out procedures, OSHA compliance and audits, MSDS process and postings, PPE policies, DOT compliance, and employee safety manuals and training. Rumpke will provide safety planning, training and programming working along with the RAA Safety Supervisor as well as the Operations Director. (In the case of the MRF Development proposal the MRF Manager will also be integral to safety.)

RAA has consistently enjoyed strong industry safety ratings across all of its divisions and has not had a reportable safety injury at the MRF since our contract began. Please see Attachment H for more details.

Key safety procedures include:

- Providing initial and quarterly safety training for all MRF personnel

- Safety programs for lock-out/tag-out, confined spaces, fire prevention/protocols and appropriate safety equipment
- Conducting quarterly mock OSHA audits to assess compliance
- Establishing fire drill procedures
- Applying critical success safety indicators for evaluation
- Updating written safety protocols and keeping detailed records of safety-related training, near misses, and incidents/accidents

B. Past Involvement with Similar Projects

1. Recycle Ann Arbor currently manages four facilities:
   - The City MRF Building: RAA has operated the transfer of recyclable at the City MRF for the past 26 months with no accidents or injuries and all of the materials were delivered to the Rumpke Facility in Cincinnati. Over 97% of the materials are marketed to regional, domestic markets. RAA has also provided its loading, transport and processing services within the approved budget.

   - The Recovery Yard: Located at 7891 Jackson Road, Ann Arbor, MI, 48103, this facility receives and processes over 11,000 tons per year of incoming construction and demolition waste on the 14 acre site. The facility opened in 2008 and is the only construction/demolition recovery site serving Washtenaw County.

   - Drop-off Station: Located at 2950 East Ellsworth Road, Ann Arbor,48108, the drop-off station receives and processes approximately 3,000 tons per year of recyclables and waste from roughly 30,000 customer visits. Recycle Ann Arbor has provided drop-off services in Ann Arbor since 1971 and this is the only drop-off serving Ann Arbor, it also serves surrounding communities. Dozens of products are accepted at the facility for recycling or safe disposal. About 50% of the users are residents and businesses in Ann Arbor.

   - The Reuse Center: Located at 2420 S. Industrial Highway, Ann Arbor, 48104, the Reuse Center has been in operation for 22 years. The 10,000 square foot facility serves thousands of customers from the region each year. Approximately 500 tons of materials are kept out of the landfill each year from this center.

2. Bryan Ukena, RAA CEO:
At the City of Milwaukee, Wisconsin's largest city, Bryan operated the residential collections programs and the jointly owned 35 ton/hour Materials Recovery Facility with the neighboring County of Waukesha through an Inter-Local Governmental Agreement. The City and County contract with Republic Services for the operations of the facility through a 10-year agreement. Bryan led the day to day operation of the City/County Entity for the Materials Recovery Facility. He also managed the city's first curbside composting program.

Eureka Recycling is the nations' largest non-profit recycler and Minnesota's only zero waste organization with a mission to demonstrate that waste is preventable, not inevitable. Eureka Recycling's demonstrations include a Materials Recovery Facility, a collections

fleet with state-of-the-art automated equipment, zero waste events and services and award winning educational services and advocacy. Bryan began by leading the development and implementation of all strategic and business plans. He was responsible for business development, materials marketing, customer service and R&D, including equipment re-design, procurement, program design and development. Later, as Co-President Bryan led the design, re-development and startup of a 200/tpd., 100,000 sq. ft. MRF where he directly held responsibility for the operations of that MRF and meeting the contract obligations of the State's two largest recycling contracts: City of Minneapolis and the City of Saint Paul

At the West River Valley Regional Solid Waste Management District, a nine county governmental agency whose governing body is made of nine county judges and twenty-eight Mayors from the first class cities in Western Arkansas, as District Director, Bryan led in the design and development of the District Drop-Off and Transfer Facilities, and MRF.

Prior to the above Bryan led commercial collections, designed, built and operates a Center for Hard to Recycle Materials (CHaRM) and was responsible for 10 recycling drop off centers in Boulder County and Broomfield County for EcoCycle: Bryan created and managed recyclable materials marketing agreements for rural communities across the State by creating a Recyclables Marketing Cooperative for rural and small recycling facilities with limited access to recycling markets for Ozark Recycling Enterprises and set up the state of Arkansas's first curbside recycling program and one of the state's first MRFs in Eureka Springs.

3. Rumpke Waste and Recycling:
In addition to Rumpke's state of the art flagship MRF in Cincinnati, Rumpke also owns and operates an additional ten recycling facilities, processing and marketing over 500,000 tons of recyclables each year. Rumpke's Cincinnati plant currently serves as the destination for Ann Arbor's recyclables, and multiple City staff have seen the scope, scale and safety embedded into this facility, also operated with Machinex equipment.

4. Pratt Recycling:
Pratt is one of the world's largest privately held packaging, paper and recycling companies. They are developing a recycled paper feedstock for a new mill in northern Ohio that will accept 25,000 tons per month of recycled feedstocks. Jeff Snyder has over 27 years in the paper recycling industry and designed two single stream facilities that operate at 21 ton/hour, 2000-4000 tons per month systems in Chattanooga, TN. and Atlanta ,GA. He has managed all aspects of MRFs including maintenance, operability and production of high quality recyclables for the market place and will work with RAA to design, construct, commission and provide ongoing MRF operations.

5. RAA Board Members' Relevant Experience:
David Stead - David Stead is an RAA Board Member who is also a principal and vice president at RRS, bringing over 30 years of professional experience in environmental, waste management, and finance projects, with skills ranging from technical analysis and project design, to communications and computer modeling. David has conducted many planning and supply analysis studies that evaluate market trends and availability of targeted recoverable commodities, such as waste wood, paper, plastics, and other

materials. He has managed procurement processes for municipalities to develop materials recovery facilities (MRFs) and collection and recyclable processing services, including the. procurement process and contract negotiations for the City of Milwaukee, WI and Waukesha County, WI in the procurement of a single stream MRF and single stream transfer and processing services.

Tim Brownell – In his current role, Tim oversees all operational aspects of a Monterey Regional Waste Management District, Monterrey, CA that include a 2,500 ton/day municipal solid waste landfill, a 250 ton/day single-stream recycling MRF, a 225 ton/day construction and demolition recycling MRF, a reuse retail outlet ($900,000/yr. sales), a household hazardous waste facility, heavy equipment maintenance shop, and a 5 MW Landfill Gas-to-Energy power plant. Tim has over 20 years of experience in the operations of recycling including the recent redevelopment and expansion of a Minnesota MRF, a 400 tpd., 90,000 sq. ft. MRF.

References

Steve Sargent, Corporate Director of Recycling, Rumpke Waste and Recycling, 1097 US Route 22 West, Circleville, OH 43113, 740-474-9790 Extension 7346, steve.sargent@rumpke.com

Paul England, Vice President and General Manager Midwest Region, Pratt Industries, 1599 Highway 138 NE, Conyers, GA 30013, 404-824-8586, pengland@prattindustries.com

Andrew Goulet, Vice President of Sales, Knight Transfer Services, P.O. Box 365, Zeeland, MI 49464, 616-748-9878, agoulet@dumpstr.com (please see attached support letter)

In addition to these references, please see letters of support in Appendix A.

C. Proposed Work Plan

RAA has developed two options and an alternate for fulfilling the tasks described in RFP 19-28.

C.1. Operation and maintenance of the City's Material Recovery Facility to receive recyclable materials delivered to the MRF by the City or its collection contractor(s), with transload to an offsite MRF for processing

Option 1: 5-year proposal for RAA to transload materials to an offsite MRF for processing and subsequent marketing to end markets.

a. MRF Operation for Transload

RAA will continue to loose load and transport recyclables from the City MRF building via live floor trailers, and these will be delivered to the Republic Services MRF in Southfield, MI for processing and marketing.

The collection trucks will scale at the new City scale site where inbound loads will be identified and given a unique scale account number. All loads delivered to the City MRF building will be tracked through this account number. The trucks will then enter the City

MRF building (via the only entrance). The trucks will proceed around the building in a counterclockwise direction, backing into the tipping area on the northern side of the building.

A spotter watches the truck unload the material and then a loader will push the material into a pile through the overhead doors in the northern side of the building. Once completed with the tipping, the truck then moves out of the building forward and leaves through the exit gate toward the west.

The transport truck that will pick up and deliver this material to Republic will scale at the new City scale site where inbound loads will be identified and given a unique scale account number. All loads leaving the MRF will be tracked through this account number. The trucks will then enter the facility from the west (via the only entrance). The trucks will proceed around the building in a counterclockwise direction, backing into the receiving area on the northern side of the building. Once completed with loading, the truck then moves out of the building forward and leaves through the exit gate toward the west.

Hauling Services

Primary hauling services for RAA's transload option will be provided by Recycle Waste Services (RWS), 7901 W. Sylvania Avenue, Sylvania, Ohio, 43560. Backup trucking services will be provided, as necessary by R & J Trucking, 8063 Southern Blvd., Youngstown, Ohio 44513, CEI Trucking, 3842 Highlands Parkway SE, Smyrna, GA, 30082 or Recycle Ann Arbor, 2420 S. Industrial Highway, Ann Arbor, MI, 48104. RWS is an environmentally responsible recycling, disposal and hauling company in the Toledo, Ohio area that specializes in waste diversion and disposal hauling. A Stansley Family venture, RWS began operations in 2009.

The materials transferred from Ann Arbor will be accepted at the RRRASOC MRF via walking floor trailers. Unloading times of 30 minutes or less for transfer vehicles is anticipated, including scaling and unloading. RAA will coordinate all communication with Republic Services

RAA will also continue to process clean loads of OCC at the City MRF building using existing equipment, including the baler, feed conveyor and loaded. The trucks scale at tare weight at the scale site and enter and back up to the dock. The material is processed on site by pushing it onto the conveyor where it feeds into the baler. Bales are stored in the bale storage area and then loaded on outbound tractor trailers that are loaded via the docks at the end of the building. When they exit the site they will also proceed to the City scale site, which will provide a net weight.

Traffic flow within the MRF site will be regulated with signage, and two staff people will be on site at all time to direct traffic flow.

Daily Cleaning Procedures

All equipment and areas will be regularly and properly cleaned during breaks and between shifts to ensure that the system running at peak capacity and efficiency. Given the high potential for negative off-site impacts from a MRF (e.g. noise, blowing debris, dust, materials falling out of delivery trucks onto roadways, vermin, etc.), RAA has

established a written site maintenance and inspection procedure to mitigate negative effects. RAA's site maintenance program minimizes and controls the occurrence of vectors, rodents, pests, and vermin, dust, litter, odor, noise, and other nuisances.

MRF staff are trained to perform workspace clean-up prior to all breaks and at the end of each shift. In the evening while the processing line is not operating, staff are designated to perform housekeeping and clean up. At least once each shift, a litter control patrol inspect the surrounding area to collect any recyclables that may have blown astray. Depending on the amount of windblown debris, the litter control patrol team may be assigned to this task for a longer period of time, as necessary.

RAA contracts vermin and vector protection services from a third party vendor that sets traps and maintain such traps on a regular schedule to maintain a safe and healthy work environmental for all workers and guests.

b. Staffing and Management for Transload

This operation will require the Director of Operations and two equipment/facility operators, one responsible for baling and one for loading (along with other miscellaneous duties including traffic flow and housekeeping). A minimum of two RAA staff people will be on-site at all times during MRF/transfer station operating hours, or whenever equipment is being operated. One of the equipment operators will be designated the lead/supervisor when the Director of Operations is not on-site. Maintenance and Safety staff will also be available as needed.

- CEO: Directs the overall MRF Transload operations.
- Director of Operations: Leads in the Transload Operations through oversight of the facility; oversees adherence with all Safety Program policies and procedures; oversight of operations equipment and facility in compliance with OSHA requirements; ensures that accurate records, reports, and data collection are kept; and assures the MRF that meets federal, state, local, and corporate safety policies, procedures, and programs ensures smooth day-to-day operations of facility.
- Equipment/Facility Operators: Operate front-end loaders, excavator, forklifts, and skid-steer loaders; contribute to maintaining an efficient flow of recyclable materials; with the highest standard of safety, do all housekeeping, monitor traffic flow, reporting any incidents, work area hazards, or equipment malfunctions.
- Maintenance/operations: Performs preventive maintenance requirements on equipment and machines; controls downtime; fabricates and repairs parts; maintains equipment, parts, and supplies inventories; prepares mechanical maintenance reports.
- Safety Supervisor: responsible for ensuring that workers are properly trained regarding company-specific and Occupational Safety and Health Act, OSHA, safety requirements.

c. Primary Processing Site

Republic Services will receive the City's incoming recyclables at their RRRASOC (Resource Recovery and Recycling Authority of Southwest Oakland County) facility located at 20000 Eight Mile Road, Southfield, Michigan, 48075. The RRRASOC MRF

serves the communities of Farmington, Farmington Hills, Milford, Milford Township, Novi, South Lyon, Southfield, Walled Lake and Wixom and also accepts merchant material from other sources. This facility is 43.6 miles from the Ann Arbor MRF. Republic Services owns or operates 91 MRFs nationwide, the largest in the U.S. The RRRASOC/Republic Southfield facility opened in 2016 and is currently processing approximately 235 tons per day, with a total daily capacity of 305 tons. RAA will be delivering approximately 52 tons/day of Ann Arbor material to this facility. Residuals from the facility are sent to Republic's Carleton Farms Landfill.

d. Backup Processing Site

Republic's New Boston Facility located at 28800 Clark Road, New Boston, MI 48164
Rumpke located at 5535 Vine St., Cincinnati, OH 45217
SOCRRA located at 995 Coolidge Highway, Troy, Michigan 48084

e. MRF Work Scheduling/Coordination with City

The materials transferred from Ann Arbor will be accepted at the RRRASOC/REPUBLIC MRF via walking floor trailers, from 6:30 a.m. to 5:00 p.m. Monday through Friday, with similar hours on holiday (make-up) Saturdays conforming to the hours the City has outlined in the RFP. Republic will accept and market all of the materials in Ann Arbor's current recycling mix. Unloading times of 30 minutes or less for transfer vehicles is anticipated, including scaling and unloading. RAA will coordinate all communication with Republic Services

Republic's facility or equipment manager will be available for consultation with the City at any time as needed, as will RAA's CEO and Director of Operations. Monthly or bi-monthly meetings between the City and RAA will be scheduled to address any issues and concerns. Ongoing communication between RAA's MRF manager and the City's scale manager will also be necessary in sharing information and addressing trucking and data issues.

A monthly, written reporting protocol will be determined by both parties at the onset of the contract. RAA has other contract agreements with the City and we view our role as partners with the City and our other customers, cooperatively working together to provide the safest, most efficient and environmentally successful outcomes possible. We look forward to working with the City on these mission-driven outcomes.

C.2 Outside third-party material to be brought to the MRF:

Option 1: 5-year proposal for RAA to transload materials to an offsite MRF for processing and subsequent marketing to end markets.

a. Third-Party Sources of Recycled Material in Transload Proposal

Only after prioritizing City of Ann Arbor generated recyclables (and then Waste Authority materials) will RAA consider taking other materials. Other materials will only be accepted if they can be accommodated in a manner consistent with best practices. If third-party tons are accepted it would provide a host fee to the City. Although not currently anticipated, additional tons will be accepted from Authority communities if the contract is transferred to WRMMA.

b. Materials Accepted in the Transload Proposal

RAA's intent is to accept all recyclables that the City program generates that comply with quality standards. This includes 1) City curbside material that is collected from single family, multi-family, and smaller commercial and institutional sites; and 2) commercial material generated from the DDA area and all other commercial recycling pickups that the City and/or RAA services that conform to quality standards. 3) WRMMA materials if the contract is transferred to the Authority.

- RAA will accept all of the commodities that the City currently accepts.

c. Third-Party Tonnage Anticipated in the Transload Proposal

We are not currently anticipating any third-party tons. Although not currently anticipated, additional tons will be accepted from Authority communities if the contract is transferred to WRMMA.

d. Additional Staffing in the Transload Proposal

We are not currently anticipating any additional staffing. Although not currently anticipated, additional tons will be accepted from Authority communities if the contract is transferred to WRMMA. It is not currently known by RAA what the tonnage might be or what additional staff will be needed.

Option 2: 10-year proposal for RAA MRF Redevelopment (Process and Sort on Site) and Option 3: 10-year alternative proposal to option 2.

a. Third-Party Sources of Recycled Material in the MRF Redevelopment Proposal

Only after prioritizing City of Ann Arbor generated recyclables (and then Waste Authority materials) will RAA consider taking other materials. Other materials will be accepted only if they can be accommodated in a manner consistent with MRF operations best practices. RAA is confident that 6,500-16,500 additional tons/year will be procured (providing a host fee to the City) as we are in possession of letters of support from Waste Management, the City of Dexter, City of Ypsilanti, and other communities in the waste authority.

Materials Accepted in the MRF Redevelopment Proposal

RAA's intent is to accept all recyclables that the City program generates that comply with quality standards. This includes 1) City curbside material that is collected from single family, multi-family, and smaller commercial and institutional sites; and 2) commercial material generated from the DDA area and all other commercial recycling pickups that the City and/or RAA services that conform to quality standards; and 3) similar materials from Authority communities and other communities in the larger region. RAA defines these materials as "primarily residential recyclables".

- RAA will accept all of the commodities that the City currently accepts.

b. Third-Party Tonnage Anticipated in the MRF Redevelopment Proposal

Only after prioritizing City of Ann Arbor generated recyclables will RAA consider taking other materials. Other materials will only be accepted if they can be accommodated in a manner consistent with MRF operations best practices. Given those requirements, third-party tonnage could account for 6,500 to 16,500 tons/year. RAA has been in contact with

members of the newly forming solid waste authority (see letters of support). In addition, there could be some tons available from other haulers that lack local processing options.

c. Additional Staffing in the MRF Redevelopment Proposal
RAA's projections, including 3rd party and City tons, allow for all processing to occur with 20-25 positions, 1 shift/day (8 hours), 5 days per week. 3rd party tons will account for 2-3 shifts/week.

C 3. Proposals to equip and modify the MRF as needed and operate the MRF as a processing facility the MRF as a processing facility

Option 2: 10-year proposal for RAA MRF Redevelopment (Process and Sort on Site) and Option 3: 10-year alternative proposal to option 2.

a. Brief narrative description on how the MRF will be equipped and modified to operate as a processing facility (See drawing(s) in Appendix C)
RAA has already invested over a year completing the design of the MRF. Machinex has been working with RAA on the redevelopment of Ann Arbor's MRF including three site visits and a systematic engineering evaluation of the existing facility.

The proposed system is a single stream system (upgrade) which features a new OCC screen along with other benefits to address processing challenges previously faced by the Ann Arbor facility. The facility is designed to process approximately 20 tons per hour or 130 tons per 8 hour shift. All components of the facility have been designed to process this volume of material. All building and equipment modifications will be the responsibility of RAA.

There are select pieces of equipment that Machinex has evaluated and will rebuild and recondition for use within the recycling equipment system. Machinex is an experienced MRF designer and equipment supplier and has evaluated the usefulness and safety of the select equipment outlined below. They have assured RAA that it will be safe, serviceable and meet the requirements once it is fully reconditioned and fit within the new system layout.

In general terms, the front-end processing system equipment will be removed and recycled, the front end transfer conveyors will be removed and recycled, the (second) pre-sort house and conveyor will be rebuilt and reconditioned and the OCC screen will be removed and recycled. The glass breaker/fines screen will be reused but the cyclone system will either be replaced or redesigned. The final sorting conveyor system, bunkers, OCC surge hopper and conveyors will be rebuilt and reconditioned. The baler will also be reused.

Planned Improvements:
Tipping Floor
The existing metering hopper and existing feed conveyors and (first) pre-sort station will be removed to allow the tipping floor to be expanded. The volume of City generated tonnage poses no issue with regard to space constraints and can be fully accommodated by the current tip floor. The tip floor space will be a guiding factor for RAA in the acceptance of

additional material – nothing that exceeds the capacity of the tip floor will be accepted. The facility is carefully designed to accept additional material.

Specifically, the Installation of the single stream sorting line in 2010 resulted in a tipping floor with a relatively shallow depth (from doors to pushwall) for the unloading of recyclables from collection vehicles. It was also noted during one of the equipment audits that "the way the system is currently laid out, it is nearly impossible to safely reach many of the system components to service them. These deficiencies will be remedied by removing all "front end" equipment, including the drum feeder, feed conveyors and (first) pre-sort area above the existing main feed conveyor. They will be replaced with a single hopper and drum metering device that will carry material into the primary pre-sort house. By replacing the existing feed system with a single hopper and feed drum and re-positioning the new feed system, the pushwall can be moved back approximately 15 feet, allowing for easier tipping and loading and freeing up several hundred feet of tip floor space. This will also make the equipment more accessible for timely and safe servicing.

Upfront System Replacement
Machinex will install a new feed system which will help free up the loader operator time so she/he can manage other items on the tipping floor. This new feed system includes a 33' long hopper that the loader operator can fill with material and let the drum feeder meter the materials into the new processing system while the loader operator manages the tipping floor.

Pre-sort system
The existing enclosure will be reused. A new pre-sort conveyor will be installed along with new sorting chutes so sorters can target & remove materials that need to be removed before the stream reaches downstream equipment. To reduce double handling of material, the system includes transfer conveyors for large rejects directly to the existing trash compactor located outside the building. The sorted rigid plastics and bulky metals will be dropped through sorting chutes which will direct the materials into roll-off bins below the platform area.

OCC screen
The material will pass over a new 2 deck OCC screen the larger OCC will be mechanically separated from the rest of the stream. The overs from the OCC screen will pass by a QC station where a final inspection of the material can be done before OCC is discharged into the OCC storage bunker.

Unders
The existing three-deck glass breaker/fines screen has been determined to be in good condition will be reconditioned and placed in a new location under the OCC screen. The

unders that fall through the OCC screen decks will feed onto the glass breaker/fines screen which will be relocated under the OCC screen. This screen will remove the 2" minus materials (fines/glass) from the rest of the OCC under material and direct that material to the glass clean up system.

Glass Clean-up System
A portion of the existing glass clean up system will be reconditioned and repurposed, and new glass clean up components will be installed to help remove light materials such as shredded paper from the 2" minus fraction before being conveyed to and stored in the existing glass bunker. The light fraction will be conveyed to the existing waste compactor outside the building.

ONP Ballistic Separator
The material that rides over the glass breaker/fines screen will be conveyed to a new scalping screen. The overs from the scalping screen will fall onto the new ONP ballistic separator. The paddles in the ONP ballistic separator will move larger flat materials in a forward and upward motion up and over the top end of the ballistic separator. Smaller pieces will fall through openings in the paddles, and 3D materials will tumble to and off the lower end of the ballistic separator. These materials along with the materials that passed through the scalping screen will fall onto a conveyor that feeds the finishing ballistic separator.

The materials that travel over the top of the ONP ballistic separator will be deposited onto a manual QC conveyor on the paper sort deck. The containers will be conveyed to the container sort line and the non-recyclable materials will be conveyed to the existing waste compactor.

Finishing Ballistic Separator
The finishing ballistic separator is similar in function to the ONP ballistic separator, but with smaller paddles and smaller openings. The remaining paper and flat materials are carried forward and upward by the paddles. 3D materials tumble down the face of the paddles to drop off the lower end of the ballistic separator. These materials are then conveyed to the container sort line. Any fines reaching the finishing ballistic separator drop through holes in the paddles and are conveyed to the existing waste compactor. This new technology creates a much higher quality of paper and is a result of the collaboration between RAA and their paper market, Pratt Industries.

The materials that travel over the top of the finishing ballistic separator will be deposited onto a manual QC conveyor on the paper sort deck. The containers will be conveyed to the container sort line and the non-recyclable materials will be conveyed to the reconditioned waste compactor.

Paper Sort Deck
The two new paper QC conveyors are located on a double deck structure located over the sorted fiber bunkers. Manual sorters can sort ONP, mixed paper, OCC, Office Paper into

the bunkers below. Containers can be sorted to a conveyor that takes them to the container line and trash can be sorted to the residue conveyor.

Container Sorting Line
Containers are conveyed under the reconditioned over-belt magnet that pulls off steel. The steel is conveyed to the steel storage bunker. The remaining container stream falls onto an acceleration conveyor for the first optical sort. This optical sorter ejects 3D fiber including cartons and other fiber in a 3D form. The non-ejected container stream passes over an eddy current separator (ECS) to remove non-ferrous metals, which are then manually sorted before being blown into a bunker for aluminum. The ejected 3D fiber and the remaining non-metal portion of the container stream are then conveyed into side-by-side channels on the second optical sorter.

The first channel of the second optical sorter will separate cartons from other fiber. The cartons will be conveyed to the carton bunker. The other fiber will be conveyed to the mixed paper bunker. The second channel of the second optical sorter will eject all plastics. This mixed plastic stream will be conveyed to the mixed plastic bunker. All remaining material will be conveyed past a final sort station where missed materials can be manually sorted if needed. Any residuals will be conveyed to the waste compactor.

Baling
As the live bottom bunkers under the paper sort lines fill and as the container slope-bottom bunkers fill, these materials can be sequentially baled using the existing baler. One at a time, a bunker is discharged onto the new baler reclaim conveyor. That conveyor discharges on to the existing inclined baler feed conveyor, which in turn discharges into the charge hopper of the existing baler. As bales are produced, they are stacked in the bale warehouse area, or live loaded into semi-trailers at the loading docks.

Controls
A completely new control system which will include a new control panel along with a new field wiring for the new portions of the processing system.

Baler Reclaim Conveyor Replacement
A new baler reclaim conveyor which will extend to the head of the OCC storage conveyor will be installed. This will allow the operator to be able to use the OCC storage conveyor. The current reclaim conveyor has been shortened which doesn't allow the OCC storage conveyor to be used so it will need to be modified as well.

Dismantling of Existing System
This proposal includes the removal of the existing "front end" of the system through the finishing screens. This will allow enough room for the base system package to be installed and leave the rest of the system in place but not functional. None of the equipment left in place will inhibit the effectiveness of the operation, safety or maintenance of the equipment and facility.

Salvage Value of Existing Equipment
RAA will reimburse the City the revenue from salvaging (recycling) any unusable equipment. RAA will pay the City of Ann Arbor the salvage value of the equipment that will

be rebuilt and reconditioned. Any dismantled equipment that cannot be sold for salvage will be cut up and recycled.

Building Modifications

RAA will do a building audit prior to the final contract. RAA and the City will mutually agree to any select repairs that are need that will facilitate the redesign of the recycling equipment line and the safe operation of the facility.

Building Footprint

The building footprint was originally designed for dual stream recycling. When the single stream equipment was added in 2010, the processing line was designed and manufactured to fit within the existing building envelope and a bale storage area was added. The current building is 37,700 square feet and the footprint will not change.

Technical Specifications

Machinex will supply the equipment, engineering and installation for the project.

Machinex and RRS have conducted a thorough assessment of the existing building and facility in order to provide the cost estimates and initial drawings for this project.

The planned equipment includes the following:

- New large feed hopper with feeder metering drum
- New incline feed conveyor leading to the pre-sort conveyor.
- New presort conveyor
- New two-deck OCC screen
- New OCC discharge conveyor and manual QC station
- Relocated and reconditioned glass breaker/fines screen
- New fines conveyor leading to glass cleanup system
- Reconditioned air knife and cyclone glass clean-up system
- New scalping deck
- New ONP feed conveyor
- New ONP (Primary) ballistic separator with blower kit
- New large (ONP) fiber transfer conveyor
- New large fiber sort conveyor
- New shuttle conveyor
- New finishing ballistic separator feed conveyor
- New finishing ballistic separator with fan kit
- New mixed paper transfer conveyor
- New mixed paper sort conveyor
- New container transfer conveyors (3)
- New over-belt magnet
- Reconditioned existing ferrous transfer conveyor

- New 3D fiber optical sorted with acceleration conveyor
- New ejected fiber transfer conveyors (2)
- New eddy current feed conveyor
- New eddy current separator
- New aluminum QC conveyor
- New aluminum blower system
- New conveyor to second optical sorter
- New dual channel optical sorter and acceleration conveyor
- New ejected transfer conveyors (2)
- New plastics transfer conveyor
- New carton transfer conveyor
- New mixed paper transfer conveyor (from OS)
- New non-ejected transfer conveyor
- New last chance recovery conveyor
- New presort rejects transfer conveyors (2)
- New compactor feed conveyor
- Reconditioned rejects transfer conveyor
- Reconditioned compactor feed conveyor
- Reconditioned fines transfer conveyors (3)
- New glass transfer conveyors (2)
- New reclaim conveyor
- Reconditioned baler feed conveyor
- Existing 2-ram baler
- Reconditioned OCC bunker conveyor
- Reconditioned office bunker conveyor
- Reconditioned ONP bunker conveyor
- Reconditioned mixed paper bunker conveyors (2)
- Reconditioned waste compactor
- Reconditioned Compressor unit
- New presort and OCC screen steel package
- New ballistic platform steel package
- New optics and ECS platform steel package
- Slope floor bunker steel package doors (5)
- New Controls package

Planned upgrade work includes the following:

- Removal of unused old equipment
- Engineering and installation

b. Interim operations/handling for the City's recyclable materials while the MRF is being modified for use.

With some exceptions, the equipment is separate from the tipping floor which allows for the equipment redevelopment while the site is still being used for transfer. Machinex, RRS and RAA will create a detailed plan for operation to be uninterrupted while redevelopment is completed. The site will be operated in the current manner that RAA has been performing operations with materials being transferred to either Rumpke's facility located at 5535 Vine

St., Cincinnati, OH 45217 or the RRRASOC facility operated by Republic at 20000 Eight Mile Road, Southfield, Michigan. They will serve as the designated processing locations while the Ann Arbor MRF is being modified and re-equipped. These facilities will also serve as the primary back-up site once the Ann Arbor MRF is re-activated.

In addition, the MRF operated by SOCRRA, located at 995 Coolidge, Troy, Michigan will serve as an additional backup facility. Please see the attached letter from SOCRRA.

c. Schedule and duration for the MRF modification and reequipping

RAA has already invested a year completing the design of the MRF. Machinex has been working with RAA on the redevelopment of Ann Arbor's MRF including three site visits and their engineering department looking at the facility in detail.

RAA has developed the following preliminary schedule based on first quarter of work that will commence upon authorization which will occur upon the award of the contract.

	Q1	Q2	Q3	Q4	Q5	Q6	Q7	Q8
Machinex Scope of Work and Contract Completed								
Develop MRF Education Center advisory team								
Finalize MRF Education Center re-design								
Finalize Conceptual Design								
Finalize Design								
Payment to Machinex								
Site Prep								
Approve final engineering drawings of equipment-detailed engineers drawings								
Complete Master Project Management Plan • Baselines, costs and schedules • Performance and monitoring measures to be used • Pre-Construction and Building Plan • Procurement Plan								
Complete of Commissioning Plan • Project control Process • Construction Plan • Project Close Out								
Kick off meeting								
2nd payment to Machinex								
Equipment fabrication begins								
Begin Dismantling of the existing equipment								
General cleaning of the area								
Recycling of used equipment								
Submit Reimbursement Request								
3rd payment to Machinex								
Necessary building modifications complete								
Installation of Equipment								
Operation Shake out of system								
Acceptance of Project Close out Plan								
Operational Acceptance/Begin onsite processing of City of Ann Arbor Materials.								
Completed as-built drawings								
Final payment to Machinex								

d. Brief narrative description on how the MRF will be operated after the equipping and modifications

RAA will continue to loose load and transport recyclables from the City MRF building via live floor trailers, and these will be delivered to the RRRASOC, Republic Services MRF in Southfield, MI for processing and marketing.

The collection trucks will scale at the new City scale site where inbound loads will be identified and given a unique scale account number. All loads delivered to the City MRF building will be tracked through this account number. The trucks will then enter the City MRF building from the west (via the only entrance). The trucks will proceed around the building in a counterclockwise direction, backing into the tipping area on the northern side of the building.

A spotter watches the truck unload the material inside the building on the tipping floor and then the loader pushes the material to the push wall to clear space for incoming loads and to keep a clear open path to the feed hopper.. Once completed with the tipping, the truck then moves out of the building forward and leaves through the exit gate toward the west.

As materials are fed into the system, and the feed hopper volume is depleted, the loader fills the hopper periodically to maintain an even flow into the system.

Pre-sort

The materials will proceed through a pre-sort area where sorters are stationed. These sorters remove the plastic film, scrap metals, electronics, hazardous materials, oversized plastics and obvious outthrows. The electronics and hazardous materials are placed into holding containers on the sorting platform and will be shipped to a properly licensed facility for downstream processing. The hazardous materials will be properly segregated and stored by class and arrangements will be made for their safe management. Sorters also open bags containing recyclable materials to release the recyclables, although bagged materials are strongly discouraged.

OCC Screen

An OCC Screen will sort large cardboard from the incoming stream. Sorted large cardboard is conveyed to a storage bunker to await baling. The remaining fibers and containers fall through discs for further downstream sorting.

Glass Removal Screen

A glass breaker/fines screen with steel in-line discs break glass bottles and jars and screen the glass and other fines from the rest of the incoming stream. This approach minimizes abrasive wear to the rest of the system and nearly eliminates glass from other products produced by the system. Fiber and containers separated from glass and other smaller materials by the glass breaker/fines screen. The unders stream is conveyed to a glass cleanup system that removes much of the low-density materials such as shredded paper. The remaining fines stream is conveyed to the glass storage bunker.

Scalping Screen and Ballistic Separators
A scalping screen is used to separate larger materials from the rest of the stream. The large fraction is fed to the ONP ballistic separator where the 2D fraction (ONP and large paper) carries over the top to be further sorted manually and the 3D fraction tumbles off the bottom. This stream is joined by the smaller materials that fall through openings in the ballistic separator paddles and the material that fell through the scalping screen, and all three are conveyed to the finishing ballistic separator.

The finishing ballistic separator again performs a 2D/3D split with the 2D mixed paper traveling over the top and then being manually sorted and the 3D fraction tumbling to the bottom and then being conveyed to the container line for further sorting. Any fines reaching the finishing ballistic separator pass through openings in the paddles and are conveyed to the waste compactor.

Steel Removal – Inline Over-belt Magnet
An inline over-belt magnet ferrous metal products from the remaining container stream. Ferrous metals are then transferred to the ferrous bunker.

First Optical Sort
An optical sorter ejects fiber (3D) from the container stream. The ejected fiber stream is conveyed to one channel of the second optical sorter. The non-ejected material is conveyed an eddy current separator

Aluminum Recovery
The Eddy Current Separator (ECS) ejects aluminum and other non-ferrous metals. A manual sort station is provided for a QC sort of the aluminum and the remaining aluminum is blown to the aluminum bunker. Materials not ejected by the ECS are conveyed to the second channel of the second optical sorter.

Second Optical sorter
The second optical sorter is divided into two side-by-side channels. The fiber ejected by the first optical sorter is fed to one channel. The materials not ejected by the ECS are fed to the other channel. In the first channel, the optical sorter ejects poly coated cartons (aseptic and gable-top) from other paper. The cartons are conveyed to the carton bunker. The non-ejected fiber is conveyed to the mixed paper bunker.

The second channel of the second optical sorter ejects all plastics. These mixed plastics are conveyed to the mixed plastic bunker. The non-ejected materials are conveyed to a manual sort station for last chance recovery of any missed recyclables. Anything not picked at that station proceeds to the waste compactor.

Materials are stored in separate bunkers. As bunkers fill the baler operator will sequentially empty and bale the materials in each. Once baled, these materials either stacked in the bale warehouse or loaded on a semi-trailer.

Transport to Market

The truck transporting the bales will scale tare weight at the scale site and enter and back up to the dock. Bales are loaded on outbound tractor trailers for shipment. When a trailer is full, the truck exits to the scale for full weight.

Traffic flow is regulated with signage, and staff people will be on site at all time to direct traffic flow.

Daily Cleaning Procedures

All equipment and areas will be regularly and properly cleaned during breaks and between shifts to ensure that the system running at peak capacity and efficiency. Given the high potential for negative off-site impacts from a MRF (e.g. noise, blowing debris, dust, materials falling out of delivery trucks onto roadways, vermin, etc.), RAA has established and written site maintenance and inspection procedures to mitigate negative effects. RAA's site maintenance program minimizes and controls the occurrence of vectors, rodents, pests, and vermin, dust, litter, odor, noise, and other nuisances.

MRF staff are trained to perform workspace clean-up prior to all breaks and at the end of each shift. In the evening while the processing line is not operating, staff are designated to perform housekeeping and clean up. At least once each shift, a litter control patrol inspect the surrounding area to collect any recyclables that may have blown astray. Depending on the amount of windblown debris, the litter control patrol team may be assigned to this task for a longer period of time, as necessary.

RAA contracts vermin and vector protection services from a third party vendor that sets traps and maintain such traps on a regular schedule to maintain a safe and healthy work environmental for all workers and guests.

Quality Assurance During and After Processing

To ensure that equipment settings, staff placement, and other factors are calibrated to specific types of material (i.e. residentially generated grades, wet material, etc.), the tip floor manager will continually monitor incoming material and maintain equipment configurations that are specific to environmental and material conditions. Maintenance crews will calibrate optic sorting equipment, disc and ballistic screens, belt speeds, and all equipment daily. Equipment manufacturers will conduct regular remote and onsite tests and recommend adjustments for optimal operation and recovery.

One of the most important features of MRF management is the use of critical success factors to manage the facility. To operate a successful and cost-effective single-stream MRF, key production components must be measured. These include processed tons per person hour, direct labor costs per ton, maintenance and capital cost per ton, residue percentage of processed tons, down-time, and MRF residue. These measurements will be tracked daily, weekly, and monthly in order to understand the financial health and operational efficiency of the facility.

Material Marketing
The materials marketing team at Recycle Ann Arbor has over 3 decades of experience holding relationships with all of the end markets that RAA will supply. This combination of the value of our relationships and the value of our product will allow for the highest and best use of materials, the high-value sales of our materials, and, equally important, the constant movement of materials. RAA staff have strong relationships with local and regional markets and manufacturers. (Details of our partnerships with end-markets are included in this proposal see Section F below.) RAA believes that the materials set out by residents that are collected for recycling should truly be used to make new products. With that goal in mind, we will process and ship materials in a way that ensures that they can be recycled into new products at the end of their journey.

Road Network for MRF
The City will be responsible for the road network leading to the MRF site. RAA will be responsible for repair and maintenance of the site inside of the site fencing, including winter snow clearing, pavement, lawn areas, and site.

Maintenance
Led by the Maintenance Supervisor, the maintenance team performs predictive and preventative maintenance and unscheduled repairs with the aim of minimizing down time and maximizing productivity of MRF production. Activities include inspections, repairs, general maintenance duties to MRF and equipment as appropriate. Maintenance staff conduct regular daily monitoring of the system to ensure each element of the MRF is performing to throughput and product recovery and quality expectations. Any issues identified are documented and inspected and repaired if necessary. All maintenance tasks and repairs are recorded and from these records, measures are taken to prevent and/or minimize future breakdowns and non-conformance issues. RAA will provide management oversight and will bring in Rumpke, Pratt, and other expert partners as needed to assist with maintenance activities.

RAA's maintenance protocols:

- Outlining needed modifications upon construction and shake-out to maximize throughput
- With Machinex develop and implement daily, weekly, monthly, and quarterly maintenance checklists on equipment, rolling stock and building
- Implementing a digital-based maintenance program to increase run time and ensure safety
- Applying critical success factors--tons per person hour, direct labor costs per ton, maintenance and capital cost per ton, residue percentage of processed tons, down-time, and MRF residue--in maintenance evaluation

e. Proposed staffing of the MRF (number and type of personnel) for processing.
Staffing levels will be determined based on anticipated daily, weekly, and monthly throughput and market specifications required by Pratt and other end markets. Current estimates are for 20-25 processing and equipment operator positions at the facility to process all tons, with job descriptions and hiring to be coordinated by RAA. In order to process the City tonnage (13,500 tons) the facility is expected to operate 2-3 eight-hour shifts per week.

RAA will hire and train all employees, using recommendations and support from Rumpke. RAA will pay better than living wages; all eligible staff will be fully benefited union employees. RAA has a long history of retaining high quality staff through its agreements with the UAW, with the average tenure of RAA employee being approximately 7 years. A similar tenure is true for most other RAA positions. This benefit is especially important when retaining sorting staff at the MRF, as worker longevity has been proven to reduce injuries and accidents and reduce absenteeism. RAA is pleased that MRF operator trends are to pay living wages or better with full benefits. This issue has plagued other MRFs that continue to use a temporary, un-benefitted labor force a practice that RAA would not use.

UAW Local 174 will be the recognized collective bargaining unit at the Ann Arbor MRF (once operational), ensuring fair wages (beyond living wage), safe working conditions and ongoing employee input to maximize the success of facility operations. Community values built on both environmental and economic justice are the cornerstone of our identity, with over 20 union jobs created through this proposal.

Staffing

- CEO: Directs the overall MRF construction and recycling processing operations.
- Director of Operations: Leads in the project management of the MRF construction with RRS as consultants and machine as equipment installation etc. and directs the facility operations through operational oversight of the facility, tracking and adjusting operations for processing requirements for meeting end-market specifications; oversees adherence with all Safety Program policies and procedures; provides oversight of operations equipment and facility in compliance with OSHA requirements; ensures that accurate records, reports, and data collection are kept; and assures the MRF that meets federal, state, local, and corporate safety policies, procedures, and programs.
- MRF Manager: Supervises and leads sorting staff; ensures smooth day-to-day operations of facility; optimizes materials processing requirements to meet end-market specifications; tracks and reports to the Director on the adherence with all Safety Program policies and procedures; maintains operations equipment and facility in compliance with OSHA requirements; maintains accurate records, reports, and data collection; and maintains a MRF that meets federal, state, local, and corporate safety policies, procedures, and programs.
- Sorters: Provide quality control, pulling off the line one type of material at each position.
- Line Leads: Act as liaisons between sorters and MRF management, directing the sorters in their rotations and cleaning assignments; enforce MRF work rules and safety standards, and assist with communications; provide quality control, pulling off the line one type of material at each position.
- Equipment Operators: Operate front-end loaders, forklifts, and skid-steer loaders; contribute to maintaining an efficient flow of recyclable materials; operate MRF vehicles with the highest standard of safety, reporting any incidents, work area hazards, or equipment malfunctions.
- Maintenance/operations Supervisor: Performs preventive maintenance requirements on engines, motors, conveyor systems, and machines; controls

downtime; fabricates and repairs parts; maintains equipment, parts, and supplies inventories; prepares mechanical maintenance reports.

- Safety Supervisor: responsible for ensuring that workers are properly trained regarding company-specific and Occupational Safety and Health Act, OSHA, safety requirements. Rumpke will provide services to support this area

MRF Development Team

Recycle Ann Arbor is the lead agent in this proposal. Rumpke Waste and Recycling Services, Pratt Industries, and Machinex will serve as our primary subcontractors and partners. RAA is responsible for the overall management, operations, reporting, invoicing and communication with the City of Ann Arbor and other parties, as identified.

RAA has secured the capital financing required for this project. Part of this is in the form of a State of Michigan EGLE grant of $800,000 for use in rebuilding the City of Ann Arbor MRF. As part of this effort, RAA will be able to tap into state market development expertise, further grant funds, and emerging public private partnerships that will assist select facilities to grow their recovery and improve the economics of material marketing and processing.

Machinex, along with subcontractors, will be responsible for the deconstruction and disposal of the existing equipment currently on-site and for the installation and testing of the new equipment, including all necessary electrical, fire suppression, safety and software systems, as well as for coordination of all required permits and submittals. Machinex will provide a maintenance schedule and contracted services.

Rumpke will assist RAA in marketing materials processed at the "new" facility and will also provide operational, safety, and logistical support to RAA in the transition to full operation, and as a third-party operational consultant thereafter.

RRS will be responsible for coordination and scheduling of equipment removal and installation to ensure the uninterrupted operation of the transfer of the materials until the MRF redevelopment is completed.

f. Identification of any secondary processing site(s) or key fixed end markets, including name of facility, address, hours of operation, holiday closures, and materials to be transported from the City of Ann Arbor MRF.

Key Markets

Pratt Industries will provide a guaranteed market for all paper. Collaboration with Pratt Industries will ensure that the new facility meets all of the necessary specifications to provide mill-ready bales to be received at their new recycled paper mill in Wapakoneta, Ohio.

In addition to Pratt Industries, RAA is also securing long-term contracts at these reliable markets for glass (Rumpke's beneficiation plant in Dayton, Ohio), plastics (Revital in Sarnia, Ontario) and metals (OmniSource in Jackson, Michigan).

g. Description of how the MRF work will be managed and scheduled, including communication and coordination with the City.

The Ann Arbor MRF will be open to receive materials from Monday through Friday, 7 a.m. to 4 p.m. and on holiday catch-up Saturdays for the same hours. Additional hours for processing will be scheduled as needed. RAA will meet the scheduling requirements as detailed in the RFP. MRF managers will be available for consultation at any time as needed, as will RAA's CEO and Director of Operations. Monthly or bi-monthly meetings between the City and RAA will be scheduled to address any issues and concerns. Ongoing communication between RAA's MRF manager and the City's scale manager will also be necessary in sharing information and addressing trucking and data issues.

A monthly, written reporting protocol will be determined by both parties at the onset of the contract. As we have with other contract agreements with the City, we view our role as partners with the City and our other customers, cooperatively working together to provide the safest, most efficient and environmentally successful outcomes possible. Partnership involves trust, collegiality and information sharing to maximize positive results. We look forward to working with the City on these mission-driven outcomes.

In addition, RAA will work with the City to reopen the MRF Education Center for visitation by school groups and the general public once the upgraded facility is reopened. Thousands of visitors per year were able to observe the City's MRF in action and participate in interactive displays and hands-on activities to increase their knowledge and commitment to zero waste behaviors. We see this as an integral function of a re-energized local facility.

h. Identification of any backup processing facilities the offeror can provide, including information in c. above, in the event a shutdown occurs at the MRF following its operating as a processing facility.

The RRRASOC facility operated by Republic at 20000 Eight Mile Road, Southfield, Michigan will serve as the designated processing location while the Ann Arbor MRF is being modified and re-equipped. This facility will also serve as the primary back-up site once the Ann Arbor MRF is re-activated. Please see the attached letter from Republic Services.

Republic's New Boston Facility located at 28800 Clark Road, New Boston, MI 48164

Rumpke Facility located at 5535 Vine St., Cincinnati, OH 45217

SOCRRA located at 995 Coolidge Highway, Troy, Michigan 48084. Please see the enclosed support letter from Jeff McKeen, P.E., General Manager of SOCRRA.

E. Authorized Negotiator

Bryan Ukena
Chief Executive Officer
734-662-6288 bryanukena@recycleannarbor.org

F. Attachments

Attachment B - Legal Status of Offeror
Attachment C – Non-Discrimination Ordinance Declaration of Compliance Form
Attachment D – Living Wage Declaration of Compliance Form
Attachment E – Vendor Conflict of Interest Disclosure Form
Attachment H – Contractor Information and Safety Record Form

ATTACHMENT B
LEGAL STATUS OF OFFEROR

(The Respondent shall fill out the provision and strike out the remaining ones.)

The Respondent is:

- A corporation organized and doing business under the laws of the state of Michigan, for whom Bryan Ukena bearing the office title of CEO, whose signature is affixed to this proposal, is authorized to execute contracts on behalf of respondent.*

  *If not incorporated in Michigan, please attach the corporation's Certificate of Authority

- A limited liability company doing business under the laws of the State of _____, whom _____ bearing the title of _____ whose signature is affixed to this proposal, is authorized to execute contract on behalf of the LLC.

- A partnership organized under the laws of the State of _____ and filed with the County of _____, whose members are (attach list including street and mailing address for each.)

- An individual, whose signature with address, is affixed to this RFP.

- A unit of government.

Respondent has examined the basic requirements of this RFP and its scope of services, including all Addendum (if applicable) and hereby agrees to offer the services as specified in the RFP.

_____ Date: 9/16/19

Signature

(Print) Name Bryan Ukena Title Chief Executive Officer

Firm: Recycle Ann Arbor

Address: 2420 South Industrial Highway, Ann Arbor, MI 48104

Contact Phone 734-662-6288 Fax 734-662-7749

Email bryanukena@recycleannarbor.org

ATTACHMENT C
CITY OF ANN ARBOR DECLARATION OF COMPLIANCE

Non-Discrimination Ordinance

The "non discrimination by city contractors" provision of the City of Ann Arbor Non-Discrimination Ordinance (Ann Arbor City Code Chapter 112, Section 9:158) requires all contractors proposing to do business with the City to treat employees in a manner which provides equal employment opportunity and does not discriminate against any of their employees, any City employee working with them, or any applicant for employment on the basis of actual or perceived age, arrest record, color, disability, educational association, familial status, family responsibilities, gender expression, gender identity, genetic information, height, HIV status, marital status, national origin, political beliefs, race, religion, sex, sexual orientation, source of income, veteran status, victim of domestic violence or stalking, or weight. It also requires that the contractors include a similar provision in all subcontracts that they execute for City work or programs.

In addition the City Non-Discrimination Ordinance requires that all contractors proposing to do business with the City of Ann Arbor must satisfy the contract compliance administrative policy adopted by the City Administrator. A copy of that policy may be obtained from the Purchasing Manager

The Contractor agrees:

(a) To comply with the terms of the City of Ann Arbor's Non-Discrimination Ordinance and contract compliance administrative policy.

(b) To post the City of Ann Arbor's Non-Discrimination Ordinance Notice in every work place or other location in which employees or other persons are contracted to provide services under a contract with the City.

(c) To provide documentation within the specified time frame in connection with any workforce verification, compliance review or complaint investigation.

(d) To permit access to employees and work sites to City representatives for the purposes of monitoring compliance, or investigating complaints of non-compliance.

The undersigned states that he/she has the requisite authority to act on behalf of his/her employer in these matters and has offered to provide the services in accordance with the terms of the Ann Arbor Non-Discrimination Ordinance. The undersigned certifies that he/she has read and is familiar with the terms of the Non-Discrimination Ordinance, obligates the Contractor to those terms and acknowledges that if his/her employer is found to be in violation of Ordinance it may be subject to civil penalties and termination of the awarded contract.

Recycle Ann Arbor
Company Name

Signature of Authorized Representative — 9/16/19 Date

Bryan U Kena, CEO
Print Name and Title

2420 S. Industrial Hwy, Ann Arbor, MI 48104
Address, City, State, Zip

734 662-6288 bryanukena@recycleannarbor.org
Phone/Email address

Questions about the Notice or the City Administrative Policy, Please contact:
Procurement Office of the City of Ann Arbor
(734) 794-6500

Revised 3/31/15 Rev. 0 NDO-2

ATTACHMENT D
CITY OF ANN ARBOR
LIVING WAGE ORDINANCE DECLARATION OF COMPLIANCE

The Ann Arbor Living Wage Ordinance (Section 1:811-1:821 of Chapter 23 of Title I of the Code) requires that an employer who is (a) a contractor providing services to or for the City for a value greater than $10,000 for any twelve-month contract term, or (b) a recipient of federal, state, or local grant funding administered by the City for a value greater than $10,000, or (c) a recipient of financial assistance awarded by the City for a value greater than $10,000, shall pay its employees a prescribed minimum level of compensation (i.e., Living Wage) for the time those employees perform work on the contract or in connection with the grant or financial assistance. The Living Wage must be paid to these employees for the length of the contract/program.

Companies employing fewer than 5 persons and non-profits employing fewer than 10 persons are exempt from compliance with the Living Wage Ordinance. If this exemption applies to your company/non-profit agency please check here [___] *No. of employees*__

The Contractor or Grantee agrees:

(a) To pay each of its employees whose wage level is not required to comply with federal, state or local prevailing wage law, for work covered or funded by a contract with or grant from the City, no less than the Living Wage. The current Living Wage is defined as $13.61/hour for those employers that provide employee health care (as defined in the Ordinance at Section 1:815 Sec. 1 (a)), or no less than $15.18/hour for those employers that do not provide health care. The Contractor or Grantor understands that the Living Wage is adjusted and established annually on April 30 in accordance with the Ordinance and covered employers shall be required to pay the adjusted amount thereafter to be in compliance with Section 1:815(3).

Check the applicable box below which applies to your workforce

[X] Employees who are assigned to any covered City contract/grant will be paid at or above the applicable living wage without health benefits

[X] Employees who are assigned to any covered City contract/grant will be paid at or above the applicable living wage with health benefits

(b) To post a notice approved by the City regarding the applicability of the Living Wage Ordinance in every work place or other location in which employees or other persons contracting for employment are working.

(c) To provide to the City payroll records or other documentation within ten (10) business days from the receipt of a request by the City.

(d) To permit access to work sites to City representatives for the purposes of monitoring compliance, and investigating complaints or non-compliance.

(e) To take no action that would reduce the compensation, wages, fringe benefits, or leave available to any employee covered by the Living Wage Ordinance or any person contracted for employment and covered by the Living Wage Ordinance in order to pay the living wage required by the Living Wage Ordinance.

The undersigned states that he/she has the requisite authority to act on behalf of his/her employer in these matters and has offered to provide the services or agrees to accept financial assistance in accordance with the terms of the Living Wage Ordinance. The undersigned certifies that he/she has read and is familiar with the terms of the Living Wage Ordinance, obligates the Employer/Grantee to those terms and acknowledges that if his/her employer is found to be in violation of Ordinance it may be subject to civil penalties and termination of the awarded contract or grant of financial assistance.

Recycle Ann Arbor
Company Name

2420 S. Industrial Hwy.
Street Address

Signature of Authorized Representative — 9/16/19 Date

Ann Arbor, MI 48103
City, State, Zip

Bryan Ukena, CEO
Print Name and Title

734 662-6288
Phone/Email address

ATTACHMENT E

VENDOR CONFLICT OF INTEREST DISCLOSURE FORM

All vendors interested in conducting business with the City of Ann Arbor must complete and return the Vendor Conflict of Interest Disclosure Form in order to be eligible to be awarded a contract. Please note that all vendors are subject to comply with the City of Ann Arbor's conflict of interest policies as stated within the certification section below.

If a vendor has a relationship with a City of Ann Arbor official or employee, an immediate family member of a City of Ann Arbor official or employee, the vendor shall disclose the information required below.

1. No City official or employee or City employee's immediate family member has an ownership interest in vendor's company or is deriving personal financial gain from this contract.
2. No retired or separated City official or employee who has been retired or separated from the City for less than one (1) year has an ownership interest in vendor's Company.
3. No City employee is contemporaneously employed or prospectively to be employed with the vendor.
4. Vendor hereby declares it has not and will not provide gifts or hospitality of any dollar value or any other gratuities to any City employee or elected official to obtain or maintain a contract.
5. Please note any exceptions below:

Conflict of Interest Disclosure*	
Name of City of Ann Arbor employees, elected officials or immediate family members with whom there may be a potential conflict of interest.	( ) Relationship to employee ( ) Interest in vendor's company ( ) Other (please describe in box below)

*Disclosing a potential conflict of interest does not disqualify vendors. In the event vendors do not disclose potential conflicts of interest and they are detected by the City, vendor will be exempt from doing business with the City.

I certify that this Conflict of Interest Disclosure has been examined by me and that its contents are true and correct to my knowledge and belief and I have the authority to so certify on behalf of the Vendor by my signature below:		
Recycle Ann Arbor		734-662-6288
Vendor Name		**Vendor Phone Number**
Bryan Ukena	9/16/19	Bryan Ukena
Signature of Vendor Authorized Representative	**Date**	**Printed Name of Vendor Authorized Representative**

Questions about this form? Contact Procurement Office City of Ann Arbor Phone: 734/794-6500, procurement@a2gov.org

ATTACHMENT H

CONTRACTOR INFORMATION AND SAFETY RECORD FORM

A. Contractor Information

Company Name: Recycle Ann Arbor

Address: 2420 S. Industrial Hwy
Ann Arbor MI 48104

Tax I.D.: 38-2224861

Phone / Fax: 734.662.6288 Fax 734.662.7749

Website: www.recycleannarbor.org

Applicant Contact Person: Bryan Ukena

Contact Person's Title: CEO

Cell Phone: 734.474.8701

Email Address: bryanukena@recycleannarbor.org

B. Organizational Structure

☐ Corporation

State of Incorporation: _____ Year: _____

☐ Subsidiary / Division of: _____

Headquarters Address: _____

☐ Parent Company to: _____

☐ Partnership: _____

☐ General ☐ Limited

State and County where filed: _____

Date of Organization: _____

☐ Joint Venture:

Date of Organization: _____

☐ Sole Proprietorship:

Date of Organization: _____

☑ Nonprofit Corporation:

Date of Organization: 1977

Company Officers and Key Personnel: List below the key officers in your organization.

First Name	Last Name	Title	Contact Information
Eric	Head	Chair	ehead8@gmail.com
miriam	Flagler	Vice Chair	mtflagler@gmail.com
mike	Garfield	Secretary	michaelg@ecocenter.org
Bryan	Ukena	CEO	bryanukena@recycleannarbor.org
Sue	Honke	CFO	sahonke@aol.com

C. Claims and Suits

1. Has your organization ever defaulted on a contract? ☐ Yes ☑ No
2. Are there any judgments, claims, arbitration proceedings or suits pending or outstanding against your organization or its officers? ☐ Yes ☑ No
3. Has your organization filed any lawsuits or claims within the last five years? ☐ Yes ☑ No

If the answer is "Yes" to any of the above questions, please provide details as an attachment.

D. Safety Record Information

1. In the last three years has your company received any alleged violations as a results of inspections conducted by the Michigan Occupational Safety & Health Administration (MIOSHA), U.S. Department of Labor – Occupation Safety and Health Administration (OSHA), U.S. Environmental Protections Agency (EPA), Michigan Department of Environment, Great Lakes & Energy (formerly Department of Environmental Quality (DEQ)) or other environmental, health and safety agencies?

   ☐ Yes ☑ No

   If response is "Yes" attached copies of violations and corrective action documentation.

2. List your organizations Experience Modification Rate (EMR) for the past three consecutive years. This should include the current calendar year and the previous two years. Both interstate and intrastate EMRs must be included. If an interstate EMR does not apply to your organization, write "NA" in those fields.

Year	2019	2018	2017
Interstate EMR:	.78	.78	.99
Intrastate EMR:	n/a	n/a	n/a

Provide a copy of an EMR verification on your insurance carrier's letterhead for the current calendar year and two previous years. Failure to provide verification may disqualify bidder from competing in the bidding process. Contractors who are self insured must attached a letter signed by an officer of their company stating that they are self-insured and do not have an EMR.

3. Use your current year and last two consecutive years of OSHA 300 logs to fill in the following information.

Year	YTD 2019	2018	2017
a. Total number of OSHA recordable cases	5	4	2
b. Number of transfer and restricted cases	0	0	0
c. Number of lost workday cases	1	0	0
d. Number of lost workdays	21	0	0
e. Number of fatalities	0	0	0
f. Employee hours worked each year	76000	75000	72000

4. Use the following information to calculate information from your organizations OSHA 300 logs.

Recordable Incident Rate = (Total of Sections H, I and J multiplied by 200,000) divided by total hours worked

DART Incident Rate = (Totals of Sections H and I multiplied by 200,000) divided by total hours worked

Complete the following rate information based upon current year-to-date numbers and the previous two years.

Year	2019	2018	2017
Recordable Incident Rate:	55	0	0
DART Incident Rate:	55	0	0

HUB International Limited
1591 Galbraith Ave SE
Grand Rapids, MI 49546
P: (616) 233-4111
F: (616) 233-4110
www.hubinternational.com

September 11, 2019

Recycle Ann Arbor Inc
2420 S Industrial Hwy
Ann Arbor, MI 48104

RE: Workers' Compensation
Insurer: Accident Fund General Insurance Company
Policy #: WCV6038634
Policy Period: 01/01/2019 to 01/01/2020

Dear Insured:

This is to confirm the Experience Modification Rate (EMR) history for the above is:

	Interstate	Intrastate
2019-2020:	.78	n/a
2018-2019:	.78	n/a
2017-2018:	.99	n/a

Thank you for the opportunity to be of service and should you have any questions please contact our office.

Sincerely,

Christine Hooper

Christine Hooper
Commercial Lines Account Manager

Sincerely,

5. Does your organization have a written company safety policy signed by a company officer? ☑ Yes ☐ No

6. Does your firm have a written Hazard Communication Program?
☑ Yes ☐ No

7. Identify the name and title or the person within your organization directly responsible for the organizations safety management program.

Name Nicole Markovits Title HR Manager Phone Number 734.249.1523

8. How often does your organization hold site or toolbox safety meetings for field teams?
☐ Daily ☐ Weekly ☐ Monthly ☐ Only on an "as needed basis"

Please explain Quarterly

9. Do you have a safety orientation program for new hires?	YES	NO
	☑	☐
If yes, does it include instruction on the following topics?		
a. Your organizations safety policy, rules and procedures	☑	☐
b. Personal protective equipment	☑	☐
c. Fall protection	☑	☐
d. Scaffolding / work platforms	☑	☐
e. Housekeeping	☑	☐
f. Fire protection	☑	☐
g. First Aid	☑	☐
h. Emergency procedures	☑	☐
i. Hazard communication	☑	☐
j. Trenching and excavation	☐	☑ NA
k. Signs, signals and barricades	☑	☐
l. Control of hazardous energy (LOTO)	☑	☐
m. Rigging and crane safety	☐	☑ NA
n. Confined space	☑	☐
o. Hazard recognition	☑	☐
p. Asbestos awareness	☐	☑
q. Lead awareness	☐	☑

10. Does your organization participate in a substance abuse program which utilizes an independent forensic laboratory for testing of all workers engaged in work for the City of Ann Arbor? ☑ Yes ☐ No

11. How do you evaluate or verify that subcontractors that you hire to support work for the City of Ann Arbor have the required experience, qualifications, training and PPE / equipment to perform the scope of work safely?

Any subcontractor of Recycle Ann Arbor is vetted to ensure that they are not only qualified to do the work, but that proper safety procedures are followed. References of potential subcontractors are contacted and onsite management observes safety protocols of our subcontractors on an ongoing basis. During the transload process, RAA will visit the Republic Services MRF at least quarterly to observe the quality of MRF operations and safety protocols.

12. Describe your organizations process to investigate and implement corrective actions to address accidents, injuries and near misses.

RAA has an internal Accident Review Committee (ARC) to determine prevention or fault. The standing committee consists of a manager, the employee involved in the accident, another employee from the same department and a member of the Safety Committee. The ARC goes through a step by step root cause analysis and determines preventative measures to eliminate the chances of a repeated incident. Accidents, injuries and near misses are all treated in the same manner.

13. Use the space below to provide any additional relevant information regarding your organization's health and safety policies or programs.

RAA values safety and we are continuously working to improve safety policies and procedures.

We work very closely with both our insurance broker and carriers on safety trainings and updates. Our workers' compensation carrier conducts quarterly audits, in conjunction with the internal Safety Committee, of our safety program, as well as different Sites. Our broker has a Risk Management Specialist that conducts annual mock OSHA audits at each RAA site.

The National Council for Occupational Health (COSH) chose RAA to participate in a National COSH training program in 2018, which was funded by the Susan Harwood Training Grant Program under Federal OSHA. A representative from COSH came in and conducted two separate employee safety trainings with a focus on chemical hazards, but not limited to this topic, and provided general assistance on health and safety programs related to the various operations under RAA direction.

Appendix:

A. Letters of Support

B. Resumes

C. Machinex Drawings

SOCRRA
Community Partners in Recycling & Waste

Berkley • Beverly Hills • Birmingham • Clawson • Ferndale • Hazel Park • Huntington Woods • Lathrup Village • Oak Park • Pleasant Ridge • Royal Oak • Troy

September 11, 2019

Mr. Bryan Ukena, CEO
Recycle Ann Arbor
2420 S. Industrial Highway
Ann Arbor, MI 48104

Dear Bryan:

As General Manager of the Southeastern Oakland County Resource Recovery Authority (SOCRRA) it is my privilege to endorse Recycle Ann Arbor's (RAA) proposal to re-establish the City of Ann Arbor materials recovery facility (MRF) for use by Ann Arbor and surrounding communities. As you know, there is a significant shortage of recycling processing capacity in southeast Michigan and RAA's proposal will help to ease some of that demand while seeking "highest and best use" for the collected materials.

In addition, although SOCRRA's MRF is near capacity, we would have the ability to accept a limited tonnage of material from Ann Arbor on an interim or as-needed basis. We are working with RAA to deliver a couple of test loads in the near future, and, if successful, could take a 20 ton (+/-) trailer load of material on a scheduled basis either in the interim (next year) or as a back-up facility once the Ann Arbor facility is back up and running.

SOCRRA accepts the same material mix as Ann Arbor, and would therefore not compromise the recyclability of any of its delivered materials. SOCRRA's MRF, which is located about 53 miles from the Ann Arbor facility, provides a relatively local outlet for some of Ann Arbor's materials on a limited, as-needed basis.

In addition, if SOCRAA's MRF were unable to accept materials, we would hope that the Ann Arbor facility would be open to accept our materials under a reciprocal arrangement. Such back-up assurance for both parties is a true win-win.

Please let me know how we might be of service in finalizing possible arrangements.

Sincerely yours,

Jeffrey A. McKeen, P.E.
General Manager, SOCRRA

SOCRRA • 3910 W. Webster Road • Royal Oak • Michigan • 48073 • Phone 248.288.5150 • Fax 248.435.0310 • Email socrra@socrra.org

www.socrra.org

REPUBLIC SERVICES

RFP No. 19-28 – MRF Operations and Recyclables Processing

September 13, 2019

City of Ann Arbor
301 East Huron Street
Ann Arbor, MI 48107

Re: "RFP No. 19-28 – MRF Operations and Recyclables Processing"

Republic Services is pleased to submit this proposal to the City of Ann Arbor for the processing of recycling materials from the City of Ann Arbor. We are confident that you will find Republic to be the best-value bidder, based on our commitments that make us a leader in the recycling and waste industry nationwide. We are proud to be recognized for the following benefits to your community:

- We have been established in the Southeast Michigan market for over 20 years as Republic Serivces and many more under affiliated names and companies
- Our employees are 41% safer than the industry average
- We have several facilities located close to Ann Arbor
- We have been recognized in the top 10% of all companies globally for our commitments and investments in sustainability
- Republic Services was designated as one of the World's Most Ethical Companies by the Ethisphere Institute.

As a partner with Recycle Ann Arbor on this proposal, Republic is very proud of the relationships that we have developed with key stakeholders in the waste and recycling business locally as well as nationally. Republic Services is one of the very few companies that can bring to the table the level of expertise, dedication, locally operated infrastructure, and financial strength to the City of Ann Arbor. Our proposal shares details about our abilities to enhance and preserve your environmental stewardship as a true community partner.

Republic Services looks forward to developing a professional relationship with the City and being a partner with the City to meet and exceed your environmental goals.

Should you have any questions or need any further information regarding this proposal, please feel to contact me at: (734) 727-2158 or scabauatan@republicservices.com.

Sincerely,

Scott Cabauatan
Municipal Services Manager

Forbes | 2017
AMERICA'S BEST LARGE EMPLOYERS

WASTE MANAGEMENT
48797 Alpha Drive - Suite 100
Wixom, MI 48393
(248) 596-3500
(248) 596-3595 Fax

September 12, 2019

Mr. Bryan Ukena, CEO
Recycle Ann Arbor
2420 South Industrial
Ann Arbor, Michigan 48104

RE: Washtenaw County Recycle Resource Recovery and Management

Mr. Ukena:

Thank you for the opportunity to discuss the current and future capacity for recycle processing in Washtenaw County and southeast Michigan. As you know, Waste Management encourages and supports recycling as an important and sustainable part of the overall solid waste management system.

More specific to Washtenaw County, Waste Management continues to work with our customers to create the most cost effective and flexible methods for managing their recycle material. For example, Ypsilanti Township, City of Saline and City of Dexter have joined the Washtenaw Regional Resource Management Authority. Together with these communities, we have structured each of their solid waste and recycling contracts to allow alternatives for the recycle processing location including delivery of recycle material to a processing facility in or near Washtenaw County should such a facility become available in the future.

This is just one example of Waste Management supporting the efforts of our customers to pursue local and regional collaboration and sustainable solutions for recycle material processing. Furthermore, Waste Management will carefully consider use of any future Washtenaw County based processing center for our own localized recycle volume assuming the cost of processing is cost effective within the market area and there is available capacity.

Finally, I hope this letter sets forth the position of Waste Management as it relates to processing of recycle material within Washtenaw County and southeast Michigan.

Please let me know if you have questions or if I can provide additional information.

Sincerely,

Patrick G. Greve
Public Sector Area Manager, MI/OH/IN

City of Ypsilanti
Office of the City Manager

September 11, 2019

Mr. Bryan Ukena, CEO
Recycle Ann Arbor
2420 S. Industrial Highway
Ann Arbor, MI 48104

Dear Bryan:

As City Manager for the City of Ypsilanti, it is my privilege to endorse Recycle Ann Arbor's (RAA) proposal to re-establish the City of Ann Arbor's materials recovery facility (MRF) for use by Ann Arbor and surrounding communities. As you know, other than the small and limited MRF operated by the Western Washtenaw Recycling Authority, there are no other recycling processing facilities operating within Washtenaw County. One of the reasons the City of Ypsilanti joined the newly established Authority is to insure long-term recycling processing capacity for our community. RAA's proposal does exactly that, whether or not Ann Arbor is a formal member of the new Authority.

In addition to securing capacity, Ypsilanti also appreciates RAA's role in the region as a non-profit, mission-driven organization seeking the highest and best use for the collected materials, as well as commitment to union representation for their employees. Ypsilanti has a very positive working relationship with RAA, and we greatly appreciate their commitment to our community's values and their willingness to work with us in managing costs and effectively reaching our community with a zero waste/recycling message.

We look forward to working with RAA and the City of Ann Arbor in securing our recycling future, maximizing recovery while protecting our community's deeper values in responsible environmental stewardship, fair labor standards and cost-effective services.

Sincerely,

Frances McMullan, City Manager
City of Ypsilanti

One South Huron Street
Ypsilanti, MI 48197
Tel (734) 483-1810
Fax (734) 483-7260
www.CityofYpsilanti.com

The City of
DEXTER
Michigan

8140 Main Street • Dexter, Michigan 48130-1092 • (734) 426-8303

September 12, 2019

Mr. Bryan Ukena, CEO
Recycle Ann Arbor
2420 S. Industrial Highway
Ann Arbor, MI 48104

Dear Mr. Ukena:

As City Manager of Dexter, it is my pleasure to endorse the re-establishment of the City of Ann Arbor's materials recovery facility (MRF) for use by Ann Arbor and surrounding communities. As you know, other than the small and limited MRF operated by the Western Washtenaw Recycling Authority, there are no other recycling processing facilities operating within Washtenaw County.

One of the reasons the City of Dexter joined the newly established Washtenaw Regional Resources Management Authority is to insure long-term recycling processing capacity for our community. Re-opening the City of Ann Arbor's MRF is a step towards achieving that goal, whether or not Ann Arbor is a formal member of the new Authority.

The City of Dexter's recycling services are currently provided by Waste Management, and they too are supportive of adding recycling processing capacity here in Washtenaw County. Dexter currently generates approximately 325 tons of recyclables each year, and this extra throughput would improve the overall economics of the redeveloped Ann Arbor MRF.

We look forward to working with all parties to secure our recycling future, maximizing recovery while protecting our community's deeper values in responsible environmental stewardship, fair labor standards and cost-effective services.

Sincerely,

Courtney Nicholls

Courtney Nicholls, City Manager
City of Dexter

PO Box 10070
Lansing, MI 48901
kobrien@michiganrecycles.org
517.974.3672
www.michiganrecycles.org

September 6, 2019

Bryan Ukena, CEO
Recycle Ann Arbor
2420 S. Industrial Highway
Ann Arbor, MI 48104

Dear Bryan,

On behalf of the Michigan Recycling Coalition that represents hundreds of recycling and composting members across Michigan, I am pleased to support Recycle Ann Arbor's (RAA) proposal to re-establish recycling processing capacity in Ann Arbor and Washtenaw County. As you know, there has been a serious shortage of Material Recovery Facility capacity in southeast Michigan, and this has in part led to Michigan's underperformance in material recovery.

With new mills and domestic capacity being developed across the country and here in the Midwest, the long-term prognosis for recycling is strong, and it makes sense for Ann Arbor to be a regional player as recycling reboots. The demand for regional recycling services in Washtenaw County is real, and new capacity will help all of the region's players—for-profit, non-profit, institutional and governmental meet the demand for services.

RAA started curbside recycling in Michigan. RAA and the Ecology Center had one of the first public recycling drop-off stations in the state. RAA has inspired countless non-profits and local units of government in their own recovery efforts and has been a pioneering leader on reuse and construction/demolition waste recovery. We enthusiastically support their efforts in adding recycling capacity and insuring recyclables find their highest and best use.

Sincerely,

Kerrin O'Brien
Executive Director

September 13, 2019

City of Ann Arbor
301 E. Huron St.
Ann Arbor MI 48104

RE: Recycle Ann Arbors proposal to operate the MRF and provide curbside recycling services.

To Whom it May Concern,

Knight Transfer Services (KTSI) and Recycle Ann Arbor (RAA) have been working together for 6+ years. Our relationship with RAA has grown tremendously over that time. We have partnered with RAA on multiple construction projects in that time, ranging from $25 million to $250+ million. RAA provides KTSI with off-site construction debris sorting services for our projects/clients that require it, as well as general recovery and transfer services.
RAA does an impeccable job of providing a safe, efficient and friendly environment for our drivers, daily. Their staff is always willing to help in any way they can. RAA has demonstrated to us that they have a very intentional and adept process for sorting, recycling and recovering the material we bring to the Jackson Road facility. RAA has provided us with transfer and sorting services for the majority of our dumpster volume in the Ann Arbor area. Our volumes are significant, and it is no small task for a material recovery/transfer facility to take as much as RAA has and in such a consistent manner.

Sincerely,

Andrew Goulet
Vice President of Sales
Knight Transfer Services
Cell – 616.438.1822
Office – 616.748.9878
www.dumpstr.com
agoulet@dumpstr.com

GRETCHEN WHITMER
GOVERNOR

STATE OF MICHIGAN
DEPARTMENT OF
ENVIRONMENT, GREAT LAKES, AND ENERGY
LANSING

EGLE
LIESL EICHLER CLARK
DIRECTOR

August 5, 2019

Mr. Bryan Ukena
Recycle Ann Arbor
2420 S Industrial Highway
Ann Arbor, Michigan 48104

Dear Mr. Ukena:

SUBJECT: Fiscal Year 2019 (FY19) – Recycling Infrastructure Grant Agreement (Agreement)

You are hereby informed that your project under the FY19 Recycling Grant Program has been recommended for funding. When fully executed, your FY19 Agreement for $800,000.00 would provide funding towards the cost to replace the equipment in the currently shuttered materials recovery facility.

This award is contingent upon approval by the State Administrative Board before an official award of funds can be made. We anticipate that will occur by August 13, 2019. To expedite and accept the award of these funds, you must sign two originals of the enclosed Agreement and return both to the Department of Environment, Great Lakes and Energy (EGLE).

The Agreement language should not be altered in any way. The Agreement will become effective once it is signed by you (the Grantee) and Mr. Jack Schinderle, Division Director, Materials Management Division, (MMD), EGLE.

Kindly review the information under Grantee Contact on the first page of the Agreement for accuracy and notate any changes.

The Agreement must be signed by an individual authorized to make such a legal commitment for the Grantee. The Grantee's Contact may be someone other than the signatory, but this individual must be authorized to request and implement changes, and to sign reimbursement requests submitted under the Agreement.

The Agreement identifies the project ending date as September 30, 2020; however, no costs should be incurred, nor can costs be reimbursed by EGLE, until after your Agreement has been fully executed. For that reason, it is important that the signed Agreement be returned as soon as possible. Your grant application serves as the scope of the project; consequently, upon signature of the Agreement, you commit to carrying out the project as stipulated in your application.

Appendix A of the Agreement outlines the project specific requirements and reimbursement process. Any changes made in your project relating to specific activities or scope of work must be approved by your Recycling Specialist, Ms. Emily Freeman, MMD. She can be reached at 517-256-9466 or at freemane@michigan.gov. You should not incur any project costs until proposed changes have been approved.

Please return your signed Agreements to my attention at the following address:

Administration Section
Resource Management Group
Department of Environment, Great Lakes and Energy
P.O. Box 30241
Lansing, Michigan 48909-7741

If you have any questions specific to the project, please contact your Recycling Specialist, Ms. Emily Freeman, MMD. For general questions relating to grant administration, please contact me by phone or campbellc@michigan.gov.

Sincerely,

Christina Campbell

Christina Campbell
Administration Section
Materials Management Division
517-420-1395/campbellc@michigan.gov

Enclosures
cc: Ms. Emily Freeman, EGLE

PRATT RECYCLING, INC.
Midwest Region

Mr. Bryan Ukena
CEO Recycling Ann Arbor
2420 Industrial Highway
Ann Arbor, Michigan 48104

September 5, 2019

Pratt Industries is the largest producer of 100% recycled corrugated packaging in North America. We currently operate four world class papermills in the United States. Our newest mill in Wapakoneta Ohio is scheduled to open in 2019. Once fully operational we will consume nearly three million tons of recovered paper every year. Clean recycled paper is our raw material and we need more.
In addition, Pratt Industries owns and has been operating XXX Materials Recovery Facilities for decades.

This is to confirm our continued support for Recycle Ann Arbor, RAA, as you move forward partnering with the City of Ann Arbor to improve current recycling effort. Once RAA is awarded the contract, RAA and Pratt will develop a long term agreement to purchase all recycled paper generated at the RAA facility that meets Pratt's quality standards. Pratt has also been involved in the faciolity design and will continue to support RAA in the design, start up and operations of the Ann Arbor Materials Recovery Facility . Pratt will also consider providing funding for infrastructure necessary to process materials to insure that the recovered material meets Pratt's quality expectations.

Pratt continues to work with all recyclers, municipalities, solid waste companies, and industry associations, such as the Recycling Partnership, across the country to increase the collection of paper from both commercial generators and households. The key to our continued success is the collection of clean, non-contaminated paper.

Paul J. England
Vice President Pratt Recycling
pengland@prattindustires.com
404-824-8586

RUMPKE

Waste & Recycling Services

September 5, 2019

Mr. Bryan Ukena, CEO
Recycle Ann Arbor
2420 S. Industrial Highway
Ann Arbor, MI 48104

Dear Bryan:

On behalf of Rumpke Waste and Recycling Services, it is my pleasure to once again offer our continued support to Recycle Ann Arbor (RAA) in proposing to provide comprehensive recycling processing services to the City of Ann Arbor and the surrounding region. As you know, Rumpke is now the tenth largest waste and recycling company in the United States and the largest such family-owned company in the country.

Rumpke is prepared to offer RAA logistical, operational, and safety consulting services, as well as diverse marketing services in the operation of a restored Ann Arbor MRF. Rumpke has an outstanding record of running safe, efficient and effective MRF's in Ohio, Indiana, Kentucky and West Virginia, marketing over 97% of our materials to domestic markets. In addition, Rumpke's state of the art glass beneficiation plant in Dayton provides a ready market for RAA's glass. We are prepared to provide these support services to RAA on an agreement basis, especially in their transition year to full operations.

RAA has proven to be a reliable, community-spirited partner with Rumpke. We look forward to a continued working relationship with RAA in your future endeavors. This is an exciting opportunity as Ann Arbor and the region moves into a new phase of recycling/zero waste services for your residential and commercial customers.

Sincerely,

Steve Sargent, Director of Recycling
steve.sargent@rumpke.com
Office (513) 851-0122 ext. 7346

Bryan Ukena
(651) 248-6124

ukenabryan@gmail.com
www.linkedin.com/in/bryanukena/

A collaborative, passionate team member committed to contributing positively to the quality of life for communities through responsible and sound management, innovation, teamwork and vision.

PROFESSIONAL PROFILE

Executive, Leader, Director and Program Manager

- Collaborative Leader-
  - Led local, county, regional governmental agencies and private non-profits in the development and implementation of strategic actionable plans and initiatives.
- Developer of Sustainable Programs.
  - 25+ years designing, planning, coordinating and implementing highly successful services and programs of all size and scope.
- Experienced and Knowledgeable
  - 25+ years of focusing on resource conservation
  - Comprehensive knowledge of local, state and federal solid waste management regulations and waste reduction ordinances and policy.
- Self-motivated and passionate.
- Outstanding references from governments, clients and associates.
- Excellent public speaking skills.

PROFESSIONAL EXPERIENCE

City of Milwaukee Recycling Manager **2017-2018**

Operated the residential collections programs and the jointly owned 35 ton/hour Materials Recovery Facility with the neighboring County of Waukesha through an Inter-Local Governmental Agreement. Led the day to day operation of the City/County Entity for the Materials Recovery Facility; also managed the city's first curbside composting program.

Neighborhood Recycling Corporation dba Eureka Recycling **2007- 2017**

Eureka Recycling is the nations' largest non-profit recycler and Minnesota's only zero waste organization. Its' mission is to demonstrate that waste is preventable, not inevitable. Eureka Recycling's demonstrations include a Materials Recovery Facility, a collections fleet with state-of-the-art automated equipment, award winning educational services and a host of Zero Waste services and demonstrations.

Co-President (2014-2017)

- Led in the development and management of a Zero Waste and Recycling not-for-profit organization, including, a 400/tpd, 100,000 sq. ft. Materials Recovery Facility (MRF), a recycling and composting collection fleet (30+ vehicles), nationally recognized advocacy and education programs with a staff of over 100 FTE's and an annual operating budget in excess of $12 million.
- Led in the development of the response to the City of Minneapolis and the City of Saint Paul Request for Proposals that resulted in the award of the State's two largest recycling contracts.
- Acted as staff liaison, provided support and reported to the Board of Directors
- Led the organization's operational activities and executive management team.

Director of Business Development (2009-2014)

- Led in the development and implementation of strategic and business plans.
- Responsible for business development, materials marketing, customer service and R&D, including equipment re-design, procurement, program design and development.
- Provided technical services to board members, elected officials, neighborhood organizations, businesses and the general public.

Senior Program Manager (2007-2009)

- Developed specifications, negotiated and administered purchasing of services from contractors and others to foster the development and continued expansion of recycling programs.
- Led policy and educational forums.

Regional Solid Waste Management District (WRVRSWMD) **2002-2007**

The District is a nine county governmental agency whose governing body is made of county judges and twenty-eight Mayors from the first class cities. During this period of time the District was one of the most influential Districts in Arkansas related to State policy.

Deputy Director

- Worked in collaborative partnership with all the Mayors and Judges in the development of City, County and State policy related to resource management.
- Responsible for oversight of all solid waste and waste reduction programs
    - Oversaw and developed all City, County and District Drop-Off and Transfer Facilities
    - Designed and implemented the regional Recyclables Processing Facility (RPF)
    - Designed and implemented the regional Scrap Tire Processing Facility (TPC)
    - Oversaw and administered the Solid Waste haulers facility operators licensing
    - Oversaw the District solid waste fee assessment program
    - Oversaw the illegal dumps abatement programs and conducted all related field work
    - Developed and administered the districts' recycling and solid waste grants programs

Eco-Cycle, Inc. **1999-2002**

Eco-Cycle is a large non-profit organization in Boulder, Colorado that has operated the Boulder County Recycling Processing Facility since it opened in 2001. Eco-Cycle provides recycling and Zero Waste collection services to over 1,000 businesses, operates the states only Center for Hard-to-Recycle Materials (CHRM) and provides award winning educational programs to Boulder County.

Business Development Director

As Business Development Director I was responsible for all planning, development and implementation of commercial collections, the Center for Hard to Recycle Materials (CHaRM), a multi-year EPA grant to assess recovery of electronics and 10 recycling drop off centers in Boulder County and Broomfield County.

Carroll County Solid Waste Authority (CCSWA) **1996- 1999**

The CCSWA is comprised of all the cities and Carroll County and governed by Mayors and the County Judge. I led in the development of the Authority to gain economies of scale and create funding mechanisms that allowed many small underfunded communities to have state-of-the-art, innovative solid waste and waste reduction programs.

Director

As the first Director, I was responsible and oversaw all aspects of solid waste and waste reduction programs. I worked collaboratively with the MRF manager, the Transfer Station Manager and all solid waste and recycling collectors in the County. I reported to the Board Chairman, County Judge Phil Jackson who is now Director of the CCSWA.

Ozark Recycling Enterprise, Inc. (ORE) **1993-1996**

ORE was a 501(c)3 non-profit organization dedicated to recycling education and to provide access to recycling markets and provide opportunities to recycle in rural areas. ORE carried out its mission by creating a Recyclables Marketing Cooperative for rural and small recycling facilities with limited access to recycling markets. ORE was sold to a private company and has been operating as a profitable locally owned and operated company since 2006.

Marketing Manager

As Marketing Director I was responsible for the development of recycling infrastructure for Cooperative members, including materials marketing agreements and technical assistance.

City of Eureka Springs, Eureka Springs, AR. **1989-1993**

The City of Eureka Springs Recycling Department was the first recycling program in the State of Arkansas, locally, regionally and nationally recognized for creating innovative solutions to solid waste issues.

Recycling Department Manager

As Recycling Department Manager, I designed, planned and implemented citywide commercial/residential curbside recycling, garbage with volume based (variable) fee structure, drop off composting and bio-solids composting facility.

LICENSES

- Class IIIC Masters License- Landfill, Transfer Station, Composting and Recycling Facility Operations
- Household Hazardous Waste Handlers and Regulatory Oversight
- Basic Environmental Crimes Investigation
- USCC Compost Facility Operator
- Solid Waste Association of North America- Transfer Station Design and Operations
- PADI Certified SCUBA Diver

MEMBERSHIPS

- Solid Waste Association of North America (SWANA)
- US Compost Council
- The Heartland Group, Transformational Leaders- 2016 Imagineer Award recipient
- Recycling Association of Minnesota (RAM)
- Minnesota Composting Council (state affiliate of USCC)

BOARD OF DIRECTORS

- Eureka Recycling Board of Directors 2014- present
- Arkansas Electronics Recovery Panel-Charter Member 2006
- Solid Waste Association of North America, Arkansas Chapter- Secretary 2004-2006
- Ozark Recycling Enterprise, Inc.- Member, Chair 2002-2006
- Arkansas Recycling Coalition, Programs Committee Chair 1997-1998

BRYAN C. WEINERT
108 WORDEN AVENUE
ANN ARBOR, MICHIGAN 48103
734-883-5720
bryancweinert@gmail.com

Experience

Director of Strategy
Recycle Ann Arbor
Ann Arbor, MI 48104

July 2013 – Present

Responsible for strategic development that contributes to the growth of Recycle Ann Arbor as a mission-driven, non-profit environmental organization, promoting and implementing zero waste collection, processing and educational strategies serving Ann Arbor and Washtenaw County.

Director of Student and Alumni Outreach (part-time)
Lutheran Campus Ministry at the University of Michigan
Ann Arbor, MI 48104

April 2009 – December 2013

Established and operated a visitation program to build relationships with alumni/friends of the ministry, upgraded and maintained a database of ministry contacts/supporters and developed and implemented programs to improve the ministry's visibility to donors and the larger community.

Solid Waste Coordinator
City of Ann Arbor
Ann Arbor, MI 48104

February, 2002 – March 2009

Responsible for the stewardship of Ann Arbor's $12 million dollar/year integrated solid waste management system, including planning and development, budgeting, contract management, materials processing and disposal, education and capital procurement.

Manager of Resource Recovery
City of Ann Arbor
Ann Arbor, MI 48104

February 1989 - January 2002

Provided management and planning services for the city's waste recovery programs, including recycling, composting and waste reduction.

Education

Master of Public Administration Eastern Michigan University Ypsilanti, Michigan	1980-1983
Bachelor of General Studies The University of Michigan Ann Arbor, Michigan	1975-1979

Non-Profit (Volunteer) Board Service

A Brighter Way (Washtenaw County Prisoner Re-entry)	2018-Present
Washtenaw County Solid Waste Planning Committee	Chair, 2015-2017
Interfaith Roundtable of Washtenaw County Ann Arbor, Michigan	2013-2014 Chair, March 2014-Present
Interfaith Council for Peace and Justice Ann Arbor, Michigan	2007-2009 Chair, 2009-2013
Lutheran Campus Ministry at UM Ann Arbor, Michigan	Chair, 2001-2006
Michigan Recycling Coalition Lansing, Michigan	1988-1990 Chair, 1991-1993

Sean Steven Adams, EdD

907 W Washington Ave, Jackson, MI 49203

(616) 902-9089 • mr.sean.adams@gmail.com

Professional Background

Recovery Yard Manager, Recycle Ann Arbor **August 2017 – Present**

- Led the partnership with multiple for-profit private partners to increase recovery opportunities in the greater Ann Abor region
- Developed and implemented multiple initiatives focused on efficiency of operations to improve cashflow and overall financial sustainability of the business unit
- Responsible for all site operations including over-the-road semi drivers, material processors, mechanics and administrative staff
- Initiated multiple safety-focused site improvements to improve patron and staff safety resulting in an injury free safety record to date
- Organized and led large-scale community-based recycling and waste events in partnership with multiple local units of government
- Led the amendment and implementation of departmental capital improvement plan
- Obtained licensure and maintained site in continuous compliance with federal, state and local ordinances and administrative rules for multiple compliance agencies

Village Manager, Village of Lexington, Michigan **Oct 2016 – June 2017**

- Chief Administrative Official appointed unanimously by the Board of Trustees to provide budget, policy and administrative recommendations/oversight in the management of a full-service general law Village
- Facilitated and led Village Board of Trustees in setting 2017-19 Village Goals
- Responsible for all day-to-day operations of the Village including a full-time Police Department, volunteer Fire Department, Public Works Department, Water/Sewerage Treatment Plant and the Lexington North Shore Mobile Home Park
- Secured record $1 million-dollar CDBG blight elimination/job creation grant through the MEDC for the mixed-use rehabilitation of the historic Cadillac House restaurant and hotel
- Led organized administrative, police and public works labor negotiations on behalf of the Village
- Served as senior administrative leader and liaison to the Downtown Development Authority, Planning Commission, Parks and Recreation Committee, Environmental Committee, Personnel Committee and Cemetery Board

Assistant Superintendent, Residential Services Department, City of Dearborn, Michigan **2014 – 2016**

- Leader of departmental administrative team responsible for City Council – Administration budget, policy and comprehensive public service management
- Responsible for divisional management of contracted services and 33 union and non-union employees; a combined annual divisional budget of over $8.5 million dollars
- Managed comprehensive residential and commercial sanitation/recycling services including curbside collection, organics, hazardous waste, roll-offs, municipal sanitation collection (special pick-ups, street cans, etc.) and commercial dumpster services
- Co-Founder and municipal leader of D.E.A.R. (Dearborn Education and Action on Recycling) Program with The Ecology Center and Recycle Ann Arbor which received grant funding from the Aetna Foundation to provide recycling services and education for students on proper recycling practices at every Dearborn Public School
- Led ordinance and zoning amendments for commercial sanitation/recycling pre-occupancy program to preserve public health, safety, and welfare in downtown business districts
- Led zoning amendments to allow utilization of renewable materials in commercial sanitation dumpster enclosures

- Managed the design, construction and provision of ten renewable material public sanitation collection "centers" in strategic commercial locations city-wide
- Organized and led sanitation/recycling community events with neighborhood associations and non-profits
- Managed public service contract development, purchasing, and performance measurement
- Developed key performance indicators for use in regular presentations to the City Council/Downtown Boards
- Regularly represented the City in meetings with neighborhood associations, non-profits, and other municipalities

DPW Supervisor, Residential Services Department, City of Dearborn, Michigan **March 2012 - Aug 2014**

- Provided comprehensive residential sanitation/recycling contract management and customer service for 32,600 residential properties; an annual contract value of $4.5 million (largest public service contract in City)
- Municipal leader of sanitation emergency response team that collected 11 months of sanitation material in a five-week period and achieved maximum FEMA reimbursement in response to record-setting 2014 city-wide flooding
- Developed sanitation/recycling customer service data collection systems to track incoming requests and work order completion
- Developed data collection and evaluation techniques utilizing sanitation/recycling truck collection records to identify households lacking adequate sanitation and recycling material capacity

Field Inspector, City of Dearborn, Michigan **2010 - 2012**

- Provided enforcement of the City of Dearborn Code and Zoning Ordinances
- Conducted special studies regarding code and zoning issues in relation to enforcement practices, efficiency and communication of Residential Services Departmental staff

Management Intern, County of Mecosta, Michigan **Jan-May, 2009**

- Developed non-union new employee handbook and acceptable use policies for office electronics
- Assisted in the administration of MDEQ tire cleanup grants totaling over $1.4 million dollars

Management Intern, City of Grand Haven, Michigan **June-Aug, 2008**

- Authored and co-authored Michigan Department of Energy and MSHDA grant applications
- Led a city-wide streetlight assessment examining types, operational costs, and sustainability
- Organized First Annual Labor Day Third Street Bridge Walk

Education

Doctor of Education, Community College Leadership **Ferris State University** **2015**
Dissertation: *An examination of the significance and influence of distance in miles between high school and community colleges on dual enrollment participation*

Master of Public Administration **Eastern Michigan University** **2011**
Graduate Certificate in Local Government Management
Graduate Certificate in Public Land Planning

Bachelor of Public Administration **Ferris State University** **2009**
Specialization in Local Government Management

Volunteerism & Community Engagement

Board Member, Greater Croswell-Lexington Chamber of Commerce **2016- Present**

Vice President, Dearborn Goodfellows **2011- Present**

- Executive leader of a local 501(C)3 non-profit responsible for an $100,000 annual capital campaign providing holiday packages to over 1,000 Dearborn children in need during the holiday season
- Led the development of the website *dearborngoodellows.com*, the organization's first website

- Developed the Dearborn Goodfellows "Nickels and Dimes" donation program which collects an annual average of $5,000 per year
- Earned the 2015 *Goodfellow of the Year Award* for organizational and community contributions in support of "No Child Without a Christmas"

Adult Leader, The Boy Scouts of America, Three Fires Council, Camp Freeland Leslie **2009**

- Served as an Adult Leader and Waterfront Director; providing management and waterfront activity training (Red Cross, BSA) for over 500 participants
- Attended and earned highest honors at BSA National Camping School
- Earned the *Handicap Champions Buddy Award* for the development of aquatics activities for cognitively and mobility impaired youths

Professional Organizations

International City/County Management Association **2016 - 2018**

- Full member

Michigan Municipal Executives **2016 - 2018**

- Full member

References

Nicholas E. Siroskey
Director, Residential Services Department
City of Dearborn, MI
Business: (313) 943-2128

Elva Mills
Village President (past)
Village of Lexington
Home: (810) 359-7733

Kirk Lignell
Senior Director
Trucent, Inc.
Cellular: (734) 904-5430

Neal Rossow
Director of Professional Development
Michigan Association of Chiefs of Police
Cellular: (810) 434-5920

Bryan Weinert
Policy Advisor & Zero Waste Advocate
Recycle Ann Arbor
Cellular: (734) 883-5720

Jim Jernigan, Esq
Executive Board Member
West Dearborn Downtown Development Authority
Cellular: (313) 570-6645

Larry Johnson
President (past)
Dearborn Goodfellows
Cellular: (313) 310-4246

Samuel Moore
City Administrator
City of Croswell, Michigan
Cellular: (989) 529-6733

Tim Brownell

14201 Del Monte Blvd, Marina, CA 93933 (w) Office: (831) 264-6373
265 Nido Way, Carmel Valley, CA 93924 (h) Residence: (651) 248-8435

A seasoned social-enterprise executive committed to serving communities through the development of collaboratively designed programs, products and services that provide lasting benefit to the environment, to local economies, and to an organization's stakeholders and employees

PROFESSIONAL PROFILE

- History of success developing and working in collaborative partnerships with governments, non-profits and for-profit organizations on resource management issues.
- Developed multiple Strategic Plans for organizations to guide their work
- 30+ years of experience in planning, implementing and operating resource management programs.
- Co-founded, developed, and managed a Zero Waste and Recycling not-for-profit organization, operating a 400/tpd, 90,000 sq. ft. Materials Recovery Facility (MRF) and recycling and composting collection fleet (30+ vehicles) with a staff of over 100 FTE's and an annual operating budget in excess of $12 million.
- Developed and manages a 120,000 sq. ft. 2-line MRF processing Single Stream recyclable materials, as well as Construction and Demolition debris to meet California diversion requirements
- Union contract negotiations, performance management and human resource management experience.
- Experienced in budget development and management.
- Financing and fund-development experience in raising over $30 million to finance capital and program investments.
- Excellent verbal, written communications and computer skills.

PROFESSIONAL EXPERIENCE

Monterey Regional Waste Management District, Marina, CA
Director of Operations, February 2017 – Present

- Oversee all operational aspects of a Solid Waste Special District that include a 2,500 ton/day municipal solid waste landfill, a 250 ton/day single-stream recycling MRF, a 225 ton/day construction and demolition recycling MRF, a reuse retail outlet ($900,000/yr. sales), a household hazardous waste facility, heavy equipment maintenance shop, and a 5 MW Landfill Gas-to-Energy power plant.
- Manages on-site contractors operating sand excavations, concrete processing, as well as anaerobic and aerobic composting activities.
- Part of leadership team that reports to the member cities Board of Directors.

- Participating in planning for future operational activities and infrastructure needs to meet expanding state of California diversion requirements for organics, recycling, and waste reduction
- Led management team negotiations with Operator Engineers – Local 3 to successful outcome for three separate operations units
- Directing process design and development activities for MRF improvements to meet changing commodity end-market demands.

The Neighborhood Recycling Corporation, dba Eureka Recycling, Minneapolis, MN
Co-President, November, 2001 – December 2016

- Incorporated organization, developed and implemented strategic plans, business plans and managed $12 million operating budget and staff of 100+
- Raised funding and financed equipment purchases for the development and expansion of the organizations operations.
- Responsible for financial, tax, risk and facilities management
- Led Strategic Planning processes and annual work-plan development
- Provided support and reported to the Board of Directors
- Led the organization's administrative, operational activities and executive management team
- Directed R&D, including equipment design and procurement, program design and development
- Oversaw financing, accounting and fundraising for the organization.

St. Paul Neighborhood Energy Consortium, St. Paul, MN
Recycling Programs Manager, 2000-2001

- Strategically planned, implemented and operated the recycling programs for the city of Saint Paul, serving over 120,000 households and numerous municipal and community buildings.
- Developed specifications, negotiated and administered purchasing of services from contractors and others to foster the development and continued expansion of source reduction and recycling programs.
- Secured all funding for programs and demonstration projects including grants, fee-for-service contracts, donations and in-kind services.
- Guided, prioritized and coordinate the activities of fifteen staff members, consultants, board members and others in order to achieve project goals in a timely manner within budget.
- Provided technical services to board members, elected officials, neighborhood organizations, businesses and the general public.
- Provided industry updates, analysis and recommendations to the staff and board of directors regarding trends and current issues.
- Represented the city of Saint Paul and the Neighborhood Energy Consortium in policy and educational forums.

Recycle Ann Arbor, Ann Arbor, MI

Interim Executive Director, Jan-July, 2000
Chair, Board of Directors, 1998-2000
Executive Director, 1993-1998

- Oversaw all business and physical operations including recycling collection fleet.
- Managed $5 + million budget
- Negotiated and oversaw union labor and client contracts
- Established and maintained relations with suppliers, customers, vendors, funders
- Developed strategic plan for maximizing recycling and re-use initiatives in Washtenaw County
- Created and operated a Materials Re-Use Center generating approximately $1 million in annual revenues

New Arbor Technologies, Ypsilanti, MI
Partner, 1998-2000
NAT was proposed 300 ton/day recycled market pulp mill sited in Ypsilanti, MI. Project intended to recover and de-ink waste paper into high-grade pulp for printing and writing paper manufacturers using mini-mill manufacturing approach. Mill site is a Brownfield Redevelopment Project. Proposed project cost is $35 million. Responsibilities include:

- Establish partnership with City of Ypsilanti to support the development of a deink facility in the community
- Identify sources of wastepaper feedstock for the mill
- Secure grants and tax abatement funding for remediation of existing Brownfield site
- Secure grant funding for infrastructure upgrades to support industrial operations
- Develop equipment package to process residual plastics and aluminum to produce marketable product instead of waste material

Sunset Scavenger Co. (now Recology), San Francisco, CA
Recycling Projects Manager, 1990-1993

- Designed and managed city-wide commercial recycling program
- Devised and implemented multi-unit residential collection program, servicing 85,000 residents
- Coordinated final expansion of residential curbside program to 50,000 households

CURRENT APPOINTMENTS

Board Member, Climate Generation - A Will Steger Legacy
Board Member, Eureka Recycling

PROFESSIONAL AFFILIATIONS and PAST APPOINTMENTS

Appointment, Hennepin County Solid Waste Management Plan Advisory Commission
Appointment, MPCA Solid Waste Management Stakeholder Process
Appointment, City of Edina Solid Waste and Recycling Commission
Board Member, Recycle Ann Arbor
Member, Solid Waste Association of North America
Member, Recycling Association of Minnesota

Elected Member, National Recycling Coalition Board of Directors 1995-1997
Elected Member of National Recycling Coalition Steering Committee, Non-profit Recycling Council
Member, Michigan Recycling Coalition
Appointment, Washtenaw County Solid Waste Planning & Implementation Committee
Member, Ann Arbor Solid Waste Monitoring & Evaluation Task Force
Member, Ann Arbor Commercial Recycling Task Force
Appointment, Ann Arbor Solid Waste Commission
Member, Washtenaw County Solid Waste Consortium
Guest Lecturer, Solid Waste Certification Program, San Francisco
Guest Lecturer, U. of Michigan School of Natural Resources

EDUCATION

Tufts University, Somerville, MA
B.A. in Economics, 1983

REPUBLIC SERVICES

Management Information for: Scott Cabauatan

Scott Cabauatan
Municipal Services Manager
Southeastern Michigan / Northwest Ohio Markets

Years of Experience at Republic Services: 15+
Years of Industry Experience: 26+

Education:
Bachelor of Arts – Eastern Michigan University (Ypsilanti, Michigan)
2003 - Communications

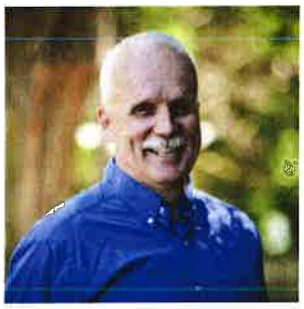
Professional References:

1. Paul J. Sincock
   City Manager – City of Plymouth
   734-453-1234

2. Craig Lyon
   Municipal Services Director – Pittsfield Township
   313-943-2196

3. Jim McDevitt
   Township Supervisor – Frenchtown Township
   734-242-5904

Experience and Qualifications:
Scott has over 26 years of experience working with solid waste and environmental related programs. Prior to joining Republic, Scott spent 11 years working in local government where he held a variety of positions primarily in the public works/municipal services area of City operations. He brings a wealth of experience and knowledge of the public sector. Some of his past responsibilities have included oversight of city's solid waste and recycling programs, environmental issues, Work Detail/Community Service programs, and public outreach for various City departments. He also served as the City's staff liaison to several community groups and mayoral appointed boards and commissions. As Municipal Services Manager, Scott is responsible for local government relations, municipal contract negotiations, municipal/governmental market development, local communications, community relations, municipal pricing, legislation tracking and analysis, and other such duties. Scott has extension knowledge of operations, community relations/education, and regulations for the waste industry.



JD LINDEBERG, PE, LEED AP

president

734.646.3303 • JDL@RECYCLE.COM
OPERATES OUT OF ANN ARBOR, MICHIGAN

JD is a Principal and President of RRS bringing over 30 years of experience developing corporate sustainability systems, material recovery and processing systems, biomass energy and organics recovery, business planning and plan development, project due diligence and risk management, capital project planning, and project financing. His training and experience as a professional engineer give an added dimension to his business background and provide insight into the development of award-winning projects. Recently his efforts have focused on increasing recovery through the innovative development and application of recovery technologies to increase overall recovery in response to both public and private demand for higher recycling rates. He is a well-known speaker on the national level, where he has delivered numerous speeches on the topic. He has also had the opportunity to pursue the development of environmental and sustainable technology through his involvement in the non-profit Environmental Capital Network and his own ventures into "green" home and resort construction.

project highlights

MARQUETTE COUNTY SOLID WASTE AUTHORITY

MRF Upgrade; Project Director

Led the planning and provided facility and funding analysis to upgrade the MRF in Marquette County, Michigan, increasing processing capacity in the region.

RESOURCE RECOVERY AND RECYCLING AUTHORITY OF SOUTHWEST OAKLAND COUNTY (RRRASOC)

Owner's Engineer; Project Team

The RRRASOC material recovery facility (MRF) experienced extensive fire damage during the summer of 2014 that devastated the majority of equipment within the facility. Served as the owner's engineer, working with the insurance company on all necessary adjustments and settlements in addition to coordinating and facilitating the facility and equipment redesign.

YPSILANTI, MICHIGAN COMMUNITY UTILITIES AUTHORITY

Biosolids Management Feasibility and Operations; Project Director

Provided strategic guidance from feasibility assessments through to the operation of a commercial scale pilot facility. RRS evaluated biosolids management options, conducted technology and feedstock assessments, performed laboratory bench testing, and provided education and training efforts. RRS also provided procurement, construction, operation, and data gathering for the implementation of a production scale in-vessel reactor. Finally, RRS presented a detailed preliminary engineering level cost estimate of the implementation of a full-scale operation and a comparison with incineration.

RETHINK FOOD WASTE THROUGH ECONOMICS AND DATA (REFED)
Roadmap to Reduce U.S. Food Waste; Project Director
Guided the team on the technical consulting services portion of this project, worked specifically on the infrastructure development portion of the report, and contributed to the soil amendment end market portion of the study. ReFED was formed to highlight food waste prevention as an untapped strategy that can save resources, create jobs, alleviate hunger, save water, and limit greenhouse gas emissions – all while stimulating a new billion-dollar growth sector.

MEDINA COUNTY, OHIO
Mixed Waste Processing Evaluation; Project Director
Provided senior level consulting to the county as it evaluated the potential effectiveness of a major mixed waste processing "mall" proposal for the Medina County solid waste management plan. Findings comprehensively outlined procurement best practices, industry recovery and marketplace statistics, and contractual risk management approaches. As a result, county decision makers were better able to ask relevant questions of the proponents and to make informed choices about a path toward greater recycling and solid waste management success.

ORGANICS MANAGEMENT COMPANY
Organics Feedstock Assessment; Project Team
Developed quantity and system cost implications for source-separated organics processing for a west coast city on behalf of a service provider preparing a collection bid response. Work included estimating and analyzing organics quantities and sources by sub-categories including residential, multi-family, and commercial, as well as GIS mapping locations of these organic generators.

EUREKA RECYCLING
Triple Bottom Line Assessment of Organics Technologies; Project Director
Developed capital and operating models for a wide range of compost processing options including backyard composting, windrow, aerated static pile (ASP), covered ASP, and wet and dry anaerobic digestion to evaluate the economic, environmental, and social impacts of handling organics waste through landfilling, waste-to-energy, or composting. This study also incorporated multi-dimensional sustainability findings ranging from carbon emission to surface water eutrophication. Full cost accounting analysis of entire composting system yielded clear, best practice recommendations for Eureka Recycling and their customer, St. Paul, Minnesota.

CITY OF DEARBORN, MICHIGAN
Energy from Organics Waste Feasibility Study; Project Director
Directed the project team efforts including developing cost models, using proprietary mapping and database information, developing GIS-based organics waste maps, and compiling a detailed study on the economic justification of water and wastewater services that was utilized to develop a viable option for the city to reduce the organic waste stream and generate a local source of energy and revenue.

ST. LOUIS COMPOSTING (SLC)
Environmental Improvement and Energy Resources Authority (EIERA) Grant Writing Services; Project Team
Coordinated the preparation of a grant application on behalf of SLC to EIERA for funding to purchase a Doppstadt Tiger HS640 depackager for pre-processing of non-source-separated food waste and packaging materials. Provided expertise on suitability of equipment for the site and task, analysis of waste streams, projections of job creation, preparing pro forma cash flow statements, obtaining quotes for equipment, and drafting model letters of interest.

education

PRINCETON UNIVERSITY, WOODROW WILSON SCHOOL OF PUBLIC AND INTERNATIONAL AFFAIRS, PRINCETON, NEW JERSEY
Master in Public Affairs, Concentration in Domestic Policy Analysis with Environmental Certificate

STANFORD UNIVERSITY, STANFORD, CALIFORNIA
Master in Civil Engineering, concentration in Geotechnical Engineering
Honors: Civil Engineering Fellowship

DARTMOUTH COLLEGE, HANOVER, NEW HAMPSHIRE
Bachelor of Arts, Engineering Sciences

certification

- Professional Engineer (PE)
- Leadership in Energy and Environmental Design Accredited Professional (LEED AP)

speaking engagements

NORTHEAST RECYCLING COUNCIL (NERC)
NERC Annual Conference, November 2016
Keynote Panel Discussion – What recovery or recycling rate is achievable and how?

COAST WASTE MANAGEMENT ASSOCIATION
Coast Waste Management Association Conference, October 2016
Keynote

WASTE360 AND NATIONAL WASTE & RECYCLING ASSOCIATION
Waste360 Recycling Summit, September 2016
Is Mixed Waste Processing Dead?

RESOURCE RECYCLING
RRC – Resource Recycling Conference, August 2016
What's Coming Down the Line?

WASTE360 AND NATIONAL WASTE & RECYCLING ASSOCIATION
Waste Expo, June 2016
Single Stream, Mixed Waste, Emerging Technologies and Composting
Food Scrap Collection and Processing
Co-Author: Nicole Chardoul

U.S. COMPOSTING COUNCIL
U.S. Composting Council Annual Conference and Tradeshow, January 2016
Wasted Food in the US - The Size of the Prize and How to Win It

WASTE360 AND NATIONAL WASTE & RECYCLING ASSOCIATION
Waste360 Recycling Summit, September 2015
Panel: Mixed Waste Processing

MICHIGAN RECYCLING COALITION
Michigan Recycling Coalition Conference, May 2015
What We Know Now – Michigan's Baseline Recycling Rate

INSTITUTE OF SCRAP RECYCLING INDUSTRIES, INC (ISRI)
ISRI Annual Convention and Exposition, April 2015
The Changing Face of Recycling and the Role of MRFs in Today's Marketplace

RESOURCE RECYCLING
Plastics Recycling Conference, February 2015
The Real Impact of Dirty MRFs on Plastics Recovery

U.S. COMPOSTING COUNCIL
U.S. Composting Council Annual Conference and Tradeshow, January 2015
"DIRTY" MRFS - Mixed Waste Processing: Implications for Organics
Food Waste Recovery on the Cutting Edge: New Funding Approaches

RESOURCE RECYCLING
Resource Recycling Conference, September 2014
An Overview of MRF Equipment on the panel MRF Technology, Trends, and Tools

WASTE360
WasteExpo, April – May 2014
Infrastructure Status, Needs and Development in the Organics Industry
Climate Change Imperatives for Food Waste Recovery

CAROLINA RECYCLING ASSOCIATION
Annual Conference and Trade Show, March – April 2014
MRF Examination and Review

RESOURCE RECYCLING
Plastics Recycling Conference, March 2014
Panel: The Other Side of the Green Fence

publications

THE CORNERSTONE JOURNAL OF SUSTAINABLE FINANCE AND BANKING
ReFED: Impact Investing in Food Waste Reduction, May 2016

RESOURCE RECYCLING
Meet the Modern MRF, November 2014

association work/volunteerism

CLEAN ENERGY COALITION
2011 – 2017: Board Member
2006 – 2011: Chair

EUREKA RECYCLING
2009 – 2012: Board Member

DELTA INSTITUTE
2008 – 2011: Board Member

OLABRISA ECO-DEVELOPMENT, BAJA
2005 – Present: Developer

COHOUSING DEVELOPMENT COMPANY
2001 – 2016: Managing Partner

UNIVERSITY OF MICHIGAN, SCHOOL OF PUBLIC POLICY
2000 – 2001, 2007: Visiting Faculty

WASHTENAW COUNTY ENVIRONMENTAL HEALTH BOARD OF APPEALS
1998 – 2011: Vice Chair

CENTER FOR ENVIRONMENTAL POLICY ECONOMICS AND SCIENCE
1994 – 2004: President

KERRY SANDFORD

senior engineer

734.476.9923 • KSANDFORD@RECYCLE.COM
OPERATES OUT OF ANN ARBOR, MICHIGAN

Kerry Sandford is a senior engineer at RRS with over 40 years of experience in recycling and waste management programs. His extensive knowledge of material recovery facilities and material processing include system design, waste stream composition, feasibility analyses, cost modeling, as well as MRF equipment audit, selection, testing and maintenance. Kerry has been a key contributor to material flow testing – onsite at MRFs and in equipment lab settings. Kerry is also a leader in the identification, vetting, and integration of cutting edge technologies into recycling processes. This includes a wide range of separation and material processing/handling technologies including robotics, density separation, optical sorting, conveyance, compaction, and cleaning.

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project highlights

CARTON COUNCIL, FOODSERVICE PACKAGING INSTITUTE, AMERICAN CHEMISTRY COUNCIL, NATIONAL ASSOCIATION FOR PET CONTAINER RESOURCES, AND ASSOCIATION OF POSTCONSUMER PLASTIC RECYCLERS

MRF Packaging Material Flow Study; Project Team

Characterized material flow behavior, examined bale content, and measured throughput of targeted materials as they moved through processing equipment at several types of material recovery facilities (MRFs). The study, funded collectively by five national trade associations, helped to identify pathways to improve recovery across the value chain.

CARTON COUNCIL

Building Carton Recycling Access Nationwide; Project Team

Provides oversight and strategic implementation as lead engineer and works with MRF owners and operators to assist in the development of efficient sorting systems for cartons utilizing various technologies as appropriate to the throughput and needs of each MRF, furthering the mission of the Carton Council to increase recovery of cartons. Carton Council achieved its goal of 60% carton recycling access nationwide in early 2017.

FOUNDATION FOR CHEMISTRY RESEARCH AND INITIATIVES

Materials Recovery for the Future (MRFF); Project Team

Led testing of current single-stream material recovery facility (MRF) equipment to recycle flexible plastic packaging as part of loose-in-the-cart collections. Defined technical specification for demonstration facility and assisted in the develop of a cost model. Work continues to optimize MRF sorting, identify suitable end markets, and develop a full-scale pilot/demonstration facility.

SOUTHEASTERN OAKLAND COUNTY RESOURCE RECOVERY AUTHORITY (SOCRRA)

Single-Stream MRF Development; Project Manager

Led team to develop technical specifications and requirements for a new publicly-owned single-stream material recovery facility (MRF). Developed and managed multi-option request for proposal (RFP) procurement process, proposal evaluation, project award, and construction contract negotiation. Project team also continued as owner's representative through the MRF construction and facility acceptance process. The project will allow the 12 communities that are part of SOCRRA to transition from dual-stream curbside recycling using bins to cart-based single-stream curbside recycling.

RENAISSANCE RECYCLING

Assistance in Processing Request for Proposal (RFP) Response and Improving Operations; Project Team

Provided technical assistance to Renaissance Recycling as the company developed a response to the City of Jamestown's RFP and worked to improve the company's current operations. Evaluated site options, economic feasibility, and process line configurations for a potential new facility to support a response the Jamestown, ND RFP and expansion into curbside recycling.

WASTE DIVERSION ONTARIO, CANADA

Optimization of the Blue Box Material Processing System; Project Team

Evaluated public and private MRFs and transfer facilities for the Province of Ontario to optimize its processing network and capabilities and developed the processing cost models to demonstrate the economic benefits of MRF sizing and automation compared to the costs of hauling recyclables greater distances for processing. This work was critical in the development of a plan to move towards a more cost-effective recycling infrastructure.

EMMET COUNTY, MICHIGAN DEPARTMENT OF PUBLIC WORKS

Material Recovery Facility Expansion; Project Manager

Worked with the Emmet County Department of Public Works for more than 20 years to expand froma small drop-off collection program and improve the recycling and organics recovery programs that serve Emmet County and neighboring counties. Worked with the county to acquire and transport a dual-stream processing system from an out-of-state MRF and redesigned the Emmet County MRF, overseeing the new construction and assisting in the equipment customization, installation, and startup. Technical support of the Emmet County MRF is still provided on an on-demand basis. Work continues with the county to explore further improvements to processing throughput and efficiency while reducing per ton processing costs.

MONTGOMERY REGIONAL SOLID WASTE AUTHORITY, VIRGINIA

Engineer Review of Transfer Station Upgrade; Project Manager

Led team and provided MRF evaluation and recommendations for trans-recycling equipment including understanding the proposed process, the amount of pre-sorting, amount of sorting, labor requirements, and potential for recovery and associated costs.

OUTAGAMIE COUNTY, WISCONSIN

Mixed Plastic and Container Recovery Study; Project Manager

Led team in analyzing single-stream recycling facility for possible expansion of type and volume of materials collected. Conducted operational equipment needs assessment, detailed capital and operational cost analyses of recommended options, generated revenue projections, and developed cost/benefit analysis over a range of possible market conditions and recovery rates.

past experience

SANDFORD, INC.
2000 – 2006; Owner
Managed a consulting and manufacturing company that inspected, improved, designed, built, and installed recycling equipment systems at recycling operations in Michigan and Ohio.

education

UNIVERSITY OF MICHIGAN, ANN ARBOR, MICHIGAN
Bachelor of Science, Electrical Engineering; Electrical Specialization Supplemental Courses in Manufacturing Technologies and Natural Resources

speaking engagements

PLASTICS INDUSTRY TRADE ASSOCIATION
Refocus Recycling Summit & Expo, April 2016
Optical Sorting and Quality Assurance

WASTE360
WasteExpo, April 2014
Recovery of Food Residuals – Waste or Resource

INSTITUTE OF SCRAP RECYCLING INDUSTRIES, INC.
Annual Conference and Exposition, April 2012
Challenges with Plastics Baling

publications

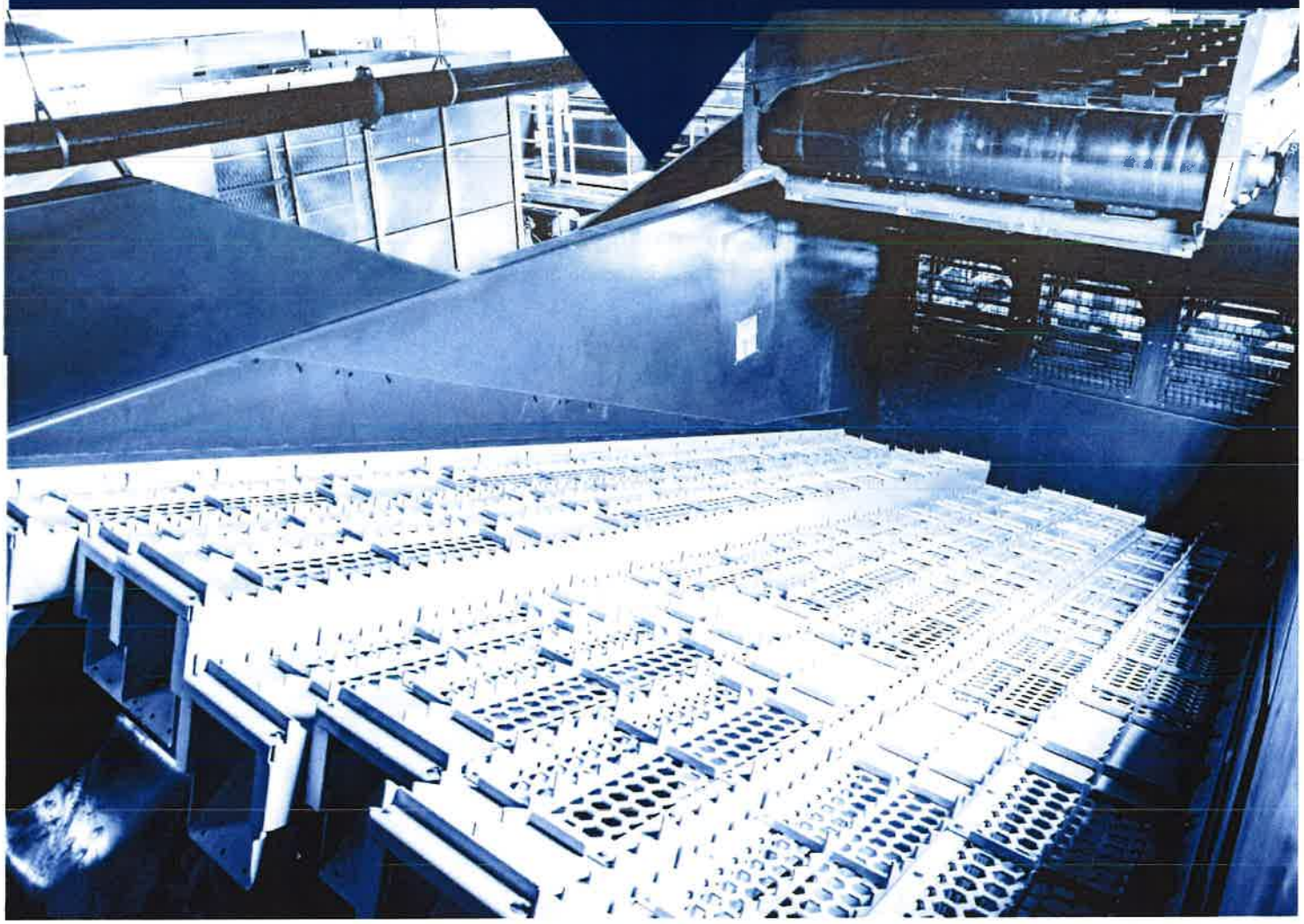
RESOURCE RECYCLING
Meet the Modern MRF, November 2014

association work/volunteerism

ASSOCIATION OF PLASTIC RECYCLERS (APR)
2017 – Present: Member

AMERICAN NATIONAL STANDARDS INSTITUTE (ANSI)
2017 – Present: Recycling Safety Committee Member

MACHINEX



Recycle Ann Arbor

Proposal #3419021-0

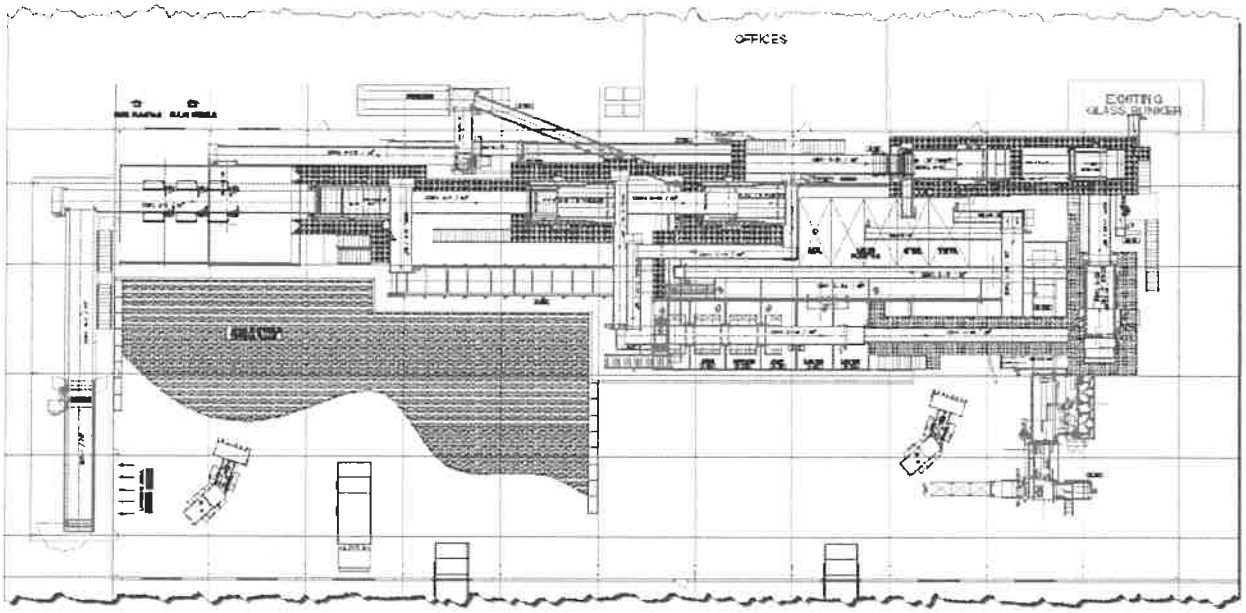
MRF Upgrade

4/30/2019

Machinex Technologies Inc. / 716 Gallimore Dairy Road, Suite 103, High Point, NC, 27265 USA / 1 877 362-3281
www.machinextechnologies.com

3. SYSTEM GUIDE LINES

As requested, Machinex designed a single-stream system to process 18-20 tons per hour within the current building.



FEATURES

- → New **drum feeder** with new incline configuration to help maximize tipping floor area;
- → New **pre-sort conveyor** with six sorting chutes (3 products), existing enclosure will be used as is;
- → New two (2) deck **OCC screen**, 7'-0" wide, 12 shafts with relocated existing **fines screen under;**
- → One (1) new primary **ballistic separator** for large fiber separation;
- → One (1) new finishing **ballistic separator** for final 2D/3D separation;
- → **New mixed paper sort line** with **container return device,** giving each sorter to ability to send flattened container straight to the container line;
- → Using existing (5) fiber bunkers (1 OCC, 1 Other, 2 Mixed Paper, 1 ONP) with automated bunker conveyors for loading to balers;
- → **One (1) new optical sorter** for **3D Fiber & Tetra**;
- → Container sort line equipped with **new magnet** and **eddy-current**;
- → One (1) new dual channel optical sorter for separating 3D Fiber from Tetra on one side and recovering all plastics from the rest of the container stream on the other side;
- → Existing four (4) high capacity **slope floor bunkers** for containers;
- → **New baler reclaim conveyor** for conveying material for bunkers to existing two ram baler;

4. EQUIPMENT LIST

EQUIPMENT LIST						
ITEM #	DESCRIPTION	MODEL	HP	VFD	WIDTH	LENGTH
BFD-1	DRUM FEEDER		0.75	X	72"	33' 4"
"	DRUM FEEDER (Moteur Drum)		7.5	X	72"	33' 4"
C-2	INCLINE CONVEYOR	Z SHAPE	7.5	-	60"	53'
C-3	PRE-SORT CONVEYOR	SLIDER BED	5	X	60"	63' 5"
S-4	2 DECK OCC SCREEN (Main gearbox)		5	X	---	---
"	2 DECK OCC SCREEN (Bigger main gearbox)		7.5	X	---	---
C-5	OCC QC CONVEYOR	SLIDER BED	2	-	60"	21' 5"
S-6	FINES SCREEN - EXISTING		5	X	---	---
"	FINES SCREEN - EXISTING		5	X	---	---
"	FINES SCREEN - EXISTING		5	X	---	---
C-7	ONP FEED CONVEYOR	SLIDER BED	5	-	60"	34' 8"
S-8	SCALPING DECK (Main gearbox #1)		5	X	---	---
S-9	PRIMARY BALLISTIC SEPARATOR (Main gearbox)	SEPB 819	7.5	X	---	---
"	PRIMARY BALLISTIC SEPARATOR (Blower Kit gearbox)	"	5	-	---	---
C-10	LARGE FIBER TRANSFER CONVEYOR	SLIDER BED	2	-	36"	37'
C-11	LARGE FIBER SORT CONVEYOR - EXISTING	SLIDER BED	5	X	48"	47' 10"
C-12	SHUTTLE CONVEYOR	SLIDER BED	2	-	48"	10'
C-13	FINISHING BALLISTIC FEED CONVEYOR	SLIDER BED	5	-	60"	51' 8"
S-14	FINISHING BALLISTIC (Main gearbox)	SEPB 819	7.5	X	---	---
"	FINISHING BALLISTIC (Fan Kit #1)	"	0.5	-	---	---
"	FINISHING BALLISTIC (Fan Kit #2)	"	0.5	-	---	---
"	FINISHING BALLISTIC (Fan Kit #3)	"	0.5	-	---	---
C-15	MIXED PAPER TRANSFER CONVEYOR	SLIDER BED	2	-	36"	16'
C-16	MIXED PAPER TRANSFER CONVEYOR	SLIDER BED	2	-	36"	43' 7"
C-17	MIXED PAPER TRANSFER CONVEYOR	SLIDER BED	2	-	36"	21' 8"
C-18	MIXED PAPER SORT CONVEYOR	SLIDER BED	5	X	48"	54' 5"
C-19	CONTAINER TRANSFER CONVEYOR	SLIDER BED	2	-	30"	45' 10"
C-20	CONTAINER TRANSFER CONVEYOR	SLIDER BED	2	-	36"	14'
C-21	CONTAINER TRANSFER CONVEYOR	SLIDER BED	5	-	48"	63' 9"
M-22	MAGNET (Belt)	UME 115 150R	---	-	---	---
C-23	FERROUS TRANSFER CONVEYOR - EXISTING	SLIDER BED	2	-	24"	18'
C-24	SPEED BELT	SPEED BELT	7.5	-	80"	21' 3"
OS-25	3D FIBER OPTICAL SORTER (Roller gearbox)		1	-	---	---
C-26	EJECTED FIBER TRANSFER CONVEYOR	SLIDER BED	2	-	30"	8' 9"
C-27	EJECTED FIBER TRANSFER CONVEYOR	SLIDER BED	2	-	30"	24'
C-28	EDDY CURRENT FEED CONVEYOR	SLIDER BED	2	-	48"	24' 11"
ECS-29	EDDY CURRENT (Belt)	MEC-V	2	X	---	---
"	EDDY CURRENT (Drum)	"	5	X	---	---
C-30	ALU QC CONVEYOR	SLIDER BED	2	-	24"	19' 3"
AB-31	ALU BLOWER SYSTEM (Blower)		10	-	---	---

RFP #

C-32	2ND OPTIC FEED CONVEYOR	SLIDER BED	3	-	60"	30' 7"
C-33	SPEED BELT	SPEED BELT	7.5	-	80"	18' 3"
OS-34	DUAL CHANNEL OPTICAL SORTER (Roller gearbox)		1	-	---	---
C-35	EJECTED TRANSFER CONVEYOR	SLIDER BED	2	-	60"	25' 7"
C-36	EJECTED TRANSFER CONVEYOR	SLIDER BED	3	-	60"	37' 3"
C-37	PLASTICS TRANSFER CONVEYOR	SLIDER BED	2	-	30"	36' 8"
C-38	TETRA TRANSFER CONVEYOR	SLIDER BED	2	-	30"	18' 1"
C-39	MIXED PAPER TRANSFER CONVEYOR	SLIDER BED	2	-	36"	57' 9"
C-40	NON-EJECTED TRANSFER CONVEYOR	SLIDER BED	2	-	36"	18'
C-41	LAST CHANCE RECOVERY CONVEYOR	SLIDER BED	5	X	30"	108' 3"
R-100	PRE-SORT REJECTS TRANSFER	SLIDER BED	2	-	48"	15' 5"
R-101	PRE-SORT REJECTS TRANSFER	SLIDER BED	3	-	48"	65'
R-102	COMPACTOR FEED CONVEYOR	SLIDER BED	2	-	48"	15'
R-103	REJECTS TRANSFER CONVEYOR - EXISTING	SLIDER BED	2	-	36"	42' 10"
R-104	REJECTS COMPACTOR FEED - EXISTING	SLIDER BED	3	-	36"	65'
F-200	FINES TRANSFER CONVEYOR	PICKING IDLER	2	-	60"	17' 11"
F-201	FINES TRANSFER CONVEYOR	PICKING IDLER	2	-	24"	18'
F-202	FINES TRANSFER CONVEYOR	PICKING IDLER	2	-	36"	36'
AS-203	GLASS CLEANUP SYSTEM (Blower Air Knife)	GCS	2	-	---	---
"	GLASS CLEANUP SYSTEM (Blower cyclone)	"	25	-	---	---
"	GLASS CLEANUP SYSTEM (Rotary valve)	"	2	-	---	---
F-204	FINES TRANSFER CONVEYOR - EXISTING	PICKING IDLER	2	-	24"	58'
F-205	FINES TRANSFER CONVEYOR - EXISTING	PICKING IDLER	2	-	24"	18'
F-206	FINES TRANSFER CONVEYOR - EXISTING	PICKING IDLER	2	-	24"	48'
F-207	GLASS TRANSFER CONVEYOR	PICKING IDLER	2	-	24"	40'
F-208	GLASS TRANSFER CONVEYOR	PICKING IDLER	2	-	24"	20'
B-300	OCC BUNKER - EXISTING	CHAIN ROLLER	5	-	60"	60'
B-301	RECLAIM CONVEYOR	CHAIN ROLLER	10	-	60"	99' 6"
B-302	BALER FEED CONVEYOR - EXISTING	CHAIN ROLLER	10	X	60"	60' 6"
B-303	TWO RAM BALER - EXISTING		---	-	---	---
B-304	OCC BUNKER CONVEYOR - EXISTING	CHAIN ROLLER	3	X	72"	19'
B-305	OFFICE BUNKER CONVEYOR - EXISTING	CHAIN ROLLER	3	X	72"	19'
B-306	ONP CONVEYOR - EXISTING	CHAIN ROLLER	3	X	72"	19'
B-307	MIXED PAPER CONVEYOR - EXISTING	CHAIN ROLLER	3	X	72"	19'
B-308	MIXED PAPER CONVEYOR - EXISTING	CHAIN ROLLER	3	X	72"	19'
CP-1	COMPACTOR - EXISTING		---	-	---	---
COMP-1	COMPRESSOR UNIT		---	-	---	---
PLA	PRE-SORT & OCC SCREEN PLATFORM-STEEL PACKAGE		---	-	---	---
PLA-1	BALLISTIC PLATFORM - STEEL PACKAGE		---	-	---	---
PLA-2	OPTICS & EDDY CURRENT PLATFORM-STEEL PACKAGE		---	-	---	---
PLA-3	SLOPE FLOORS - STEEL PACKAGE(Door)		0.75	-	---	---
"	SLOPE FLOORS - STEEL PACKAGE(Door)		0.75	-	---	---
"	SLOPE FLOORS - STEEL PACKAGE(Door)		0.75	-	---	---
"	SLOPE FLOORS - STEEL PACKAGE(Door)		0.75	-	---	---
"	SLOPE FLOORS - STEEL PACKAGE(Door)		0.75	-	---	---
CONTROLS	CONTROLS		---	-	---	---

5. NARRATIVE DESCRIPTION

As requested by Recycle Ann Arbor, Machinex has designed a system based on the throughput capacity to 18-20 TPH and recovering valuable recyclables in the inbound residential single stream. Below is description of the process through the newly designed Single Stream Processing System.

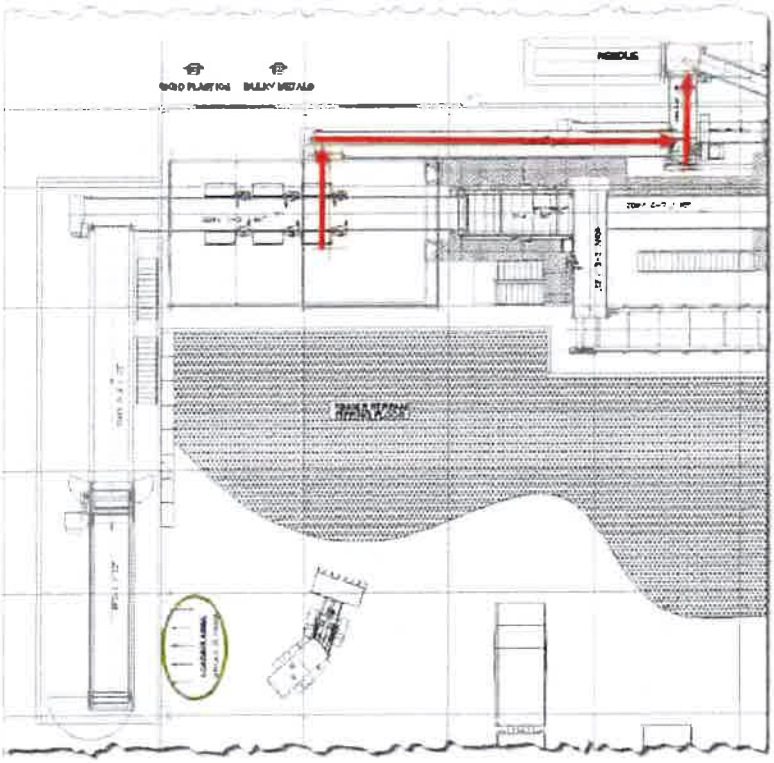
5.1.1 BASE UPGRADE PACKAGE – FEED SYSTEM & PRE-SORT AREA

Starting at the beginning of the system, the base upgrade package will have a new drum feeder setup with incline conveyor which will meter the material into the processing system to help the downstream equipment work as efficient as possible.

The new location will open up additional tipping floor to add storage capacity inbound tonnage.

After the material is metered into the system, the material will continue into the existing pre-sort enclosure by new transfer conveyors. When passing through the pre-sort enclosure, sorters will have the ability to pull large rejects, rigid plastics, and bulky metals before the downstream processing equipment.

Included in the base package is a transfer conveyor to take all the large rejects (red arrow) directly to the trash compactor so this material doesn't need to be managed by a wheel loader.



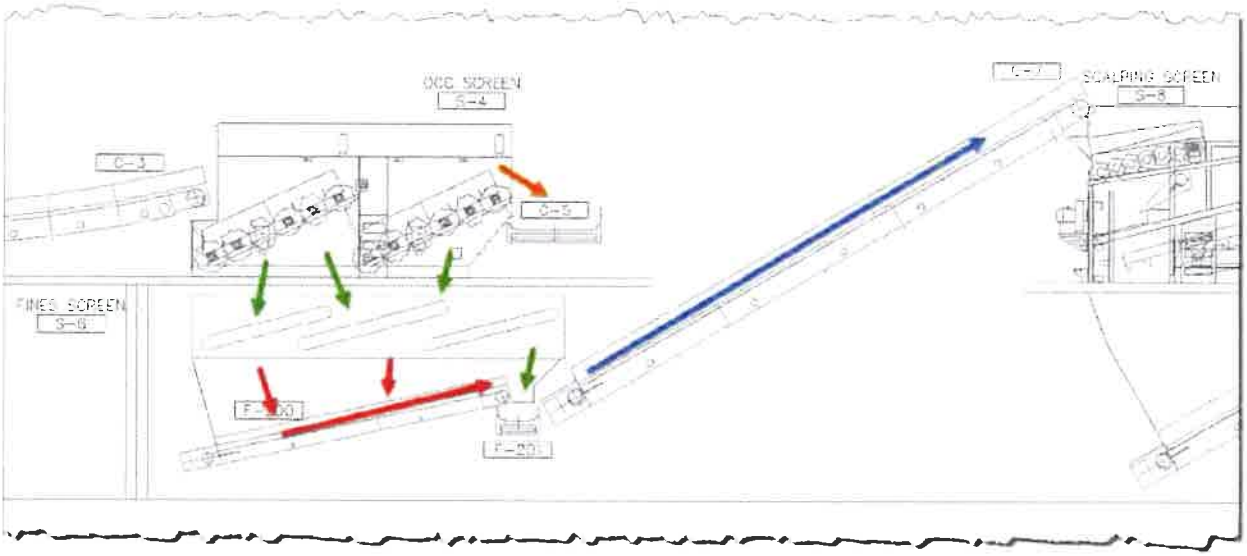
5.1.2 BASE UPGRADE PACKAGE – OCC / FINES SCREEN

As part of the base package we will provide new Machinex two (2) deck OCC Screen. The material after the pre-sort would then be fed onto this screen where we will use this screen to remove larger cardboard from the material stream. The larger cardboard (orange arrow) will ride over the two (2) decks and end up on the QC conveyor where a sorter will have the opportunity to remove any non-OCC and return this back to the downstream system. After the sorter clean OCC will be fed into the existing storage bunker until its ready to be baled.

The fall through material (green arrow) from the first and second deck of the OCC screen will fall onto the existing fines screen which will be relocated to its new location. This fines screen will target the 2" minus material (mostly glass – red arrow) and separate it from the rest of the fibers & containers which will continue through the processing system.

The 2" minus fines material (red arrow) will be conveyed to the new glass clean up system, where the 2"-8" material (blue arrow) will be conveyed to the primary ballistic/scalping screen.

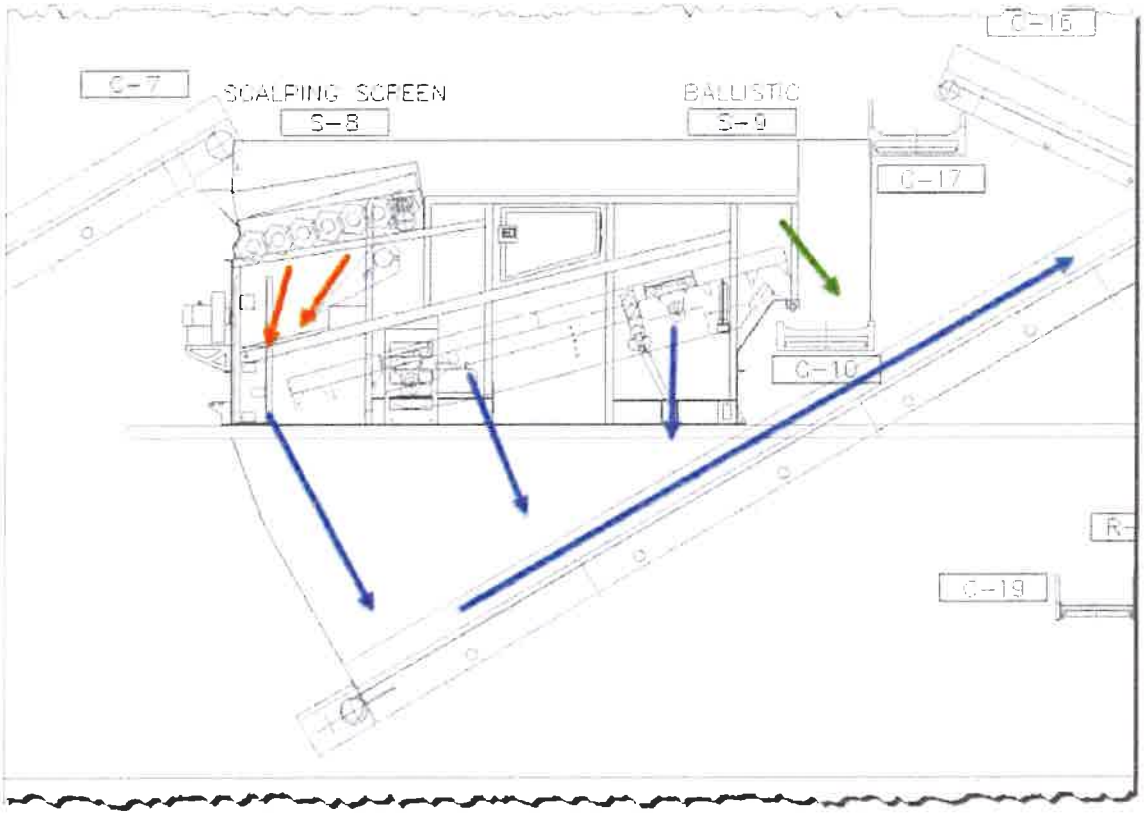
It's important to note, Machinex has included its **newly designed 8" square shaft design which has dramatically reduced wrapping along with recovering more OCC inside the screen**. Customers where we have installed these new shafts have seen the requirement for cleaning these shafts drastically reduced from other types of OCC screens. This again results in increased system up time along with limiting the maintenance on the machine. It is also important to note that our newer generation OCC screen has slightly tighter spacing than older models because we have seen the size of OCC decreasing over time. Our new generation screen conservatively recovers 15% more OCC. Some customers have seen that number as high as 30% more recovery of their OCC.



5.1.3 BASE UPGRADE PACKAGE – PRIMARY BALLISTIC SEPARATOR & SCALPING SCREEN

Now that we have removed the larger OCC materials with the OCC screen and 2" minus material with the fines screen; the remaining fibers and some containers will be fed onto the primary ballistic separator with scalping deck. Once the material is fed into the machine, the material will first ride over a scalping deck where we will scalp the smaller plastics (orange arrow) and fibers before the 5" overs material will drop on the primary ballistic separator paddles. Once the material is on the ballistic separator, the material will be split into two streams. The larger fiber (flexible – green arrow) fraction will float up the screen which will be collected on the C-10 fiber transfer belt. The fall through along with the rollback (containers, smaller fibers, rigids – blue arrow) of the primary ballistic separator will combine with the scalped material (orange arrow) which will be conveyed further downstream to the finishing ballistic separator.

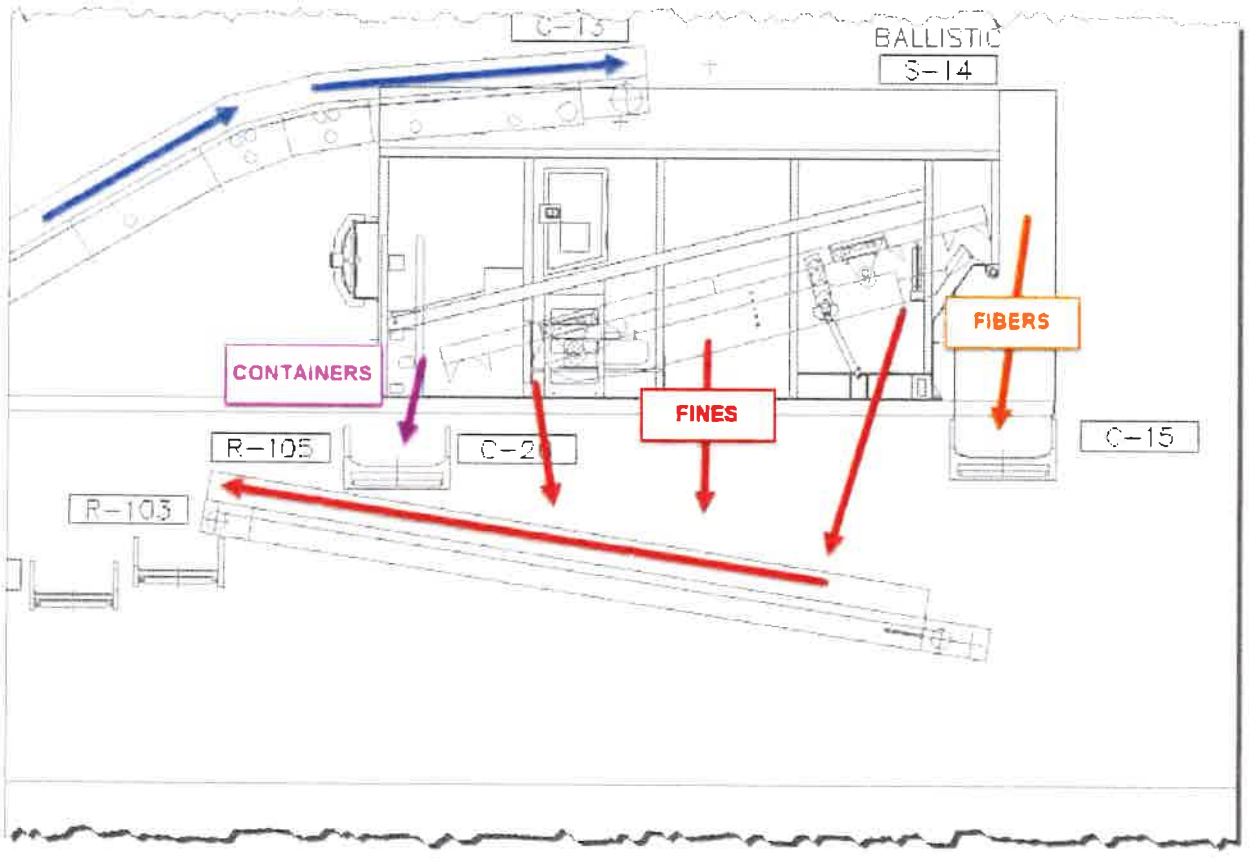
Note: That the ONP ballistic separator will have larger openings on the paddles to allow smaller fibers and containers to fall through the paddles. This helps will the overall throughput of the machine along with producing a larger fiber stream like a traditional ONP (News) screen without the rubber discs and shafts to maintain.



5.1.4 BASE UPGRADE PACKAGE – FINISHING BALLISTIC SEPARATOR

The fall through and rollback of the primary ballistic separator (blue arrows) continue downstream where this material will be fed onto a finishing ballistic separator. Once the material is fed onto the new finishing ballistic separator, we will separate the stream into three (3) different fractions. The first fraction is fiber (flexible – orange arrow) stream, this stream will float up the paddles and will be dropped onto a transfer conveyor which will take the fiber fraction to the fiber sorting platform where it can be QC before baling. The second fraction will be the container fraction (rigid – purple arrow) stream, this material stream will be conveyed to the start of the container line where it can be further separated into different commodities.

The third stream coming from the finishing ballistic will be a 2" minus fraction – trash fraction (red arrow) will fall through 2" holes on the steel paddles, this material will be combined back with the rejects/trash belt from the fiber sorting area which takes the non-recyclable material to the existing trash compactor. Unlike rubber disc screens, the fines stream will stay much more consistent over time because of the steel paddles. This will limit the loss of UBC and flattened PET bottles. This will benefit both the recovery of these materials along with providing a cleaner fines stream.

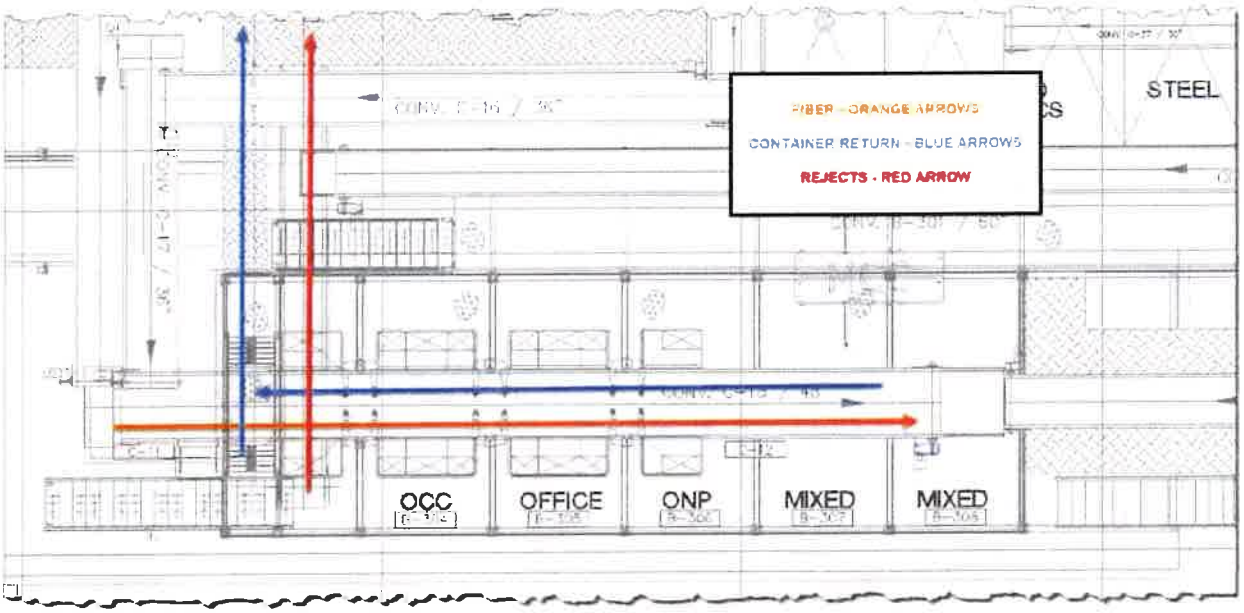


5.1.5 BASE UPGRADE PACKAGE – FIBER SORT AREA/PLATFORM

Now that both the small and large fiber have been separated, each stream will be conveyed to the sorting platform for final inspection. The base system includes reusing the fiber sorting platform and the lower sorting conveyor; however the upper sorting conveyor will be replaced with a new sorting conveyor with the container return device feature which will allow all sorters on the mixed paper conveyor to be able to pull flattened container and send it directly to the container line. This feature will help eliminate the use of bin/carts on the platform.

Also included with the base package is a way to send rejects directly to the residue compactor by the way of using the existing rejects transfer conveyor currently installed.

Another added feature in the base system is flip gates or reversing conveyor on both the fiber lines, the new system will reuse this setup to give the operator the ability to combine both fiber lines or keep the separate depending on local markets.



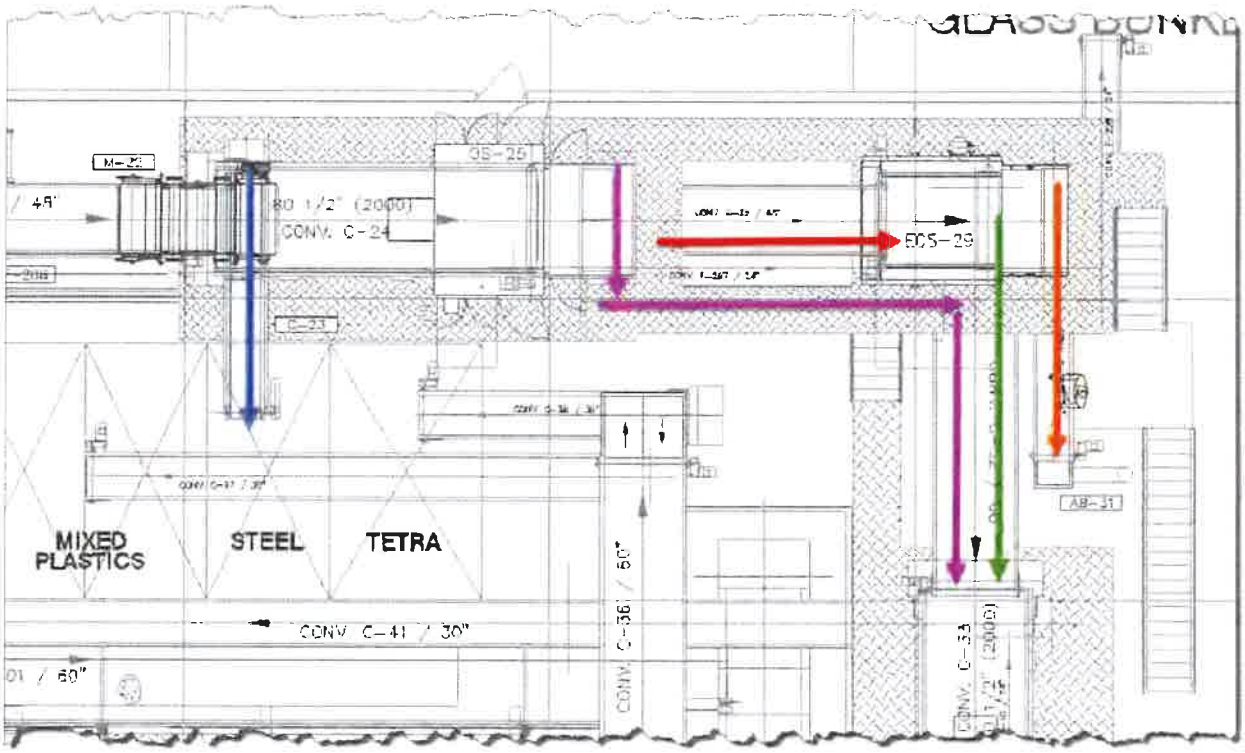
5.1.6 BASE UPGRADE PACKAGE – MAGNET, 3D FIBER OPTICAL SORTER, & EDDY CURRENT

Now that the fibers and glass have been removed from the processing stream, the rest of the material (mostly containers) will be directed to the container line where the material will first go under a new overbelt magnet to remove any ferrous metals (Blue Arrow) in the container stream.

After passing the overbelt magnet, the remaining container will be fed onto a 3D fiber / Tetra optical sorter where fibers will be ejected (fibers – Purple Arrow) will be ejected upwards onto a transfer conveyor which will take this material to the next optical sorter.

After the optical sorter, the non-eject container (Red Arrow) will be conveyed further down stream to an eddy current separator for removing any non-ferrous materials in the stream. The separated non-ferrous (Orange Arrow) will pass by a sorting station where a sorter can grade the aluminum before it is blown into its storage bunker.

The non-ejected fraction from the eddy current (Green Arrow) will drop onto a split belt (C-32) which will convey both the ejected 3D fiber (Purple Arrow) from the first optical sorter on one side of the belt and the non-ejected fraction from the eddy current on the other side.

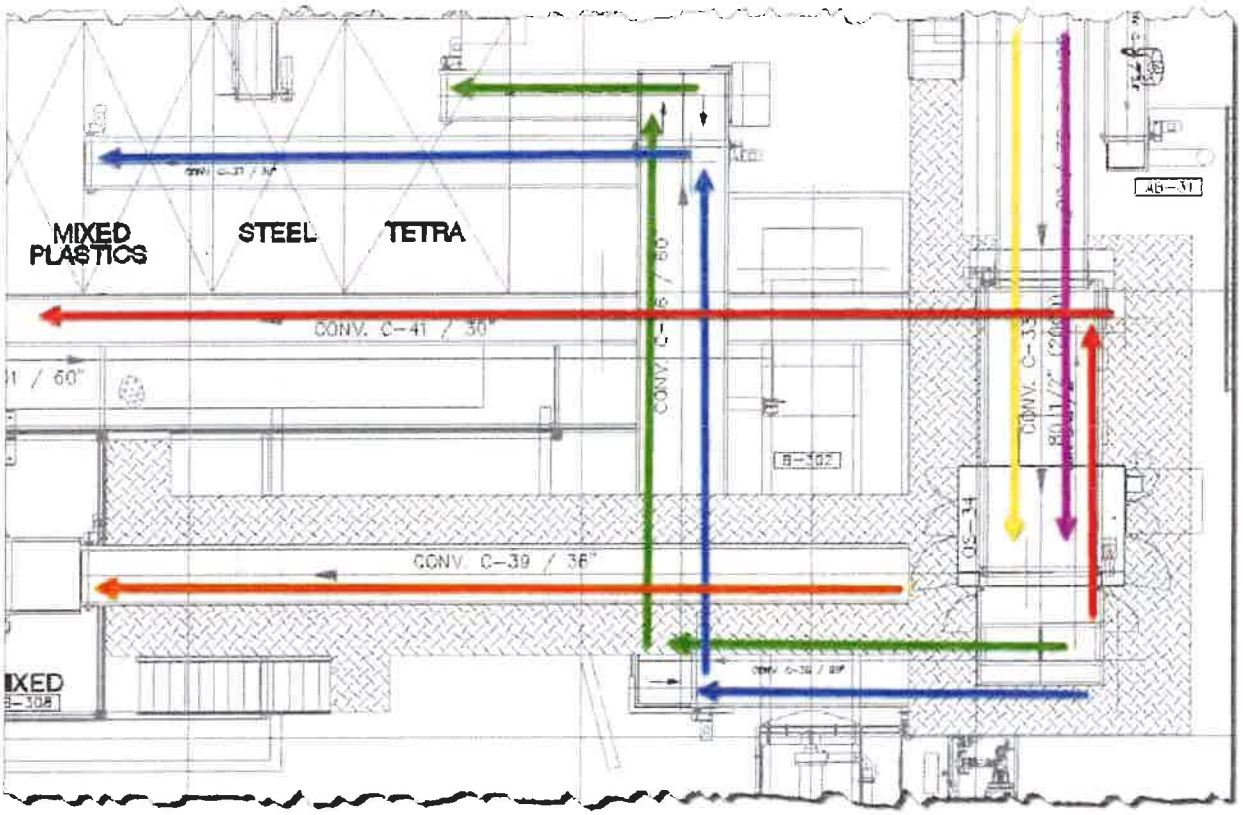


5.1.7 BASE UPGRADE PACKAGE – 2nd OPTICAL SORTER FOR PLASTICS RECOVERY & TETRA SEPARATION

After the first optical sorter and the removal of the metals, the two streams (3D fibers – Yellow Arrow & remaining container line – Purple Arrow) will be fed onto a dual channel optical sorter where we will further the recovery of the recyclable material.

For the 3D fiber channel, the optic will separate the Tetra containers (Green Arrow) from the rest of the 3D fibers. This will help maximize the recovery of the cartons along with requiring less sorters to manual remove the targeted material from the eject stream of the first optical sorter. The non-ejected fraction (Orange Arrow) from the 3D fiber channel will be conveyed to combine with the end of the mixed paper sort conveyor.

As for the remaining container line channel, this optical channel will eject all plastics which are remaining in the system stream. This ejected fraction (Blue Arrow) will be ejected onto a split belt under the optical sorter and be conveyed back to the slope floor bunker until its ready to be baled. The non-ejected fraction (Red Arrow) will be conveyed back to a conveyor which will run in front of the slope floor bunker which can staffed if they would like to insure all recyclables are removed from the stream.

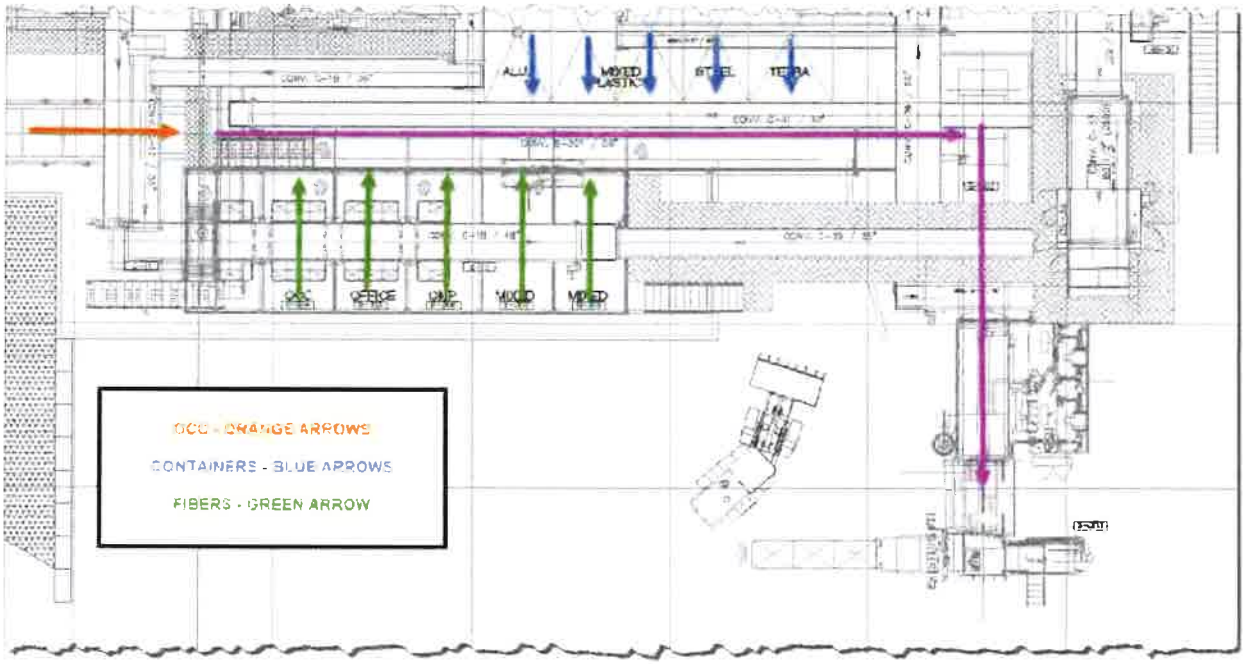


5.1.8 BASE UPGRADE PACKAGE – BALING SYSTEM & STORAGE BUNKERS

Now that the materials have been separated into different grades and storage in the correct bunkers. The base system package includes reusing the fiber bunker system/conveyors allow with the slope floor bunkers for the container storage.

The base package does include a new baler reclaim conveyor B-301, which will replace the existing baler reclaim conveyor which has been modified/shortened. This new conveyor will be able to take material from each bunker storage system and convey this to the baler feed conveyor B-302.

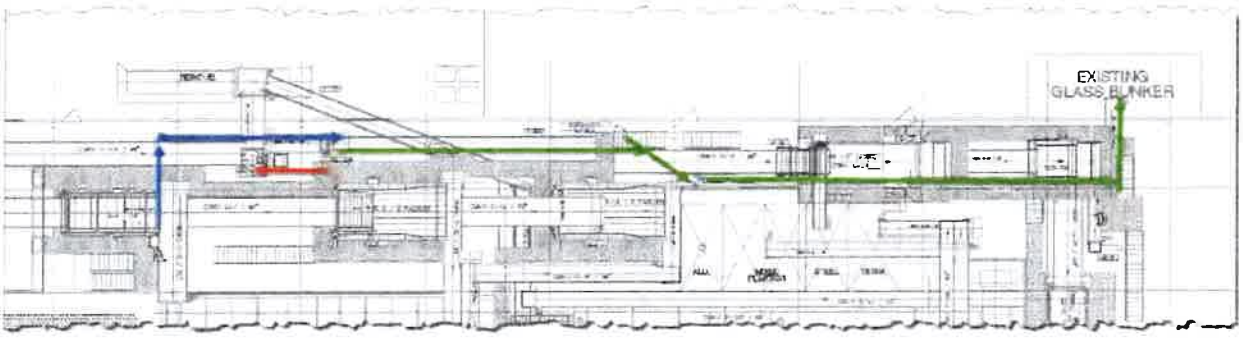
Lastly, in the baling system there is still access for baling clean loads by loading that material directly on the new baler reclaim conveyor.



5.1.9 BASE UPGRADE PACKAGE – GLASS CLEANUP & STORAGE

Included in the new base system upgrade, the fines material (Blue Arrow) which is taken from the fines screen under the OCC Screen will be conveyed to a new glass clean up system which will remove light weight fraction from the glass fraction and help reduce the amount of shredded fiber in the glass stream. Once the material has passed through the new glass cleanup system, the clean glass (Green Arrow) will be conveyed to the existing glass bunker for storage.

The light fraction (Red Arrow) which is pulled off with air will be conveyed to the rejects transfer conveyor which will feed the trash compactor.



6. EQUIPMENT DESCRIPTION

Drum Feeder

BFD-1

FRAME DESCRIPTION

1) Frame type: Open frame construction will be designed for ease of maintenance. All frames shall be made of formed steel plate with reinforcements. Frames will be made of minimum 3/16" formed steel plate.
2) Conveyors will be designed in sections no longer than 12'-0" with gusset reinforcements every 72" (3/16" plate minimum)
3) Side skirts: will be 72" high minimum or otherwise specified. All side skirts shall be made of 3/16" steel plate minimum with reinforcing gussets and horizontal bends on top.
4) Conveyor chain tracks shall be made of 30# RAILS, minimum.
5) Connecting plates: will be made of 3/8" thick precision cut steel plate for ease of assembly. All sections shall be bolted together (Minimal welding on site).
6) Impact areas: All frame sections in impact areas shall have reinforcements every 36" minimum, with 2 impact rails.
7) Impact rails: Must be made of formed "C" channels with 3/8" thick UHMW on top to minimize possible friction of steel on steel. UHMW shall be held in place by small brackets with 2 counter sunk bolts at one end. Impact bars shall be slightly lower than the lowest point of the metal belt.
8) Conveyor tail section details: All conveyor tail sections shall have bolt on type side skirts with bolt on type rubber flaps. All above ground tail sections shall be equipped with all necessary guards.

SAFETY GUARDS AND OTHERS

9) All safety guards will be bolt on type for ease of maintenance (Color: safety yellow)
10) Protective guards or "dribble pans" shall be provided (As per OSHA requirements). All shields will be bolted on frame for ease of removal and cleaning.
11) Two (2) chain oilers will be included with each conveyor

BEARINGS, SHAFTS AND SPROCKETS

12) All tail section bearings will have greasable take up type mounted on a bolt on take up mechanisms (tensioning with travel screws) for ease of maintenance. Minimum bearing size will be 2 15/16" or larger depending on conveyor length. Sprockets shall be 18" pitch diameter cast iron (6 teeth).
13) Tail shaft size will be 2 15/16 minimum or larger depending on conveyor length.
14) All head section bearings shall be greasable pillow block type mounted on heavily reinforced flanges. Sprockets will be 18" pitch diameter cast iron (6 teeth).
15) Head shaft size will be 3 7/16" minimum or larger depending on conveyor length.
16) Head and tail shaft sprockets to have hubs with keyways and set screws. One (1) of the tail sprockets will be floating on the shaft.

BELT ASSEMBLY

17) Belt assembly: Will be manufactured in sections no longer than 12'-0".
18) Pan details: Flat pan will be made of minimum 1/4" formed steel plate, bolt on type (Overlapping).
19) Cleats: Will be made of 1/4" flat bar welded on pans every 36" on center.
20) Chain details: 9" pitch minimum. 4" diameter roller, single flange with solid bushing hardened 50/60 RC, 2" high x 3/8" thick sidebars and 4" high x 3/8" thick overlap side wings. Pan attachment will be welded on chain. Chain will have minimum 50,000 pound rating.

DRIVES AND MOTORS

21) All gear reducers and motors will be shaft mounted Nord Gear or equivalent, sized by application. (See equipment list)
22) All motors are mounted on reducers and are PREMIUM efficiency type, 1.15 Service factor.

STRUCTURAL SUPPORTS

23) All equipment structural supports to be made of square tubing and/or structural steel.
24) All legs will have boot adjustments. Each boot to be attached using "Red Head anchors" through 2 to 4 holes in each footpad.
25) Support bracings to be made of angle iron and/or structural steel.

TRANSFER PANELS

26) All transfer panels will be made of formed steel plate. Transfer panels to be bolt on type for easy access to head shafts. (No rubber strips transfer acceptable)
27) Transitions to be equipped with rubber skirting, where necessary, to avoid material spillage.
28) Appropriate adapter skirts or shields, chutes and transfer panels to be provided at all transfer points to assure that all transitions are sufficiently enclosed to minimize spillage or dust emissions.

FLOW REGULATOR ROTATING DRUM

29) Width : conveyor belt width minus 11'' minimum or wider
30) Diameter : 4'-6"
31) Motor : Shaft mounted 10 HP minimum, 460/3/60 (Soft start in VFD)
32) Speed : 24 minimum VFD
33) Equipment will be ready to ship in one (1) piece with extension walls and support legs separate

FEATURES & BENEFIT

→ Super Heavy Duty conception
→ Ring to prevent Glass infiltration on drum edges
→ Reversible option for drum access
→ Doors with safety switch for safe access behind drum
→ Easy removable flat metal pan belt (4 bolts)
→ Electrical Oilers
→ All speed parameters are variable

Chain-Roller

INFEED & BALER FEED,

FRAME DESCRIPTION

1) Frame type: Open frame design for ease of maintenance. Frames made of minimum 3/16" formed plate;
2) Conveyors are designed in sections no longer than 12'-0" with gusset reinforcements every 72";
3) Side skirts: 36" high minimum or otherwise specified. All side skirts will be made of 3/16" plate;
4) Conveyor chain tracks will be made of flat bar;
5) Connecting plates: Will be made of 3/8" thick. All sections bolted together (Minimal welding on site);
6) Impact rails: Will be made of formed "C" channels;
7) Conveyor tail section details: Tail sections will have bolt on type side skirts with bolt on type rubber flaps. Above ground tail sections will be equipped with all necessary guards;

SAFETY GUARDS AND OTHERS

8) Safety guards will be bolt on type for ease of maintenance;
9) Protective guards up to 7'-0" above slab or platforms will be provided (as per OSHA requirements);
10) Two (2) chain oilers and a mechanical back stop will be included with conveyor when required;

BEARINGS, SHAFTS AND SPROCKETS

11) Tail bearings are greasable take up. Bearing & shaft size of 2 15/16" or larger when required;
12) Sprockets of 18" pitch diameter cast iron or larger when required;
13) Head bearings are greasable pillow block. Bearing & shaft size of 2 15/16" or larger when required;
14) Sprockets of 18" pitch diameter cast iron (6 teeth) or larger when required;

BELT ASSEMBLY

15) Z-shape pan ¼" thick bolted on each side for easy removal.
16) Chain details: 9" Pitch.

DRIVES AND MOTORS

17) Gear reducers and motors should be helical in line shaft mount types, sized for the applications;
18) All motors will be HIGH efficiency type, 1.15 Service factor;

Slider Bed (Type I)

Sorting conveyor and heavy-duty transfer conveyor

FRAME DESCRIPTION

1) Closed formed 3/16" plate frame construction design for sorters safety and ergonomics;
2) Conveyor beds are 3/16" steel plate minimum, slotted type for self-cleaning;
3) Conveyors are designed in sections no longer than 12'-0" with gusset reinforcements every 72";
4) All conveyors will be 3" trough type conveyors;
5) 6" high minimum side skirts, 12 GA. formed steel plate when required;
6) Connecting plates: Will be made of 3/16" thick. All sections bolted together (Minimal welding on site);
7) Tail sections have bolt on type rubber flaps;
8) 5" diameter return rollers (steel-CEMA "C") with sealed tapered roller bearings and slide in type brackets. Return rollers to be spaced on 12' centers, maximum.

SAFETY GUARDS AND OTHERS

9) Safety guards will be bolt on type for ease of maintenance (Color: yellow);
10) Protective guards up to 7'-0" above slab or platforms will be provided (as per OSHA requirements);

BEARINGS, SHAFTS AND PULLEYS

11) Tail bearings greaseable. Bearings & shafts size of 2 15/16" or larger when required;
12) Tail shaft pulleys to be 10" diameter minimum, winged, crowned and self-cleaning;
13) Head bearings greaseable. Four (4) bolt flange type. Bearings & shafts of 2 15/16" or larger when required;
14) Head shaft pulleys are 8" diameter minimum, crowned with 1/4" lagging;
15) All pulleys to be held on shafts by taper hub bushings with key ways and set screws.

RUBBER BELT

16) Rubber belt: One (1) piece with one mechanical belt splice; (unless otherwise specified)
17) Belt minimum of 3 –ply 330 low friction back with 3/16" top cover.

DRIVES AND MOTORS

18) Gear reducers and motors are helical in line shaft mount type, sized by application;
19) All motors are mounted on reducers and are HIGH efficiency type, 1.15 Service factor;

Slider Bed (Type II)

All medium duty transfer and sorting conveyors

FRAME DESCRIPTION

1) Closed formed 3/16" plate frame construction design for sorters safety and ergonomics;
2) Conveyor beds are 3/16" steel plate minimum, slotted type for self-cleaning;
3) Conveyors are designed in sections no longer than 12'-0" with gusset reinforcements every 72";
4) All conveyors will be 3" trough type conveyors;
5) 6" high minimum side skirts, 12 GA. formed steel plate when required;
6) Connecting plates: Will be made of 3/16" thick. All sections bolted together (Minimal welding on site);
7) Tail sections have bolt on type rubber flaps;
8) 2 3/8" diameter return rollers (steel-CEMA "C") with sealed tapered roller bearings and slide in type brackets. Return rollers to be spaced on 12' centers, maximum.

SAFETY GUARDS AND OTHERS

9) Safety guards will be bolt on type for ease of maintenance (Color: yellow);
10) Protective guards up to 7'-0" above slab or platforms will be provided (as per OSHA requirements);

BEARINGS, SHAFTS AND PULLEYS

11) Tail bearings greasable. Bearings & shafts size of 1 15/16" or larger when required;
12) Tail shaft pulleys to be 8" diameter minimum, winged, crowned and self-cleaning;
13) Head bearings greasable. Four (4) bolt flange type. Bearings & shafts of 1 15/16" or larger when required;
14) Head shaft pulleys are 8" diameter minimum, crowned with 1/4" lagging;
15) All pulleys to be held on shafts by taper hub bushings with key ways and set screws.

RUBBER BELT

16) Rubber belt: One (1) piece with one mechanical belt splice; (unless otherwise specified)
17) Belt minimum of 2 –ply 220 low friction back with 3/16" top cover.

DRIVES AND MOTORS

18) Gear reducers and motors are helical in line shaft mount type, sized by application;
19) All motors are mounted on reducers and are HIGH efficiency type, 1.15 Service factor;

Slider Bed (Type III)

All medium duty transfer / limited space

FRAME DESCRIPTION

1) Closed formed 3/16" plate frame construction design for sorters safety and ergonomics;
2) Conveyor beds are 3/16" steel plate minimum, slotted type for self-cleaning;
3) Conveyors are designed in sections no longer than 12'-0" with gusset reinforcements every 72";
4) All conveyors will be 3" trough type conveyors;
5) 3" high minimum side skirts, 12 GA. formed steel plate when required;
6) Connecting plates: Will be made of 3/16" thick. All sections bolted together (Minimal welding on site);
7) Tail sections have bolt on type rubber flaps;
8) 2 3/8" diameter return rollers (steel-CEMA "C") with sealed tapered roller bearings and slide in type brackets. Return rollers to be spaced on 12' centers, maximum.

SAFETY GUARDS AND OTHERS

9) Safety guards will be bolt on type for ease of maintenance (Color: yellow);
10) Protective guards up to 7'-0" above slab or platforms will be provided (as per OSHA requirements);

BEARINGS, SHAFTS AND PULLEYS

11) Tail bearings greasable. Bearings & shafts size of 1 7/16" or larger when required;
12) Tail shaft pulleys to be 4" diameter minimum, winged, crowned and self-cleaning;
13) Head bearings greasable. Four (4) bolt flange type. Bearings & shafts of 1 7/16" or larger when required;
14) Head shaft pulleys are 4" diameter minimum, crowned with 1/4" lagging;
15) All pulleys to be held on shafts by taper hub bushings with key ways and set screws.

RUBBER BELT

16) Rubber belt: One (1) piece with one mechanical belt splice; (unless otherwise specified)
17) Belt minimum of 2 –ply 220 low friction back with 3/16" top cover.

DRIVES AND MOTORS

18) Gear reducers and motors are helical in line shaft mount type, sized by application;
19) All motors are mounted on reducers and are HIGH efficiency type, 1.15 Service factor,

Container Return Device

Attached to C-18

DESCRIPTION

1) Industrial blower 5HP minimum;
2) Air Knife with UHMW scraper for removing containers;
3) Adjustable discharge;
4) Necessary conveyor frame modifications;

SPEED BELT CONVEYOR (FOR OPTICAL SORTING UNIT)

C-24, & C-33

FRAME DESCRIPTION

1) Closed formed 3/16" plate frame construction design for sorters safety and ergonomics;
2) Conveyor beds are 3/16" steel plate minimum. All conveyor beds will be slotted type for self-cleaning;
3) Conveyors will be designed in sections no longer than 12'-0" long with gusset reinforcements every 72";
4) 3" high minimum side skirts, 12 GA. formed steel plate when required;
5) Sections will be braced as necessary for extra strength;
6) Connecting plates: Will be made of 3/16" thick. All sections bolted together (Minimal welding on site);
7) Tail sections have bolt on type rubber flaps;
8) Conveyors will be shipped in the largest practical sections for ease of installation;
9) 6" diameter return roller with tapered roller bearings with sealed bearings and slide in type brackets;

SAFETY GUARDS AND OTHERS

10) All safety guards will be bolt on type for ease of maintenance (Color: yellow)
11) Protective guards up to 7'-0" above slab or platforms will be provided (as per OSHA requirements);

BEARINGS, SHAFTS AND PULLEYS

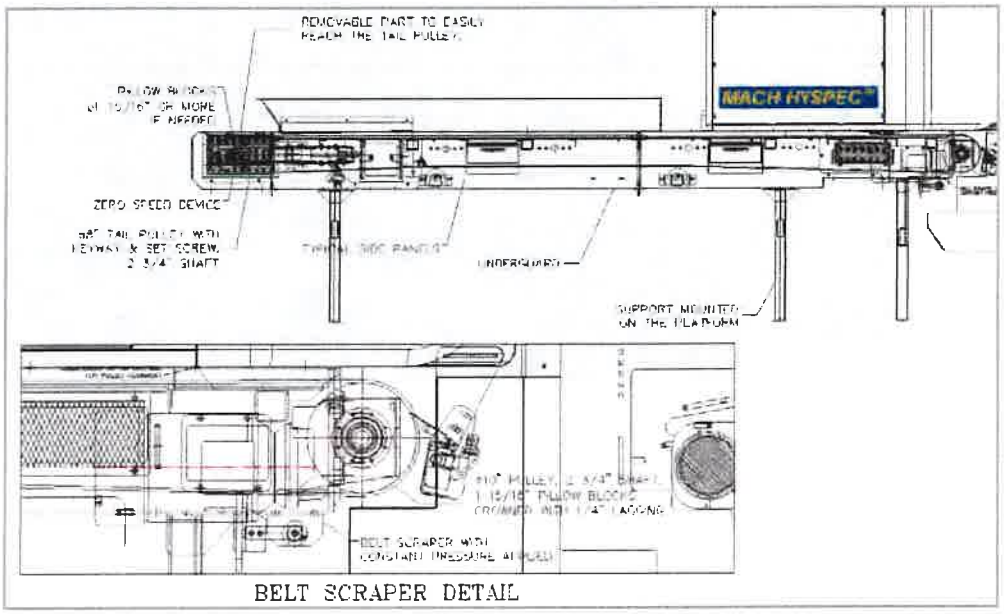
12) Tail bearings greasable take up type. Bearings & Shafts size of 1 15/16";
13) Tail shaft pulleys to be 8" diameter;
14) Head bearings greasable four (4) bolt flange type. Bearings & shafts of 1 15/16" or larger when required;
15) Head shaft pulleys will be 8" diameter;
16) All pulleys will be held on shafts by taper hub bushings with key ways and set screws;

RUBBER BELT

17) Rubber belt: One (1) piece with vulcanized joint type.
18) Belt will be a minimum of 2-ply 220 low friction back rubber with 1/8" top cover and bare-back bottom.

DRIVES AND MOTORS

19) Gear reducers and motors will be helical in line shaft mount type, only sized for the applications.
20) All motors will be premium efficiency type, 1.15 Service factor;



BELT SCRAPER DETAIL

RFP #

OCC SCREEN SEPARATOR (2 FIXED DECKS)

S-4

FRAME DESCRIPTION

1) Closed frame construction design with hinged access doors for ease of maintenance. Frame is made of minimum ¼" formed steel plate with reinforcements;
2) Side skirts are 36" high above shaft, 3/16" steel plate with reinforcing gussets and horizontal bends on top;
3) Driving chains are lubricated by an automatic oiler;
4) Separator will have two (2) fixed decks with six (6) shafts per deck;
5) The first three (3) shafts are equipped with glass breaking metal disks (TBD);
6) The minimum inside width of each screen deck is 7'-0" with a screening area of 6'-9";
7) Refer to layout for screen maintenance access setup;

SAFETY GUARDS AND OTHERS

8) All safety guards to be bolted on type for ease of maintenance (Color: yellow);
9) One (1) chain oiler included;
10) Optional electronic device to control the angle of the machine from the control panel.

BEARINGS AND SHAFTS

11) All bearings to be heavy-duty type for intense services;
12) Bearing minimum size of 2 7/16".

DRIVES AND MOTORS

13) All gear reducers and motors to be helical in line shaft mount type, sized by application;
14) All motors are mounted to reducer and HIGH efficiency type, 1.15 Service factor,
15) Each deck is powered by one (1) 5 HP gear motor;

BALLISTIC SEPARATOR

S-9, S-14

FRAME DESCRIPTION

1) Frame construction is made of formed steel plate and reinforcement gusset as required.
2) Deck angle will be adjustable using hydraulic cylinder and manual pump. (no daily adjustment required)
3) The screen will be delivered in one piece without any bolted joint.
4) The movement parts are factory pre-balanced.
5) Safety access doors will be on both side and armed with a safety switch interconnected with the control cabinet.
6) Adjustable feeding gate is also included.

MACHINE PARAMETERS

7) Length: Approx 18'-0" (Slats)
8) Graining Material: 2" minus
9) Width: Approx 11'-2" (Inside)
10) Height: 9'-0" (Including side skirt)
11) Volume Flow: 20 to 40 cu.yd / hour
12) Weight: Approx 10 tons
13) Power: 7.5 HP (or higher based on material analysis)

SAFETY GUARDS AND OTHERS

14) All safety guards will be bolt on type for ease of maintenance (Color: yellow)

FEATURES & BENEFIT

- → Easy access door on each side and under for cleaning and maintenance access
- → Removable slats
- → Variable in angle and in speed
- → **Very low maintenance for your application**

OPTICAL SORTING MACHINES – MACHINEX

OS-25, & OS-34

MODEL: HYPERSPECTRAL SWIR

MATERIAL DETECTION PER SHORT WAVE INFRA-RED MEASURING SYSTEM (SWIR)

The original conception of our sensor and lighting system brings key advantages:

1) Very high speed;
2) 28,344,320 measurements per second;
3) Signal quality is far superior then classic technologies with a signal to noise ratio of 70dB and a dark noise of only 14 ADU;
4) The analysis resolution is between 3mm x 8.7mm and 5mm x 8.7mm;
5) The timing precision between the sensing unit and the ejection unit is 500µs;
6) The distance between the detection line and the ejection line is only 15 cm. This allows a better efficiency on the ejection of rolling objects which can move on the belt before the ejection line, a major cause of 'lost' material;

HIGH PERFORMANCE LIGHTING SYSTEM

7) The depth of field of the optical system (lens and lighting system) is 430mm. This means that an object is detected as effectively when flat on the belt as it is at 430mm above the belt;
8) The lighting system uses diffused light, which generates very little heat at the belt level.
9) The lighting system has been optimized to help identify thin and transparent objects as well as thick and opaque objects;
10) No moving parts used in the optical and detection system;

HOODING OF SORTING MACHINE

11) The hooding of the machines is made of tubing and formed steel plate (Heavy duty)
12) All our conveyors are equipped with attachment rings for uplifting as well as a bracket for the handling of the conveyor's motor reducer.

TECHNICAL DESCRIPTION OF THE HYPERSPECTRAL SWIR MACHINE

13) Equipment allowing the detection of objects according to their nature (one or several materials simultaneously), except black or very dark objects, by means of short wave infra-red spectrometry (SWIR), including:
14) 1 halogen lighting system, protected by a glass pane (for power see table);
15) 1 acquisition system;
16) 1 air-conditioned electric control cabinet – 230-240 V mono, 50-60Hz;
17) High speed SWIR HyperSpectral detection system;
18) Central computing unit & associated software;
19) Touch screen control panel with user-friendly menus;
20) Safety and protection components;
21) Remote access capabilities for remote maintenance;
22) 1 compressed air nozzle ejection unit(s) fixed on the sub-frame of the machine;
23) All these devices are integrated into a welded frame encased in Steel covers comprising 2 side access doors with safety switches.

PERMANENT MAGNET SEPARATOR

M-22

FRAME DESCRIPTION

1) Frame type: Closed frame construction design for ease of maintenance & safety. Frames are to be made of structural steel.
2) Equipment to be equipped with all necessary guards.
3) Structural supports to be included to platform level with four (4) rods or turnbuckles to adjust magnet height off sorting belt surface.

SAFETY GUARDS AND OTHERS

4) All safety guards to be a bolt on type for ease of maintenance (Color: safety yellow)
5) Appropriate rectifiers to be provided to power the electro magnet assembly.
6) Cross belt installation – Magnet to be 12" wider than conveyor effective belt width
7) In-Line installation – Magnet to match effective belt width.
8) Magnet full efficiency at up to 14" suspension height (At magnet belt level)

RUBBER BELT

9) Rubber belt: One (1) piece with no more than one stainless steel mechanical belt splice.
10) Belt to be a minimum of 3-ply 330 ABS rubber with 1/4" top cover and a 1/16" bottom cover with stainless steel cleats
11) Lacing to be FLEXCO Rustaloy or equivalent

DRIVES AND MOTORS

12) All gear reducers and motors to be helical in line shaft mount types, only sized for the applications. Motors to be mounted on gear reducers.
13) All motors to be HIGH efficiency type, 1.15 Service factor, 460/3/60

RFP #

MACHINEX EDDY CURRENT SEPARATOR

ESC-29 (ERIEZ ROTOR WITH MACHINEX CONVEYOR FRAME)

FRAME DESCRIPTION

1) Frame type: Cantilever frame construction design for quick and easy maintenance. All frames to be made of heavy-duty steel tubing with reinforcements.
2) Side openings with bolted door with removable pin hinge for ease of maintenance and cleaning. All exposed moving parts to be equipped with all necessary guards.
3) The eddy current separator will have an effective width of 40".
4) Transfer panels to be provided to the under and over and feed conveyors
5) Vibrating pad to be provided with the equipment to isolate vibration induced by other equipment
6) Adjustable discharge separation hood to be provided with the equipment. Hood to be separate from the equipment and to be a bolt on type.

SAFETY GUARDS AND OTHERS

7) All safety guards to be a bolt on type for ease of maintenance
8) The Eddy Current Separator System shall include all power supplies and control system interface requirements.

DRUM DESCRIPTION

9) Eddy-Current drum to be 16" diameter minimum, eccentric design and have fiberglass shells.

RUBBER BELT

10) Endless Nitril Belt with vulcanized V-Guide

DRIVES AND MOTORS

11) 2 HP minimum belt gear reducers and motors to be clincher hollow shaft mount type, sized for the application.
12) Belt speed up to 400 FPM (VFD)
13) 7.5 HP minimum – variable drive rotor motor, flange mounted, direct drive with stub shaft and clutch

AIR BLOWER

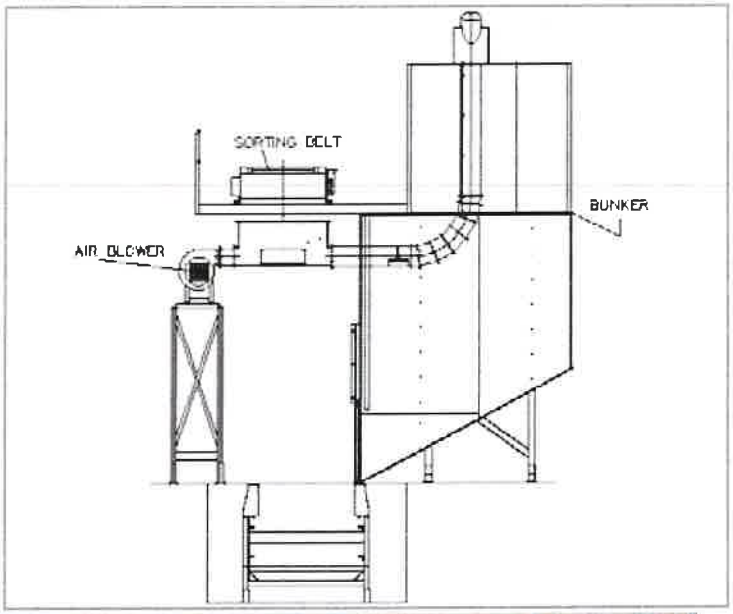
AB-31

DESIGN FEATURES

1) Flexibility to fill high capacity bunkers
2) Adaptability to fit your projects

TECHNICAL SPECIFICATIONS

3) Capacity up to 5 tons /hr
4) 5 hp minimum motor on blower
5) Ducts: 12" diameter
6) Cleanout doors



STEEL PACKAGE

Refer to drawing MR-4224A-0_Rev0 for dimensions

Necessary pre-sort platform modifications:

- → Floor made of 3/16" thick floor plate "Diamond plate".
- → Necessary structure and handrail & kick plates.
- → Necessary chutes to bunkers.
- → Necessary additional bunker walls (if option is taken)

Necessary OCC QC & maintenance platform:

- → Floor made of 3/16" thick floor plate "Diamond plate".
- → Necessary stairway and step to access the platform. (Per drawing)
- → Necessary structure and handrail & kick plates.

Necessary Ballistic & Fiber Sorting/Maintenance platform:

- → Floor made of 3/16" thick floor plate "Diamond plate".
- → Necessary stairway and step to access the platform. (Per drawing)
- → Necessary structure and handrail & kick plates.

Necessary Container & Optical Sorting/Maintenance platform:

- → Floor made of 3/16" thick floor plate "Diamond plate".
- → Necessary sorting chutes.
- → Necessary stairway and step to access the platform. (Per drawing)
- → Necessary structure and handrail & kick plates.
- → Necessary additional bunker walls extensions

7. ELECTRICAL INFORMATION

7.1 Controls and wiring

Infeed wiring: Bringing or removing main power from the electrical room / switchgear to new Machinex control panels: *LCP's Optical Units, Air Compressors, Balers, Compactors, Shredders, or any other control panel is* ***NOT part of Machinex's scope of supply.***

Field wiring: Bringing power and control wiring (armoured cables or "teck cables") from control panels to each piece of equipment is however part of Machinex scope of supply.

Additional Information

IS INCLUDED:

→ Dismantling wiring from equipment being removed to existing control panel
→ New Machinex Control Panel for controlling processing system & bunker management system
→ Integration with existing two ram baler & compactor

ARE NOT INCLUDED:

→ Modifications to two ram baler or compactor control panel

GENERAL NOTES:

→ Machinex will use regular ETHERNET cables for communication between the existing & new control panels or consoles.

PRELIMINARY ELECTRICAL DROPS:

BASE SYSTEM - MRF UPGRADE PACKAGE							
Description	Drop Tension (Volt)	Number of Phases	Frequency (Hz)	Panel protection (Main Breaker rating in Amp)	Total Connected Load (FLA)	kVA	Running KW
Main System Panel	460	3	60	600	324	258.35	145
Control	230	1	60	40	30.43	7	0
OS-25 3D FIBER OPTICAL SORTER	230	1	60	60	43.47	10	0
OS-34 DUAL CHANNEL OPTICAL SORTER	230	1	60	60	43.47	10	0
Bunker Management Controls	460	3	60	125	67	53.24	35

MACHINEX

ELECTRICAL COMPONENTS

For Sales indicative purpose only, do not use this information for engineering

Automation Components							
Prefered Supplier	Make	Model	Communication Protocol	Safety over network	Nema / IP Rating	MMC	Picture of the component
PLC (Programmable Logic Controllers)	Siemens	S7-1500	YES	Yes		1	
HMI (Human-Machine Interface)	SIEMENS	TP-1500	YES	No		0	
						1	
						200	
VFD (Variable Frequency Drive)		FC302	YES	Yes		0	
						200	
Motor Starter	Schneider	TsysU	YES	No		0	
						200	

RFP #

Standard Panel Components						
Prefered Supplier	Make	Model			Nema / IP Rating	Picture of the component
Cabinet	RITTAL					
Air Conditioning	Rittal	Air Conditioning			12	
Main Disconnect Circuit Breaker	Schneider	GV				 
	Square D	Circuit Breaker				
Manual Starter / protector	Schneider	TsysU				
Power supplies	PHOENIX CONTACT					

RFP #

Standard Field Components						
Prefered Supplier	Make	Model			Nema / IP Rating	Picture of the component
Field Wiring	Armoured_Cable					
Push Button & Emergency Stop		ELES-EMERG-COMPLET				
		Push Button Station				
Emergency Stop Pull-Cord	ABB					
Safety Door Switch (Magnetic)	Allen-Bradley					
Local Motor Disconnect						
Photocell	SICK					
Time-Delay Pull-Cord	Schneider					

7.1 CONTROL OPERATIONS PHILOSOPHY

Infrastructure

The Local Control Panel (LCP) shall consist of base standing panels. Ventilation/cooling*/heating will be provided according to the manufacturers' recommendations. The panel assembly will be approved according to local regulation (CSA; 22.2 #13, CSAus; UL508A, CE; IEC61439).

*Cooling calculation are done with ambient temperature of 35 Celsius *degree. If your project requirement differs, please advise your sales representative.*

Safety Controller/Relay

The loop for safety components is done according to the manufacturers' recommendations and EN 954-1/ISO13849-1 standard is applied. It is possible to achieve high safety performance level through programming when having a safety controller, in which case zoning can be done with the connected circuits and proper design to facilitate maintenance**. A risk assessment of the system will be done. Safety Performance Level of each function will be adjusted accordingly.

***can be proposed as an option*

Remote Access

Machinex uses eWON industrial VPN router to have remote access to the control panel and all its ethernet featured devices. The customer has to bring, connect and commission the Internet access into Machinex control cabinet. The eWON is a full IP router featuring "Factory" LAN to "Machine" LAN routing functionalities with an embedded modem for use as a backup access to the "Machine" LAN.

Advantages: *Firewall-friendly, Outbound connections only, Standard ports use: 443 (HTTPS) & 1194 (UDP), Compatible with customer LAN's Proxy*

Customer keeps control: *VPN access can be controlled with external key switch, Connection report*

Motor Control

VFD, Soft/Start and motor starter with communication capabilities*** can be reset externally on minor faults. Thus, no need to open the panel to reset the Overload, prohibiting exposure of high voltage and reducing the downtime. Communication capabilities also came with amperage reading. With the amperage reading, a low and high current limit alarm can be set up. A low amp limit can be used to detect a loose or broken belt or a local disconnect let in OFF position. The high amp limit is usually set to detect an untracked belt or a blockage.

****for components make/model/option, see Electrical Component*

Emergency Stop

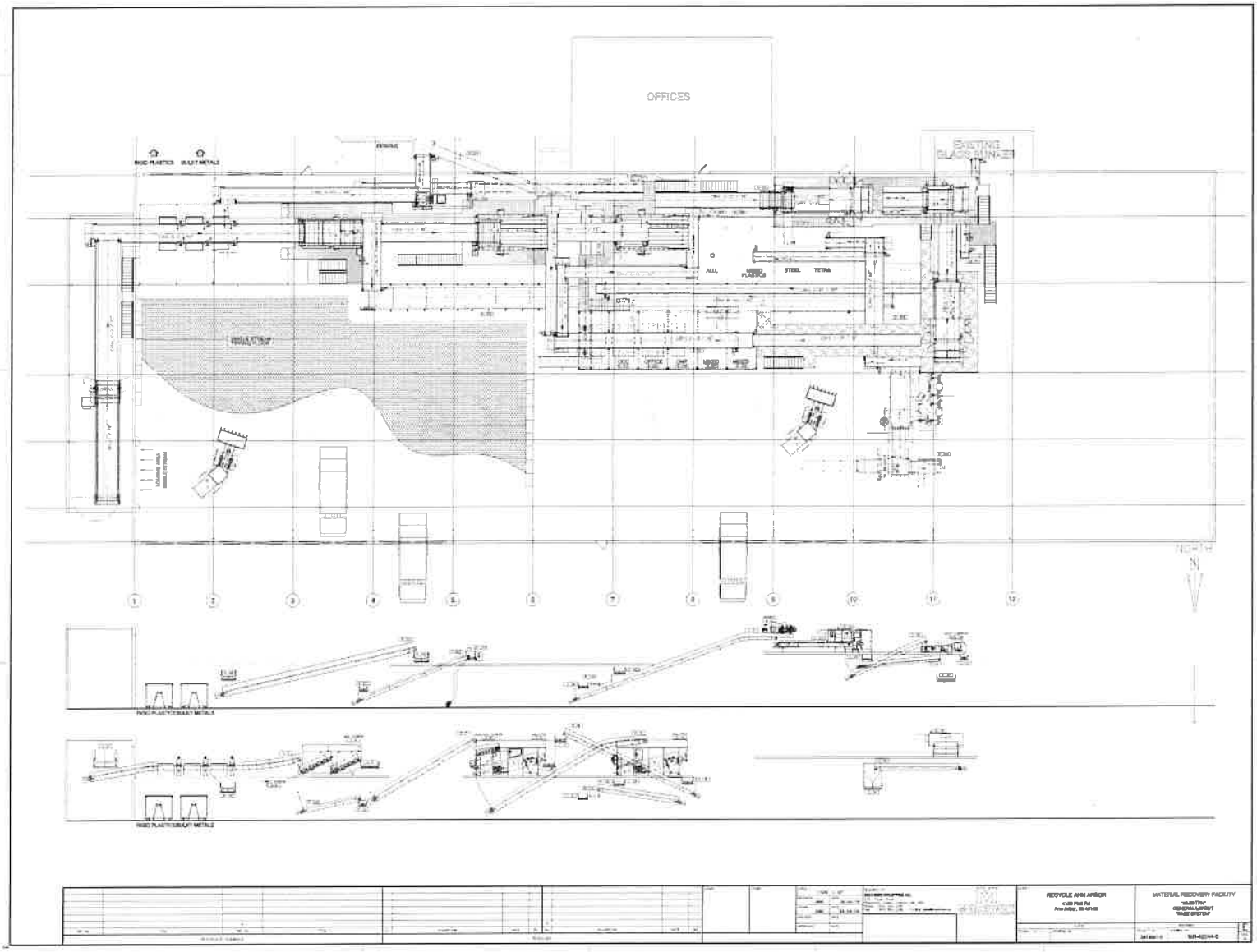
All emergency stop functions are designed according to ISO 13850:2008 4.1.3. Each operator/sorter work station has an accessible emergency device (E-Stop or emergency pull cord) available (ISO 13850:2008 4.4.2). Emergency door switches have been installed on maintenance guards and access is determined by the risk assessment. The positioning of the e-stops is decided by several factors such as occupancy, equipment risk and egress. All frequent maintenance access doors have a safety door switch security detection installed.

The E-Stops must only be activated in case of an emergency. Activation of an E-Stop during operation may lead to uncontrolled conditions in the system as all equipment are stopped disregarding any sequence. Therefore, the reason for the activation of the E-Stop has to be determined and an inspection of the system has to be carried out before restart of the system.

LOCK OUT / TAG OUT

Lock out / Tag out procedure is to be determined by the customer and shall be respected by everybody on site. Everything is in place to facilitate it, local motor isolator and MCC main disconnect switch allow multiple lock.

APPENDIX A - LAYOUT



						RECYCLE ANN ARBOR 4120 Platt Rd Ann Arbor, MI 48105	MATERIAL RECOVERY FACILITY 10x20 TRY GENERAL LAYOUT *PHASE SHEDAP*	

ATTACHMENT A: COST PROPOSAL FORMS

RFP # 19-28 MRF OPERATIONS AND RECYCLABLES PROCESSING
FOR THE CITY OF ANN ARBOR

1: OFFEROR NAME: Recycle Ann Arbor

The undersigned has examined the complete Request for Proposal and its requirements contained in the solicitation and is submitting the following Cost Proposal Forms in full compliance with those requirements.

Signature: Bryan Ukena

Name / Title: Bryan Ukena, CEO

Date: Sept. 17, 2019

2. PROPOSAL OPTIONS

Option 1: Receive recyclable materials at City of Ann Arbor MRF, transload materials to offsite MRF for processing and subsequent marketing to end markets (For Option 1, respond to Item 3 and Item 4 below.)

Option 2: Equip and modify the City of Ann Arbor MRF to receive, process and market all recyclable materials at the City's MRF. Interim processing at an offsite MRF must be provided until such time as the City's MRF is operating (For Option 2, respond to Item 3 and Item 4 for those years that interim processing will be provided, and respond to Item 5 for those years that processing will be conducted at the City's MRF).

Alternative Proposal: If a proposer wishes to submit a propsoal for an alternative arrangement to sort, process and market the City of Ann Arbor's recyclable materials a separate detailed fee proposal for this alternative shall be submitted.

3: MRF INFORMATION - OFFSITE PROCESSING

Facility Name: RRRASOC Materials Recovery Facility operated by Republic Services

Address: 20000 West 8 Mile Road, Southfield, MI 48075

Hours of Operation:

Monday-Friday 6:00AM- 5:30PM Saturday After holidays Sunday _____

Holiday Closures:

New Years Day, Memorial Day, Independence Day, Labor Day, Thanksgiving and Christmas

(specify all holidays MRF is closed)

Proposal Cover Sheet

Recycle Ann Arbor is pleased to provide the City with 3 cost proposals for "RFP #19-28 MRF Operations and Recyclables Processing for the City of Ann Arbor."

Option 1: 5-year proposal for RAA to transload materials to an offsite MRF for processing and subsequent marketing to end markets.

- 4a: Base Service Fee
- 4b: 3rd Party Transload Credit
- 4c: Material Revenue Share Credit
- 4d: Saturday and Sunday Operations

Option 2: 10-year proposal for RAA MRF Redevelopment (Process and Sort on Site.)

- 5a: Capital Costs
- 5b: Base Service Fee
- 5c: 3rd Party Processing Credit
- 5d: Material Revenue Share Credit
- 5e: Saturday and Sunday Operations

Option 3: 10-year alternative proposal to Option 2 with a different proposal for base service fee (5b) and 3rd Party Processing credit (5c). 5a, 5d and 5e remain the same as Option 2 in this alternative proposal.

- 5a: capital cost (same as option 2)
- ALT5b: Alternative Base Service Fee
- ALT5c: Alternative 3rd Party Processing Credit
- 5d: Material Revenue Share credit (same as option 2)
- 5e: Saturday and Sunday Operations (same as option 2)

Examples:

- Base Service Fee and 3rd Party Credit: MRF Redevelopment - Processing and Sorting on Site
    - This compares Option 2 and Option 3 net cost/ton for the City at base service fee and with 6,500, 10,000, and 16,500 additional 3rd party tons.
- Revenue Share Example: MRF Redevelopment - Processing and Sorting on Site
    - This shows the revenue share calculations for various average ACRs as part of the Option 2 and Option 3 proposals.

ATTACHMENT A: COST PROPOSAL FORMS

4: PROPOSED RATE SCHEDULES (Transload Operations)

4.a Base Service Fee (fee paid by City to Offeror on City tons)

Below rate schedule applies to tonnage (residential and commercial recyclables) delivered by the City of Ann Arbor or its designated contracted haulers. Offeror will set rates for any 3rd party tonnage delivered to facility. In no instance will City be liable to pay any service fee on 3rd party tonnage.

Contract Year	Year Ending	City MRF Operation/ Transload ($/ton)	Transport ($/ton)	Offsite MRF Processing ($/ton)	Total ($/ton)
1	6/30/2021	14.14	24.24	109.00	147.38
2	6/30/2022	14.56	24.97	112.27	151.80
3	6/30/2023	15.00	25.72	115.64	156.36
4	6/30/2024	15.45	26.49	119.11	161.05
5	6/30/2025	15.91	27.28	122.68	165.88
6	6/30/2026				
7	6/30/2027				
8	6/30/2028				
9	6/30/2029				
10	6/30/2030				

4.b 3rd Party Transload Credit

A 3rd Party Transload Credit will be deducted from charges due by the City to the Offeror for all 3rd Party tons sourced by Offeror and received at the City's MRF for transload. This credit is to offset depreciation on the City's MRF from 3rd party tons.

Specify 3rd Party Recyclables Credit: $2.00 /ton

Option 1

ATTACHMENT A: COST PROPOSAL FORMS

4.c Material Revenue Share Credit

Material Revenue Share Credit will be deducted from charges due by the City to the Offeror for all City tons. In table below, specify source of price data, the current index price, and the revenue per ton of single-stream materials delivered by City. Pricing is for proposal evaluation; it is recognized that index pricing and revenue per single-stream ton will vary from month to month, and allocation percentages may change based on periodic material audits.

Material	Allocation	Index Price Source (specify publication or actual)	Current Index Price ($/ton)	Revenue ($/ton)
OCC	20.38%	80% of actual	32.00	6.52
Mixed Paper	35.36%	80% of actual	8.00	2.83
News	13.76%	80% of actual	8.00	1.10
Steel Cans	1.61%	80% of actual	52.80	0.85
UBC	0.26%	80% of actual	752.00	1.96
HDPE-Natural	0.52%	80% of actual	528.00	2.75
HDPE-Colored	0.52%	80% of actual	176.00	0.92
PET	2.47%	80% of actual	196.00	4.84
Mix Plastic (1-7)	1.17%	80% of actual	0.00	0.00
Bulk Metal	0.67%	80% of actual	56.00	0.38
Aseptic Cartons	0.03%	80% of actual	8.00	0.00
Glass (3-Mix)	13.34%	80% of actual	-16.28	-2.17
Residuals	9.91%	80% of actual	-24.24	-2.40
ACR	100.00%			17.56

City Revenue Share (on City tonnage):

For ACR <= Offsite MRF Processing Fee (from Table 4.a) = 100%*

For ACR > Offsite MRF Processing Fee (from Table 4.a) = 100%* *(specify %)*

City Revenue Share (on 3rd Party tonnage):

For ACR > Offsite MRF Processing Fee (from Table 4.a) = 0% *(specify %)*

or,

Flat Fee (to be escalated at same rate as Offsite MRF Processing Fee) = 0.00 *(specify $/ton)*

In no event shall Average Commodity Revenue (ACR) be a negative number

* RAA will pass on 100% of revenues received from Offsite MRF (80% of actuals).

ATTACHMENT A: COST PROPOSAL FORMS

4.d Saturday and Sunday Operations

Below rate schedule is daily rate to receive recyclables on Saturdays (7:00 a.m. - 4:30 p.m.) and Sundays (7:00 a.m. - 12:30) as requested by City. Daily rate would be in lieu of per ton City MRF Operation/Transload service fee in Schedule 4.a. Per ton Transport service fee and Offsite MRF Processing service fee would still apply in addition to daily rate. Estimated quantity of City recyclables on weekends is 6-7 tons per weekend.

Contract Year	Year Ending	Daily Rate - Saturdays (Full Day)	Daily Rate - Sundays (Half Day)
1	6/30/2021	265.50	148.50
2	6/30/2022	264.20	152.96
3	6/30/2023	272.12	157.54
4	6/30/2024	280.28	162.27
5	6/30/2025	288.69	167.14
6	6/30/2026		
7	6/30/2027		
8	6/30/2028		
9	6/30/2029		
10	6/30/2030		

* This is price for remaining open to accept material only. The full City MRF operation/ transload, transportation and processing fee costs will still apply to all tons delivered.

Option 2

ATTACHMENT A: COST PROPOSAL FORMS

5: PROPOSED RATE SCHEDULES (Equip and Modify City's MRF)

5.a Capital Costs (to equip and modify for processing at City's MRF) $5,100,000

(specify total $)

5.b Base Service Fee (fee paid by City to Offeror on City tons)

Below rate schedule applies to tonnage (residential and commercial recyclables) delivered by the City of Ann Arbor or its designated contracted haulers. Show pricing beginning the first year that processing would commence at the City's MRF. Offeror will set rates for any 3rd party tonnage delivered to facility. In no instance will City be liable to pay any service fee on 3rd party tonnage.

Contract Year	Year Ending	City MRF: Capital Cost ($/month)	City MRF: O&M Cost ($/ton)
1	6/30/2021	57,744	59.00
2	6/30/2022	57,744	60.77
3	6/30/2023	57,744	62.59
4	6/30/2024	57,744	64.47
5	6/30/2025	57,744	66.41
6	6/30/2026	57,744	68.40
7	6/30/2027	57,744	70.45
8	6/30/2028	57,744	72.56
9	6/30/2029	57,744	74.74
10	6/30/2030	57,744	76.98

5.c 3rd Party Processing Credit

A 3rd Party Processing Credit will be deducted from charges due by the City to the Offeror for all 3rd Party tons sourced by Offeror and received at the City's MRF for processing. This credit is to offset depreciation and incremental capital costs on the City's MRF from 3rd party tons.

Specify 3rd Party Recyclables Credit: $ 12.50 /ton

ATTACHMENT A: COST PROPOSAL FORMS

5.d Material Revenue Share Credit

Material Revenue Share Credit will be deducted from charges due by the City to the Offeror for all City tons. In table below, specify source of price data, the current index price, and the revenue per ton of single-stream materials delivered by City. Pricing is for proposal evaluation; it is recognized that index pricing and revenue per single-stream ton will vary from month to month, and allocation percentages may change based on periodic material audits.

**For Option 2, contractors may utilize City's transfer station for disposal of residuals at a rate of $26.76/ton effective 07/01/2020, transfer/disposal fee to be paid by contractor.

Material	Allocation	Index Price Source (specify publication or actual)	Current Index Price ($/ton)	Revenue ($/ton)
OCC	20.38%	Old corrugated containers (11) Pulp and Paper Weekly (PPW), Midwest/Chicago Region High Side.	30.00	6.11
Mixed Paper	35.36%	Mixed Paper (54) Pulp and Paper Weekly (PPW), Midwest/Chicago Region High Side.	0.00	0.00
News	13.76%	Residential Mixed Paper (56) Pulp and Paper Weekly (PPW), Midwest/Chicago Region High Side	20.00	2.75
Steel Cans	1.61%	actual	130.00	2.09
UBC	0.26%	actual	1,100.00	2.86
HDPE-Natural	0.52%	actual	560.00	0.73
HDPE-Colored	0.52%	actual	140.00	2.91
PET	2.47%	actual	220.00	5.43
Mix Plastic (1-7)	1.17%	actual	50.00	0.59
Bulk Metal	0.67%	actual	42.50	0.28
Aseptic Cartons	0.03%	actual	22.50	0.01
Glass (3-Mix)	13.34%	actual	-12.50	-1.67
Residuals	9.91%	actual	-26.76	-2.65
ACR	100.00%			19.45

City Revenue Share (on City tonnage):

For ACR <= Total Processing Fee (from Table 5.a) = 100% of ACR less $45/ton (with a floor of zero)* ~~100%~~

For ACR > Total Processing Fee (from Table 5.a) = 100% of ACR less $45/ton (with a floor of zero)* _____ *(specify %)*

City Revenue Share (on 3rd Party tonnage):

For ACR > Total Processing Fee (from Table 5.a) = 0.00 *(specify %)*

or,

Flat Fee (to be escalated at same rate as Total Processing Fee) = 0.00 *(specify $/ton)*

In no event shall Average Commodity Revenue (ACR) be a negative number.

*see attached example

ATTACHMENT A: COST PROPOSAL FORMS

5.e Saturday and Sunday Operations

Below rate schedule is daily rate to receive recyclables on Saturdays (7:00 a.m. - 4:30 p.m.) and Sundays (7:00 a.m. - 12:30) as requested by City. Daily rate would be in lieu of per ton O&M Cost service fee from Schedule 5.b. Estimated quantity of City recyclables on weekends is 6-7 tons per weekend.

Contract Year	Year Ending	Daily Rate - Saturdays (Full Day)	Daily Rate - Sundays (Half Day)
1	6/30/2021	265.50	148.50
2	6/30/2022	264.20	152.96
3	6/30/2023	272.12	157.54
4	6/30/2024	280.28	162.27
5	6/30/2025	288.69	167.14
6	6/30/2026	297.35	172.15
7	6/30/2027	306.27	177.32
8	6/30/2028	315.46	182.64
9	6/30/2029	324.93	188.12
10	6/30/2030	334.67	193.76

* This is price for remaining open to accept material only. The full per ton O&M cost will still apply to all tons delivered.

Examples

Base Service Fee and 3rd Party Credit: MRF Processing and Sorting on Site (Options 2 and 3)

	Option 2	Option 3
Capital Cost/year	$692,928	$692,928
Ann Arbor Tons/Year	13,500	13,500
Capital Cots/Ton	$51.33	$51.33
Base Processing Fee	$59.00	$53.00
Total City Cost/Ton Before 3rd Party Credit (Base Service Fee)	**$110.33**	**$104.33**
Host Fee/3rd Party Processing Credit Proposal	$12.50/ton per ton for every 3rd party ton	$20.00/ton per ton for every 3rd party ton over 20,000 tons
Host Fee/Credit with 13,500 Ann Arbor Tons and 6,500 3rd Party Tons	$81,250	$0
Net AA Price/Ton after 3rd Party Processing Credit	**$104.31**	**$104.33**
Host Fee/Credit with 13,500 Ann Arbor Tons and 10,000 3rd Party Tons	$125,000	$70,000
Net AA Price/Ton after 3rd Party Processing Credit	**$101.07**	**$99.14**
Host Fee/Credit with 13,500 Ann Arbor Tons and 16,500 3rd Party Tons	$206,250	$200,000
Net AA Price/Ton after 3rd Party Processing Credit	**$95.05**	**$89.51**

Revenue Share Example - MRF Processing and Sorting on Site (Options 2 and 3)		
Average ACR/Ton	**Rev Share Proposed**	**Resulting Rev. Share/Ton**
$ 20.00	100%-45/ton	$ -
$ 30.00	100%-45/ton	$ -
$ 40.00	100%-45/ton	$ -
$ 50.00	100%-45/ton	$ 5.00
$ 60.00	100%-45/ton	$ 15.00
$ 70.00	100%-45/ton	$ 25.00
$ 80.00	100%-45/ton	$ 35.00
$ 90.00	100%-45/ton	$ 45.00
$ 100.00	100%-45/ton	$ 55.00

As a non-profit organization, Recycle Ann Arbor's mission is to develop and operate innovative reuse, recycling, and zero waste programs that improve the environmental quality of our community.

Oct. 7, 2019

Mr. Cresson Slotten, P.E. (via email)
Manager
City of Ann Arbor
301 Huron St. Ann Arbor, MI 48104

Re: Interview Follow-Up Questions

We appreciate the opportunity to answer your additional questions. From our understanding, these questions are to help city staff clarify our existing proposal. We can not negotiate any terms or conditions outlined in our proposal unless we receive notification that we are selected as the top proposer and are in exclusive contract negotiations.

A second set of responses to questions will be sent tomorrow morning to respond to the second set of questions sent. Please do not hesitate to contact me with any further questions.

Thanks,

Bryan Ukena

CEO

Recycle Ann Arbor

2420 S. Industrial Hwy. Ann Arbor, MI 48104
734-662-6288 • Fax 734-662-7749 • www.recycleannarbor.org

INTERVIEW FOLLOW-UP QUESTIONS REGARDING
RECYCLE ANN ARBOR'S PROPOSAL RESPONDING TO RFP 19-28

1. Proposed Work Plan Section C.1.d (p. 14) identifies Republic's New Boston MRF, Rumpke's Cincinnati MRF, and the SOCRRA MRF as backup facilities to the RRRASOC MRF operated by Republic Services. Please confirm that the City will not incur any additional costs in the event that a backup facility is used by RAA, regardless of which facility.

RESPONSE:

In the case of the transload Proposal, RAA will seek the most cost effective facility that provides the best backup solution if the Republic/RRRASOC MRF is unable to accept material. As RAA does not control the operations at Republic's MRF, there may be an increase in cost related to a RRRASOC MRF shutdown. We have provided a proposal for re-development of the Ann Arbor MRF, which guarantees pricing, even in the event of a temporary shutdown and use of backup facility.

2. Proposed Work Plan Section C.3.a (p. 16) states that all building and equipment modifications will be the responsibility of RAA. What insurance coverages does RAA have to cover design and construction activities (Professional E&O, contractor's insurance, etc.)?

RESPONSE:

RAA does not currently have design and construction activity insurance, however RAA will procure builders risk/remodel insurance prior to the beginning of MRF construction. If RAA is selected to enter into exclusive negotiations, a detailed document will be provided.

3. Proposed Work Plan Section C.3.a (pp. 20-21) lists new and reconditioned equipment.
   a. Under your proposal what existing equipment will be left in-place and not used in the reconfigured sorting line?

RESPONSE:

<u>Equipment Being Removed:</u>

- Drum Feeder
- OCC Screen

- ONP Screen (Rubber Disc)
- Finishing Screen (Rubber Disc)
- Overbelt Magnet
- PET Optical Sorter
- Compressor Unit
- Eddy Current Separator
- Fiber Sorting Conveyors
- Misc. Transfer Conveyors
- Other supporting platforms

Existing Equipment being Refurbished:

- Pre-Sort Enclosure (part of building)
- Trash Compactor
- Fines Screen
- OCC Storage Bunker
- Fiber Bunker Storage
- Two Ram Baler

New Main Equipment:

- Drum Feeder
- OCC Screen
- Primary Ballistic Separator
- Finishing Ballistic Separator
- Overbelt Magnet
- Container Line Optical Sorter
- Compressor Unit
- Eddy Current Separator
- Fiber Sorting Conveyors
- Container Sorting Conveyor
- Misc. Transfer Conveyors
- Additions to glass clean up system
- Baler Reclaim Conveyor (rebuild existing housing for conveyor)
- Complete New Control System (old control systems removed or otherwise disengaged)

Existing Equipment that could possibly be refurbished:

- Overbelt Magnet
- PET Optical Sorter
- Fiber Sort Conveyors
- Misc. Transfer Conveyors
- Compressor Unit
- OCC Screen

b. What specific pieces are proposed to be refurbished?

RESPONSE:

See above

4. Proposed Work Plan Section C.3.b (p. 22) states that the RRRASOC MRF and/or Rumpke-Cincinnati MRF would be used for interim operations during construction, and as backup facilities following construction. Please confirm that the same pricing (Option 1 pricing) would apply if Rumpke's MRF is used rather than RRRASOC.

RESPONSE:

Until the end of the existing contract, the current pricing will remain in effect, currently scheduled to end June 30, 2020. At that time (except for acts of god etc.), Option 1 pricing for O&M costs will remain in place until the MRF is operational.

UNNUMBERED. The position of "tip floor manager" is mentioned under Quality Assurance During and After Processing (p. 25), but this role/position is not mentioned elsewhere in the proposal. Is this a new/different staff person than others already mentioned? If not, which other position will also be serving this role.

RESPONSE:

An equipment operator is designated as tip floor manager for each shift.

5. The description of maintenance activities (p. 26) is not entirely clear. Who will perform the actual

maintenance work on the equipment: If it is RAA, what experience does RAA have maintaining fixed processing equipment? Who is the Maintenance Supervisor?

RESPONSE:

Recycle Ann Arbor will be responsible for conducting preventive and routine maintenance (PM) on fixed equipment on a schedule created by Machinex and reviewed by Rumpke. As part of the commissioning of the equipment, Machinex will provide detailed PM schedules and a list of replacement parts that will be stocked on site.

As part of the Scope of Work under the current procurement proposal with Machinex, a PM inspection will also be conducted 2X per year for the first 2 years. This assures that a 3rd party is inspecting the equipment bi-annually.

Major repair evaluation will be done by Machinex and will be completed by Machinex, a contractor recommended by Machinex or RAA staff depending on the scope of the repair.

The maintenance supervision is done by an RAA staff person (new hire) that will be trained by Machinex and with experience in maintaining fixed equipment.

6. Regarding the Proposed Work Plan Section C.3.e (p. 26), Proposed Staffing:
   c. Provide additional detail on the 20-25 positions per shift and, for sorters, their location on the processing line.

RESPONSE:

The MRF will process approximately 20 tons per hour with a minimum of 17-19 sorters and 2-3 equipment operators. There are also the management and supervisor positions. The position of the sorters on the processing line will be optimized based on the volume of material, composition, weather conditions (wet material) and other factors that affect incoming material.

d. The range of 20-25 positions is fairly broad. Under what circumstances would 20 staff be used versus 25 staff?

RESPONSE:

The number and placement of processors per shift will be dependent on a number of factors including, but not limited to, volume of material to be processed in a given day, residue rates, recyclable material sourcing and operation speed. As noted, many factors will determine the circumstances which impact the number and placement of processors.

7. Regarding the Proposed Work Plan Section C.3.e (p. 28), Key Markets:

a. If RAA is securing a "guaranteed" market for paper at Pratt's new Ohio facility, and with the understanding from the interview that all paper streams (news, mixed and OCC) be sent to Pratt's new facility, why is index pricing for paper materials proposed in line 5.d of the pricing forms?

RESPONSE:

RAA's pricing agreement with Pratt is based on indexed pricing.

b. Will all incoming single-stream materials be sorted into 3 paper grades (news, mixed and OCC) throughout the term of the contract?

RESPONSE:

At this time, we are planning to sort paper into three grades as described. The markets and ISRI specifications for paper grades have changed significantly over the past 5 years and will continue to change in the next ten years so we cannot guarantee that it will continue to be sorted into three grades.

c. As you stated that plastics at the MRF will not be sorted by grade, how will the composition of plastics be determined for monthly invoicing? If by audit, how does RAA propose to segregate plastics during the audit since it won't be doing it as part of the facility processing.

RESPONSE:

The city will receive revenues based on the actual value of the grade that is sold for.

8. Tables 4.c. and 5.d. of your cost proposal for Material Revenue Share Credit uses "actual" for several of the material streams. Can you please provide more detail on how these values are derived on a monthly basis and how/what back-up material would be provided to support the monthly invoices.

RESPONSE:

We use the actual monthly revenue we receive by material type for actual volumes sold. We can provide an excel file with the calculation showing the price we received by commodity to support the invoice. If a commodity changes for any reason, to include without limitation, mill demands, changes in mill specifications, shipping restrictions or the need to move product to maintain Facility compliance, the applicable coding and commodity value shall change accordingly.

9. The capital costs listed on line 5.a of the pricing forms are $5,100,000. At the interview it was stated that this number did not include the $800,000 grant from EGLE. Why is this grant not included in this figure? Will the savings from this grant not be passed on to the City and its taxpayers?

RESPONSE:

The cost of developing the MRF to RAA is 5.9 million -we have passed the savings on to the city by not including an additional $800,000 on line 5a.

10. The EGLE letter of support included in the proposal indicates that there was a recommendation for funding, not a commitment. Did RAA submit an executed Agreement as requested by EGLE? Did the State Administrative Board approve the funding request? How is grant funding disbursed by EGLE, i.e., is the $800,000 provided up-front or does RAA have to submit reimbursement packages to EGLE to receive funding?

RESPONSE:

We have a signed agreement with EGLE and if we are awarded the contract it is a reimbursement grant.

11. The capital cost fee schedule listed on line 5.b of the pricing forms appears to be based on $5,100,000 and a 10-year amortization schedule at 6% annual interest.

a. Will monthly amortization be lower if the State awards an $800,000 grant?

RESPONSE:

No, it will not. The total project cost is $5.9 million. This is our proposal cost to the City.

b. Will monthly amortization be lower if other grants are secured?

RESPONSE:

We do not anticipate other grants

c. Is there a financing commitment in hand for all of the capital costs? Is the RAA proposal contingent on securing financing? What happens if financing is not secured, or not secured based on the financing terms assumed in the proposal? What documentation will be provided to assure financing has been secured?

RESPONSE:

Term sheets with funders have been negotiated and are contingent upon acceptable executed City contract terms and language. We will make detailed financing information available to the City if RAA is selected to enter into exclusive negotiations. We cannot make other information public in this stage of the RFP process. We have unfortunately seen these kinds of RFP questions and responses become public information before a contract is signed which would give our competitors information that we would not otherwise share with them.

12. Why did capital costs increase by 10% from RAA's previous unsolicited proposal?

RESPONSE:

Equipment and other costs increased. The pricing we have now is in effect for 90 days from Sept 17, 2019.

13. Under Option 1, transport costs are comparatively high relative to other proposers -- how many quotes did RAA get for transport to RRRASOC?

RESPONSE:

We cannot speak to other freight lanes and freight costs for other locations. Each freight lane has specific costs associated with it i.e. Detroit traffic slowdowns etc. We received several quotes and this is the lowest price we can offer for the freight lane being proposed.

14. Why is the 3rd party credit under Option 2 ($12.50/ton) below the capital cost per ton of the new sorting line? Assuming historical deliveries by the City of 14,200 tons per year, and the monthly capital cost proposed by RAA ($57,744/month), the per ton capital cost of the new sorting line is $48.80/ton assuming only City tons are delivered. If 3rd party tonnage of 14,200 tons per year was sourced (i.e., facility tonnage was doubled), the recomputed overall capital cost per ton would be $24.40/ton. RAA's proposed 3rd party credit would not cover the proportionate capital cost of the 3rd party tonnage -- why would this arrangement be beneficial to the City, as the City would be subsidizing the cost of 3rd party users?

RESPONSE:

We understand the City's desire for an equitable 3rd party credit fee related to the capital costs. As the cost model for any MRF is complicated, we put together a proposal that provides the best pricing to the City while further lowering costs as more tons come through the facility. This pricing ensures that the MRF is operated in a financially stable and sound way while providing the lowest cost to the City, and passing on additional savings created through economies of scale. If RAA is selected by the City to exclusively negotiate, we can propose alternative pricing structures. Would RAA consider a tiered schedule for the 3rd party credit, based on tonnage actually sourced, such that all users of the facility (City and 3rd parties) pay their proportionate share of the capital?

RESPONSE:

Please see option 3 which uses a tiered approach- a $0/ton 3rd party credit up to 20,000 tons (with a lower processing fee than option 2) and a second tier of $20/ton per ton 3rd party credit for all non-contract tons over 20,000 tons.

15. In line 4.c of the pricing forms for Option 1, do the revenue per ton values reflect the 80% of actual, or do the values in the table have to be multiplied by 0.8?

RESPONSE:

The values shown are 80% of actual. You do not need to multiply by .8.

16. Can RAA provide services under Option 1 for a 10-year contract term?

RESPONSE:

No. Republic cannot offer a guaranteed price for processing for ten years.

17. For Option 2, line 5.d (Material Revenue Share Credit), please explain why the revenue share is 100% of ACR less $45/ton. Is the $45/ton "profit" to RAA? Please confirm whether the capital and O&M costs on line 5.b represent the full costs of recommissioning and operating the City's MRF, and that there are no other capital and O&M costs that RAA hopes to cover through the $45/ton holdback from ACR.

RESPONSE:

The revenue share is 100% of ACR less $45/ton. It is structured in this way to provide the city low side protection, while still sharing revenues on the high side. When you conduct the calculations together with our processing fees, you can see that the net result is a lower cost to the city at all ACR values compared to your current contract or our transload proposal. Again, as the cost model for any MRF is complicated, we put together a proposal that utilized our experience and knowledge of the recycling markets to provide the best pricing to the City while ensuring the long term financial viability of the MRF.

There are two other items that we would like to receive to help in our evaluation of your proposal:

1. An "organizational chart" indicating the roles and responsibilities of the various parties involved in Option 1 and in Option 2, to provide added clarification to the questions at the interview regarding the make-up of your team.

   Response: We will include this item in our response tomorrow (Oct. 8, 2019).

2. A listing of the proposed/potential end markets for the various material streams, including their location.

   Name and location of recycling processor, broker and/or end market, if known.
   Paper (fiber) makes up over two-thirds of Ann Arbor's current material mix, and Pratt has agreed to purchase Ann Arbor's fiber product for the life of the agreement. With Pratt Industries as a partner of

   this project, the design, construction and operation of the facility will be undertaken with this specific

end market for fiber in mind. This integration will ensure that market specifications will be consistently met. The facility's equipment will be designed to extract the purest fiber stream possible to be sent to

Pratt. Based on the last audit, the City's recycling stream is two-thirds fiber.
In addition, three other major processors -- Revital, OmniSource and Rumpke -- have been engaged as markets for the non-paper components of our recycling stream, with the new facility able to meet their specifications for the effective recovery of plastics, metals and glass as well.

Entity	**Location**	**Stream**
Pratt Industries	Wapakoneta, OH	Fiber
Revital	Sarnia, ON	Plastics
OmniSource	Toledo, OH	Metals
Rumpke	Dayton, OH	Glass

RAA staff has over 40 years of experience marketing materials and ⅔ of the material (paper) will be under contract as stated in the RFP

Finally, as a reminder, the following items were requested during the interview and can be included with the responses to these other follow-up items:

The results of the review of RAA's Recordable Incident Rate and DART Rate for 2016, 2017 and 2018

Response: A response to this item will be included in our responses tomorrow (Oct. 8, 2019)

· A copy of RAA's grant application to MDEQ/EGLE for the Recycling Infrastructure Grant

Response: A response to this item will be included in our responses tomorrow (Oct. 8, 2019)

Department of Environmental Quality
Recycling Infrastructure Grant Application Cover Sheet

Applicant Name: Recycle Ann Arbor	
Street Address: 2420 South Industrial Highway	
City/State/Zip/County: Ann Arbor, MI 48104	
Mailing Address: (if different from street address)	
City/State/Zip:	
Contact Person and Title: Bryan Ukena	
Contact Person's E-Mail Address: bryanukena@recycleannarbor.org	
Contact Person's Telephone Number: 734-662-6288	
Grant Amount Requested:	**$ 1,000,000**
Local Match Amount: (must be equal to or greater than 25 percent of the total grant budget)	**$ 3,641,000**
Total Grant Budget:	**$ 4,641,000**
DUNS Number: 176802130	**Senator: Jeff Irwin**
Federal Identification Number 38-2224861	**Representative: Yousef Rabhi**

Applicant Signature: (application must be signed by the person accepting responsibility for the terms and conditions of the grant agreement if awarded)

Print Name: Bryan Ukena
Signature: _____
Date: May 1, 2019

Project Description

1. Clear and realistic project goals and objectives, including a description of how the proposed project's goals will increase recycling in the State of Michigan.

Over the last three years, the recycling landscape has changed dramatically in Ann Arbor, Michigan and across the globe. While China's National Sword policy has strained the current economics of recycling, it has also created an opportunity to improve recycling in the long run by bringing local governments, residents, haulers, processors and end markets together to ensure that materials are locally recycled for their highest and best use.

As a private not-for-profit organization, Recycle Ann Arbor has over 40 years of experience providing education and innovative services in the collection, processing, and marketing of recyclable materials. RAA is seeking MDEQ/EGLE infrastructure grant funding to install new equipment and improve processing capacity at the City of Ann Arbor Materials Recovery Facility. The goal of this project is to gain the following benefits over our current situation, in which single-stream recyclables are transferred from the Ann Arbor MRF and hauled to a MRF in Cincinnati, Ohio:

- Reduced transportation climate emissions related to long-haul trucking of materials to the Ohio MRF measured with the EPA WARM tool;
- Reutilization of an important and valued community asset that will increase recycling capacity in Southeast Michigan;
- The creation of 10-20 new union FTE positions;
- Lower processing fees and transportation expenses (with additional savings as tonnage grows); and
- A long term commitment to capture the highest environmental value for materials, promoting city and state objectives toward zero waste and a circular economy.

This project benefits recycling in the state of Michigan in the following ways. First, there is virtually no additional MRF processing capacity in Southeast Michigan, limiting recycling processing options for Ann Arbor and Eastern Washtenaw County. The absence of processing capacity has forced the long-distance transfer of recyclables since the closure of Ann Arbor's MRF. The continuing transfer of Ann Arbor's recyclables and residuals to Cincinnati, Ohio is a significant financial and environmental burden to the City. By processing materials locally, this proposal reduces climate emissions from transportation. The renovated MRF would significantly improve Southeast Michigan's recycling infrastructure and could offer processing services to recyclers outside of Ann Arbor as well. The regional facility would provide sustainability benefits to the larger region.

Also, the MRF would provide a cornerstone for the new intergovernmental authority in Eastern Washtenaw County. The authority, when launched, will have an excellent processing solution to work with in its early years as the authority is establishing and organizing itself. This would simplify the realization of the authority's mission to enhance recycling performance for the region.

RAA maintains a "triple bottom line" approach to building successful metrics for measuring the success of its enterprises:

- **Economic** – Making a key investment now and planning intentionally for careful stewardship of this resource will allow the MRF to be profitable enough to reinvest in its ongoing economic success. Because the MRF will pay living wages and offer good working conditions, the MRF intends to provide important socio-economic capital. *Key Measures Tracked*: *Operational costs, processing costs, job creation*
- **Community/Social** –Community benefits are anticipated with the addition of education and

outreach programs – RAA will measure participation as well as changes in knowledge, behaviors, and attitudes to ensure there is a significant community benefit to the MRF. *Key Measures Tracked*: *Participation, visitors to center, changes in knowledge (surveys)*

- **Environmental** – The MRF and its upgrade will help RAA and the City achieve highest and best use of materials, greater recycling in Ann Arbor and the region, and reduce negative impacts of the waste stream (e.g., carbon footprint). *Key Measures Tracked*: *Types of materials processed, GHG emissions*

2. Description of current recycling program, including (if applicable):

Collection method (curbside, drop-off, all materials collected in the same container (single stream), separate containers for different materials [dual stream], source separated, etc.).
Recycling is available via single-stream curbside pick-up.

Volume of containers (in gallons or cubic yards).
There are three residential container sizes: 32-gallon, 64-gallon, 96-gallon. (64-gal primarily for residential; 96-gal primarily for businesses that have carts) The City also has recycling dumpsters for businesses.

Collection frequency (weekly, bi-weekly, drop-off, operating hours, etc.).
Year-round weekly curbside pick-up.

List of recyclable or organic materials collected.
Recyclable material accepted:

- Mixed paper
- Boxboard and cardboard
- Plastic bottles and tubs
- Metal cans, trays, foil
- Glass bottles and jars
- Cartons/aseptic packaging

Volume or tonnage of recycling currently collected each year (in tons or cubic yards).
This data is derived from MRF invoicing data from 2018 calendar year:

Month	Residential Tons (RAA pick-ups)	Commercial Tons (City A2 pick-ups)	Total
Jan-18	1019.34	263.94	1283.28
Feb-18	831.06	266.94	1098
Mar-18	942.9	322.52	1265.42
Apr-18	855.95	356.13	1212.08
May-18	923.95	425.69	1349.64
Jun-18	858.49	374.52	1233.01
Jul-18	873.73	306.11	1179.84
Aug-18	995.27	344.06	1339.33
Sep-18	928.18	287.93	1216.11
Oct-18	991.8	327.2	1319

Nov-18	1006.59	301.42	1308.01
Dec-18	1087.51	293.79	1381.3
Totals	11314.77	3870.25	15185.02

Provide explanation of calculation method or data source.
City of Ann Arbor scale house weight report is automatically sent to RAA weekly.

Geographical area served, including population and/or number of households/units served, if known.
The City of Ann Arbor is 28.7 square miles. Population of approximately 121,000 and 47,500 households.
Based on March 2019 data, we serviced:

- 20,468 single-family carts
- 8,293 multi-family carts (plus had 1,669 “multi-tip” / additional multi-family tips per week)
- 2,190 business carts (plus had 944 “multi-tip” / additional business tips per week)

Name and location of recycling processor, broker and/or end market, if known.
Rumpke Recycling (5535 Vine St, Cincinnati, OH 45217)

Description of current education and outreach program.
Recycle Ann Arbor provides educational materials and presentations for Ann Arbor residents and businesses including an A to Z Recycling Guide, On Site Presentations, and Recycling Resources. Recycling Guides are available in English, Chinese, Russian, and Spanish.

Description of existing community support and/or partners in the program

- **City of Ann Arbor** – RAA has worked closely with the City since inception. In this project, RAA is working with the City to institute an agreement wherein Recycle Ann Arbor will remove all inoperable equipment from the City MRF and salvage or discard it; install equipment for processing recyclables; and independently operate a MRF that will process the City of Ann Arbor’s recyclables for a ten-year period, seeking the highest possible environmental value for the materials. RAA is working with the City to obtain an agreement for the following: use of the MRF building free of charge; a ten-year commitment to process all of the City’s recyclables (minimum of 13,500 tons) and additional merchant tons; and the City to pay the residue disposal costs.
- **Ecology Center -** Founded in 1970, the Ecology Center is organized for one purpose -- to develop innovative solutions for healthy people and a healthy planet. Recycle Ann Arbor (RAA) is a recycling subsidiary non-profit organization that was founded in 1977 as a program of the Ecology Center. In 1981, RAA merged with the Ecology Center and received the first contract from the City of Ann Arbor to collect recyclables from the curb. Through the years, this partnership arrangement has helped RAA grow into one of the largest recycling programs in the country.

Description of existing operational funding sources such as user fees, millage, special assessments, or general funds, etc.

- City of Ann Arbor “Refuse Collection” millage at 2.3759 mills
- Sale of recyclables offsets processing fees.

3. **Description of the planned recycling program, including the information listed below, if applicable. If the information will remain the same as described in the previous section, indicate "same as above".**

Description of the infrastructure item(s) to be purchased by the grant and how they will be used to either enhance an existing recycling program or start a new program.
The proposed new MRF building is small by modern standards, but this project turns those space constraints into an advantage. The facility is designed as a single-stream MRF taking in primarily residential recyclables. The facility will sort commodities by general material type to be sent to other private partners for further sorting and processing. New equipment includes:

- 2 deck OCC Screen
- Primary Ballistic Separator & Scalping Screen
- Finishing Ballistic Separator
- Fiber Sort Area/Platform
- 3D Fiber Optical Sorter
- Plastics Recovery Optical Sorter
- Baling System
- Storage Bunkers
- Glass Cleanup System & Storage Area

If the infrastructure item(s) are to be owned by someone other than the applicant, please describe the owner relationship.
The City of Ann Arbor will own the MRF building. RAA is working with the City to obtain an agreement for the following: use of the MRF building free of charge; a ten-year commitment to process all of the City's recyclables (minimum of 13,500 tons) and additional merchant tons; and the City to pay the residue disposal costs.

Collection method (curbside, drop-off, all materials collected in the same container [single stream], separate containers for different materials [dual stream], source separated, etc.)
"same as above".

Volume of containers (in gallons or cubic yards).
"same as above".

Collection frequency (weekly, bi-weekly, drop-off, operating hours, etc.).
"same as above".

List of recyclable or organic materials to be collected.
RAA's intent is to accept all recyclables that the City program generates that comply with quality standards. RAA will use the Institute for Scrap Recycling Industries' Scrap Specifications Circular 2018, "Guidelines for inbound Curbside Recyclables for Materials Recovery Facilities" www.scrap2.org/specs/files/assets/basic-html/page-1.html# as a guidance document for acceptance of materials. The following items will be accepted:

- #11 Old Corrugated Containers (OCC)
- #54 Mixed Paper (MP)
- #56 Sorted Residential Paper & News (SRPN)
- Used Beverage Containers (UBC)
- 3-color mixed container glass (MRF glass)
- PET bottles
- HDPE colored and natural bottles
- HDPE and PP Tubs and Lids
- HDPE bulky rigid Plastic
- LDPE and PP bottles and small rigid plastic
- Tin (steel) cans

- Aseptic containers (i.e. paper milk cartons)
- Up to 10% non-recyclable/non-conforming materials (residue)

Name and location of recycling processor, broker and/or end market, if known.
Paper (fiber) makes up over two-thirds of Ann Arbor's current material mix, and Pratt has agreed to purchase Ann Arbor's fiber product for the life of the agreement. With Pratt Industries as a partner of this project, the design, construction and operation of the facility will be undertaken with this specific end market for fiber in mind. This integration will ensure that market specifications will be consistently met. The facility's equipment will be designed to extract the purest fiber stream possible to be sent to Pratt. Based on the last audit, the City's recycling stream is two-thirds fiber.

In addition, three other major processors -- Revital, OmniSource and Rumpke -- have been secured as markets for the non-paper components of our recycling stream, with the new facility able to meet their specifications for the effective recovery of plastics, metals and glass as well.

Entity	Location	Stream
Pratt Industries	Wapakoneta, OH	Fiber
Revital	Sarnia, ON	Plastics
OmniSource	Toledo, OH	Metals
Rumpke	Cincinnati, OH	Glass

Description of projected increase based on the grant-funded project, as applicable. Provide explanation of calculation method or data source.

Area	Projected Increase	Data Source
Increase in recycling processing capacity volume or tonnage (in tons or cubic yards).	For tonnages outside of Ann Arbor, RAA is targeting an additional 6,500 delivered tons in 2020/21.	scale house weight report
Increase in collection capacity volume or tonnage (in tons or cubic yards).	Additional 6,500 delivered tons in 2020/21.	Measure additional tonnage secured (source separated OCC, residential single-stream, commercial single-stream), and the geographic source of these tons.
Increase in access or participation.	3% increase in recovered tons by 2020/21 in Ann Arbor	Measure additional tonnage secured and the geographic source of these tons.
Increase in population and/or number of households/units served.	Additional 6,500 delivered tons in 2020/21 from beyond City of Ann Arbor	scale house weight report collector reporting
Increase in geographical area to be served.	Additional 7 communities (140,000 persons)	Washtenaw County

Proposed qualitative and quantitative methods to measure and/or track increase, participation, and relevant metrics:

- **Include proposed frequency of monitoring/measurement.**
- **Description of education and outreach associated with the grant project, if applicable. Grant applicants are encouraged to use the Recycle, MI™ logo on education and outreach materials.**

Participation: Quantitative: rates of capacity, participation, and collection will be measured monthly through scale house data and reporting.
Education and outreach: Quantitative: attendance numbers at the center. Qualitative: measure changes in knowledge through the use of pre- and post- attendance online surveys. All education,

outreach, and publicity products will acknowledge that the project was supported in whole or in part by the DEQ/EGLE Recycling Grant Program and use the **Recycle, MI™** logo on materials
Lessons learned: Qualitative: monthly check-ins of progress toward goals and lessons learned.

Description of community support and/or partners for the grant project:
Include any specific letters committing an amount of time, money, activities, or other specified resources for the planned program. This is particularly important for infrastructure purchases to support public space recycling or event recycling.
RAA is pleased to have ongoing partnerships with the Ecology Center and the City of Ann Arbor. We also have the support of Washtenaw County, Pratt Industries, Rumpke Recycling, the University of Michigan Office of Campus Sustainability, and State Representative Rabhi. Letters of Support are included in Appendix A.

Description of how the project will be sustained beyond the grant timeline, including a description of existing or proposed operational funding sources such as user fees, millage, special assessments, or general funds, etc., to be used.
RAA has worked with their team of experts as well as equipment vendors to plan for sustainable operations costs. These will be supported beyond the grant timeline with existing user fees, general funds, millage, and operations funding and planned increased revenues based on the increased capacity projections.

4. **Describe how an evaluation of the project will be done, including how success will be defined and measured. A final report will be required, which must include any relevant and measurable data including previous and new diversion and/or participation rates (if known), lessons learned, and recommendations for future actions.**

RAA will implement regular tracking of key metrics to ensure the successful operation of an impactful and sustainable MRF. In addition to the measures noted above, RAA will monitor and report on the following:

Area	Goal	Measures
Timeline	Adherence to planned timeline	Did RAA plan accurately to ensure timely completion of required tasks? If not, why not?
Budget	overall facility construction comes in at or under budget	Expenditures against budget
Residual	10 to 15% maximum residuals from its sorting operations	Track residuals
Shipping rates	Ship all non-residual materials shipped to anticipated markets	Track shipping
Economy/Jobs	create a minimum of ten new FTE union jobs	Jobs data tracking
GHG	Net positive carbon footprint was achieved (equivalent of almost 800 barrels of oil saved per year)	WARM measurement to understand what greenhouse gas impacts were realized
Education/Outreach	1,000-2,000 visitors each year through 50 pre-scheduled MRF tours 12 monthly public open house events	Track attendance Track events Survey participants for change in knowledge

5. **Describe how evaluation results will be used and distributed, including any products that will result from the planned program.**

RAA will publish evaluation results through our internal and external communication channels. They will be shared during quarterly reporting to MDEQ/EGLE, the City of Ann Arbor, and our local stakeholders via our newsletters, print and social media, and press releases to other media outlets.

Work Plan

1. Identify the tasks and responsible party for procurement of the infrastructure item(s) proposed in the application.

Recycle Ann Arbor is uniquely qualified to develop and manage a cutting-edge recycling facility that will maximize recovery, minimize contamination, and assist Ann Arbor in achieving its goals of sustainability and responsible resource management. RAA provides access to the local labor market, understands the culture and recycling experience of our community, and has decades of operational experience in all phases of recycling and waste services. Our team includes:

Contract Administrator- Bryan Ukena (RAA)
Project Managers

- RAA and Machinex
    - Sean Adams (RAA)
    - Brad Goins (Machinex)
- Consultants for design and procurement
    - Kerry Sanford (RRS)
    - Paul England (Pratt Paper)
    - TBD Rumpke
- Field Engineer- provided by Machinex

Procurement Task	**Deliverables**	**Responsible Party**
City and RAA finalize contract	Signed Contract	RAA/Bryan Ukena
Machinex Scope of Work and Contract Completed	Signed Contract	RAA/Bryan Ukena Machinex
Finalize Conceptual Design (includes MRF Education Center re-design)		RAA/Sean Adams Machinex/Brad Goins RRS/ Kerry Sanford Pratt/Paul England
Finalize Design	Site Design	RAA/Sean Adams Machinex/Brad Goins RRS/ Kerry Sanford Pratt/Paul England
Approve final engineering drawings of equipment- detailed engineers drawings	Engineering Drawings	RAA/Sean Adams Machinex/Brad Goins RRS/ Kerry Sanford Pratt/Paul England
Complete Master Project Management Plan • Baselines, costs and schedules • Performance and monitoring measures to be used • Pre-Construction and Building Plan • Procurement Plan	Master Project Management Plan	RAA/Sean Adams Machinex/Brad Goins
Complete Commissioning Plan • Project control Process • Construction Plan • Project Close Out	Commissioning Plan	RAA/Sean Adams Machinex/Brad Goins
Hold Kick off meeting	Kick off meeting	RAA/Sean Adams Machinex/Brad Goins

2. Identify the tasks and responsible party for deployment and/or utilization of the infrastructure item(s) proposed in the application.

Deployment/Utilization Task	Deliverables	Responsible Party
Equipment fabrication begins		
Begin Dismantling of the existing equipment		RAA/Sean Adams
General cleaning of the area		RAA/Sean Adams
Recycling of used equipment		RAA/Sean Adams
Submit Reimbursement Requests		RAA/Bryan Ukena
Necessary building modifications complete		RAA/Sean Adams Machinex/Brad Goins
Installation of Equipment		RAA/Sean Adams Machinex/Brad Goins
Installation of revised educational displays	Displays completed and installed	RAA/Angela Porta
Operation shake out of system	Acceptance test complete	RAA/Sean Adams Machinex/Brad Goins
Acceptance of Project Closeout Plan	Closeout Plan	RAA/Bryan Ukena RAA/Sean Adams Machinex/Brad Goins
Operational Acceptance		RAA/Bryan Ukena RAA/Sean Adams Machinex/Brad Goins
Completed as-built drawings		RAA/Sean Adams Machinex/Brad Goins

Note: A detailed narrative and technical description of how the Ann Arbor MRF will operate once completed is included in Appendix B.

3. Identify the tasks and party responsible for preparing quarterly progress reports and the final project report.

Reporting Task	Deliverables	Responsible Party
Quarterly Reports to MDEQ/EGLE January 1 – March 31 April 1 – June 30 July 1 – September 30 October 1 – December 31	Report with ongoing measures	RAA/Bryan Weinert
Final Report to MDEQ/EGLE	Final report	RAA/Bryan Weinert
Project Closeout	MDEQ/EGLE determination of project completion	RAA/Bryan Weinert RAA/Bryan Ukena RAA/Sean Adams +MDEQ/EGLE as needed

Timeline

This proposal will see full operations begin at the renovated MRF between late 2020 and early 2021, according to the timeline below. A number of these next steps can happen concurrently.

	Q2 2019	Q3 2019	Q4 2019	Q1 2020	Q2 2020	Q3 2020	Q4 2020	Q1 2021
City and RAA finalize contract								
Machinex Scope of Work and Contract Completed								
Develop MRF Education Center advisory team								
Finalize MRF Education Center re-design								
Finalize Conceptual Design								
Finalize Design								
Payment to Machinex								
Site Prep								
Approve final engineering drawings of equipment- detailed engineers drawings								
Complete Master Project Management Plan • Baselines, costs and schedules • Performance and monitoring measures to be used • Pre-Construction and Building Plan • Procurement Plan								
Complete of Commissioning Plan • Project control Process • Construction Plan • Project Close Out								
Kick off meeting- by Feb. 2020								
2nd payment to Machinex by Feb. 2020								
Equipment fabrication begins – by March 2020								
Begin Dismantling of the existing equipment- April 2020								
General cleaning of the area- July 2020								
Recycling of used equipment- July 2020								
Submit Reimbursement Request – Sept. 30 2020								
3rd payment to Machinex – Sept. 30 2020								
Necessary building modifications complete- Oct. 2020								
Installation of Equipment- Nov/Dec. 2020								
Operation Shake out of system- Jan. 2021								
Acceptance of Project Close out Plan- Jan. 2021								
Operational Acceptance- Jan. 2021								
Completed as-built drawings-Jan. 2021								
Final payment to Machinex- Feb. 2021								
Quarterly Reporting								
Final Report – by Feb. 28, 2021								

Budget

Department of Environmental Quality
Recycling Infrastructure Grant Application Budget Form

Applicant Name: **Recycle Ann Arbor**

Line Item No.	Budget Line Item Description	Quantity	Unit Price	Budget Amount
	Feed System and Pre-Sort Area (replace all)			$4,641,000
	New Drum Feeder (see Appendix C)			
	New pre-sort conveyor (see Appendix C)			
	OCC/Fines Screen			
	Primary Ballistics Separator & Scalping Screen			
	Finishing Ballistics Separator			
	Fiber Sort Area and Platform			
	3D Fiber Optical Sorter			
	Magnet and Eddy Current			
	2nd Optical sorter for Plastics/Carton Sorting			
	Baling System & Storage Bunkers			
	Glass Cleanup System and Storage			
			Total Grant Budget	$4,641,000

Grant Amount Requested	Local Match Amount	Total Grant Budget
$1,000,000	$3,641,000	$4,641,000

The local match amount must equal at least 25 percent of the ***total grant budget***. The local match amount can be greater than 25 percent of the total grant budget. The grant amount requested cannot exceed $1,000,000.00.

For example, if the **total grant budget** is $1,500,000.00, the grant amount requested can only be the maximum amount of $1,000,000.00, and the local match amount would have to be $500,000.00 which is greater than 25 percent of the **total grant budget.**

If the **total grant budget** were $100,000, the local match amount would have to be at least $25,000.00.

Description of the infrastructure item(s) listed in the Application Budget Form. If possible, include a price quote for the item(s) to be purchased.

Please see above. Additional information about equipment is included in Appendix C.

Description of the source(s) of match funding to be used for the planned infrastructure purchase.

Grant matching for equipment will be funded through the 10-year contract with the City of Ann Arbor. Financing for this capital project will come from a variety of sources including the following:

- Rudolph Steiner Foundation - RSF Social Finance
- Closed Loop Fund
- Pratt Industries

Appendix A: Letters of support

53RD DISTRICT
STATE CAPITOL
P.O. BOX 30014
LANSING, MI 48909-7514
PHONE: (517) 373-2577
FAX: (517) 373-5808
E-MAIL: yousefrabhi@house.mi.gov

MICHIGAN HOUSE OF REPRESENTATIVES

YOUSEF RABHI

DEMOCRATIC FLOOR LEADER

April 30, 2019

To Whom It May Concern:

On behalf of my constituents, I am writing in support of Recycle Ann Arbor's application for an MDEQ Infrastructure Grant. RAA's bold proposal would provide materials recovery processing capacity for public and private recycling tonnage generated primarily in the eastern half of Washtenaw County over the next ten or more years. The proposal would make efficient use of the now-dormant City of Ann Arbor materials recovery facility building.

Southeastern Michigan faces a serious shortage of recycling processing capacity, and this updated facility will be capable of handling up to 30,000 tons per year. RAA's private investment will cover the bulk of capital costs for the upgrades to the existing Ann Arbor MRF, with the State of Michigan's support helping to reduce the overall capital costs of the facility by up to $1 million. This capital cost savings to RAA will be passed on to communities and other merchant customers in lower tipping fees, encouraging greater recovery and maximum use of the facility.

Washtenaw County has been working with the communities in eastern Washtenaw County to create a Washtenaw Area Regional Resource Management Authority, currently comprising seven communities. This grant application, if successful, will help to secure local processing capacity for these participating communities and others, and also create a consistent and uniform menu of acceptable recyclables, thereby improving the larger community's understanding of recycling expectations.

Thank you for your careful consideration of RAA's grant proposal.

Sincerely,

Yousef Rabhi
Representative, 53rd District (Ann Arbor)
Democratic Floor Leader

BOARD OF PUBLIC WORKS

705 North Zeeb Road
P.O. Box 8645
Ann Arbor, MI 48107-8645

Phone: (734) 222-6860 Fax: (734) 222-6803

www.washtenaw.org/publicworks

EVAN N. PRATT, P.E.
Public Works Director

THEO EGGERMONT
Public Works Manager

To Whom It May Concern:

On behalf of the Washtenaw County Department of Public Works and the Water Resources Commissioner's Office, I am pleased to support the MDEQ Infrastructure Grant being submitted by Recycle Ann Arbor (RAA). RAA's bold proposal is intended to secure long-term MRF processing capacity for public and private recycling tonnage generated primarily in the eastern half of Washtenaw County over the next ten or more years.

Washtenaw County Public Works supports increasing recycling processing capacity in southeastern Michigan, and this updated facility will be capable of handling up to 30,000 tons per year of this feedstock. RAA's private investment would cover the bulk of capital costs for the upgrades to the existing Ann Arbor MRF, with the State of Michigan's support helping to reduce the overall capital costs of the facility by up to $1 million. This capital cost savings to RAA will be passed on to communities and other merchant customers in lower tipping fees, encouraging greater recovery and maximum use of the facility.

Washtenaw County has been working with the communities in eastern Washtenaw County to create a Washtenaw Regional Resource Management Authority (WRRMA), currently comprised of seven communities with a population of almost 140,000 people. Educational efforts from municipalities, Washtenaw County, RAA, and WRMMA will work towards cleaning the stream arriving at the proposed facility. This grant application, if successful, will secure a location option for processing for these participating communities and others, and also create a consistent and uniform menu of acceptable recyclables, thereby improving the larger community's understanding of recycling expectations. Thank you for considering RAA's grant proposal.

Sincerely,

Evan Pratt
Washtenaw County Water Resources Commissioner
Public Works Director

PRATT RECYCLING, INC.
Midwest Region

Mr. Bryan Ukena
CEO Recycle Ann Arbor
2420 Industrial Highway
Ann Arbor, Michigan 48104

April 30, 2019

Pratt Industries is the largest producer of 100% recycled corrugated packaging in North America. We currently operate four world class papermills in the United States. Our newest mill in Wapakoneta Ohio is scheduled to open later in 2019. Once fully operational we will consume nearly three million tons of recovered paper every year. Clean recycled paper is our raw material and we need more.

This is to confirm our continued support for Recycle Ann Arbor, RAA, as you move forward partnering with the City of Ann Arbor and Washtenaw County to improve current recycling efforts. We are pleased to support RAA's Recycling Infrastructure Grant to the MDEQ/EGLE for $1 million. Once the relevant approvals are secured, RAA and Pratt will work towards a long term agreement to purchase all recycled paper generated at the RAA facility that meets Pratt's quality standards. In addition, Pratt will consider expanded support to include the design and possible funding for infrastructure necessary to process materials to insure that the recovered material meets Pratt's quality expectations.

Pratt continues to work with all recyclers, municipalities, solid waste companies, and industry associations, such as the Recycling Partnership, across the country to increase the collection of paper from both commercial generators and households. The key to our continued success is the collection of clean, non-contaminated paper.

Paul J. England
Vice President Pratt Recycling
pengland@prattindustires.com
404-824-8586

RUMPKE RECYCLING

5535 Vine Street, Cincinnati, OH 45217
Phone (800) 582.3107 Fax (513) 242.4459

April 30, 2019

To Whom It May Concern:

On behalf of Rumpke Waste and Recycling (Rumpke), I am pleased to support the $1 million MDEQ/EGLE Infrastructure Grant being submitted by Recycle Ann Arbor (RAA) to reactivate the Ann Arbor materials recovery facility (MRF). Rumpke has been a partner with RAA since July 2017, providing MRF processing and materials marketing services out of our Cincinnati location for Ann Arbor's materials.

RAA's proposal to reactivate the City facility and secure long-term local processing capacity for eastern Washtenaw County communities, institutions and private haulers in the area is essential, given the lack of recycling processing infrastructure in the region. RAA's need to transfer the City of Ann Arbor's recyclables to Cincinnati (with the additional cost and GhG impacts that such an approach entails) speaks to the need for such capacity locally.

Rumpke has been a proud sponsor of RAA's efforts in the interim, and intends to remain a partner over the long-term, providing operational and marketing support to enhance positive recycling outcomes in Washtenaw County.

Rumpke markets over 400,000 tons of recyclables each year, with 97% of our materials finding markets here in the United States. This regional capacity will greatly enhance RAA's access to those same markets, and will improve the overall economics of this upgraded facility.

Thank you for considering RAA's proposal.

Sincerely,

Rich Simon,
Corporate Marketing Specialist
Rumpke Waste and Recycling

THE UNIVERSITY OF MICHIGAN
Office of Campus Sustainability

Andrew Berki
Director

109 East Madison
Ann Arbor, MI 48104-2943

April 30 2019

To Whom It May Concern:

On behalf of the University of Michigan's Office of Campus Sustainability, Facilities and Operations, I am pleased to support the $1 million MDEQ/EGLE Infrastructure Grant being submitted by Recycle Ann Arbor (RAA) to reactivate the Ann Arbor materials recovery facility (MRF). As you may know, the Ann Arbor MRF has been dormant for almost three years, requiring each UM recycling truck to make a thirty six mile round trip to the Western Washtenaw Recycling Authority.

RAA's proposal to reactivate the City facility and secure long-term processing capacity for eastern Washtenaw County communities, institutions like the University of Michigan and private haulers in the area is essential, given the distance that generators in the county need to travel to find processing capacity here in Southeast Michigan.

While contractual details would obviously need to be addressed between RAA and UM, we are certainly interested in eliminating our long haul to Chelsea, and would look favorably on the opportunity to keep our processing outlet within a few miles of campus.

In addition, an upgraded regional facility for eastern Washtenaw County would also create a consistent and uniform menu of acceptable recyclables between the university and surrounding communities (including glass, which we currently can't recycle via Western Washtenaw), thereby standardizing educational efforts and providing a common understanding of recycling expectations.

Thank you for considering RAA's proposal.

Sincerely,

Tracy Artley, Manager
University of Michigan Office of Campus Sustainability
Facilities and Operations

Appendix B: Detailed Installation and Operations Plan

Following is a detailed narrative and technical description of how the Ann Arbor MRF will operate once completed.

FEED SYSTEM & PRE-SORT AREA

A new drum feeder will be installed and setup with an incline conveyor which will meter the material into the processing system to help the downstream equipment work as efficiently as possible. The new location will allow for additional tipping floor and storage capacity. The material will continue into the existing pre-sort enclosure by new transfer conveyors. When passing through the pre-sort enclosure, sorters will have the ability to pull large rejects, rigid plastics, and bulky metals before the downstream processing equipment. A transfer conveyor will take all the large rejects directly to the trash compactor.

OCC / FINES SCREEN

A 2 deck OCC Screen will be installed. The material after the pre-sort will then be fed onto this screen where a screen to remove larger cardboard from the material stream will be modified. The larger cardboard will ride over the 2 decks and end up on the QC conveyor where a sorter will have the opportunity to remove any non-OCC and return this back to the downstream system. After the sorter clean OCC will be fed into the existing storage bunker until its ready to be baled. The fall through material from the first and second deck of the OCC screen will fall onto the existing fines screen which will be relocated to its new location. This fines screen will target the 2” minus material and separate it from the rest of the fibers & containers which will continue through the processing system. The 2” minus fines material will be conveyed to the new glass clean up system, where the 2”-8” material will be conveyed to the primary ballistic/scalping screen. A newly designed 8” square shaft design which has dramatically reduced wrapping along with recovering more OCC inside the screen.

PRIMARY BALLISTIC SEPARATOR & SCALPING SCREEN

The larger OCC materials has been removed with the OCC screen and 2” minus material with the fines screen so the remaining fibers and some containers will be fed onto the primary ballistic separator with scalping deck. Once the material is fed into the machine, the material will first ride over a scalping deck where the smaller plastics will be scalped and fibers before the 5” overs material will drop on the primary ballistic separator paddles. Once the material is on the ballistic separator, the material will be split into two streams. The larger fiber fraction will float up the screen which will be collected on the fiber transfer belt. The fall through along with the rollback (containers, smaller fibers, rigids of the primary ballistic separator will combine with the scalped material which will be conveyed further downstream to the finishing ballistic separator. The ONP ballistic separator will have larger openings on the paddles to allow smaller fibers and containers to fall through the paddles. This helps will the overall throughput of the machine along with producing a larger fiber stream like a traditional ONP (News) screen without the rubber discs and shafts to maintain.

FINISHING BALLISTIC SEPARATOR

The fall through and rollback of the primary ballistic separator continue downstream where this material will be fed onto a finishing ballistic separator. Once the material is fed onto the new finishing ballistic separator, we will separate the stream into three (3) different fractions. The first fraction is fiber stream, this stream will float up the paddles and will be dropped onto a transfer conveyor which will take the fiber fraction to the fiber sorting platform where it can be QC before baling. The second fraction will be the container fraction stream, this material stream will be conveyed to the start of the container line where it can be further separated into different commodities. The third stream coming from the finishing ballistic will be a 2” minus fraction – trash fraction will fall through 2” holes on the steel paddles, this material will be combined back with the rejects/trash belt from the fiber sorting area which takes the non-recyclable material to the existing trash compactor. Unlike rubber disc screens, the fines stream will stay much more consistent over time because of the steel paddles. This will limit the loss of UBC and flattened PET bottles. This will benefit both the recovery of these materials along with providing a cleaner fines stream.

FIBER SORT AREA/PLATFORM

Now that both the small and large fiber have been separated, each stream will be conveyed to the sorting platform for final inspection. The base system includes reusing the fiber sorting platform and the lower sorting conveyor; however the upper sorting conveyor will be replaced with a new sorting conveyor with the container return device feature which will allow all sorters on the mixed paper conveyor to be able to pull flattened container and send it directly to the container line. This feature will help eliminate the use of bin/carts on the platform. Also included with the base package is a way to send rejects directly to the residue compactor by the way of using the existing rejects transfer conveyor currently installed. Another added feature in the base system is flip gates or reversing conveyor on both the fiber lines, the new system will reuse this setup to give the operator the ability to combine both fiber lines or keep the separate depending on local markets.

MAGNET, 3D FIBER OPTICAL SORTER, & EDDY CURRENT

Now that the fibers and glass have been removed from the processing stream, the rest of the material (mostly containers) will be directed to the container line where the material will first go under a new overbelt magnet to remove any ferrous metals in the container stream. After passing the overbelt magnet, the remaining container will be fed onto a 3D fiber / Tetra optical sorter where fibers will be ejected will be ejected upwards onto a transfer conveyor which will take this material to the next optical sorter. After the optical sorter, the non-eject container will be conveyed further down stream to an eddy current separator for removing any non-ferrous materials in the stream. The separated non-ferrous will pass by a sorting station where a sorter can grade the aluminum before it is blown into its storage bunker.

The non-ejected fraction from the eddy current will drop onto a split belt (C-32) which will convey both the ejected 3D fiber from the first optical sorter on one side of the belt and the non-ejected fraction from the eddy current on the other side.

2nd OPTICAL SORTER FOR PLASTICS RECOVERY & TETRA SEPARATION

After the first optical sorter and the removal of the metals, the two streams will be fed onto a dual channel optical sorter where we will further the recovery of the recyclable material.
For the 3D fiber channel, the optic will separate the Tetra containers from the rest of the 3D fibers. This will help maximize the recovery of the cartons along with requiring less sorters to manual remove the targeted material from the eject stream of the first optical sorter. The non-ejected fraction from the 3D fiber channel will be conveyed to combine with the end of the mixed paper sort conveyor.
As for the remaining container line channel, this optical channel will eject all plastics which are remaining in the system stream. This ejected fraction will be ejected onto a split belt under the optical sorter and be conveyed back to the slope floor bunker until its ready to be baled. The non-ejected fraction will be conveyed back to a conveyor which will run in front of the slope floor bunker which can staffed if they would like to insure all recyclables are removed from the stream.

BALING SYSTEM & STORAGE BUNKERS

Now that the materials have been separated into different grades and storage in the correct bunkers. The base system package includes reusing the fiber bunker system/conveyors allow with the slope floor bunkers for the container storage. This new conveyor will be able to take material from each bunker storage system and convey this to the baler feed conveyor B-302. Lastly, in the baling system there is still access for baling clean loads by loading that material directly on the new baler reclaim conveyor.

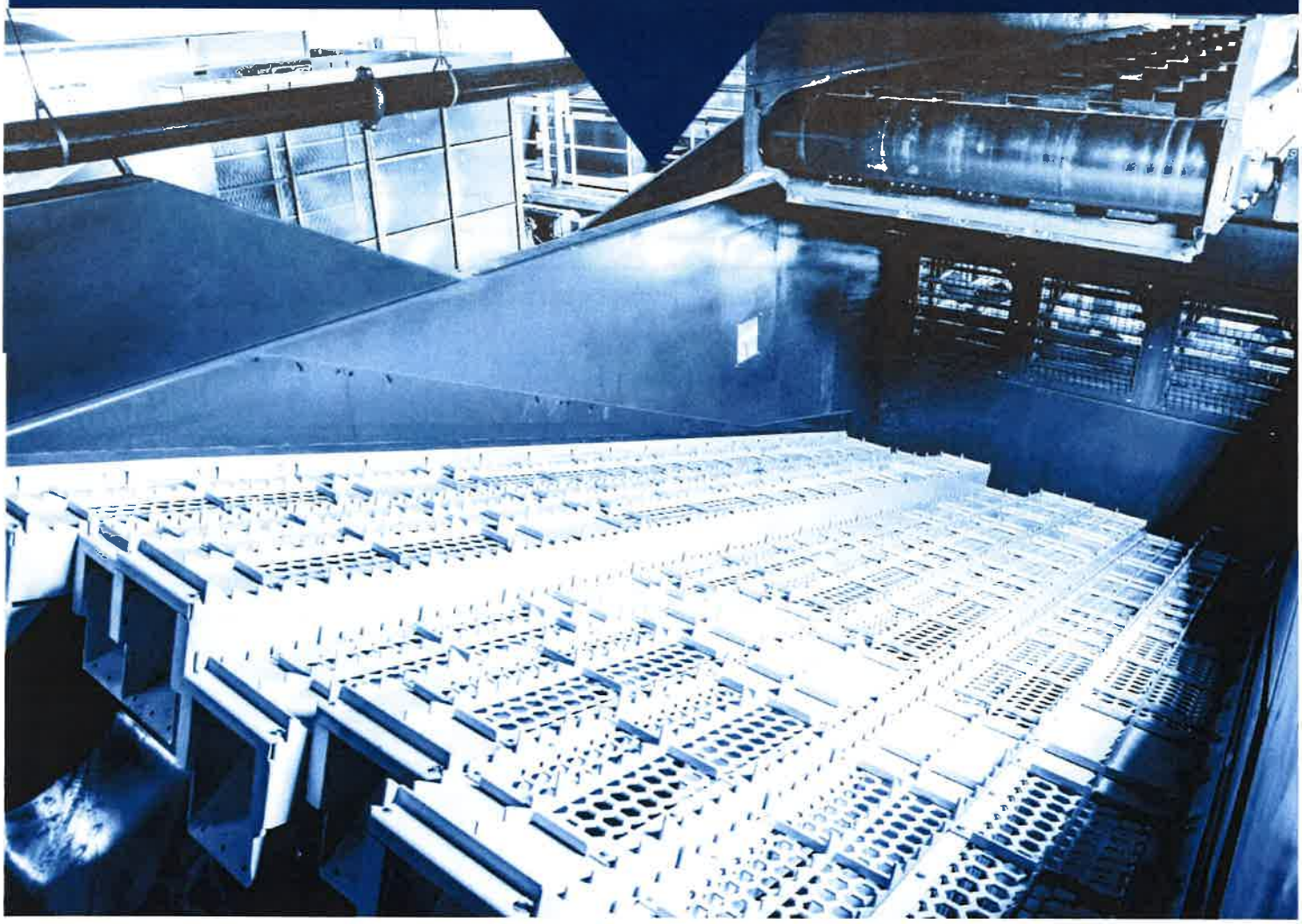
GLASS CLEANUP & STORAGE

Included in the new base system upgrade, the fines material (Blue Arrow) which is taken from the fines screen under the OCC Screen will be conveyed to a new glass clean up system which will remove light weight fraction from the glass fraction and help reduce the amount of shredded fiber in the glass stream. Once the material has passed through the new glass cleanup system, the clean

glass will be conveyed to the existing glass bunker for storage. The light fraction which is pulled off with air will be conveyed to the rejects transfer conveyor which will feed the trash compactor.

Appendix C: Machinex Specs and Budget Details

MACHINEX



Recycle Ann Arbor

Proposal #3419021-0

MRF Upgrade

4/30/2019

Machinex Technologies Inc. / 716 Gallimore Dairy Road, Suite 103, High Point, NC, 27265 USA / 1 877 362-3281
www.machinextechnologies.com

1. INTRODUCTION

4/30/2019

Mr. Bryan Ukena
Recycle Ann Arbor
2420 S. Industrial Highway
Ann Arbor, MI
48104

SUBJECT: **MRF Upgrade**
Our Proposal # 3419021-0

We are pleased to submit our Proposal # 3419021-0 for your project featuring Machinex Technologies Equipment.

In the following, we present the details of our proposal based on drawing MR-4224A-0, Rev 0. The scope of the work is to Design, Fabricate & Ship the equipment listed in the following. All necessary civil work (building modification, site preparation, sprinkler system modification, Seismic and main electrical), performance & execution bond fees, attorney fees are not included and will be the responsibility of Recycle Ann Arbor.

Unloading the equipment, installation, controls, field wiring as well as start-up and training are included in the Machinex Technologies scope of work.

We hope that you will find that this proposal meets with your requirements. If you have any comments or questions, whatsoever, please do not hesitate to contact us.

Sincerely,

MACHINEX TECHNOLOGIES INC.

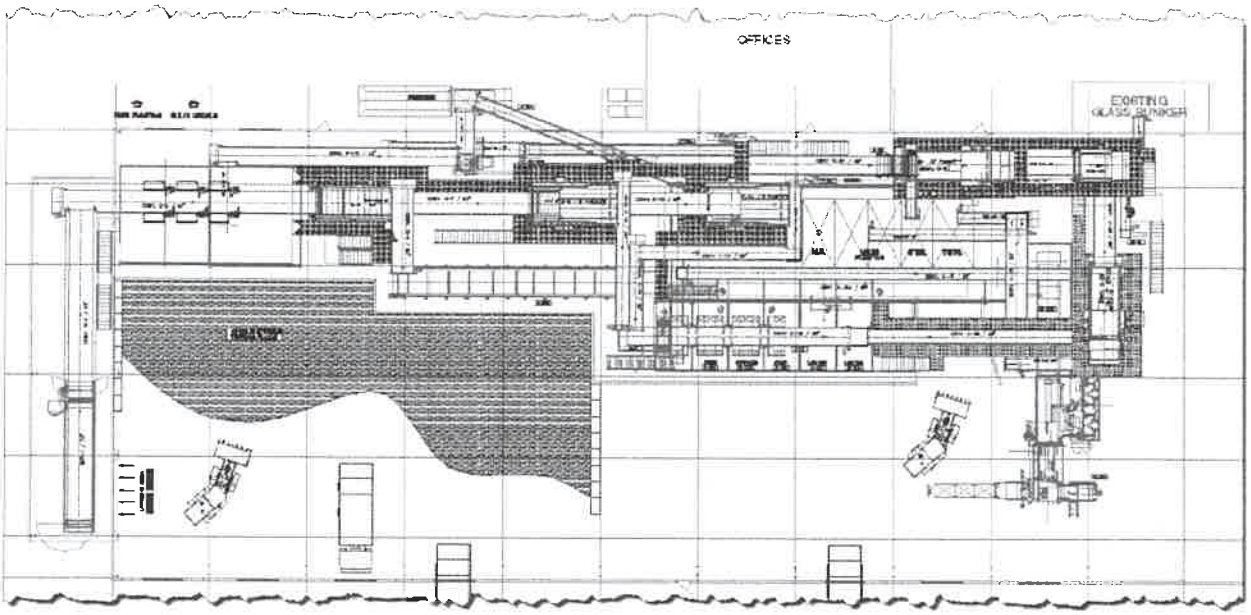
Brad Goins, Project Director

MACHINEX TECHNOLOGIES INC.

Chris Hawn, CEO

3. SYSTEM GUIDE LINES

As requested, Machinex designed a single-stream system to process 18-20 tons per hour within the current building.



FEATURES

- → New **drum feeder** with new incline configuration to help maximize tipping floor area;
- → New **pre-sort conveyor** with six sorting chutes (3 products), existing enclosure will be used as is;
- → New two (2) deck **OCC screen**, 7'-0" wide, 12 shafts with relocated existing **fines screen under;**
- → One (1) new primary **ballistic separator** for large fiber separation;
- → One (1) new finishing **ballistic separator** for final 2D/3D separation;
- → **New mixed paper sort line** with **container return device,** giving each sorter to ability to send flattened container straight to the container line;
- → Using existing (5) fiber bunkers (1 OCC, 1 Other, 2 Mixed Paper, 1 ONP) with automated bunker conveyors for loading to balers;
- → **One (1) new optical sorter** for **3D Fiber & Tetra**;
- → Container sort line equipped with **new magnet** and **eddy-current**;
- → One (1) new dual channel optical sorter for separating 3D Fiber from Tetra on one side and recovering all plastics from the rest of the container stream on the other side;
- → Existing four (4) high capacity **slope floor bunkers** for containers;
- → **New baler reclaim conveyor** for conveying material for bunkers to existing two ram baler;

RFP #

C-32	2ND OPTIC FEED CONVEYOR	SLIDER BED	3	-	60"	30' 7"
C-33	SPEED BELT	SPEED BELT	7.5	-	80"	18' 3"
OS-34	DUAL CHANNEL OPTICAL SORTER (Roller gearbox)		1	-	---	---
C-35	EJECTED TRANSFER CONVEYOR	SLIDER BED	2	-	60"	25' 7"
C-36	EJECTED TRANSFER CONVEYOR	SLIDER BED	3	-	60"	37' 3"
C-37	PLASTICS TRANSFER CONVEYOR	SLIDER BED	2	-	30"	36' 8"
C-38	TETRA TRANSFER CONVEYOR	SLIDER BED	2	-	30"	18' 1"
C-39	MIXED PAPER TRANSFER CONVEYOR	SLIDER BED	2	-	36"	57' 9"
C-40	NON-EJECTED TRANSFER CONVEYOR	SLIDER BED	2	-	36"	18'
C-41	LAST CHANCE RECOVERY CONVEYOR	SLIDER BED	5	X	30"	108' 3"
R-100	PRE-SORT REJECTS TRANSFER	SLIDER BED	2	-	48"	15' 5"
R-101	PRE-SORT REJECTS TRANSFER	SLIDER BED	3	-	48"	65'
R-102	COMPACTOR FEED CONVEYOR	SLIDER BED	2	-	48"	15'
R-103	REJECTS TRANSFER CONVEYOR - EXISTING	SLIDER BED	2	-	36"	42' 10"
R-104	REJECTS COMPACTOR FEED - EXISTING	SLIDER BED	3	-	36"	65'
F-200	FINES TRANSFER CONVEYOR	PICKING IDLER	2	-	60"	17' 11"
F-201	FINES TRANSFER CONVEYOR	PICKING IDLER	2	-	24"	18'
F-202	FINES TRANSFER CONVEYOR	PICKING IDLER	2	-	36"	36'
AS-203	GLASS CLEANUP SYSTEM (Blower Air Knife)	GCS	2	-	---	---
"	GLASS CLEANUP SYSTEM (Blower cyclone)	"	25	-	---	---
"	GLASS CLEANUP SYSTEM (Rotary valve)	"	2	-	---	---
F-204	FINES TRANSFER CONVEYOR - EXISTING	PICKING IDLER	2	-	24"	58'
F-205	FINES TRANSFER CONVEYOR - EXISTING	PICKING IDLER	2	-	24"	18'
F-206	FINES TRANSFER CONVEYOR - EXISTING	PICKING IDLER	2	-	24"	48'
F-207	GLASS TRANSFER CONVEYOR	PICKING IDLER	2	-	24"	40'
F-208	GLASS TRANSFER CONVEYOR	PICKING IDLER	2	-	24"	20'
B-300	OCC BUNKER - EXISTING	CHAIN ROLLER	5	-	60"	60'
B-301	RECLAIM CONVEYOR	CHAIN ROLLER	10	-	60"	99' 6"
B-302	BALER FEED CONVEYOR - EXISTING	CHAIN ROLLER	10	X	60"	60' 6"
B-303	TWO RAM BALER - EXISTING		---	-	---	---
B-304	OCC BUNKER CONVEYOR - EXISTING	CHAIN ROLLER	3	X	72"	19'
B-305	OFFICE BUNKER CONVEYOR - EXISTING	CHAIN ROLLER	3	X	72"	19'
B-306	ONP CONVEYOR - EXISTING	CHAIN ROLLER	3	X	72"	19'
B-307	MIXED PAPER CONVEYOR - EXISTING	CHAIN ROLLER	3	X	72"	19'
B-308	MIXED PAPER CONVEYOR - EXISTING	CHAIN ROLLER	3	X	72"	19'
CP-1	COMPACTOR - EXISTING		---	-	---	---
COMP-1	COMPRESSOR UNIT		---	-	---	---
PLA	PRE-SORT & OCC SCREEN PLATFORM-STEEL PACKAGE		---	-	---	---
PLA-1	BALLISTIC PLATFORM - STEEL PACKAGE		---	-	---	---
PLA-2	OPTICS & EDDY CURRENT PLATFORM-STEEL PACKAGE		---	-	---	---
PLA-3	SLOPE FLOORS - STEEL PACKAGE(Door)		0.75	-	---	---
"	SLOPE FLOORS - STEEL PACKAGE(Door)		0.75	-	---	---
"	SLOPE FLOORS - STEEL PACKAGE(Door)		0.75	-	---	---
"	SLOPE FLOORS - STEEL PACKAGE(Door)		0.75	-	---	---
"	SLOPE FLOORS - STEEL PACKAGE(Door)		0.75	-	---	---
CONTROLS	CONTROLS		---	-	---	---

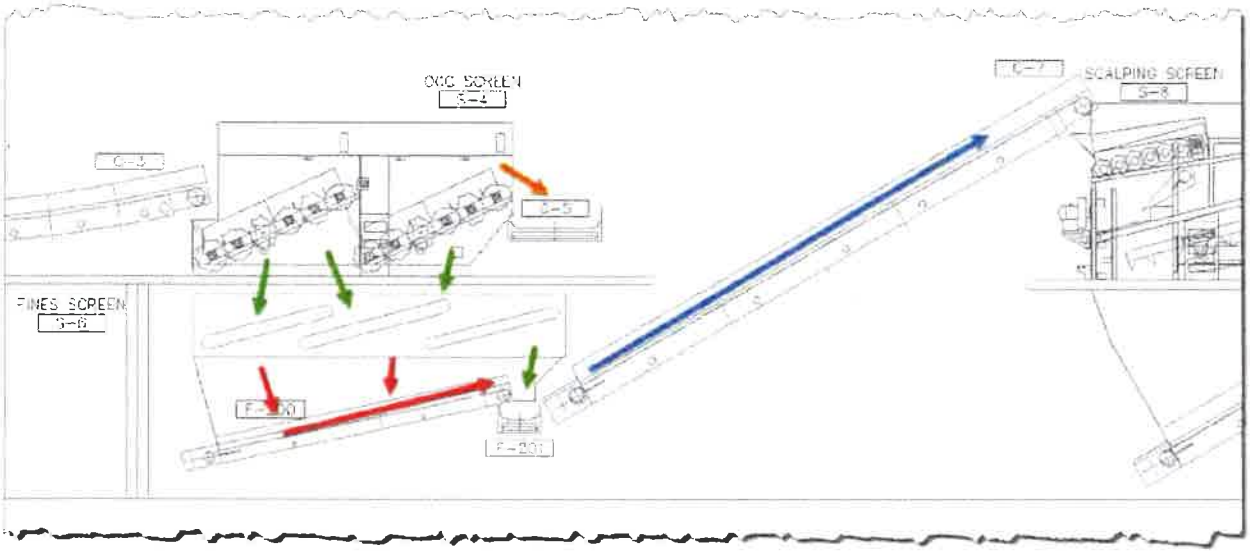
5.1.2 BASE UPGRADE PACKAGE – OCC / FINES SCREEN

As part of the base package we will provide new Machinex two (2) deck OCC Screen. The material after the pre-sort would then be fed onto this screen where we will use this screen to remove larger cardboard from the material stream. The larger cardboard (orange arrow) will ride over the two (2) decks and end up on the QC conveyor where a sorter will have the opportunity to remove any non-OCC and return this back to the downstream system. After the sorter clean OCC will be fed into the existing storage bunker until its ready to be baled.

The fall through material (green arrow) from the first and second deck of the OCC screen will fall onto the existing fines screen which will be relocated to its new location. This fines screen will target the 2" minus material (mostly glass – red arrow) and separate it from the rest of the fibers & containers which will continue through the processing system.

The 2" minus fines material (red arrow) will be conveyed to the new glass clean up system, where the 2"-8" material (blue arrow) will be conveyed to the primary ballistic/scalping screen.

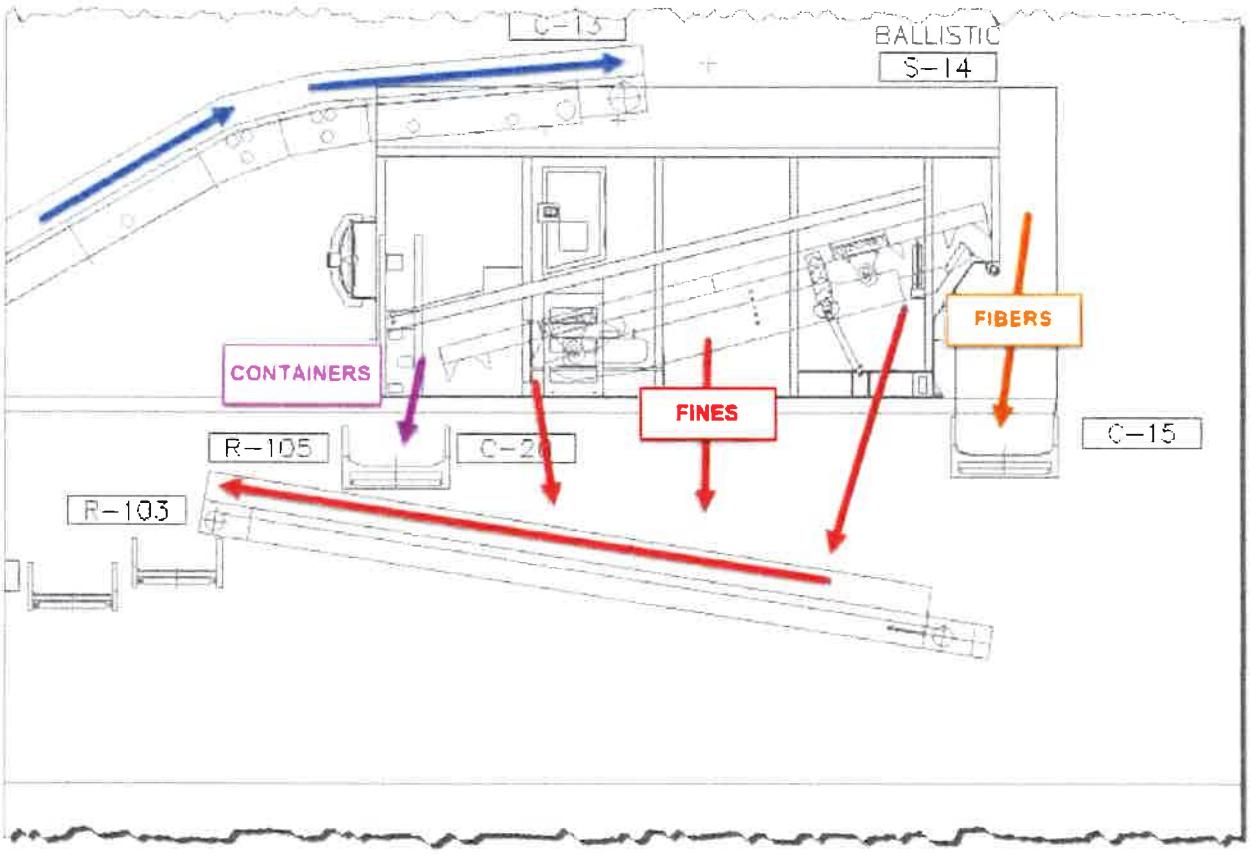
It's important to note, Machinex has included its **newly designed 8" square shaft design which has dramatically reduced wrapping along with recovering more OCC inside the screen**. Customers where we have installed these new shafts have seen the requirement for cleaning these shafts drastically reduced from other types of OCC screens. This again results in increased system up time along with limiting the maintenance on the machine. It is also important to note that our newer generation OCC screen has slightly tighter spacing than older models because we have seen the size of OCC decreasing over time. Our new generation screen conservatively recovers 15% more OCC. Some customers have seen that number as high as 30% more recovery of their OCC.



5.1.4 BASE UPGRADE PACKAGE – FINISHING BALLISTIC SEPARATOR

The fall through and rollback of the primary ballistic separator (blue arrows) continue downstream where this material will be fed onto a finishing ballistic separator. Once the material is fed onto the new finishing ballistic separator, we will separate the stream into three (3) different fractions. The first fraction is fiber (flexible – orange arrow) stream, this stream will float up the paddles and will be dropped onto a transfer conveyor which will take the fiber fraction to the fiber sorting platform where it can be QC before baling. The second fraction will be the container fraction (rigid – purple arrow) stream, this material stream will be conveyed to the start of the container line where it can be further separated into different commodities.

The third stream coming from the finishing ballistic will be a 2" minus fraction – trash fraction (red arrow) will fall through 2" holes on the steel paddles, this material will be combined back with the rejects/trash belt from the fiber sorting area which takes the non-recyclable material to the existing trash compactor. Unlike rubber disc screens, the fines stream will stay much more consistent over time because of the steel paddles. This will limit the loss of UBC and flattened PET bottles. This will benefit both the recovery of these materials along with providing a cleaner fines stream.



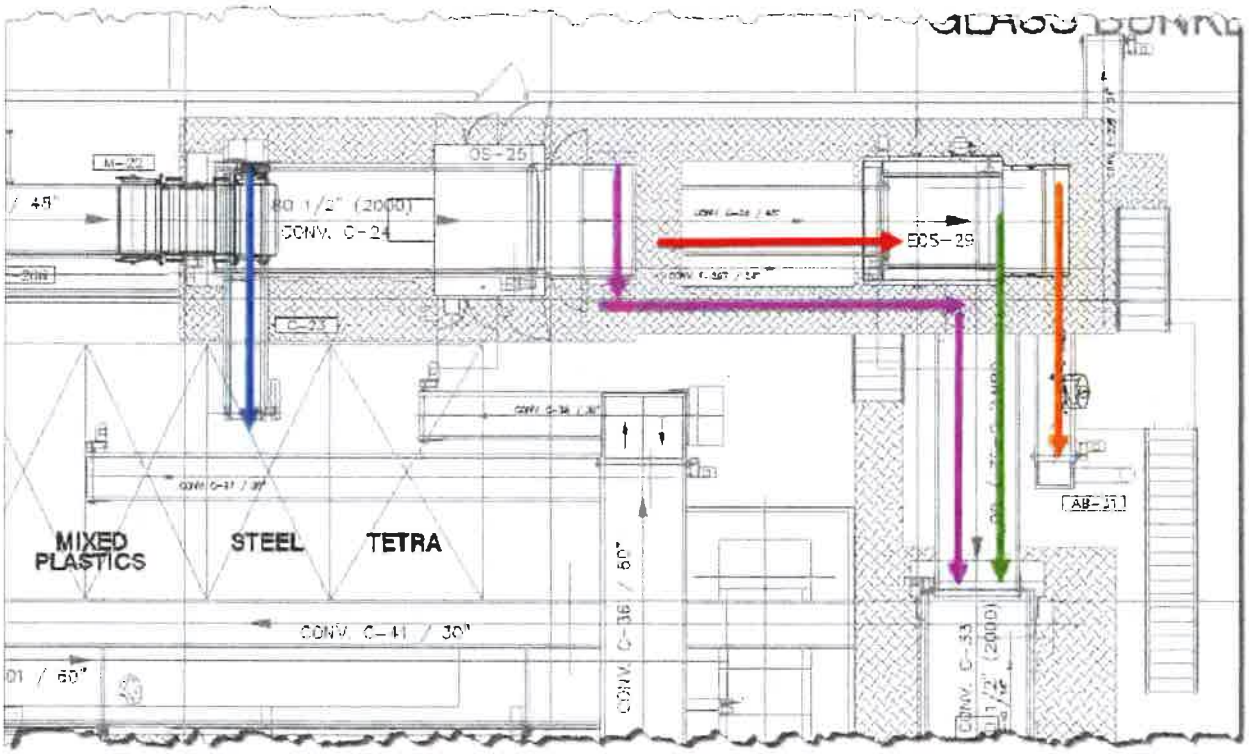
5.1.6 BASE UPGRADE PACKAGE – MAGNET, 3D FIBER OPTICAL SORTER, & EDDY CURRENT

Now that the fibers and glass have been removed from the processing stream, the rest of the material (mostly containers) will be directed to the container line where the material will first go under a new overbelt magnet to remove any ferrous metals (Blue Arrow) in the container stream.

After passing the overbelt magnet, the remaining container will be fed onto a 3D fiber / Tetra optical sorter where fibers will be ejected (fibers – Purple Arrow) will be ejected upwards onto a transfer conveyor which will take this material to the next optical sorter.

After the optical sorter, the non-eject container (Red Arrow) will be conveyed further down stream to an eddy current separator for removing any non-ferrous materials in the stream. The separated non-ferrous (Orange Arrow) will pass by a sorting station where a sorter can grade the aluminum before it is blown into its storage bunker.

The non-ejected fraction from the eddy current (Green Arrow) will drop onto a split belt (C-32) which will convey both the ejected 3D fiber (Purple Arrow) from the first optical sorter on one side of the belt and the non-ejected fraction from the eddy current on the other side.

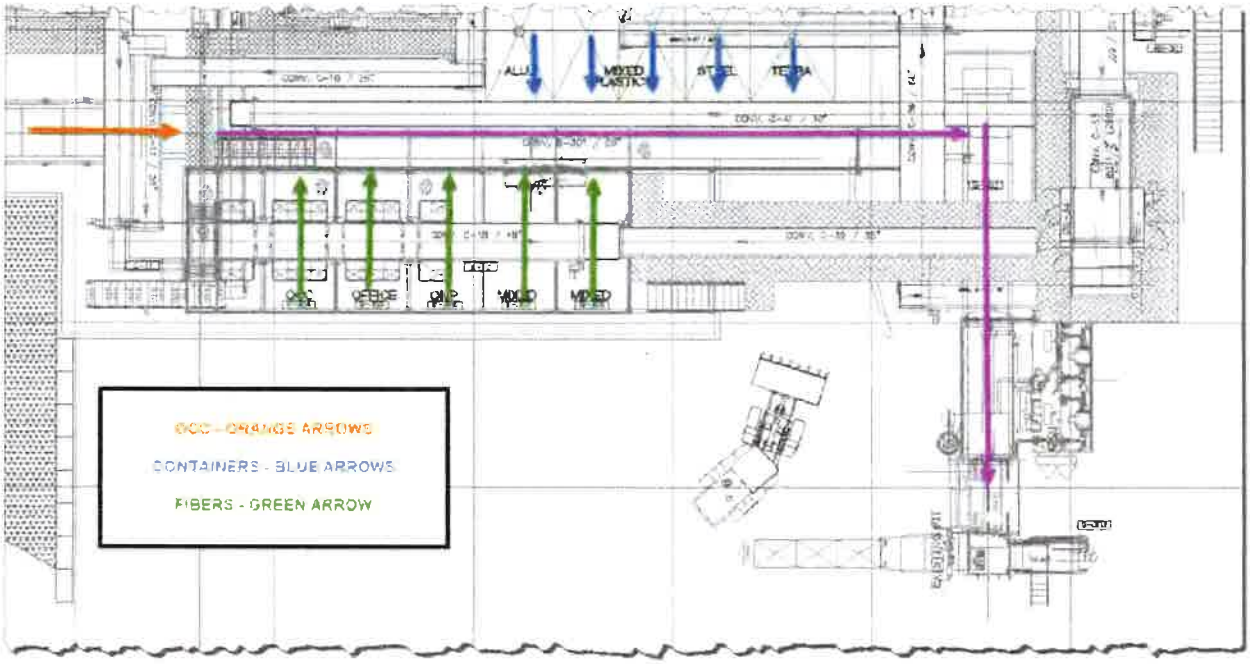


5.1.8 BASE UPGRADE PACKAGE – BALING SYSTEM & STORAGE BUNKERS

Now that the materials have been separated into different grades and storage in the correct bunkers. The base system package includes reusing the fiber bunker system/conveyors allow with the slope floor bunkers for the container storage.

The base package does include a new baler reclaim conveyor B-301, which will replace the existing baler reclaim conveyor which has been modified/shortened. This new conveyor will be able to take material from each bunker storage system and convey this to the baler feed conveyor B-302.

Lastly, in the baling system there is still access for baling clean loads by loading that material directly on the new baler reclaim conveyor.



6. EQUIPMENT DESCRIPTION

Drum Feeder

BFD-1

FRAME DESCRIPTION

1) Frame type: Open frame construction will be designed for ease of maintenance. All frames shall be made of formed steel plate with reinforcements. Frames will be made of minimum 3/16" formed steel plate.
2) Conveyors will be designed in sections no longer than 12'-0" with gusset reinforcements every 72" (3/16" plate minimum)
3) Side skirts: will be 72" high minimum or otherwise specified. All side skirts shall be made of 3/16" steel plate minimum with reinforcing gussets and horizontal bends on top.
4) Conveyor chain tracks shall be made of 30# RAILS, minimum.
5) Connecting plates: will be made of 3/8" thick precision cut steel plate for ease of assembly. All sections shall be bolted together (Minimal welding on site).
6) Impact areas: All frame sections in impact areas shall have reinforcements every 36" minimum, with 2 impact rails.
7) Impact rails: Must be made of formed "C" channels with 3/8" thick UHMW on top to minimize possible friction of steel on steel. UHMW shall be held in place by small brackets with 2 counter sunk bolts at one end. Impact bars shall be slightly lower than the lowest point of the metal belt.
8) Conveyor tail section details: All conveyor tail sections shall have bolt on type side skirts with bolt on type rubber flaps. All above ground tail sections shall be equipped with all necessary guards.

SAFETY GUARDS AND OTHERS

9) All safety guards will be bolt on type for ease of maintenance (Color: safety yellow)
10) Protective guards or "dribble pans" shall be provided (As per OSHA requirements). All shields will be bolted on frame for ease of removal and cleaning.
11) Two (2) chain oilers will be included with each conveyor

BEARINGS, SHAFTS AND SPROCKETS

12) All tail section bearings will have greasable take up type mounted on a bolt on take up mechanisms (tensioning with travel screws) for ease of maintenance. Minimum bearing size will be 2 15/16" or larger depending on conveyor length. Sprockets shall be 18" pitch diameter cast iron (6 teeth).
13) Tail shaft size will be 2 15/16 minimum or larger depending on conveyor length.
14) All head section bearings shall be greasable pillow block type mounted on heavily reinforced flanges. Sprockets will be 18" pitch diameter cast iron (6 teeth).
15) Head shaft size will be 3 7/16" minimum or larger depending on conveyor length.
16) Head and tail shaft sprockets to have hubs with keyways and set screws. One (1) of the tail sprockets will be floating on the shaft.

BELT ASSEMBLY

17) Belt assembly: Will be manufactured in sections no longer than 12'-0".
18) Pan details: Flat pan will be made of minimum 1/4" formed steel plate, bolt on type (Overlapping).
19) Cleats: Will be made of 1/4" flat bar welded on pans every 36" on center.
20) Chain details: 9" pitch minimum. 4" diameter roller, single flange with solid bushing hardened 50/60 RC, 2" high x 3/8" thick sidebars and 4" high x 3/8" thick overlap side wings. Pan attachment will be welded on chain. Chain will have minimum 50,000 pound rating.

Chain-Roller

INFEED & BALER FEED,

FRAME DESCRIPTION

1) Frame type: Open frame design for ease of maintenance. Frames made of minimum 3/16" formed plate;
2) Conveyors are designed in sections no longer than 12'-0" with gusset reinforcements every 72";
3) Side skirts: 36" high minimum or otherwise specified. All side skirts will be made of 3/16" plate;
4) Conveyor chain tracks will be made of flat bar;
5) Connecting plates: Will be made of 3/8" thick. All sections bolted together (Minimal welding on site);
6) Impact rails: Will be made of formed "C" channels;
7) Conveyor tail section details: Tail sections will have bolt on type side skirts with bolt on type rubber flaps. Above ground tail sections will be equipped with all necessary guards;

SAFETY GUARDS AND OTHERS

8) Safety guards will be bolt on type for ease of maintenance;
9) Protective guards up to 7'-0" above slab or platforms will be provided (as per OSHA requirements);
10) Two (2) chain oilers and a mechanical back stop will be included with conveyor when required;

BEARINGS, SHAFTS AND SPROCKETS

11) Tail bearings are greasable take up. Bearing & shaft size of 2 15/16" or larger when required;
12) Sprockets of 18" pitch diameter cast iron or larger when required;
13) Head bearings are greasable pillow block. Bearing & shaft size of 2 15/16" or larger when required;
14) Sprockets of 18" pitch diameter cast iron (6 teeth) or larger when required;

BELT ASSEMBLY

15) Z-shape pan ¼" thick bolted on each side for easy removal.
16) Chain details: 9" Pitch.

DRIVES AND MOTORS

17) Gear reducers and motors should be helical in line shaft mount types, sized for the applications;
18) All motors will be HIGH efficiency type, 1.15 Service factor;

Slider Bed (Type II)

All medium duty transfer and sorting conveyors

FRAME DESCRIPTION

1) Closed formed 3/16" plate frame construction design for sorters safety and ergonomics;
2) Conveyor beds are 3/16" steel plate minimum, slotted type for self-cleaning;
3) Conveyors are designed in sections no longer than 12'-0" with gusset reinforcements every 72";
4) All conveyors will be 3" trough type conveyors;
5) 6" high minimum side skirts, 12 GA. formed steel plate when required;
6) Connecting plates: Will be made of 3/16" thick. All sections bolted together (Minimal welding on site);
7) Tail sections have bolt on type rubber flaps;
8) 2 3/8" diameter return rollers (steel-CEMA "C") with sealed tapered roller bearings and slide in type brackets. Return rollers to be spaced on 12' centers, maximum.

SAFETY GUARDS AND OTHERS

9) Safety guards will be bolt on type for ease of maintenance (Color: yellow);
10) Protective guards up to 7'-0" above slab or platforms will be provided (as per OSHA requirements);

BEARINGS, SHAFTS AND PULLEYS

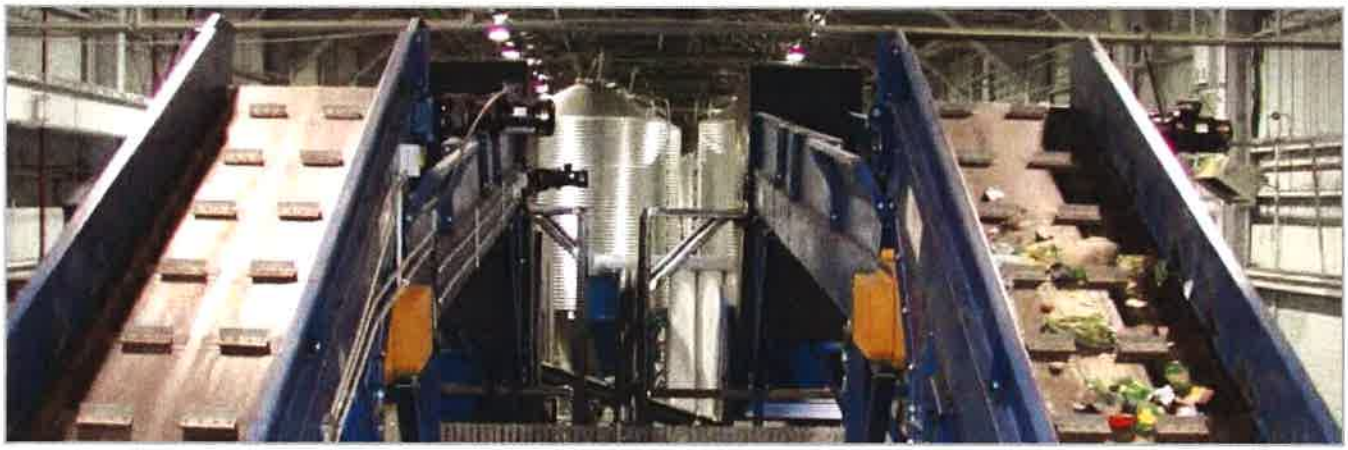
11) Tail bearings greasable. Bearings & shafts size of 1 15/16" or larger when required;
12) Tail shaft pulleys to be 8" diameter minimum, winged, crowned and self-cleaning;
13) Head bearings greasable. Four (4) bolt flange type. Bearings & shafts of 1 15/16" or larger when required;
14) Head shaft pulleys are 8" diameter minimum, crowned with 1/4" lagging;
15) All pulleys to be held on shafts by taper hub bushings with key ways and set screws.

RUBBER BELT

16) Rubber belt: One (1) piece with one mechanical belt splice; (unless otherwise specified)
17) Belt minimum of 2 –ply 220 low friction back with 3/16" top cover.

DRIVES AND MOTORS

18) Gear reducers and motors are helical in line shaft mount type, sized by application;
19) All motors are mounted on reducers and are HIGH efficiency type, 1.15 Service factor;



Container Return Device

Attached to C-18

DESCRIPTION

1) Industrial blower 5HP minimum;
2) Air Knife with UHMW scraper for removing containers;
3) Adjustable discharge;
4) Necessary conveyor frame modifications;

RFP #

OCC SCREEN SEPARATOR (2 FIXED DECKS)

S-4

FRAME DESCRIPTION

1) Closed frame construction design with hinged access doors for ease of maintenance. Frame is made of minimum ¼" formed steel plate with reinforcements;
2) Side skirts are 36" high above shaft, 3/16" steel plate with reinforcing gussets and horizontal bends on top;
3) Driving chains are lubricated by an automatic oiler;
4) Separator will have two (2) fixed decks with six (6) shafts per deck;
5) The first three (3) shafts are equipped with glass breaking metal disks (TBD);
6) The minimum inside width of each screen deck is 7'-0" with a screening area of 6'-9";
7) Refer to layout for screen maintenance access setup;

SAFETY GUARDS AND OTHERS

8) All safety guards to be bolted on type for ease of maintenance (Color: yellow);
9) One (1) chain oiler included;
10) Optional electronic device to control the angle of the machine from the control panel.

BEARINGS AND SHAFTS

11) All bearings to be heavy-duty type for intense services;
12) Bearing minimum size of 2 7/16''.

DRIVES AND MOTORS

13) All gear reducers and motors to be helical in line shaft mount type, sized by application;
14) All motors are mounted to reducer and HIGH efficiency type, 1.15 Service factor,
15) Each deck is powered by one (1) 5 HP gear motor;

OPTICAL SORTING MACHINES – MACHINEX

OS-25, & OS-34

MODEL: HYPERSPECTRAL SWIR

MATERIAL DETECTION PER SHORT WAVE INFRA-RED MEASURING SYSTEM (SWIR)

The original conception of our sensor and lighting system brings key advantages:

1) Very high speed;
2) 28,344,320 measurements per second;
3) Signal quality is far superior then classic technologies with a signal to noise ratio of 70dB and a dark noise of only 14 ADU;
4) The analysis resolution is between 3mm x 8.7mm and 5mm x 8.7mm;
5) The timing precision between the sensing unit and the ejection unit is 500µs;
6) The distance between the detection line and the ejection line is only 15 cm. This allows a better efficiency on the ejection of rolling objects which can move on the belt before the ejection line, a major cause of 'lost' material;

HIGH PERFORMANCE LIGHTING SYSTEM

7) The depth of field of the optical system (lens and lighting system) is 430mm. This means that an object is detected as effectively when flat on the belt as it is at 430mm above the belt;
8) The lighting system uses diffused light, which generates very little heat at the belt level.
9) The lighting system has been optimized to help identify thin and transparent objects as well as thick and opaque objects;
10) No moving parts used in the optical and detection system;

HOODING OF SORTING MACHINE

11) The hooding of the machines is made of tubing and formed steel plate (Heavy duty)
12) All our conveyors are equipped with attachment rings for uplifting as well as a bracket for the handling of the conveyor's motor reducer.

TECHNICAL DESCRIPTION OF THE HYPERSPECTRAL SWIR MACHINE

13) Equipment allowing the detection of objects according to their nature (one or several materials simultaneously), except black or very dark objects, by means of short wave infra-red spectrometry (SWIR), including:
14) 1 halogen lighting system, protected by a glass pane (for power see table);
15) 1 acquisition system;
16) 1 air-conditioned electric control cabinet – 230-240 V mono, 50-60Hz;
17) High speed SWIR HyperSpectral detection system;
18) Central computing unit & associated software;
19) Touch screen control panel with user-friendly menus;
20) Safety and protection components;
21) Remote access capabilities for remote maintenance;
22) 1 compressed air nozzle ejection unit(s) fixed on the sub-frame of the machine;
23) All these devices are integrated into a welded frame encased in Steel covers comprising 2 side access doors with safety switches.

MACHINEX EDDY CURRENT SEPARATOR

ESC-29 (ERIEZ ROTOR WITH MACHINEX CONVEYOR FRAME)

FRAME DESCRIPTION

1) Frame type: Cantilever frame construction design for quick and easy maintenance. All frames to be made of heavy-duty steel tubing with reinforcements.
2) Side openings with bolted door with removable pin hinge for ease of maintenance and cleaning. All exposed moving parts to be equipped with all necessary guards.
3) The eddy current separator will have an effective width of 40".
4) Transfer panels to be provided to the under and over and feed conveyors
5) Vibrating pad to be provided with the equipment to isolate vibration induced by other equipment
6) Adjustable discharge separation hood to be provided with the equipment. Hood to be separate from the equipment and to be a bolt on type.

SAFETY GUARDS AND OTHERS

7) All safety guards to be a bolt on type for ease of maintenance
8) The Eddy Current Separator System shall include all power supplies and control system interface requirements.

DRUM DESCRIPTION

9) Eddy-Current drum to be 16" diameter minimum, eccentric design and have fiberglass shells.

RUBBER BELT

10) Endless Nitril Belt with vulcanized V-Guide

DRIVES AND MOTORS

11) 2 HP minimum belt gear reducers and motors to be clincher hollow shaft mount type, sized for the application.
12) Belt speed up to 400 FPM (VFD)
13) 7.5 HP minimum – variable drive rotor motor, flange mounted, direct drive with stub shaft and clutch

STEEL PACKAGE

Refer to drawing MR-4224A-0_Rev0 for dimensions

Necessary pre-sort platform modifications:

- → Floor made of 3/16" thick floor plate "Diamond plate".
- → Necessary structure and handrail & kick plates.
- → Necessary chutes to bunkers.
- → Necessary additional bunker walls (if option is taken)

Necessary OCC QC & maintenance platform:

- → Floor made of 3/16" thick floor plate "Diamond plate".
- → Necessary stairway and step to access the platform. (Per drawing)
- → Necessary structure and handrail & kick plates.

Necessary Ballistic & Fiber Sorting/Maintenance platform:

- → Floor made of 3/16" thick floor plate "Diamond plate".
- → Necessary stairway and step to access the platform. (Per drawing)
- → Necessary structure and handrail & kick plates.

Necessary Container & Optical Sorting/Maintenance platform:

- → Floor made of 3/16" thick floor plate "Diamond plate".
- → Necessary sorting chutes.
- → Necessary stairway and step to access the platform. (Per drawing)
- → Necessary structure and handrail & kick plates.
- → Necessary additional bunker walls extensions

MACHINEX

ELECTRICAL COMPONENTS

For Sales indicative purpose only, do not use this information for engineering.

Automation Components							
Prefered Supplier	Make	Model	Communication Protocol	Safety over network	Nema / IP Rating	MMC	Picture of the component
PLC (Programmable Logic Controllers)	Siemens	S7-1500	YES	Yes		1	
HMI (Human-Machine Interface)	SIEMENS	TP-1500	YES	No		0	
						1	
						200	
VFD (Variable Frequency Drive)		FC302	YES	Yes		0	
						200	
Motor Starter	Schneider	TsysU	YES	No		0	
						200	

RFP #

Standard Field Components						
Prefered Supplier	**Make**	**Model**			**Nema / IP Rating**	**Picture of the component**
Field Wiring	Armoured_Cable					
Push Button & Emergency Stop		ELES-EMERG-COMPLET				
		Push Button Station				
Emergency Stop Pull-Cord	ABB					
Safety Door Switch (Magnetic)	Allen-Bradley					
Local Motor Disconnect						
Photocell	SICK					
Time-Delay Pull-Cord	Schneider					

8. MECHANICAL INSTALLATION

ARE INCLUDED

- → Dismantling of the existing equipment required based on the new system
- → All necessary labor and travel expenses to install all the listed equipment and associated;
- → All necessary tools for the technicians;
- → Touch-up & Start-up;
- → Fork lift, Crane and Scissors lift.
- → Any misfit will be corrected in a timely fashion by the installation crew always in contact with the project manager.

ARE NOT INCLUDED

- → Any form of dismantling or general cleaning of the area;
- → Disposal of used equipment, if any by buyer;
- → Building work (by buyer);
- → Necessary building modifications (footing if required);
- → Access to facilities for Machinex employee responsibility of customer;
- → Sprinkler work;
- → Filling pits if required
- → Any misfit resulting of building or other work not included will be managed together under a change order agreement and additional charges may apply.

GENERAL NOTES

- → Local EPA permits, i.e. EPA & Planning and/or construction are not included;
- → Price reflects the use of non-union labor for equipment installation (Machinex crew);
- → We reserve the right to modify pricing should the use of union labor be required;
- → Installation cost will also be adjusted if prevailing wage apply;
- → Wiring price & installation is based on a Machinex crew;
- → We reserve the right to change the price if permits or MI licensed electrician is required;
- → Installation price reflects the use of Wedge anchor bolts;
- → All main electrical drops are the responsibility of the customer (Main control panel (460/3/60), Refer to Control & Wiring section for specific required drops on optical units).

ADDITIONAL INFORMATION

- → This proposal is for a turnkey installation and includes all equipment shown on layout drawing referred to within this proposal;
- → All necessary controls & equipment field wiring meeting local codes are included;
- → Machinex will be included as named insured to the Buyer's Builder's Risk Insurance, while on site performing installation, start-up, commissioning and punch-list as specified within our term and conditions.

MISCELLANEOUS

- → Any rolling stocks.
- → Any containers or bins
- → Any security fences
- → Double emergency pull-cords
- → Life lines on conveyors
- → Any fee for the Independent CE marking audit inspection.
- → Any insurance costs.
- → The provision of all necessary safety equipment (fire blanket, eyes washer station, extinguishers, etc.)

WARRANTY

All new equipment is covered with a warranty of **12 months (2 200 hours)** whichever comes first against manufacturer's equipment defaults (material) while in normal use.

The warranty period starts from the date of delivery.

The warranty will lapse if the equipment is repaired or altered by personnel that has not been authorized by Machinex Technologies Inc. to carry out repairs, or if operation and maintenance instructions for the equipment have not been followed and approved.

Machinex Technologies Inc. shall not be responsible for loss or damages of any kind, or from any cause, to any person or property of any person, or for loss of revenue or profit, or for any other special, incidental or consequential damages.

Any parts or equipment which Machinex Technologies Inc. supplies but does not manufacture shall be subject only to the warranties of Machinex's vendors to the extent Machinex Technologies Inc. can enforce such warranties.

*The warranty covers replacement parts only, and excludes labor and consequential damages.

Buyer shall notify Machinex Technologies Inc. in writing within fifteen (15) days of discovery, within the warranty period, of any alleged defect and permit Machinex Technologies Inc. and/or its representatives to make such investigation, examination and tests deemed appropriate. Upon request from Machinex Technologies Inc., the buyer shall return the alleged defective product to Machinex's factory for examination and testing. If the product is defective, and provided that the warranty of quality applies, Machinex Technologies Inc. will repair or replace same at its own cost.

Any action for breach of warranty or other action under this agreement must be commenced within one (1) year after such cause of action arises.

In regards to equipment that is sold as "used" and "as is", if applicable, Machinex declines all warranties, whether expressed or implied, and assumes no responsibility nor authorizes any person to assume any liability on its behalf in regards to the sale of said equipment. Machinex declines any responsibility in regards to security related to the equipment being sold as "used". Since the buyer is responsible for the integration of this equipment, the Buyer has the responsibility to ensure compliance with regulations. The Buyer is entirely responsible for the security of this equipment during operation and in accordance with regulation standards.

THIS LIMITED WARRANTY IS IN LIEU OF ALL OTHER WARRANTIES, EXPRESSED OR IMPLIED, INCLUDING ANY IMPLIED WARRANTY OF MERCHANTIBILITY OR FITNESS.

SPECIAL CLAUSE

Machinex Technologies Inc. reserves the possibility to make any modifications or adjustments to the design or equipment shown on drawing MR-4224A-0, Rev 0. Although the layout will remain the same, any adjustments such as but not limited to: the horsepower of motors, conveyor frame, conveyor type, safety features or others that can improve or standardize the equipment shown on the previously mentioned drawing and specification detail is under Machinex Technologies discretion.

In a circumstance where the buyer purchases in whole or in part an equipment, that is to be utilized in this system, directly from another manufacturer than Machinex Technologies Inc. the buyer is responsible for all costs as well as the management related to the equipment's integration, unless otherwise specified in this proposal. These costs may include, but are not limited to, the items listed in the section "Limited Scope of Supply" such as: delivery charges and unloading, insurances, warranties, performance guarantees, integration, mechanical and electrical installation (wiring and controls), civil work (building, permits, safety and environmental standards), start-up, testing and any other cost related to these including redoing these if necessary.

In the case where Machinex will commit to such equipment's integration, certain information will be required throughout the project and dates will be assigned that such information needs to be provided by the buyer and will remain under the buyer's responsibility and management. If such information is not supplied within the expected timeline, additional costs will be charged to the buyer.

Whether the equipment is being integrated by the buyer or Machinex, any delays and additional costs in the project that are related to that equipment such as but not limited to: communication with supplier to validate equipment integration protocol, communication and control protocol, performances and mechanical / physical equipment integration are solely the responsibility of the buyer. Any additional cost related to these delays will be at the Buyer's expense.

MODIFICATIONS

No waivers or modification of any of the foregoing Terms and Conditions of Sale shall be valid unless made in writing and signed by both parties. The failure of Machinex Technologies Inc. to enforce any right it possesses under the foregoing Terms and Conditions of Sale shall not constitute a waiver thereof or establish a custom. In the event any Terms and Conditions of any submitted by buyer to Machinex Technologies Inc. shall be in conflict with any Terms and conditions herein, the Terms and Conditions set forth herein shall govern and prevail.

Appendix D: Financial Audit

RECYCLE ANN ARBOR

FINANCIAL STATEMENTS

FOR THE YEARS ENDED DECEMBER 31, 2017 AND 2016

RECYCLE ANN ARBOR

Financial Statements

For the years ended December 31, 2017 and 2016

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Bennett & Associates
Certified Public Accountants PLLC
100 Huronview Blvd, Ste 200
Ann Arbor, MI 48103
734-622-7000
www.jimbennettcpa.com

INDEPENDENT AUDITOR'S REPORT

To the Board of Directors of
Recycle Ann Arbor
Ann Arbor, Michigan

We have audited the accompanying financial statements of Recycle Ann Arbor (a nonprofit corporation), which comprise the statements of financial position as of December 31, 2017 and 2016, and the related statements of activities, functional expenses, and cash flows for the years then ended, and the related notes to the financial statements.

Management's Responsibility for the Financial Statements
Management is responsible for the preparation and fair presentation of these financial statements in accordance with accounting principles generally accepted in the United States of America; this includes the design, implementation, and maintenance of internal control relevant to the preparation and fair presentation of financial statements that are free from material misstatement, whether due to fraud or error.

Auditor's Responsibility
Our responsibility is to express an opinion on these financial statements based on our audits. We conducted our audits in accordance with auditing standards generally accepted in the United States of America. Those standards require that we plan and perform the audit to obtain reasonable assurance about whether the financial statements are free from material misstatement.

An audit involves performing procedures to obtain audit evidence about the amounts and disclosures in the financial statements. The procedures selected depend on the auditor's judgment, including the assessment of the risks of material misstatement of the financial statements, whether due to fraud or error. In making those risk assessments, the auditor considers internal control relevant to the entity's preparation and fair presentation of the financial statements in order to design audit procedures that are appropriate in the circumstances, but not for the purpose of expressing an opinion on the effectiveness of the entity's internal control. Accordingly, we express no such opinion. An audit also includes evaluating the appropriateness of accounting policies used and the reasonableness of significant accounting estimates made by management, as well as evaluating the overall presentation of the financial statements.

We believe that the audit evidence we have obtained is sufficient and appropriate to provide a basis for our audit opinion.

Opinion
In our opinion, the financial statements referred to above present fairly, in all material respects, the financial position of Recycle Ann Arbor as of December 31, 2017 and 2016, and the changes in its net assets and its cash flows for the years then ended in accordance with accounting principles generally accepted in the United States of America.

Respectfully,

Bennett & Associates CPAs PLLC

Ann Arbor, Michigan
June 19, 2018

RECYCLE ANN ARBOR
STATEMENTS OF FINANCIAL POSITION
December 31,

	2017	2016
ASSETS		
Cash and cash equivalents	$ 67,648	$ 185,525
Trade accounts receivable, net of allowance, including related party receivables of $0 and $7,136 in 2017 and 2016, respectively	467,326	256,878
ReUse Center inventory	48,449	57,119
Prepaid expenses	38,274	9,020
Security deposit	22,000	22,000
Property and equipment, net of accumulated depreciation	998,767	860,889
TOTAL ASSETS	$ 1,642,464	$ 1,391,431
LIABILITIES		
Accounts payable, including related party payables of $10,548 and $8,985 in 2017 and 2016, respectively	$ 376,946	$ 90,681
Accrued liabilities	109,210	219,138
Line of credit	135	-
Notes payable	362,223	447,730
TOTAL LIABILITIES	848,514	757,549
NET ASSETS		
Unrestricted	793,950	633,882
TOTAL NET ASSETS	793,950	633,882
TOTAL LIABILITIES AND NET ASSETS	$ 1,642,464	$ 1,391,431

RECYCLE ANN ARBOR
STATEMENTS OF ACTIVITIES
For the years ended December 31,

	2017	2016
UNRESTRICTED NET ASSETS		
REVENUE AND SUPPORT		
Curbside collection contracts	$ 1,842,569	$ 1,782,681
Drop-off facilities revenue, including contracts, fees, and sales of collected materials at the Drop Off Station and Recovery Yard	1,471,123	1,365,884
ReUse Center sales	897,237	972,100
Roll-off container fees	769,788	778,050
City of Ann Arbor Materials Recovery Facility contract revenue	637,336	-
Trucking services	11,042	19,221
Grants	28,998	11,484
Contributions	15,100	15,000
Value of material donated to ReUse Center	581,387	685,431
Interest income	252	204
Other revenue	64,980	42,809
TOTAL REVENUE AND SUPPORT	6,319,812	5,672,864
EXPENSES		
Program services	5,503,555	4,881,238
Supporting services		
Management and general	656,189	610,483
TOTAL EXPENSES	6,159,744	5,491,721
CHANGE IN UNRESTRICTED NET ASSETS BEFORE GAINS AND LOSSES	160,068	181,143
GAINS AND LOSSES		
Loss on disposal of fixed assets	-	(35,488)
TOTAL GAINS AND LOSSES	-	(35,488)
CHANGE IN UNRESTRICTED NET ASSETS	160,068	145,655
NET ASSETS AT BEGINNING OF YEAR	633,882	488,227
NET ASSETS AT END OF YEAR	$ 793,950	$ 633,882

RECYCLE ANN ARBOR
STATEMENT OF FUNCTIONAL EXPENSES
For the year ended December 31, 2017, with comparable totals for 2016

	Program Services	Supporting Services Management and General	Total 2017	Total 2016
Employee Compensation				
Wages	$ 1,743,914	$ 245,508	$ 1,989,422	$ 1,870,762
Benefits	424,598	23,668	448,266	365,369
Payroll taxes	142,720	17,640	160,360	148,079
	2,311,232	286,816	2,598,048	2,384,210
Other Expenses				
Accounting fees	45,522	143,738	189,260	181,637
Legal fees	1,470	1,470	2,940	3,504
Contract trucking	29,794	-	29,794	149,244
Fees for services - other	69,954	16,682	86,636	55,916
Fees for services - MRF	532,944	-	532,944	-
Advertising	12,338	-	12,338	22,304
Office expenses	190,940	61,368	252,308	234,998
Information technology	6,382	9,547	15,929	387
Occupancy	372,366	59,471	431,837	441,128
Disposal fees	305,213	-	305,213	297,722
Travel	306	34	340	1,863
Urban Wood, mulch and compost purchases	271,140	-	271,140	268,743
Equipment operating costs	362,327	25,356	387,683	315,492
Conferences and meetings	1,422	3,504	4,926	3,983
Interest	19,773	-	19,773	27,958
Depreciation and amortization	171,853	9,045	180,898	187,115
Insurance	147,617	21,762	169,379	160,751
Value of materials donated to ReUse Center	581,387	-	581,387	685,431
Taxes - sales	50,769	-	50,769	55,534
All other	18,806	17,396	36,202	13,801
Total expenses	$ 5,503,555	$ 656,189	$ 6,159,744	$ 5,491,721

RECYCLE ANN ARBOR
STATEMENT OF FUNCTIONAL EXPENSES
For the year ended December 31, 2016

	Program Services	Supporting Services Management and General	Total 2016
Employee Compensation			
Wages	$ 1,625,138	$ 245,624	$ 1,870,762
Benefits	346,200	19,169	365,369
Payroll taxes	131,790	16,289	148,079
	2,103,128	281,082	2,384,210
Other Expenses			
Accounting fees	44,722	136,915	181,637
Legal fees	1,752	1,752	3,504
Contract trucking	149,244	-	149,244
Fees for services - other	42,533	13,383	55,916
Advertising	19,076	3,228	22,304
Office expenses	181,042	53,956	234,998
Information technology	1,300	(913)	387
Occupancy	384,358	56,770	441,128
Disposal fees	297,722	-	297,722
Travel	1,677	186	1,863
Urban Wood, mulch and compost purchases	268,743	-	268,743
Equipment operating costs	293,949	21,543	315,492
Conferences and meetings	1,060	2,923	3,983
Interest	27,958	-	27,958
Depreciation and amortization	177,759	9,356	187,115
Insurance	139,798	20,953	160,751
Value of materials donated to ReUse Center	685,431	-	685,431
Taxes - sales	55,534	-	55,534
All other	4,452	9,349	13,801
Total expenses	$ 4,881,238	$ 610,483	$ 5,491,721

RECYCLE ANN ARBOR
STATEMENTS OF CASH FLOWS
For the years ended December 31,

	2017	2016
CASH FLOWS FROM OPERATING ACTIVITIES		
Change in net assets	$ 160,068	$ 145,655
Adjustments to reconcile change in net assets to net cash from operating activities:		
Depreciation and amortization	180,898	187,115
(Gain)/loss on disposal of fixed assets	-	35,488
(Increase)/decrease in inventory of donated goods	8,670	394
Change in:		
Trade accounts receivable, including related party receivables	(210,448)	(43,296)
Prepaid expenses	(29,254)	73
Accounts payable, including related party payables	286,265	23,495
Accrued liabilities	(109,928)	52,052
Net cash from operating activities	286,271	400,976
CASH FLOWS FROM INVESTING ACTIVITIES		
Purchase of equipment	(318,776)	(243,768)
Proceeds from sale of fixed assets	-	42,000
Net cash used for investing activities	(318,776)	(201,768)
CASH FLOWS FROM FINANCING ACTIVITIES		
Net increase/(decrease) in line of credit	135	(99,598)
Loan proceeds	114,444	175,871
Principal payments on long term liabilities	(199,951)	(199,598)
Net cash used for financing activities	(85,372)	(123,325)
NET CHANGE IN CASH AND CASH EQUIVALENTS	(117,877)	75,883
BEGINNING CASH AND CASH EQUIVALENTS	185,525	109,642
ENDING CASH AND CASH EQUIVALENTS	$ 67,648	$ 185,525
SUPPLEMENTAL DISCLOSURE OF CASH FLOW INFORMATION		
Cash paid for interest	$ 19,151	$ 27,958
Notes payable issued for purchase of equipment and intangible assets	$ 114,444	$ 175,871

NOTE A - NATURE OF ORGANIZATION AND SIGNIFICANT ACCOUNTING POLICIES

Mission Statement

Recycle Ann Arbor (RAA)'s mission is to develop and operate innovative reuse, recycling, and zero-waste programs that improve the environmental quality of our community.

Basis of Accounting

The financial statements of RAA have been prepared on the accrual basis of accounting and, accordingly, reflect all significant receivables, payables, and other liabilities.

Basis of Presentation

The financial statement presentation follows the accounting standards for not-for-profit organizations. Under these standards, an organization is required to report information regarding its financial position and activities according to three classes of net assets depending on the existence and/or nature of any donor restrictions as follows: unrestricted net assets, temporarily restricted net assets, and permanently restricted net assets. RAA does not have any restricted net assets.

Trade Accounts Receivable

Accounts receivable are stated at the amount management expects to collect from outstanding balances. Management provides for probable uncollectible amounts through a charge to expense and a credit to a valuation allowance based on its assessment of the current status of individual accounts. Balances that are still outstanding after management has used reasonable collection efforts are written off through a charge to the valuation allowance and a credit to trade accounts receivable. Management has established an allowance for uncollectible trade accounts receivable based on evaluation of collectability of outstanding accounts receivable.

Cash Equivalents

RAA considers all short-term investments with an original maturity of three months or less to be cash equivalents.

Property and Equipment

Property and equipment are recorded at cost when purchased and at estimated fair market value when donated. Depreciation on property and equipment is provided on a straight-line basis over the estimated useful lives of the assets, ranging from 3 to 15 years. RAA has a set capitalization policy where new property and equipment over $3,000 is capitalized and those under the limit are expensed. Repair costs that materially add to the value of, substantially prolong the useful life of, or adapt the asset to a new or different use are also capitalized.

Donated Material

RAA's ReUse Center receives donations of materials that are then offered for sale. The donated material is recorded at fair value. The fair value of donated materials is considered to be equal to the value received when the materials are sold.

ReUse Center inventory consists of donated materials available for sale, and is estimated to be equal to one month's sales.

Income Tax Status

RAA is exempt from federal income taxes under provisions of the Internal Revenue Code Section 501(c)(3). Donations to RAA qualify for the charitable contribution deduction. The Internal Revenue Service does not classify RAA as a private foundation.

NOTE A – NATURE OF ORGANIZATION AND SIGNIFICANT ACCOUNTING POLICIES, *continued*

Presentation of Sales Tax

The State of Michigan imposes a sales tax on all of RAA's sales to non-exempt customers. RAA collects that sales tax and remits the entire amount to the state. RAA's accounting policy is to include the tax collected and remitted to the state in revenue and cost of sales. The amount of sales tax expense was $50,769 and $55,534 in 2017 and 2016, respectively.

Use of Estimates

Management uses estimates and assumptions in preparing financial statements. Those estimates and assumptions affect the reported amounts of assets and liabilities, the disclosure of contingent assets and liabilities, and reported revenues and expenses. It is at least reasonably possible that the significant estimates used will change within the next year.

Advertising Costs

Advertising costs are expensed as incurred.

Subsequent Events

Subsequent events have been evaluated through June 19, 2018, the date the financial statements were available to be issued.

NOTE B - CHANGES IN VALUATION ALLOWANCE FOR TRADE ACCOUNTS RECEIVABLE

Changes in the valuation allowance for trade accounts receivable are:

	2017	2016
Beginning balance	$ 20,000	$ 20,000
Provision for realization losses	4,127	1,330
Recoveries / (Write-offs)	(4,127)	(1,330)
Ending balance	$ 20,000	$ 20,000

Accounts receivable 90 days or more past due totaled $70,270 at December 31, 2017.

NOTE C - PROPERTY AND EQUIPMENT

Property and equipment consists of the following at December 31:

	2017	2016
Leasehold improvements	$ 205,201	$ 167,403
Office equipment	88,586	88,586
Commercial equipment	101,059	101,059
DOS equipment	238,362	238,362
ReUse Center equipment	64,180	64,180
Recovery Yard equipment	1,938,852	1,662,874
Curbside equipment	136,819	131,819
	2,773,059	2,454,283
Less accumulated depreciation	(1,774,292)	(1,593,394)
	$ 998,767	$ 860,889

Substantially all property and equipment is collateral for various notes payable.

NOTE D - LINE OF CREDIT

RAA has a $500,000 line of credit with a bank, at the bank's prime rate +1.00%, (but not less than 5%) maturing October 5, 2018. The interest rate at December 31, 2017 was 5.50%. There was $135 and $0 outstanding on the line of credit at December 31, 2017 and 2016, respectively. The line of credit is secured by substantially all assets.

NOTE E - LEASES

Operating Leases

RAA leases its office and operations facilities under a five-year operating lease ending in March 2020. In 2015, additional space was added to the original lease with the end date remaining March 2020. Rental expense under this lease was $253,735 and $241,350 in 2017 and 2016, respectively.

RAA also leases its Jackson Road location under a five-year operating lease that ends in May 2018, and has been renewed for an additional 5-year term through May 20, 2023. Rental expense under this lease was $60,000 in both 2017 and 2016.

Future minimum rental payments required under these leases are as follows: $321,982 in 2018, $338,340 in 2019, $139,389 in 2020, $72,000 in 2021, $72,000 in 2022 and $30,000 in 2023.

NOTE F - RETIREMENT PLANS

RAA sponsors two defined contribution plans (the Plans) covering all employees with 90 days of service who agree to make contributions to the Plans. One plan is for non-union employees. The other plan is for union employees. The employer match was suspended in 2017 and 2016.

RAA's expense related to retirement plans totaled $0 in both 2017 and 2016.

NOTE G - TRANSACTIONS WITH THE CITY OF ANN ARBOR

Contract Revenues

RAA provides recycling services to the City of Ann Arbor under several contracts.

Revenue recognized from the Curbside collection contract totaled $1,842,569 and $1,782,681 in 2017 and 2016, respectively. The Curbside collection revenue is based on the number of single families served and multi-family and commercial carts processed. The contract expires in June 2019. The City may then extend the agreement through two five-year renewal terms.

Revenue recognized from the Material Recovery Facility contract totaled $637,336 and $0 in 2017 and 2016, respectively. The Material Recovery Facility revenue is from managing the operations at the Ann Arbor Material Recovery Facility. The contract expires in December 2018. The City may extend the agreement until June 30, 2019. RAA is also in negotiations with the City over a multi-year extension of this agreement.

Equipment Use

RAA, under an agreement with the City of Ann Arbor, uses various pieces of equipment purchased and owned by the City. RAA has not capitalized these assets and the value of their use is not included in revenue.

NOTE H - NOTES PAYABLE

Notes payable consists of the following at December 31:

	2017	2016
Promissory note to local bank, payable at $5,251 monthly until November 2020. 5% interest. Secured by all assets.	$ 170,518	$ 223,553
Promissory note to finance corporation, payable at $6,039 monthly until April 2018. 5% interest. One final payment for the balance of the loan is due by May 21, 2018. Secured by vehicles and equipment purchased with the funds.	14,506	83,594
Promissory note to local bank, payable at $2,173 monthly until May 2022. 5.25% interest. Secured by all assets.	102,571	-
Promissory note to local bank, payable at $4,121 monthly until May 2019. 5% interest. Secured by all assets.	59,182	112,369
Promissory note to finance corporation, payable at $1,130 monthly until January 2019. 3.82% interest. Secured by equipment purchased with the funds.	15,446	28,214
	$ 362,223	$ 447,730

Aggregate principal payments in the succeeding years are as follows:

2018	$ 151,803
2019	95,216
2020	79,685
2021	24,797
2022	10,722
Thereafter	-
Total principal payments	$ 362,223

The notes with the local bank are subject to certain covenants, including a minimum debt service coverage ratio. RAA was in compliance with all financial and reporting covenants as of the auditor's report date.

NOTE I - RELATED PARTY TRANSACTIONS

Ecology Center, a nonprofit corporation, is the sole member of RAA and, as outlined in RAA's bylaws, has the right to appoint two members to the RAA Board of Directors. The full RAA board slate of fifteen directors is presented to the Ecology Center for approval at the annual meeting of membership.

Transactions with Ecology Center are as follows:

	2017	2016
Reimbursements to Ecology Center for services and event sponsorships	$ 67,152	$ 51,397
Reimbursements from Ecology Center for services	$ 2,848	$ 17,011

NOTE J - CONCENTRATIONS

Major Customers

Revenue from various contracts with the City of Ann Arbor totaled $2,479,905 and $1,782,681 in 2017 and 2016, respectively. Accounts receivable from the City of Ann Arbor totaled $367,811 and $153,788 at December 31, 2017 and 2016, respectively.

Cash Balances

RAA maintains its cash balances in two Midwest-based financial institutions. The Federal Deposit Insurance Corporation insures the balances up to $250,000. At December 31, 2017, RAA had no uninsured cash balances.

Labor Supply

RAA has a labor contract with the UAW affecting Recycle Ann Arbor employees. The agreement expires April 30, 2020.

NOTE K - NEW ACCOUNTING PRONOUNCEMENTS

The FASB issued ASU No. 2014-09, *Revenue from Contracts with Customers (Topic 606)*, a principles-based standard to recognize revenue from customer contracts. ASU No. 2014-09 will be effective beginning in 2019. RAA is currently evaluating the impact the adoption of ASU No. 2014-09 will have on its financial statements.

The FASB also issued ASU No. 2016-02, *Leases (Topic 842)*, which will require recognition of an asset and liability for most leases entered into by lessees. ASU No. 2016-02 will be effective beginning in 2020. RAA is currently evaluating the impact the adoption of ASU No. 2016-02 will have on its financial statements.

The FASB also issued ASU No. 2016-14, *Not-for-Profit Entities (Topic 958)*, which will require changes to the presentation of financial statements for not-for-profit entities. These changes are designed to improve the current net asset classification requirements and the information presented in financial statements and notes about a not-for-profit entity's liquidity, financial performance, and cash flows. ASU No. 2016-14 will be effective for fiscal years beginning after December 15, 2017. Early adoption is allowed. RAA is currently evaluating the impact the adoption of ASU No. 2016-14 will have on its financial statements.

The FASB also issued ASU No. 2016-15, *Statement of Cash Flows (Topic 230)*, which addresses eight specific cash flow issues with the objective of reducing the existing diversity in practice. ASU No. 2016-15 will be effective for fiscal years beginning after December 15, 2018. Early adoption is allowed. RAA is currently evaluating the impact the adoption of ASU No. 2016-15 will have on its financial statements.

GRETCHEN WHITMER
GOVERNOR

STATE OF MICHIGAN
DEPARTMENT OF
ENVIRONMENT, GREAT LAKES, AND ENERGY
LANSING

LIESL EICHLER CLARK
DIRECTOR

August 5, 2019

Mr. Bryan Ukena
Recycle Ann Arbor
2420 S Industrial Highway
Ann Arbor, Michigan 48104

Dear Mr. Ukena:

SUBJECT: Fiscal Year 2019 (FY19) – Recycling Infrastructure Grant Agreement (Agreement)

You are hereby informed that your project under the FY19 Recycling Grant Program has been recommended for funding. When fully executed, your FY19 Agreement for $800,000.00 would provide funding towards the cost to replace the equipment in the currently shuttered materials recovery facility.

This award is contingent upon approval by the State Administrative Board before an official award of funds can be made. We anticipate that will occur by August 13, 2019. To expedite and accept the award of these funds, you must sign two originals of the enclosed Agreement and return both to the Department of Environment, Great Lakes and Energy (EGLE).

The Agreement language should not be altered in any way. The Agreement will become effective once it is signed by you (the Grantee) and Mr. Jack Schinderle, Division Director, Materials Management Division, (MMD), EGLE.

Kindly review the information under Grantee Contact on the first page of the Agreement for accuracy and notate any changes.

The Agreement must be signed by an individual authorized to make such a legal commitment for the Grantee. The Grantee's Contact may be someone other than the signatory, but this individual must be authorized to request and implement changes, and to sign reimbursement requests submitted under the Agreement.

The Agreement identifies the project ending date as September 30, 2020; however, no costs should be incurred, nor can costs be reimbursed by EGLE, until after your Agreement has been fully executed. For that reason, it is important that the signed Agreement be returned as soon as possible. Your grant application serves as the scope of the project; consequently, upon signature of the Agreement, you commit to carrying out the project as stipulated in your application.

Appendix A of the Agreement outlines the project specific requirements and reimbursement process. Any changes made in your project relating to specific activities or scope of work must be approved by your Recycling Specialist, Ms. Emily Freeman, MMD. She can be reached at 517-256-9466 or at freemane@michigan.gov. You should not incur any project costs until proposed changes have been approved.

Please return your signed Agreements to my attention at the following address:

Administration Section
Resource Management Group
Department of Environment, Great Lakes and Energy
P.O. Box 30241
Lansing, Michigan 48909-7741

If you have any questions specific to the project, please contact your Recycling Specialist, Ms. Emily Freeman, MMD. For general questions relating to grant administration, please contact me by phone or campbellc@michigan.gov.

Sincerely,

Christina Campbell

Christina Campbell
Administration Section
Materials Management Division
517-420-1395/campbellc@michigan.gov

Enclosures
cc: Ms. Emily Freeman, EGLE

I. PROJECT SCOPE

This Agreement and its appendices constitute the entire Agreement between the State and the Grantee and may be modified only by written agreement between the State and the Grantee.

(A) The scope of this project is limited to the activities specified in Appendix A and such activities as are authorized by the State under this Agreement. Any change in project scope requires prior written approval in accordance with Section III, Changes, in this Agreement.

(B) By acceptance of this Agreement, the Grantee commits to complete the project identified in Appendix A within the time period allowed for in this Agreement and in accordance with the terms and conditions of this Agreement.

II. AGREEMENT PERIOD

Upon signature by the State, the Agreement shall be effective from the Start Date until the End Date on page 1. The State shall have no responsibility to provide funding to the Grantee for project work performed except between the Start Date and the End Date specified on page 1. Expenditures made by the Grantee prior to the Start Date or after the End Date of this Agreement are not eligible for payment under this Agreement.

III. CHANGES

Any changes to this Agreement shall be requested by the Grantee or the State in writing and implemented only upon approval in writing by the State. The State reserves the right to deny requests for changes to the Agreement or to the appendices. No changes can be implemented without approval by the State.

IV. GRANTEE DELIVERABLES AND REPORTING REQUIREMENTS

The Grantee shall submit deliverables and follow reporting requirements specified in Appendix A of this Agreement.

(A) The Grantee must complete and submit quarterly financial and progress reports according to a form and format prescribed by the State and must include supporting documentation of eligible project expenses. These reports shall be due according to the following:

Reporting Period	Due Date
January 1 – March 31	April 30
April 1 – June 30	July 31
July 1 – September 30	Before October 15*
October 1 – December 31	January 31

*Due to the State's year-end closing procedures, there will be an accelerated due date for the report covering July 1 – September 30. Advance notification regarding the due date for the quarter ending September 30 will be sent to the Grantee. If the Grantee is unable to submit a report in early October for the quarter ending September 30, an estimate of expenditures through September 30 must be submitted to allow the State to complete its accounting for that fiscal year.

The forms provided by the State shall be submitted to the State's contact at the address on page 1. All required supporting documentation (invoices, proof of payment, etc.) for expenses must be included with the report.

(B) The Grantee shall provide a final project report in a format prescribed by the State.

EGLE

RECYCLING INFRASTRUCTURE GRANT AGREEMENT
BETWEEN THE
MICHIGAN DEPARTMENT OF ENVIRONMENT, GREAT LAKES, AND ENERGY
AND RECYCLE ANN ARBOR

This Grant Agreement ("Agreement") is made between the Michigan Department of Environment, Great Lakes, and Energy (EGLE), Materials Management Division ("State"), and Recycle Ann Arbor ("Grantee").

The purpose of this Agreement is to provide funding in exchange for work to be performed for the project named below. Legislative appropriation of Funds for grant assistance is set forth in Public Acts of 2018, Public Act No. 588. This Agreement is subject to the terms and conditions specified herein.

Project Name: Reycle Ann Arbor
Project #: _____
Amount of grant: $800,000.00
% of grant state 100 / % of grant federal 0
Amount of match: $3,841,000.00 = 83%
Project Total: $4,641,000.00 (grant plus match)
Start Date (date executed by EGLE): _____
End Date: September 30, 2020

GRANTEE CONTACT:

Bryan Ukena, CEO
Name/Title
Recycle Ann Arbor
Organization
2420 S Industrial Highway
Address
Ann Arbor, MI 48104
Address
734-662-6288
Telephone number
Fax number
bryanukena@recycleannarbor.org
E-mail address
38-2224861
Federal ID number –
176802130
Grantee DUNS number - (Required for Federal Funding)

STATE'S CONTACT:

Emily Freeman, Recycling Specialist
Name/Title
Materials Management Division
Division/Bureau/Office
P.O. Box 30241
Address
Lansing, MI 48909-7741
Address
517-256-9466
Telephone number
Fax number
freemane@michigan.gov
E-mail address

The individuals signing below certify by their signatures that they are authorized to sign this Agreement on behalf of their agencies and that the parties will fulfill the terms of this Agreement, including any attached appendices, as set forth herein.

FOR THE GRANTEE:

Bryan Ukena
Signature
8/23/19
Date
Bryan Ukena CEO
Name/Title

FOR THE STATE:

Signature
Date
Jack Schinderle, Division Director, Materials Management Division
Name/Title

The Grantee shall submit the final status report, including all supporting documentation for expenses, along with the final project report and any other outstanding products within 30 days from the End Date of the Agreement.

(C) The Grantee must provide 2 copies of all products and deliverables in accordance with Appendix A.

(D) All products shall acknowledge that the project was supported in whole or in part by Recycling Grant Program, EGLE, per the guidelines provided by the program.

V. GRANTEE RESPONSIBILITIES

(A) The Grantee agrees to abide by all applicable local, state, and federal laws, rules, ordinances, and regulations in the performance of this grant.

(B) All local, state, and federal permits, if required, are the responsibility of the Grantee. Award of this grant is not a guarantee of permit approval by the State.

(C) The Grantee shall be solely responsible to pay all applicable taxes and fees, if any, that arise from the Grantee's receipt or execution of this grant.

(D) The Grantee is responsible for the professional quality, technical accuracy, timely completion, and coordination of all designs, drawings, specifications, reports, and other services submitted to the State under this Agreement. The Grantee shall, without additional compensation, correct or revise any errors, omissions, or other deficiencies in drawings, designs, specifications, reports, or other services.

(E) The State's approval of drawings, designs, specifications, reports, and incidental work or materials furnished hereunder shall not in any way relieve the Grantee of responsibility for the technical adequacy of the work. The State's review, approval, acceptance, or payment for any of the services shall not be construed as a waiver of any rights under this Agreement or of any cause of action arising out of the performance of this Agreement.

(F) The Grantee acknowledges that it is a crime to knowingly and willingly file false information with the State for the purpose of obtaining this Agreement or any payment under the Agreement, and that any such filing may subject the Grantee, its agents, and/or employees to criminal and civil prosecution and/or termination of the grant.

VI. USE OF MATERIAL

Unless otherwise specified in this Agreement, the Grantee may release information or material developed under this Agreement, provided it is acknowledged that the State funded all or a portion of its development.

The State, and federal awarding agency, if applicable, retains a royalty-free, nonexclusive and irrevocable right to reproduce, publish, and use in whole or in part, and authorize others to do so, any copyrightable material or research data submitted under this grant whether or not the material is copyrighted by the Grantee or another person. The Grantee will only submit materials that the State can use in accordance with this paragraph.

VII. ASSIGNABILITY

The Grantee shall not assign this Agreement or assign or delegate any of its duties or obligations under this Agreement to any other party without the prior written consent of the State. The State does not assume responsibility regarding the contractual relationships between the Grantee and any subcontractor.

VIII. SUBCONTRACTS

The State reserves the right to deny the use of any consultant, contractor, associate, or other personnel to perform any portion of the project. The Grantee is solely responsible for all contractual activities performed under this Agreement. Further, the State will consider the Grantee to be the sole point of contact with regard to contractual matters, including payment of any and all charges resulting from the anticipated Grant. All subcontractors used by the Grantee in performing the project shall be subject to the provisions of this Agreement and shall be qualified to perform the duties required.

IX. NON-DISCRIMINATION

The Grantee shall comply with the Elliott Larsen Civil Rights Act, 1976 PA 453, as amended, MCL 37.2101 *et seq.*, the Persons with Disabilities Civil Rights Act, 1976 PA 220, as amended, MCL 37.1101 *et seq.*, and all other federal, state, and local fair employment practices and equal opportunity laws and covenants that it shall not discriminate against any employee or applicant for employment, to be employed in the performance of this Agreement, with respect to his or her hire, tenure, terms, conditions, or privileges of employment, or any matter directly or indirectly related to employment, because of his or her race, religion, color, national origin, age, sex, height, weight, marital status, or physical or mental disability that is unrelated to the individual's ability to perform the duties of a particular job or position. The Grantee agrees to include in every subcontract entered into for the performance of this Agreement this covenant not to discriminate in employment. A breach of this covenant is a material breach of this Agreement.

X. UNFAIR LABOR PRACTICES

The Grantee shall comply with the Employers Engaging in Unfair Labor Practices Act, 1980 PA 278, as amended, MCL 423.321 *et seq.*

XI. LIABILITY

(A) The Grantee, not the State, is responsible for all liabilities as a result of claims, judgments, or costs arising out of activities to be carried out by the Grantee under this Agreement, if the liability is caused by the Grantee, or any employee or agent of the Grantee acting within the scope of their employment or agency.

(B) Nothing in this Agreement should be construed as a waiver of any governmental immunity by the Grantee, the State, its agencies, or their employees as provided by statute or court decisions.

XII. CONFLICT OF INTEREST

No government employee, or member of the legislative, judicial, or executive branches, or member of the Grantee's Board of Directors, its employees, partner agencies, or their families shall benefit financially from any part of this Agreement.

XIII. ANTI-LOBBYING

If all or a portion of this Agreement is funded with federal funds, then in accordance with OMB Circular A-21, A-87, or A-122, as appropriate, the Grantee shall comply with the Anti-Lobbying Act, which prohibits the use of all project funds regardless of source, to engage in lobbying the state or federal government or in litigation against the State. Further, the Grantee shall require that the language of this assurance be included in the award documents of all subawards at all tiers.

If all or a portion of this Agreement is funded with state funds, then the Grantee shall not use any of the grant funds awarded in this Agreement for the purpose of lobbying as defined in the State of Michigan's lobbying statute, MCL 4.415(2). "'Lobbying' means communicating directly with an official of the executive branch of state government or an official in the legislative branch of state government for the purpose of influencing legislative or administrative action." The Grantee shall not use any of the grant funds awarded in this Agreement for the purpose of litigation against the State. Further, the Grantee shall require that language of this assurance be included in the award documents of all subawards at all tiers.

XIV. DEBARMENT AND SUSPENSION

By signing this Agreement, the Grantee certifies that it has checked the federal debarment/suspension list at www.SAM.gov to verify that its agents, and its subcontractors:

(1) Are not presently debarred, suspended, proposed for debarment, declared ineligible, or voluntarily excluded from covered transactions by any federal department or the state.

(2) Have not within a three-year period preceding this Agreement been convicted of or had a civil judgment rendered against them for commission of fraud or a criminal offense in connection with obtaining, attempting to obtain, or performing a public (federal, state, or local) transaction or contract under a public transaction, as defined in 45 CFR 1185; violation of federal or state antitrust statutes or commission of embezzlement, theft, forgery, bribery, falsification or destruction of records, making false statements, or receiving stolen property.

(3) Are not presently indicted or otherwise criminally or civilly charged by a government entity (federal, state, or local) with commission of any of the offenses enumerated in subsection (2).

(4) Have not within a three-year period preceding this Agreement had one or more public transactions (federal, state, or local) terminated for cause or default.

(5) Will comply with all applicable requirements of all other state or federal laws, executive orders, regulations, and policies governing this program.

XV. AUDIT AND ACCESS TO RECORDS

The State reserves the right to conduct a programmatic and financial audit of the project, and the State may withhold payment until the audit is satisfactorily completed. The Grantee will be required to maintain all pertinent records and evidence pertaining to this Agreement, including grant and any required matching funds, in accordance with generally accepted accounting principles and other procedures specified by the State. The State or any of its duly authorized representatives must have access, upon reasonable notice, to such books, records, documents, and other evidence for the purpose of inspection, audit, and copying. The Grantee will provide proper facilities for such access and inspection. All records must be maintained for a minimum of [five] years after the final payment has been issued to the Grantee by the State.

XVI. INSURANCE

(A) The Grantee must maintain insurance or self-insurance that will protect it from claims that may arise from the Grantee's actions under this Agreement.

(B) The Grantee must comply with applicable workers' compensation laws while engaging in activities authorized under this Agreement.

XVII. OTHER SOURCES OF FUNDING

The Grantee guarantees that any claims for reimbursement made to the State under this Agreement must not be financed by any source other than the State under the terms of this Agreement. If funding is received through any other source, the Grantee agrees to delete from Grantee's billings, or to immediately refund to the State, the total amount representing such duplication of funding.

XVIII. COMPENSATION

(A) A breakdown of costs allowed under this Agreement is identified in Appendix A. The State will pay the Grantee a total amount not to exceed the amount on page 1 of this Agreement, in accordance with Appendix A, and only for expenses incurred and paid. All other costs necessary to complete the project are the sole responsibility of the Grantee.

(B) Expenses incurred by the Grantee prior to the Start Date or after the End Date of this Agreement are not allowed under the Agreement.

(C) The State will approve payment requests after approval of reports and related documentation as required under this Agreement.

(D) The State reserves the right to request additional information necessary to substantiate payment requests.

(E) Payments under this Agreement may be processed by Electronic Funds Transfer (EFT). The Grantee may register to receive payments by EFT at the SIGMA Vendor Self Service web site (https://sigma.michigan.gov/webapp/PRDVSS2X1/AltSelfService).

(F) An amount equal to _5_ percent of the grant award will be withheld by the State until the project is completed in accordance with Section XIX, Closeout, and Appendix A.

(G) The Grantee is committed to the match percentage on page 1 of the Agreement, in accordance with Appendix A. The Grantee shall expend all local match committed to the project by the End Date on page 1 of the Agreement.

XIX. CLOSEOUT

(A) A determination of project completion, which may include a site inspection and an audit, shall be made by the State after the Grantee has met any match obligations, satisfactorily completed the activities, and provided products and deliverables described in Appendix A.

(B) Upon issuance of final payment from the State, the Grantee releases the State of all claims against the State arising under this Agreement. Unless otherwise provided in this Agreement or by State law, final payment under this Agreement shall not constitute a waiver of the State's claims against the Grantee.

(C) The Grantee shall immediately refund to the State any payments in excess of the costs allowed by this Agreement.

XX. CANCELLATION

This Agreement may be canceled by the State, upon 30 days written notice, due to Executive Order, budgetary reduction, other lack of funding, upon request by the Grantee, or upon mutual agreement by the State and Grantee.

The State may honor requests for just and equitable compensation to the Grantee for all satisfactory and eligible work completed under this Agreement up until 30 days after written notice, upon which time all outstanding reports and documents are due to the State and the State will no longer be liable to pay the grantee for any further charges to the grant.

XXI. TERMINATION

(A) This Agreement may be terminated by the State as follows.

(1) Upon 30 days written notice to the Grantee:

a. If the Grantee fails to comply with the terms and conditions of the Agreement, or with the requirements of the authorizing legislation cited on page 1, or the rules promulgated thereunder, or other applicable law or rules.
b. If the Grantee knowingly and willingly presents false information to the State for the purpose of obtaining this Agreement or any payment under this Agreement.
c. If the State finds that the Grantee, or any of the Grantee's agents or representatives, offered or gave gratuities, favors, or gifts of monetary value to any official, employee, or agent of the State in an attempt to secure a subcontract or favorable treatment in awarding, amending, or making any determinations related to the performance of this Agreement.
d. If the Grantee or any subcontractor, manufacturer, or supplier of the Grantee appears in the register of persons engaging in unfair labor practices that is compiled by the Michigan Department of Licensing and Regulatory Affairs or its successor.
e. During the 30-day written notice period, the State shall withhold payment for any findings under subparagraphs a through d, above and the Grantee will immediately cease charging to the grant and stop earning match for the project (if applicable).

(2) Immediately and without further liability to the State if the Grantee, or any agent of the Grantee, or any agent of any subcontract is:

a. Convicted of a criminal offense incident to the application for or performance of a State, public, or private contract or subcontract;
b. Convicted of a criminal offense, including but not limited to any of the following: embezzlement, theft, forgery, bribery, falsification or destruction of records, receiving stolen property, or attempting to influence a public employee to breach the ethical conduct standards for State of Michigan employees;
c. Convicted under State or federal antitrust statutes; or
d. Convicted of any other criminal offense that, in the sole discretion of the State, reflects on the Grantee's business integrity.
e. Added to the federal or state Suspension and Debarment list.

(B) If a grant is terminated, the State reserves the right to require the Grantee to repay all or a portion of funds received under this Agreement.

XXII. IRAN SANCTIONS ACT

By signing this Agreement, the Grantee is certifying that it is not an Iran linked business, and that its contractors are not Iran linked businesses, as defined in MCL 129.312.

PROJECT-SPECIFIC REQUIREMENTS – APPENDIX A

I. GRANT APPLICATION; PROJECT SCOPE

The scope of this project is outlined in the Grantee's approved Fiscal Year 2019 Recycling Infrastructure Grant Program Proposal, which is included in this grant agreement as part of this Appendix A, as well as any subsequent modifications to the original grant proposal as approved by the State.

II. GRANT REIMBURSEMENT PROCESS

Breakdown of project funds covered under this Agreement:

Grant Amount = $800,000.00
Matching Funds = $3,841,000.00
Total Grant Budget = $4,641,000.00

The total payment made to the Grantee by the State shall not exceed $800,000.00. Any additional costs associated with the project shall be the responsibility of the Grantee.

The Grantee is responsible for the payment of all eligible costs necessary to complete the project. The Grantee shall submit reimbursement requests to the State which specify the time period covered by the reimbursement request and the payments made by the Grantee during the time period. Grant reimbursements will be for up to 75 percent of the documented purchase expenditures, not to exceed the awarded grant amount, less a 5 percent retention amount that will be released upon approval of the final report. The final report is due six months after the infrastructure item(s) have been purchased and/or constructed, but no later than February 28, 2021.

A request for payment shall be submitted by the Grantee on a form provided by the State and shall include proof of payment to the vendor (such as canceled checks, ACH, wire transfer confirmations, bank statements, etc.) and proof of receipt of goods. Grantees will be reimbursed up to 75 percent of documented purchase expenditures, not to exceed the awarded grant amount. The remaining unreimbursed expenditures serve as the required match amount for the grant. Reimbursement forms will be available on the EGLE's Recycling Program website located at: **http://www.michigan.gov/mirecycles**.

The Grantee is responsible for ensuring that all partner entities fulfill their commitments under the grant proposal.

The Grantee is responsible for ensuring that all products requiring reimbursement acknowledge that the project was supported in whole or in part by the EGLE Recycling Grant Program.

III. REPORTING REQUIREMENTS

The Grantee shall comply with all reporting requirements of the State during the Agreement Period.

QUARTERLY REPORT

The Grantee shall submit the final quarterly status and financial report, including all supporting documentation for expenses, by September 30, 2020. Supporting documentation must include proof of payment and proof of receipt of goods.

Quarterly progress and financial reports must be submitted at least every three months during the Agreement Period, even if no funds were expended. Provide the following narrative using the numbers and headings listed below:

I. SUMMARY OF ACTIONS TAKEN DURING THE CURRENT PERIOD

A. Describe the tasks completed and how project funds were expended during the time period covered by the report. If no funds were expended during the current period, include a statement to that effect and explain why. A description of tasks completed during the current period must still be included.

B. If any products were developed during the time period covered by the report, include a copy of the products with the report.

II. SUMMARY OF ACCOMPLISHMENTS DURING THIS PERIOD

A. Goals and objectives as set forth in the grant application and grant contract. List the project's stated goals and objectives and describe how the project is meeting them.

B. Additional project accomplishments not included in original project goals and objectives.

C. Project data: Provide any data collected during the current period, as described in the grant application incorporated with this contract. Attach available documentation which supports the data. If the data provided covers a previous reporting period, specify the dates which the data is from.

III. SUMMARY OF REMAINING ACTIONS TO BE TAKEN

A. Describe the remaining tasks to be completed and indicate whether or not these tasks will be completed within the approved project schedule. For tasks which will not be completed within the approved project schedule, discuss the reasons for the delay and provide the revised task completion date.

IV. PROBLEMS ENCOUNTERED DURING THIS PERIOD

A. Identify any problems encountered during the current reporting period and explain how they were resolved. Describe the impact these problems have had or will have on project design, completion, and operations.

V. ADDITIONAL COMMENTS

A. Provide any additional comments relevant to the status of the project and its operations.

VI. FINANCIAL DOCUMENTTION

A. Provide required documentation, including proof of payment and proof of receipt of goods, for funds expended during the reporting period.

FINAL PROJECT REPORT

The purpose of the final project report is to provide the State with data on your project and a narrative discussion about your project, including an evaluation of the project to date. The final report is due six months after the infrastructure item(s) have been purchased and/or constructed, but no later than February 28, 2021. Retained funds will be forfeited by the Grantee if the final report is not accepted.

Identify the time period covered by the final project report. Provide the following narrative information using the numbers and headings listed below:

I. PROJECT DESCRIPTION

A. Provide a description of the project funded.

i. Provide a 4-5 sentence summary of the project, including the following information, as applicable: description of item purchased and/or constructed, geographical area served, population and/or number of households/units served, volume of containers, collection frequency, collection method, list of recyclable or organic materials collected, name and location of recycling processor, increase in processing capacity, and description of how project will be sustained beyond the grant timeline.

ii. Include any news articles and/or photographs as appropriate.

iii. Include the date project operations began and a discussion of the current status of project operations.

B. List and explain the steps involved in completing the project, from planning through implementation to ongoing operations. Include the dates of major project activities and events.

C. List and discuss other entities (e.g., companies, nonprofit groups, local units of government) that played a role in planning and implementing the project and briefly describe their role. Describe any formal agreements that were entered into as a part of project implementation.

II. PROJECT DATA

A. Diversion rate, participation rate, and geographical area. Project data must also be submitted through the ReTRAC system.

i. For the time period covered by this report, provide the quantity of recyclable or organic materials diverted, in tons or cubic yards /time period. Specify which recyclable or organic materials are included in this reported volume. Describe the methods for measuring these quantities.

ii. Provide diversion rates prior to the grant project, if known.

iii. For the time period covered by this report, provide information on the number of people and/or number of households/units served by the project. Describe the methods for measuring these numbers.

iv. Provide information on the number of people and/or number of households/units served prior to the grant project, if known.

v. For the time period covered by this report, provide information on the geographical area served by the project.

vi. Provide previous information on the geographical area served by the program prior to the current grant project.

B. Education and Outreach Program. Provide the following information for all project related promotional activities which have occurred as a result of the project:

i. Types of groups (audience) targeted.

ii. Types of promotional materials developed.

iii. Methods used to distribute information or materials.

iv. Planned/future educational efforts.

III. PROJECT COSTS: Provide the following information regarding additional costs required to implement the project:

A. Provide the dollar amounts and a description of all additional program related capital costs which have been incurred during the time period covered by this report. Identify the specific dates these costs were incurred.

B. For the time period covered by this report, provide the dollar amounts and a description of all additional costs (beyond match) required to complete the project. Identify the specific dates these costs were incurred.

C. For the time period covered by this report, provide the dollar amount and a description of the costs needed to operate the project.

D. Describe the funding mechanisms utilized to operate and maintain the project activities.

IV. PROJECT EVALUATION

A. Goals and Objectives. Summarize each of the project's goals and objectives as stated in your original proposal. Discuss (in both narrative and numerical terms) how well you are meeting each goal and objective. For each goal or objective that is not being met, discuss why.

i. If the project goals and objectives have changed from those that were originally established, discuss how and why. Also, discuss how these changes have impacted the final project.

ii. Recovery/Access/Participation Goals: As a part of the above discussion of project goals and objectives, identify the increase in either volume collected (in tons or cubic yards per year) by material type, or geographical access/population served that the project is currently achieving. If the project is not meeting its goals, provide a discussion on why these goals are not being met. Also, indicate what steps you are taking in order to meet the stated goals in the future, and provide a timeframe for meeting these goals.

B. Discuss any project accomplishments not included in the project's original goals and objectives.

C. Discuss the economic impact the project has had on the local economy. Include information on new jobs created and sustained and any other relevant economic information.

D. List and describe all significant problems encountered during project implementation, including any cost overruns, institutional barriers, local issues, etc. Describe how the problems were addressed and resolved. Describe any impact these problems had in project design, implementation and/or ongoing operations.

E. Describe the most successful components of the project and explain why you think they are successful.

F. Describe the least successful components of the project and explain why you think they are not successful.

G. Lessons Learned. Discuss any conclusions you have made about the technical and economic feasibility of carrying out a similar project. Identify what you would do differently if you were to carry out a similar project, and why.

V. ADDITIONAL COMMENTS

A. Provide any additional information relevant to the status of the project and its operations.

The quarterly and final project report must be signed by the authorized contact person for the project. Indicate any name, address or telephone number changes for the contact person and/or the project.

Submit the quarterly and final project reports to the attention of the State's contact at the following email address:

EGLE-RecyclingGrant@michigan.gov

As a non-profit organization, Recycle Ann Arbor's mission is to develop and operate innovative reuse, recycling, and zero waste programs that improve the environmental quality of our community.

Oct. 8, 2019

Mr. Cresson Slotten, P.E. (via email)
Manager
City of Ann Arbor
301 Huron St. Ann Arbor, MI 48104

Re: Second Set Of Interview Follow-Up Questions

We appreciate the opportunity to answer the second set of additional questions sent on Friday, October 4, 20219 at 11am related to RFP 19-28. From our understanding, these questions are to help city staff clarify our existing proposal. We cannot negotiate any terms or conditions outlined in our proposal unless we receive notification that we are selected as the top proposer and are in exclusive contract negotiations.

Please do not hesitate to contact me with any further questions.

Thanks,

Bryan Ukena

CEO

Recycle Ann Arbor

2420 S. Industrial Hwy. Ann Arbor, MI 48104
734-662-6288 • Fax 734-662-7749 • www.recycleannarbor.org

PART TWO OF INTERVIEW FOLLOW-UP QUESTIONS REGARDING RECYCLE ANN ARBOR'S PROPOSAL RESPONDING TO RFP 19-28

There are two other items that we would like to receive to help in our evaluation of your proposal:

1. An "organizational chart" indicating the roles and responsibilities of the various parties involved in Option 1 and in Option 2, to provide added clarification to the questions at the interview regarding the make-up of your team.

   Response: See attached Org. Chart for MRF Project

   2. A listing of the proposed/potential end markets for the various material streams, including their location.

   Name and location of recycling processor, broker and/or end market, if known.
   Paper (fiber) makes up over two-thirds of Ann Arbor's current material mix, and Pratt has agreed to purchase Ann Arbor's fiber product for the life of the agreement. With Pratt Industries as a partner of this project, the design, construction and operation of the facility will be undertaken with this in mind. This integration will ensure that market specifications will be consistently met at this, and any other similar paper mill. The facility's equipment will be designed to extract the purest fiber stream possible to be sent to Pratt. Based on the last audit, the City's recycling stream is two-thirds fiber.
   In addition, three other major processors – Revital/Envision/Placon for plastics, OmniSource and Rumpke -- have been engaged as markets for the non-paper components of our recycling stream, with the new facility able to meet their specifications for the effective recovery of plastics, metals and glass as well.

Entity	**Location**	**Stream**
Pratt Industries	Wapakoneta, OH	Fiber

Revital	Sarnia, ON	Plastics
OmniSource	Toledo, OH	Metals
Rumpke	Dayton, OH	Glass

RAA staff has over 40 years of experience marketing materials and ⅔ of the material (paper) will be under contract as stated in the RFP

Finally, as a reminder, the following items were requested during the interview and can be included with the responses to these other follow-up items:

- The results of the review of RAA's Recordable Incident Rate and DART Rate for 2016, 2017 and 2018

Response:

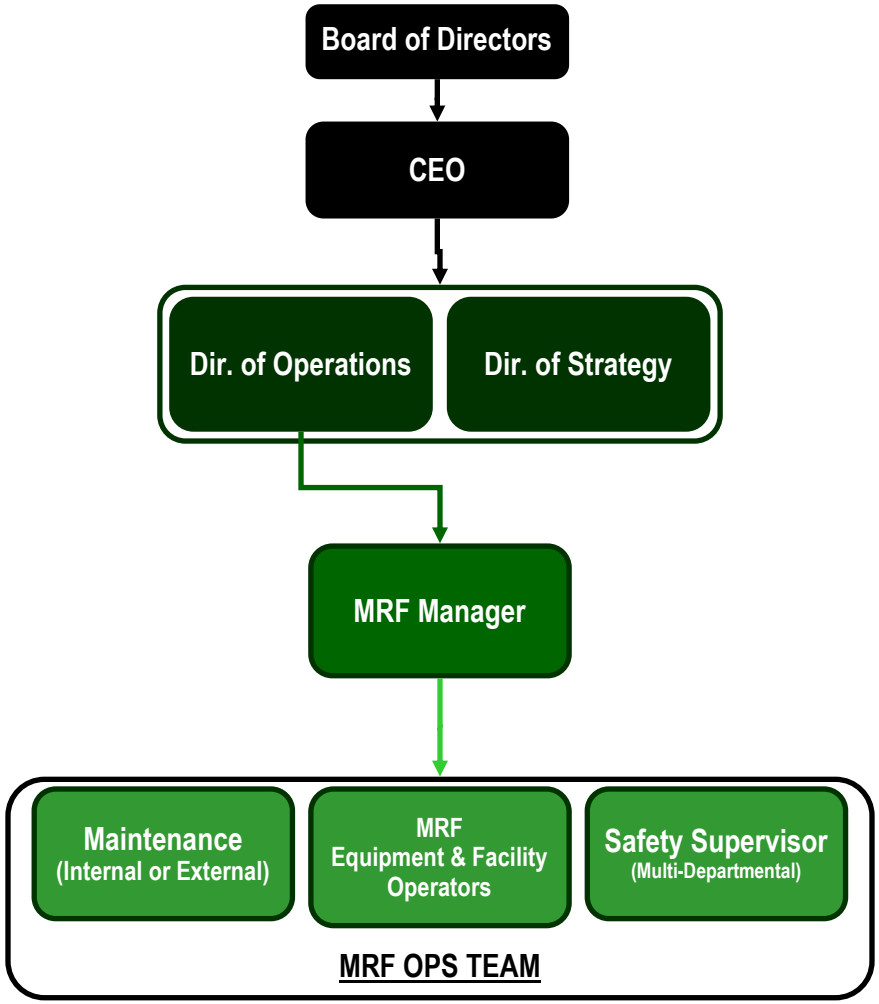
Year	2016	2017	2018	2019
Recordable Incident Rate	5.33	5.55	10.67	13.16
Dart Rate	2.67	0	0	2.63

- A copy of RAA's grant application to MDEQ/EGLE for the Recycling Infrastructure Grant

Response: See attachment below

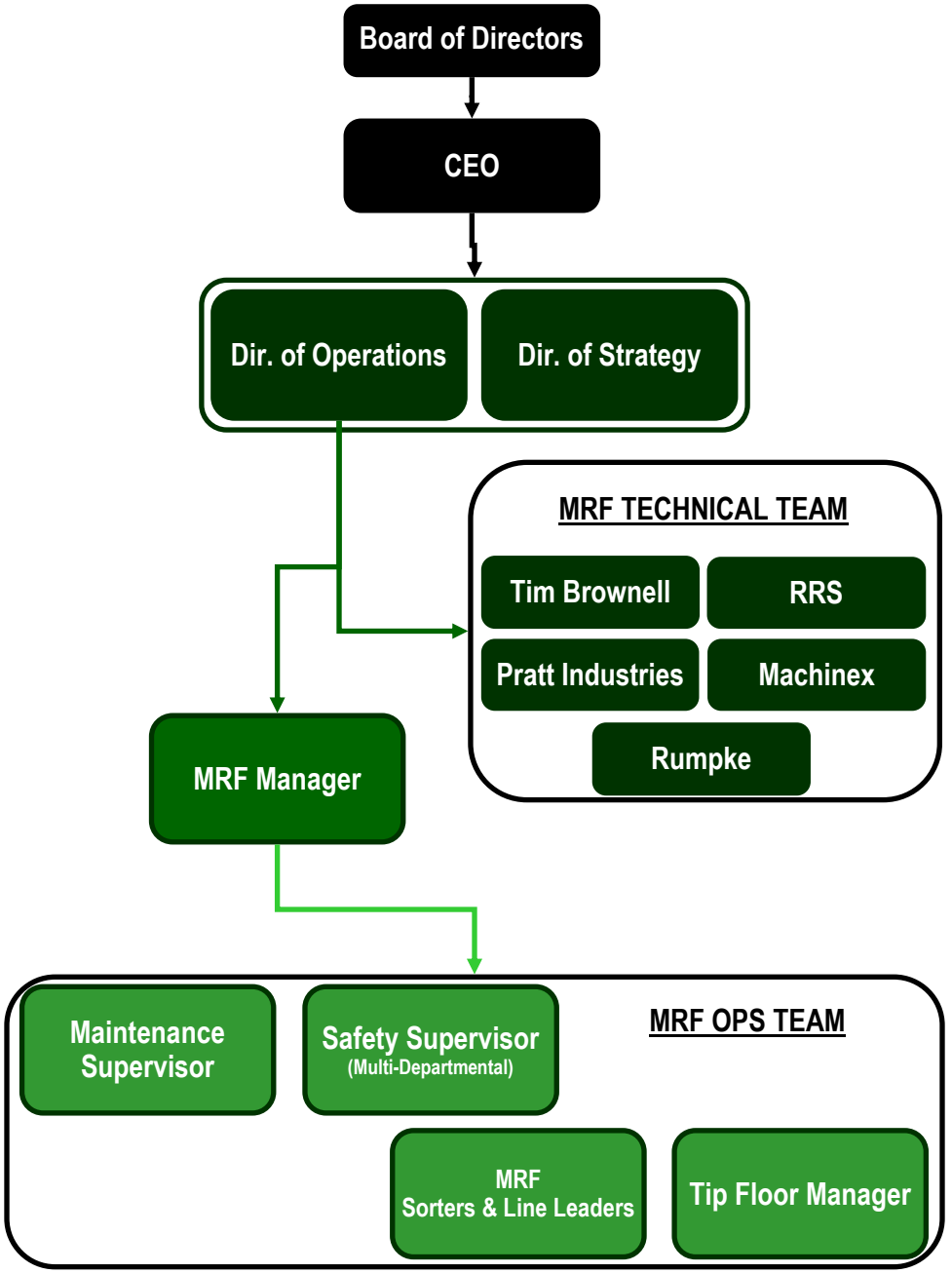
DRAFT

Recycle Ann Arbor MRF Organizational Chart
City of Ann Arbor MRF Proposal Option #1



DRAFT

Recycle Ann Arbor MRF Organizational Chart
City of Ann Arbor MRF Proposal Options #2 & #3



INTERVIEW FOLLOW-UP QUESTIONS REGARDING
RECYCLE ANN ARBOR'S PROPOSAL RESPONDING TO RFP 19-28
(Second Set, 10/4/2019)

19. With regards to Tables 4.c (Material Revenue Share Credit – Option 1) and 5.d (Material Revenue Share Credit – Option 2) provided in the cost proposal:
    a. Please confirm, or correct our understanding that the Current Index Price ($/ton) provided in Table 4.c is 80% of the actual revenue that Republic Services as RRRASOC MRF operator and proposed processor under Option 1 received in this hypothetical example, i.e., for OCC material Republic received $40.00/ton for that material and 80% of that is $32.00 which was entered in Table 4.d

       RESPONSE:

       This is a correct understanding of what is entered into table 4.c.

    b. Please confirm, or correct our understanding of the added *footnote for Option 1 that the City will receive all of the revenue share provided by Republic Services for all of the materials, i.e., $17.56/ton in this hypothetical example presented, and not 80% of $17.56/ton, or $14.05/ton.
       RESPONSE:

       This is correct. The City will receive all of the revenue share provided by Republic Services ($17.56/ton in the case of the example).

    c. Please provide the date of the pricing provided in these two tables (4.c and 5.d) to allow the City to review and compare the pricing to the market indices and other proposals, as well as to compare the pricing between the two tables (the "actual" prices provided in Table 5.d do not match, and are actually highly variable from the "100% value" of the prices provided in Table 4.c)
       RESPONSE:

       The date of the pricing for the two examples is Sept. 2019. The data for Republic comes directly from them as their reported average values for the month. RAA has no control over the value that Republic markets their materials for, as they market material independently. The values listed are actual values as reported to us.

20. Please confirm that your proposed pricing for Saturday and Sunday Operations (Table 4.d and Table 5.e) is a daily rate, and not a per ton rate, i.e., RAA would be paid $265.50 for each Saturday worked in year 1, not $265/ton of material received.
    RESPONSE:

This is correct, the total cost is $265.50/day with the stipulation referenced in question 21.

21. The instructions for Table 4.d states that the daily rate for those days "would be in lieu of the per ton City MRF Operation/Transload Service Fee in Schedule 4.a" and the instructions for Table 5.e states that the daily rate for those days "would be in lieu of per ton O&M Cost service fee from Schedule 5.b" yet there are added *footnotes stating these charges would still apply. Please provide and explanation as to why these charges, which were to be excluded, are included as additional costs in the proposal.
RESPONSE:

If the City will commit to a maximum amount of tons delivered on Saturday and Sunday, RAA can provide a fixed price for the weekend options.