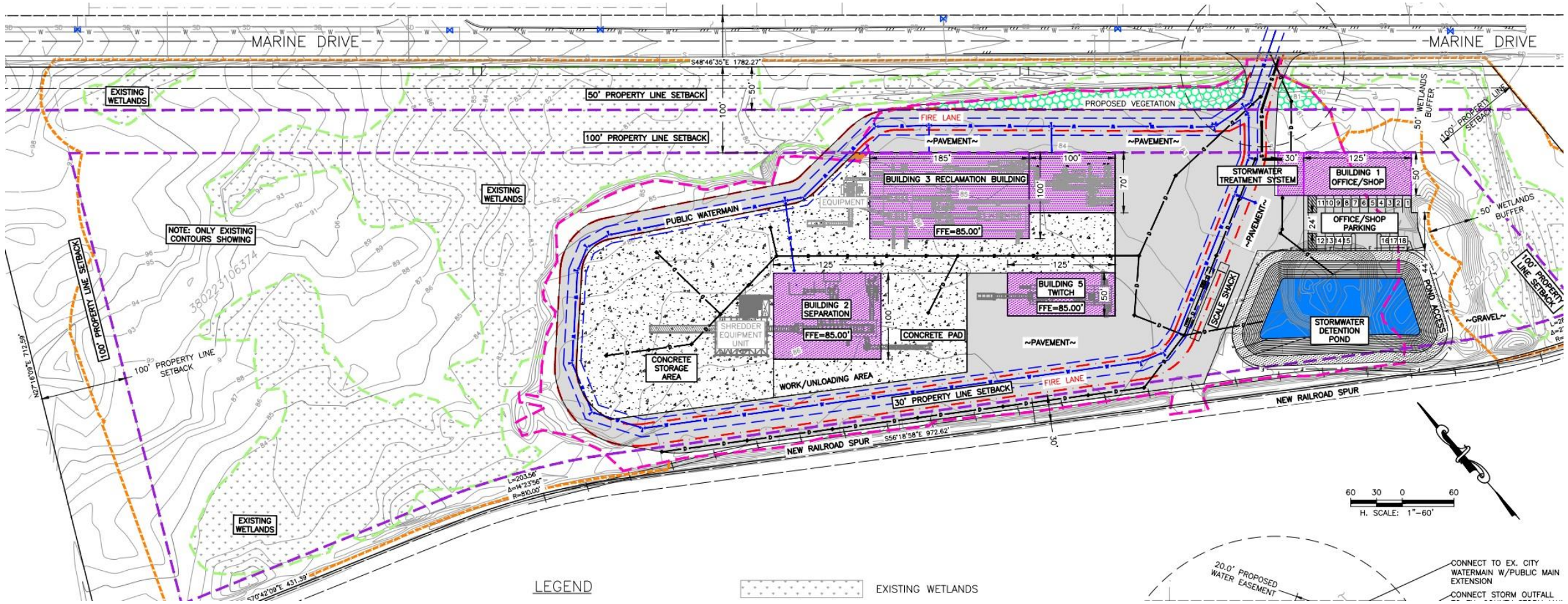


Proposed Industrial Metal Shredding Facility on Marine Drive



Welcome

Ground Rules and Expectations



ABC Recycling

- Family owned and operated for 112 years
- Headquarters just 40 miles north in Burnaby, BC
- Operates 10 metal recycling facilities in BC
- Bellingham team and future hires are all local
- Strong environmental and safety track record

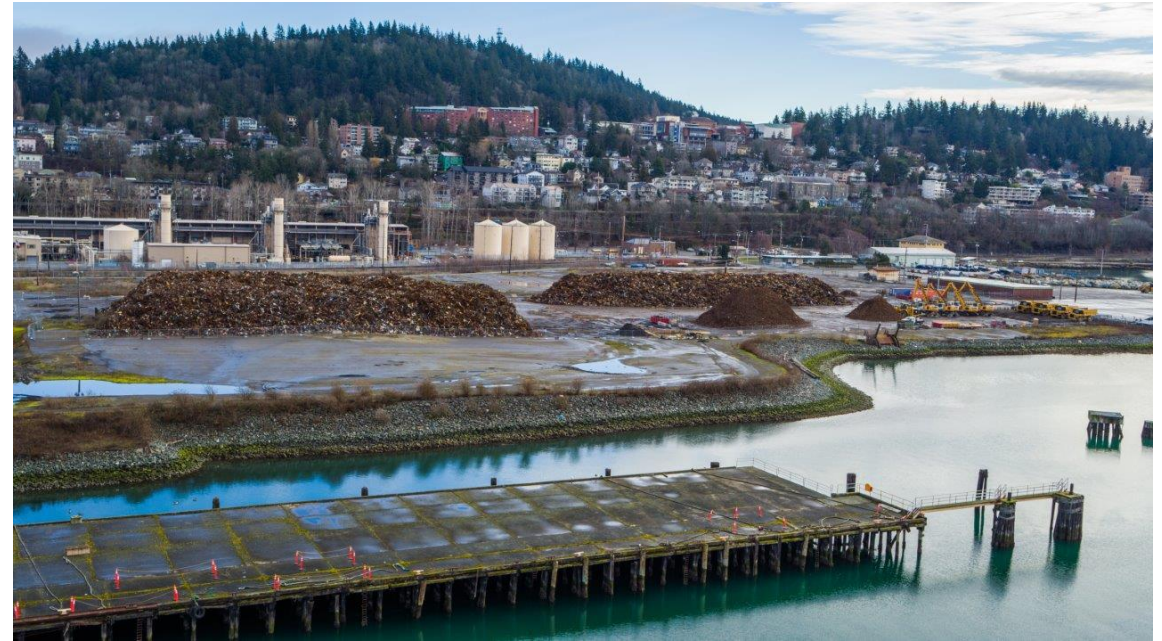


2023



Why Bellingham?

- Access to rail and a deep-water port
- Expand into the Northwest WA market
- Build on the relationships we already have in the community



POST-CONSUMER METAL RECYCLING

1

Demolitions
Community
Members
Local
Businesses



Material is inspected and prepared for sale at a metal recycling facility

2

Non-ferrous shredded metals (copper, aluminum, stainless steel, etc) are sold to smelters to be turned into wire, cans and other high-quality products.



Non-metallic material (foam, plastic, etc) is sent to local landfills for use as alternative daily cover (ADC) to deter wildlife from getting into the garbage

Post-consumer products like cars and appliances are sent to a metal shredder

3



Ferrous shredded metals are sent to our Bellingham facility in anticipation for sale to steel mills

4



Ferrous shredded metals (along with our current inventory of shear-cut & flame-cut ferrous recycled materials) are loaded onto ships at the Bellingham Shipping Terminal for delivery

5



Steel Mills melt recycled materials to manufacture new steel products

6



Products produced by steel mills are sold to regional markets and used by local builders to construction highways, bridges, new businesses, and housing

A Modular Metal Shredder

- A metal shredder facility is an operation that uses a shredding technique to process end-of-life vehicles, appliances, and other forms of scrap metal that have been prepared by a scrapyards for shredding.
- Metal shredder residue is the residual material that remains after the marketable metals have been removed.
- The miscellaneous metal products produced from the facility will be appropriately sized for transport and sale in well established markets.



A Modular Metal Shredder - Goals and Objectives

Sustainability: Confronting the Climate Crisis

Metal shredders are central to the sustainable use of scrap metal. By shredding scrap metal, we can reduce the need for mining new metals, which has a positive impact on the environment.

- **Conserving Resources:** Helps protect natural resources and extend the lifespan of metal ores. For instance, recycling one ton of steel conserves 2,500 pounds of iron ore, 1,400 pounds of coal, and 120 pounds of limestone.
- **Reclaiming Existing Resources:** The sustainable use of scrap metal made possible by metal shredding helps preserve natural resources by reducing our dependence on finite supplies of raw materials found within nature's reserves.
- **Reducing Need for Landfills.** The conversion of end-of-life consumable product such as vehicles and appliances into marketable metal products for sale in secondary markets reduces the need for landfills.
- **This facility helps meet several objectives from the Whatcom County Climate Action Plan (2021).**

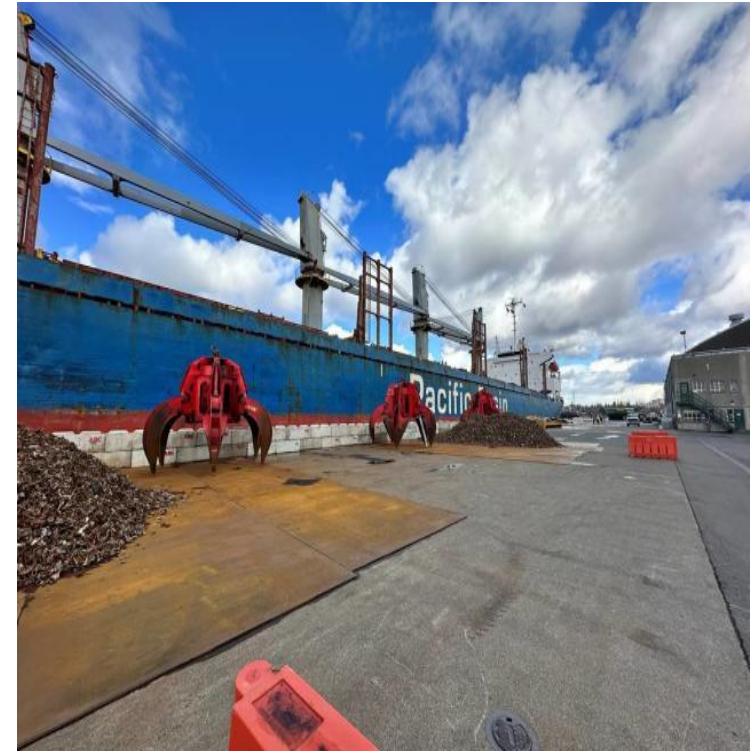


A Modular Metal Shredder - Goals and Objectives

Economic Benefits:

Shredded metal products can be sold to industries that require such metals, creating a new revenue stream. Additionally, it reduces energy consumption and creates new jobs.

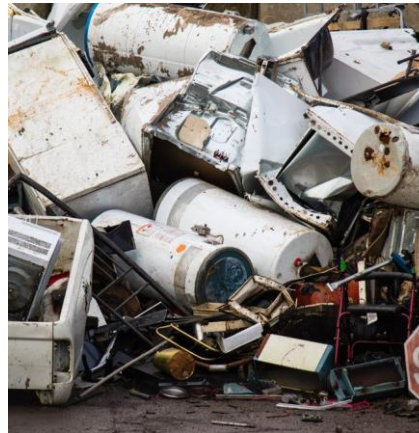
- Energy savings using various reclaimed metals compared to virgin ore is up to 92% for aluminum, 90% for copper, and 56% for steel. This results in reduced damage to our planet because mining operations, especially open pit mining, which is extremely bad for the environment.
- Processing metal from automobiles is estimated to save enough energy to power 18 million homes in the United States each year.
- The facility will create 12 to 15 full-time family wage jobs at ribbon cutting with 30 full-time positions at full capacity.
- This facility will increase employment and economic activity at the Bellingham Shipping Terminal where currently ABC Recycling generates over \$700,000 in revenue for the Port of Bellingham annually.



A Modular Shredder – Purchase of Scrap Metal Materials

ABC will accept for-purchase ferrous and non-ferrous metal material, consisting primarily of post-consumer depolluted automobiles and kitchen appliances.

- This facility will process end-of-life vehicles and post-consumer appliances with a majority coming **from Whatcom, Skagit, and BC.**
- The variety and complexity of end-of-life products has increased, requiring more sophisticated sizing, sorting and processing.
- Implementing Best Management Practices: All materials purchased by the facility will be subject to an Inbound Source Control Program, which is a management system that ensures material quality meets codified standards for acceptance.
- Purchased materials will be transported into the facility by truck (75% - 90%) and by rail (10% - 25%).



A Modular Shredder - Production of High Quality, High Yield Miscellaneous Metal Products

ABC will sell the miscellaneous metal products *to industries that require such metals, creating a new revenue stream.*

Shredded ferrous and non-ferrous metal products are ideal input for steel mills and other metal industries because they yield a high amount of hot metal with a concise, precise and consistent chemistry.

Electric shredding machines and related metal separation and reclamation equipment are cost-effective methods to isolate various types of metal products from post-consumer scrap materials.

Vendor selection and process design will integrate the latest technology to optimize recovery.



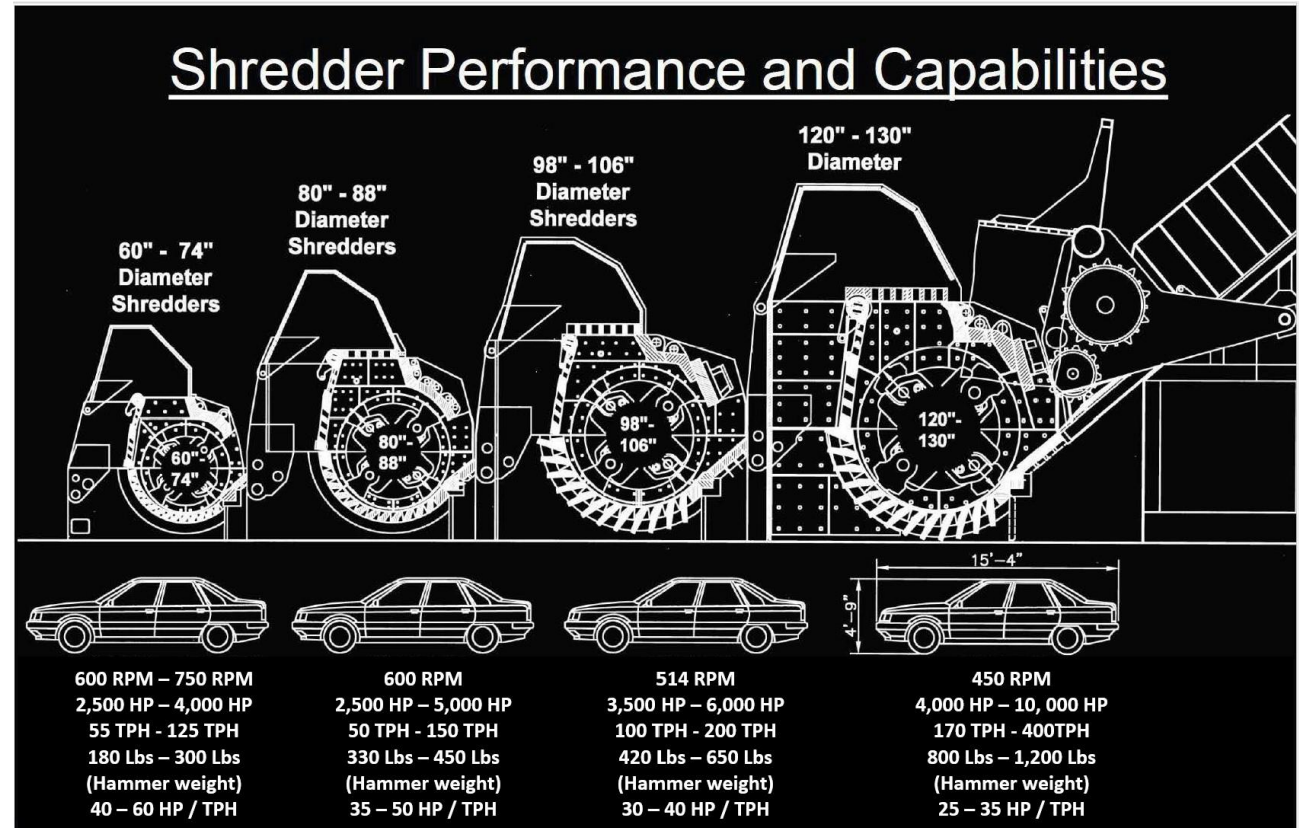
Metal Shredders – Size, Scale and Scope

Metal Shredders vary in size, scale and scope. Let's compare and contrast to gain insight on the proposed project.

This image provides relative shredder performance and capacity for various size (diameter) shredders paired with various size motors.

ABC plans to install a 74" Modular Shredder, powered with a 4,000 hp a/c motor operating at 720 RPM, suitable to produce 80 to 120 ferrous shredded tons per hour with a density of 70 to 90 pounds per cubic foot of ferrous metal material, using a hammer weight of 287 Lbs.

This puts the ABC Metal Shredder at the smaller end of the spectrum as compared with other shredders in the industry.



Modular Shredders – Primary Components: Infeed Conveyor

The primary components of a modular shredder ensure durability and efficiency of the process.

The Infeed Conveyor is a very strong structure designed to match the feed ramp and shredder. The conveyor belt is made up of heavy curved triple grouser flights, chain, and rollers selected from D-4 type units.

This infeed conveyor includes a steel support structure and complete drive unit. The drive for this conveyor is a hydraulic pump and motor setup that is connected to the infeed conveyor head shaft.

This infeed conveyor is 88 feet long, at an incline of 20 degrees. This unit includes an above ground horizontal loading section 13 feet in length.



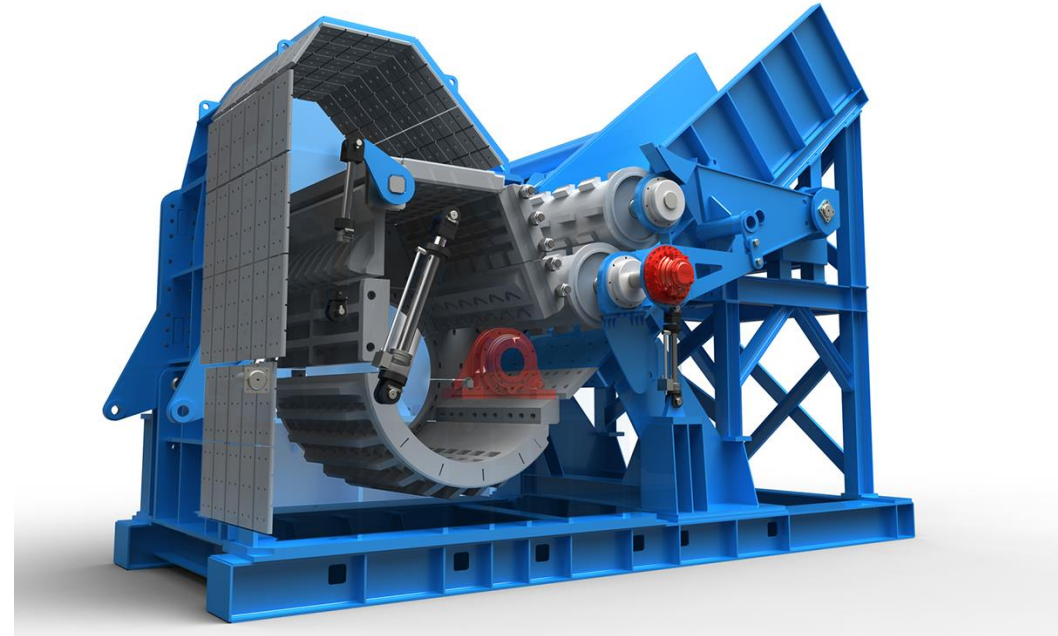
Modular Shredders – View with Double Feed Rolls

The shredder housing, fabricated from steel with heavy duty liners, will be modular; only smaller shredders ranging from 60" to 80" are designed this way.

Wear liners contoured from 3.0 to 5.0 inches cover the interior of 2.0-inch-thick steel shredder walls. The rotor (not shown) sits inside steel grates with angled openings that allow processed material to discharge efficiently at the top and bottom. A 36" tall reject door opens inward for discharge of pieces that will not pass through the grates.

The feed system consists of heavy-duty steel structure, supporting a 40-degree, 24 ft. long, 30 ft. height ramp with hydraulically driven Double Feed Rolls.

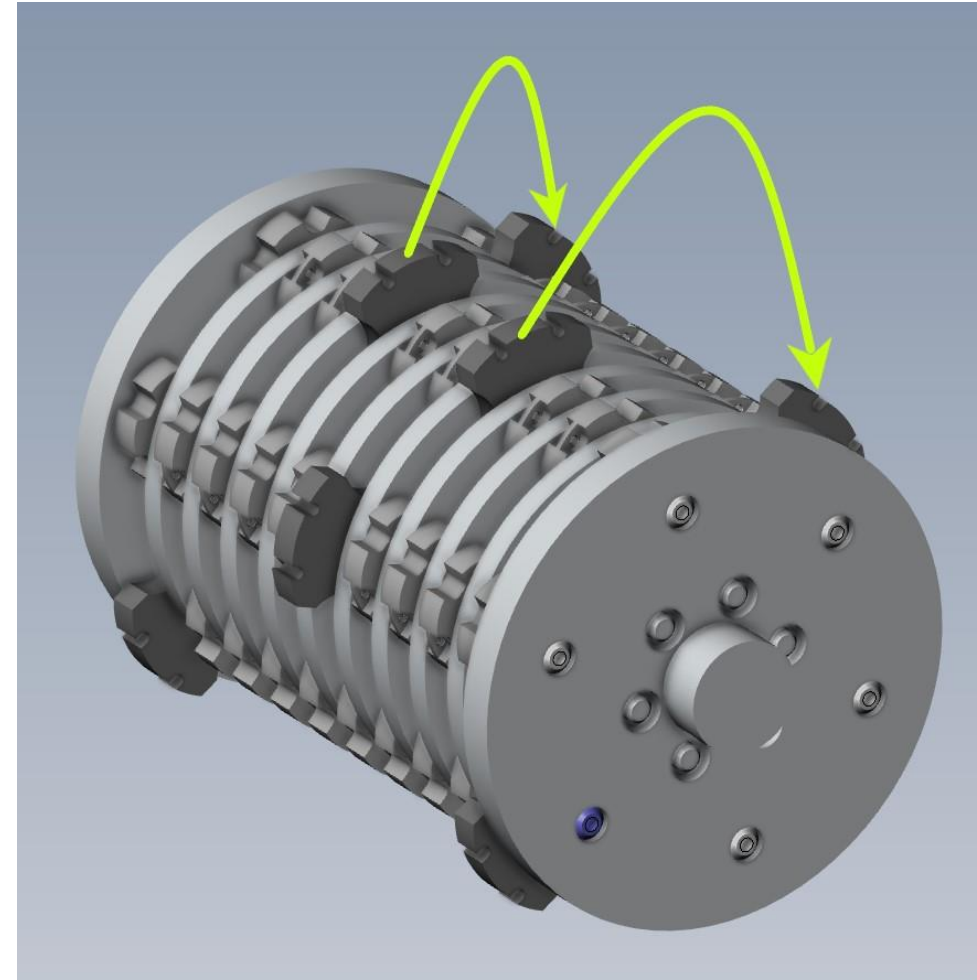
Both upper and lower feed rolls have 3.0" abrasion resistant teeth, supported by heavy duty bearings and driven by (2) hydraulic motors.



Modular Shredders – Disk Rotor with Hammers

The rotor that spins within the shredder housing contains hammers that swing out radially and provide the force need to shred the depolluted automobiles and kitchen appliances, liberating metals and nonmetallic components.

The 100" width Disk Rotor comes designed with 11 plate disks and 10 slots. The disk can use between 10 to 16 hammers (12 is standard), variable per application requirements. The hammers weight 287 Lbs. made of cast manganese.



Modular Shredders – Under Mill Vibrator and Output

The shredded material flows through grates surrounding the rotor, onto the Under Mill Vibrator.

The Under Mill Vibrator is a 74" wide, 182" long heavy-duty shaker deck weighing 16,000 Lbs. Electrically powered @ 900 cycles/minute, this unit conveys shredder output to a discharge conveyor that carries the material to the Separation Building where electromagnets remove ferrous material for future sale to steel mills.

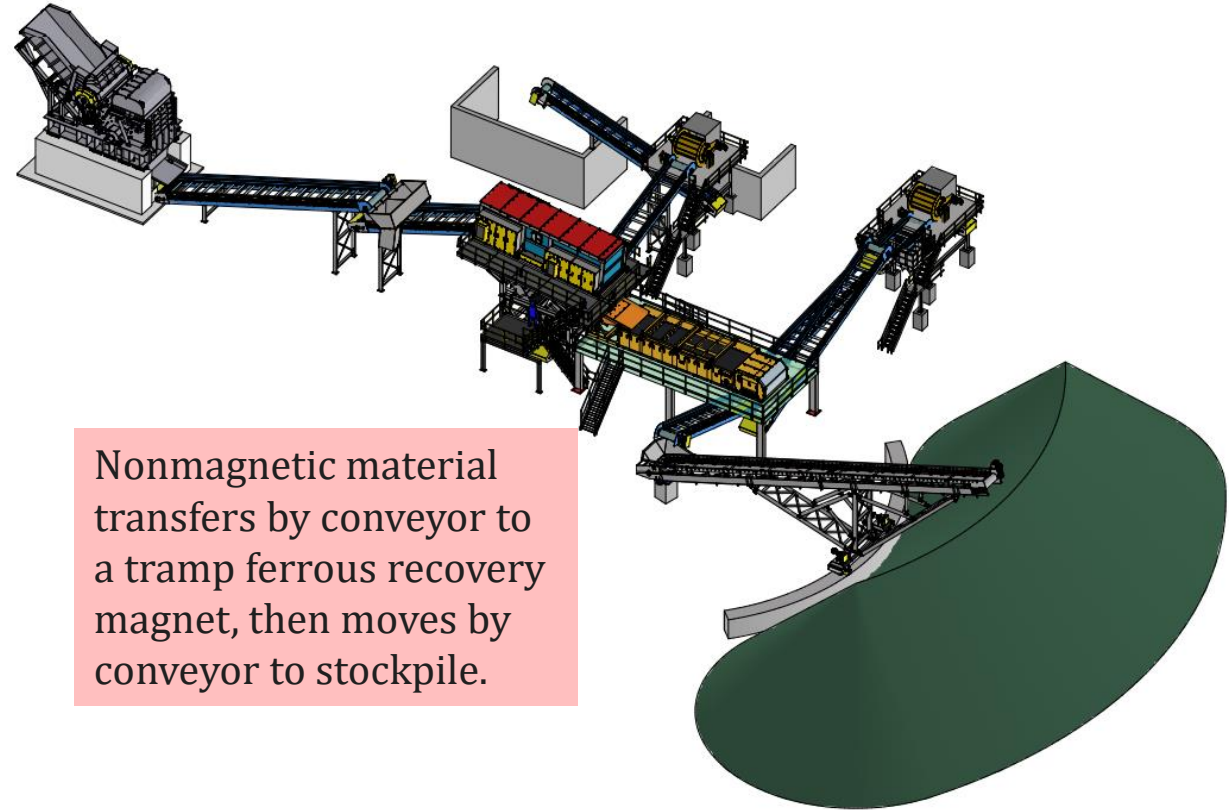


Modular Shredders – Post Shredding Separation System

The equipment shown here, excluding the metal shredder and the ferrous material stockpile, will operate inside the Separation Building.

Shredded product will transfer by conveyor from the Under Mill Vibrator to a Poker Picker Device (to remove long bars using a side chute). Another conveyor will transfer remaining shredded product to the magnetic separation system. Ferrous material is lifted from the shredded product and carried over both electromagnetic drums and transferred via vibratory feeder to a ballistic separator and polishing drum magnet for quality control.

This system produces Shelmo, consisting of mixed copper and aluminum bearing material comprised of motors without cases.



Nonmagnetic material transfers by conveyor to a tramp ferrous recovery magnet, then moves by conveyor to stockpile.

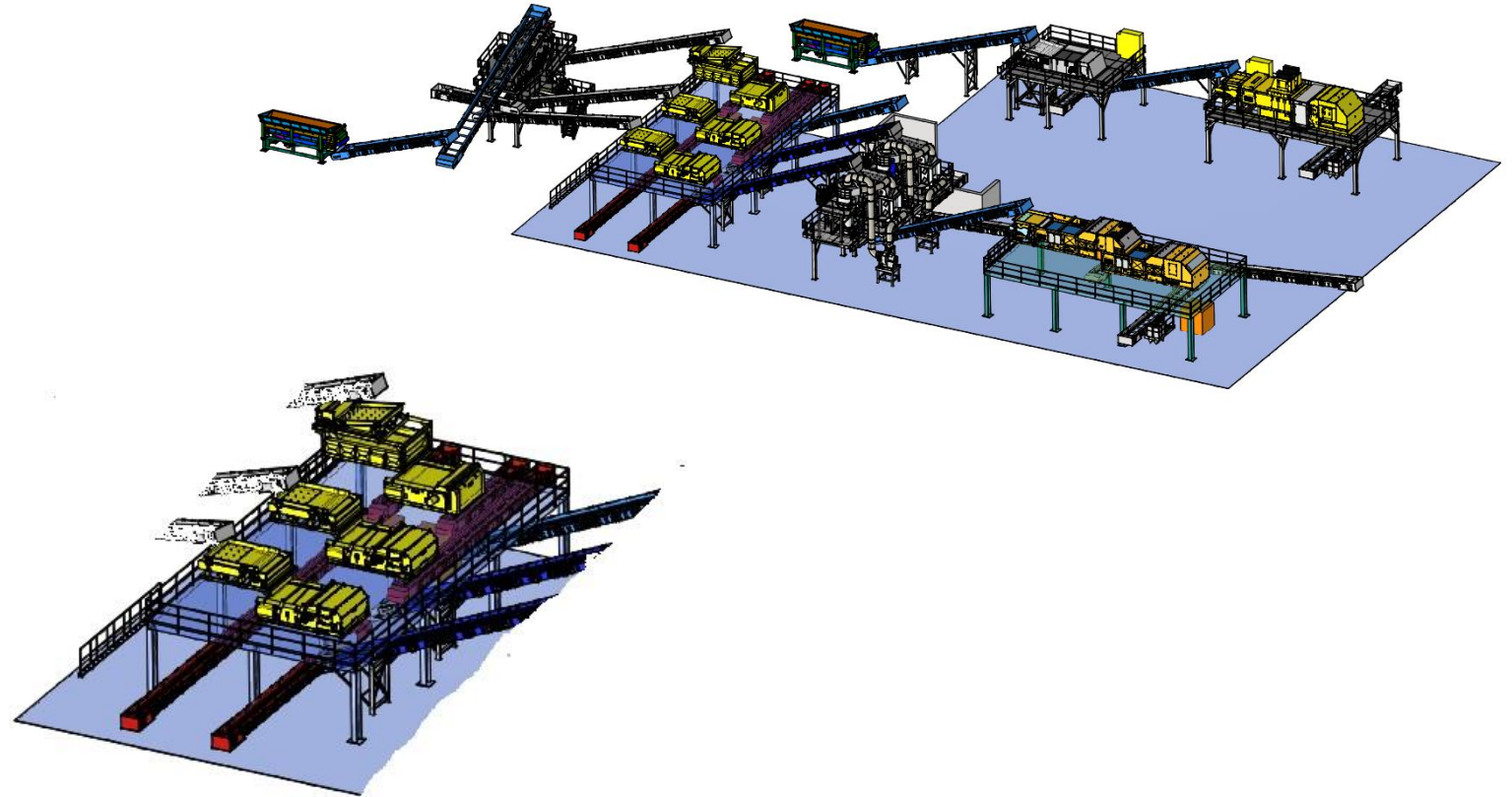


Modular Shredders – Non-Ferrous Reclamation System

The equipment shown here, excluding batch feeder, triple-deck screen and related conveyors, will operate inside the Reclamation Building.

A wheel loader will move nonmagnetic material from the Separation Building to the batch feeder, which will then process through the triple-deck screen.

ABC will build the fully equipped system in phases. The initial phase includes transfer conveyors, Eddy Current separator units and related platforms. **This system will produce Zorba**, a combination of aluminum, copper, lead, stainless steel, nickel, tin and zinc, in elemental or alloyed (solid) form.



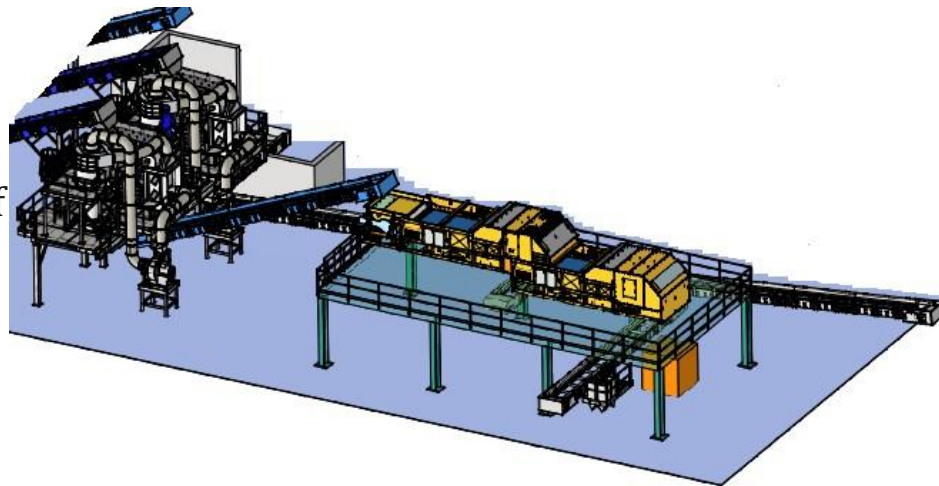
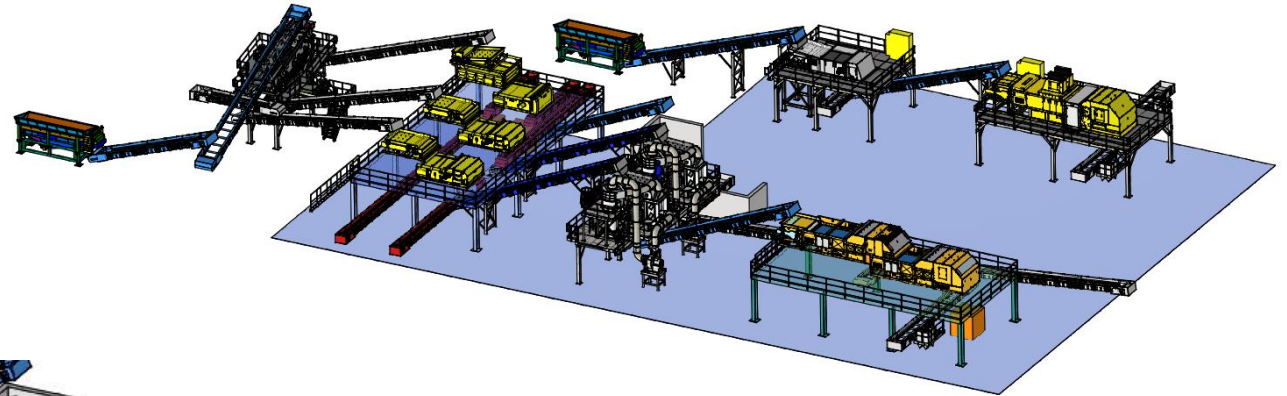
Modular Shredders – Non-Ferrous Reclamation System

The equipment shown here, excluding batch feeder, triple-deck screen and related conveyors, will operate inside the Reclamation Building.

A wheel loader will move nonmagnetic material from the Separation Building to the batch feeder, which will then process through the triple-deck screen.

ABC will build the fully equipped system in phases. The second phase includes transfer conveyors, air classifiers, dual-cascaded induction sensor units and related platforms.

This system will produce Zurich, a combination of stainless steel, insulated copper wire, aluminum, copper, lead, nickel, tin, and zinc, in elemental or alloyed (solid) form.

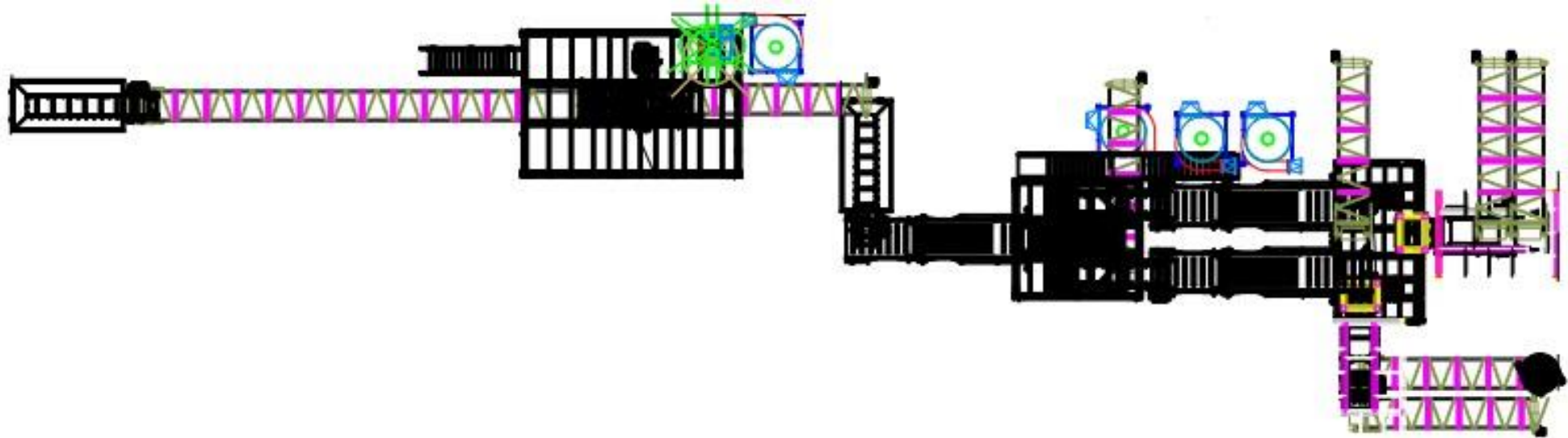


Modular Shredders – Non-Ferrous Reclamation System

ABC will build the fully equipped system in phases.

In the third phase, a wheel loader will move nonmagnetic material from Phase I and Phase II to the batch feeder, which will then process through a small metal recovery system including transfer conveyors and platforms, a vertical balling mill, a primary and secondary vacuum destoners, circular screeners, eddy current and induction sorters, rotary screens and air tables.

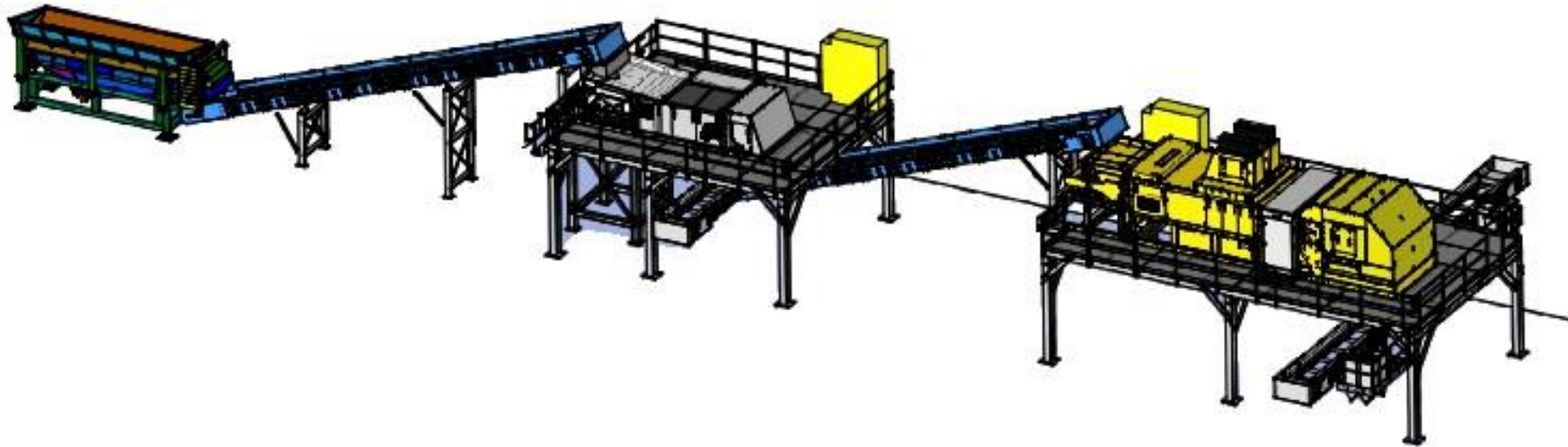
This system will produce Zorba, Zurich, (as well as Clove / Cobra / Cocoa, which consist of bare, uncoated and unalloyed copper wire scrap nodules, chopped or shredded, minimum 97% to 99% copper, free of insulation and metal impurities).



Modular Shredders – Non-Ferrous Twitch System

ABC will build the fully equipped system in phases. In the fourth phase, located in the Twitch building, a wheel loader will move mixed metal material from Phase I in the Reclamation building to the batch feeder outside of the Twitch building. A conveyor will transfer the material into the building onto a cassette feeder, over an eddy current, and on to a state-of-the-art combination sensor sorting system.

This system will produce Twitch, a clean sheet aluminum product containing not more than 1% maximum free zinc, 1% maximum free analytical iron, and not more than 2% non-metals. **The system will also produce Zebra**, containing brass, copper, zinc, nonmagnetic stainless steel, and copper wire.



Addressing Community Concerns

- **Emissions**
- **Fires**
- **Noise**
- **Ecological**
- **Stormwater**
- **Trucks**



Modular Shredders – Managing Materials Entering the Facility

Contracts and Requirements

- All customers will be provided a list of acceptable materials and sign contracts verifying compliance with regulatory requirements. This includes the full depollution of vehicles or appliances, removal of fluids or non-conforming materials.

Inbound Source Control

- All inbound materials will be visually inspected for quality as well as prohibited materials as they enter and prior to being accepted at the facility.
- **Any prohibited materials shall be rejected from the facility.**
- Inspectors will also be positioned at the materials staging area and will inspect all loads during offloading process.



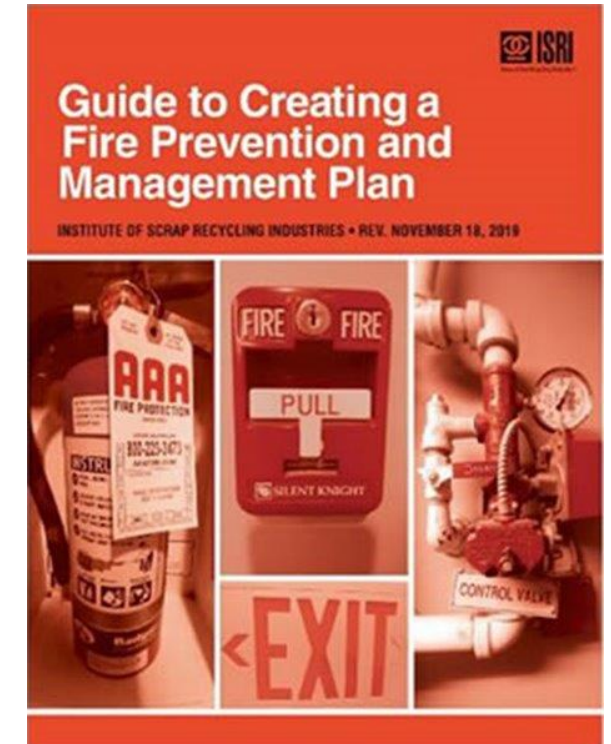
Modular Shredders - Risk Reduction Measures and Controls

ABC, working together with the local Fire Marshall, will design the facility to reduce risks and ensure access to the site to facilitate response, if needed.

- Include an emergency access lane around the facility perimeter.
- Position fire hydrants strategically around the site.
- Develop fire suppression systems, where needed, to ensure compliance with local code.

Additional technology and best management practices include:

- Water and Foam Injection Systems installed within the shredder housing.
- Thermal Cameras installed to identify potential temperature changes in stockpiles.
- Daily processing of purchased inventory; if circumstances prevent processing, management will create small stockpiles with fire breaks and maintain a fire watch until all inventory is processed.



Modular Shredders – Risk Mitigation and Controls

ABC has worked with qualified consultants to understand the potential impact of sound outside the facility perimeter.

Sound is measured in Decibels (dB)

- 30 dB = whispering*
- 60 dB = normal conversation*
- 95 dB = motorcycle engine running*

Receiver	EDNA	Predicted Shredder Noise Level at Receiver (dBA)	Noise Limit (dBA)
R1	Class A	47	60
R2	Class C	50	70
R3	Class A	51	60
R4	Class C	60	70
R5	Class B	38	65
R6	Class A	36	60
R7	Class C	67	70

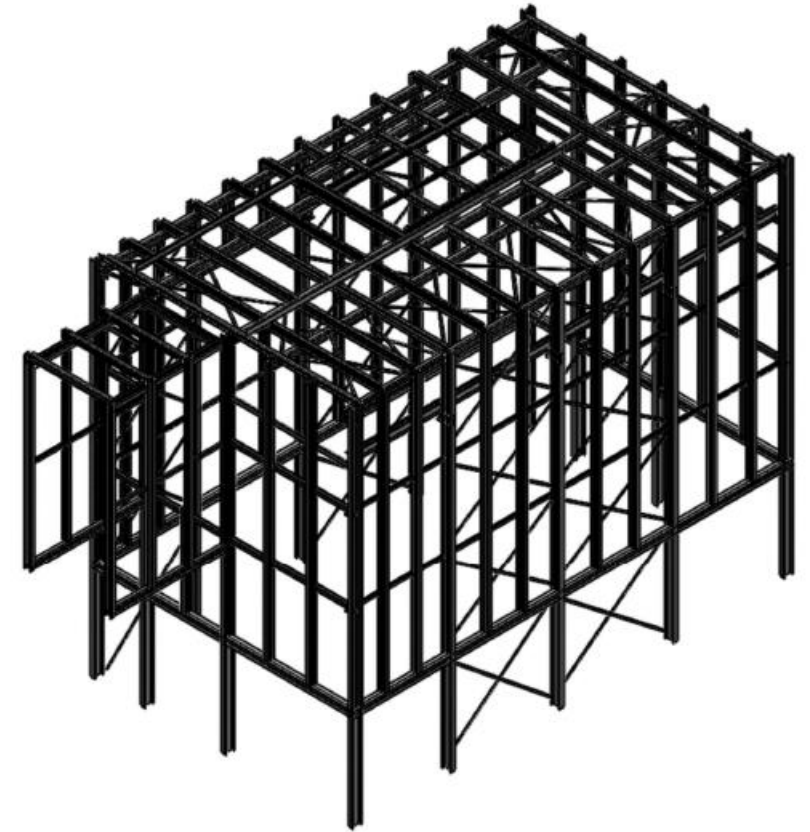
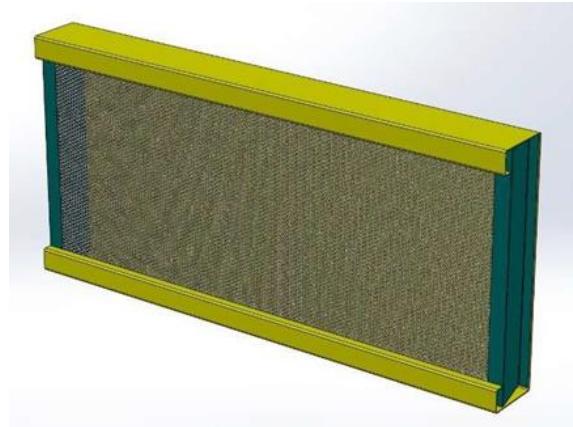
Class A: Residential, Class B: Commercial, Class C: Industrial



Modular Shredders – Risk Mitigation and Controls

ABC will work with qualified professionals to attenuate sound from the shredding and other processes.

- A 4-sided enclosure will surround the shredder, a portion of the infeed conveyor and a portion of the first output conveyor. The proposed enclosure incorporates individually replaceable wall panels, designed to mitigate sound.
- The proposed structure will be designed for sound to be absorbed or directed upwards.
- The shredder has been positioned in the central part of the facility to increase distances from Marine Drive and optimize intervening buildings, landscapes, and terrain to enhance noise reduction.



Modular Shredders – Planned Environmental Safeguards

- ABC's metal shredder facility will be designed with a high standard of environmental protection in mind. **The shredder itself will be enclosed on all four sides, providing noise and debris control.**
- To minimize dust emissions during material handling, ABC will utilize **atomization technology (wetting) at the infeed pile** as a best management practice. Additionally, ABC will **implement water injection during the shredding process**, which will significantly reduce emissions. ABC will commit to the continued use of this equipment in their operating permit conditions.
- After shredding, **all downstream processing will occur inside enclosed buildings**, significantly limiting emissions.
- As part of the permitting process, ABC will complete emissions studies to confirm that the controls proposed are protective of human health and the environment.



Modular Shredders – Planned Environmental Safeguards

- ABC understands the importance of complying with air quality regulations and is committed to securing the necessary permits.
- ABC has engaged an expert consulting firm to complete the required studies and work closely with the Northwest Clean Air Agency (NWCAA) in obtaining an air permit.
- This comprehensive permitting process involves the calculation of emissions from each proposed process. This data allows ABC to model how air emissions will disperse from the site and will include site-specific meteorological, surface and terrain data.
- **ABC will mitigate identified air quality issues to protect both human health and the environment** in addition to its planned environmental safeguards prior to NWCAA issuing an Order of Approval. Such mitigation measures will be coordinated with and reviewed by NWCAA for their approval.



Modular Shredders – Planned Environmental Safeguards

- In the issued air permit, ABC will have commitments to certain operating conditions, working with the NWCAA will ensure the facility is maintaining compliance.
- Routine sampling, inspections, and reporting will be conducted by ABC to facilitate NWCAA oversight of the facility. Inspections conducted by NWCAA will also ensure adherence to the established permit requirements.
- ABC recognizes that responsible operation of a facility is an ongoing commitment and is dedicated to maintaining a **safe and environmentally responsible** facility.



Modular Shredders – Planned Environmental Safeguards

Stormwater Management - Treatment Process

- The proposed stormwater design includes a specialized stormwater quality system that will significantly improve water quality from the current (pre-construction) condition.
- Within the water treatment system, ABC will employ a multi-step process to ensure the highest standards of water quality. After initial settling in the detention pond, stormwater will undergo treatment for turbidity, pH, oils, and metals as specified by the Department of Ecology.
- A key component of this process is electrocoagulation, a well-established and proven technology that effectively removes contaminants from stormwater. This advanced treatment method exceeds the minimum requirements for the site and is a testament to ABC's commitment to environmental responsibility and regulatory compliance.



Modular Shredders – Planned Environmental Safeguards

Stormwater Management - Detention pond

- To reduce flows to the municipal stormwater system and free-up additional capacity and stress on the system, ABC's proposed design includes the construction of a stormwater detention pond that will reduce the peak 100-year flowrate from the site by at least 90% from the existing condition.
- The purpose of the detention pond is to retain water on site and to allow for the settling of suspended solids in stormwater before it undergoes further treatment. These essential steps help prevent the release of contaminants into the environment.



Modular Shredders – Planned Environmental Safeguards

Stormwater Management – Industrial Stormwater Permit

- ABC recognizes the importance of regulatory compliance, accountability, and agency oversight in managing stormwater. To this end, ABC will secure an industrial stormwater permit that outlines stringent requirements for its operations as determined by the Washington Department of Ecology.
- In the site-specific Stormwater Pollution Prevention Plan to be developed for the facility, ABC will include commitments related to the continued operation and maintenance of the treatment system.
- Ongoing monitoring (testing) for contaminants will be scheduled on a quarterly basis to verify compliance, and results will be reported to the Department of Ecology.
- Through the permit, ABC will commit to an escalating corrective action schedule should future issues be identified. This approach ensures that ABC's stormwater is **protective of the environment and maintains compliance**.



Modular Shredders – Planned Environmental Safeguards

Traffic Impact and Mitigation – Over the Road

Inbound and Outbound Truck Shipments:

Materials in the local Washington State area and southern BC region will arrive at the facility via the Marine Drive entrance. All shipments shall meet DOT requirements for the safe transport of materials.

Traffic to and From the Facility

The facility will employ 30 people at the facility when at full capacity. No one intersection is expected to experience impacts from the facility, as the peak hour volumes at a given intersection are expected to be low.

Most of the private vehicles and truck traffic would use the primary arterials, including Bennett Drive. **However, trucks can use other roadways in Whatcom County provided weight restrictions are met, including Alderwood / Airport Way via Marine Drive.**



Responsible Shipping

Trucks carry potentially hazardous materials **safely** through our community every single day.

Drivers are required to **secure their load**, per Dept. of Transportation (DOT) regulation.

Best management practices will be in place to ensure trucks do not track out dirt and debris when entering and exiting the facility.



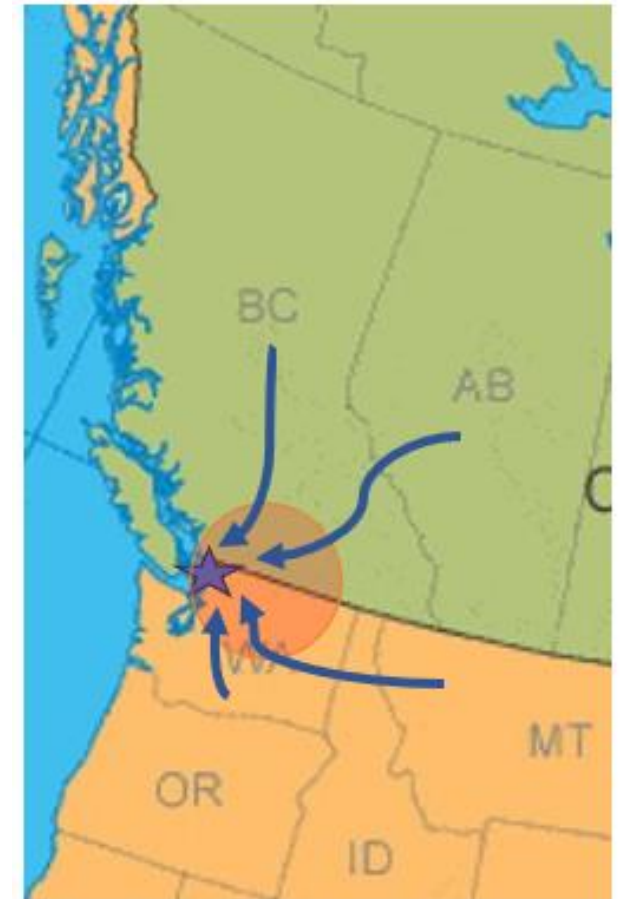
Modular Shredders – Planned Environmental Safeguards

Traffic Impact and Mitigation - Railroad

Rail Shipments:

Materials outside the local area will primarily arrive by rail at the facility. Rail shipments have the capacity of multiple truckloads of materials in a single railcar, helping reduce potential total inbound and outbound truck traffic at the facility.

Rail services are anticipated to occur once per day and all inbound and outbound shipments will meet all Federal Railroad Administration (FRA) regulatory requirements.



Conclusion

Metal Shredding facilities are an essential component in confronting the climate crisis and providing family wage jobs.

ABC Recycling plans to build a state-of-the-art metal shredding facility to prepare materials for market.

The facility includes a smaller, modular metal shredder and several post-shredding processes.

Significant mitigation measures are outlined to address concerns relating to noise, emissions, stormwater, and traffic.

The facility is an appropriate fit and use for the location.



What Happens Next

- Currently Whatcom County and other relevant regulators are reviewing our permit materials. You can see all the submitted materials on the County website:
<https://www.whatcomcounty.us/4277/ABC-Recycling>
- This includes a State Environmental Protection Act (SEPA) review.
- The Hearing Examiner and then County Council will review those permits and conditions.
- If granted, construction to begin in 2024 with ribbon cutting in 2025.



The screenshot shows the Whatcom County website. The header includes the county logo, navigation links for 'How Do I?', 'Your Government', 'County Services', and 'Safety & Justice', and a search bar. The main content area is titled 'Planning & Development Services' and features a sidebar with 'Ranch Quarry Mine' and 'ABC Recycling'. The 'ABC Recycling' section contains a breadcrumb trail, a title, and a paragraph of text describing a pre-application meeting request for a metal processing facility. Below the text is a blue button labeled 'Pre-Application Documents' and a list of documents, including 'PRE2023-00097 Pre-application w. revised signature page 20231024'.



Questions

- We will now answer questions submitted by neighbors
- Staff will be available after that to answer questions individually
- If we did not get to your question, we will follow up with everyone who gave us their email with a FAQ and video of the presentation
- Thank you for coming!

