Project Planning: Attachment B
Project Development Form

This form is to be used to document project planning and approval in order to assure that: project options are well-considered; the best option is put forward; initial and continuing costs and funding are addressed; and that Council approval has been given for implementation. Use this project scoping form with the Project Planning and Approval Process Flow Chart.

Answer the questions that pertain to your proposed project. Attach additional narrative pages if necessary. Type in the electronic form using as much space as you feel is necessary.

Part 1. Project Identification

Name of project: Horizontal Baler Purchase

Department: Disposal & Recycling Center (DRC) Contact: Paul Berry

E-mail: dumpmaster@gustavus-ak.gov Phone 907-697-2118

Part 2. Project Scope refers to a project's size, goals, and requirements. It identifies what the project is supposed to accomplish and the estimated budget (of time and money) necessary to achieve these goals. Changes in scope will need Council approval.

1. What is the project?
   This project is the specification, purchase and installation of a new horizontal baler for the DRC.

   - What are its goals and objectives?
     Goal:
     - For the DRC to be able to bale a wide variety of both recyclable and non-recyclable material with a machine that is robust, can produce dense bales, is able to process a high volume of material and needing minimal operator time for the feeding of material into it.

     Objectives:
     - To specify and purchase the right baler for the DRC's needs. There are a wide variety of balers on the market and it is important to know which style and model is going to meet the greatest number of our objectives.
     - Specify a baler that can utilize an in-feed hopper to allow the operator to use a loader to feed the baler. Additionally, specify a baler that could be fitted with an in-feed conveyor should the need arise in the future.
     - Specify a baler that produces bales sized to maximize the space available in a 20' or 40' long shipping container. Gustavus is a rural community and our shipping costs are high. The DRC is able to achieve a diversion ratio of over 50% for the waste it receives from the

public. This means a lot of recyclable material is exported from the community and the best value is achieved when the most material as possible is fit into a shipping container.

- Specify a baler that can bale Municipal Solid Waste (MSW) as dense as possible. The community of Gustavus is surrounded by national park wilderness and open water. The possibility of relocating Gustavus's landfill in another location within the City's boundaries is highly unlikely. Because the City's 11.9 acre DRC parcel has a finite holding capacity for MSW, that limited capacity needs to be maximized as much as possible by compressing the waste as much as possible.

- Who/what will be aided by this project? Who are the targeted stakeholders/customers?
  The City benefits from this project as the City is the MSW service provider. The DRC Operator and facility benefit as the baler is a core piece of equipment in the facility. By extension, the community of Gustavus benefits from having a well designed solid waste facility.

- Is a preliminary survey necessary to identify the number of potential customers/users? How will you design and conduct the survey?
  No. This is not a new service but an improvement of an existing service.

- What is NOT covered by this project? What are its boundaries?
  The DRC has several different material handling pieces of equipment in its operation: loaders, glass processing equipment, composting operations etc. This project only addresses the baler component of the DRC's operation.

2. Why is the project needed?
   - What community problem, need, or opportunity will it address?
     The project is important because the DRC needs equipment that can maximize the usable life of the City's landfill. The City also needs equipment that can help keep shipping costs low by being able to fill shipping containers as efficiently as possible. The current balers have been in use for 20+ years and need to be upgraded.
     The DRC has been using balers to process MSW since May of 1995 when the facility stopped open the burning of MSW. In 1997 the DRC exported its first bales of recyclable plastics and cardboard.
     The DRC's initial baler was a very small vertical baler which produced bales weighing less than 100 pounds and were not very dense. In 2003 the DRC was able to start using a larger vertical baler, the Cram-a-lot DHR-42, which allowed the facility to bale a wide variety of recyclables and ship those recyclables to recyclers in the lower 48. The DRC also uses a smaller Harmony Enterprises MD30HD vertical baler for baling MSW. This baler is over 20 years old and is undersized for the facility.
     Time is taking its toll on both the DHR-42 and MD30HD and they frequently need welding and other fixes to keep them in good working order. Additionally, both the DHR-42 and the MD30HD are vertical balers with no in-feed hopper or conveyor option and have to be hand-fed. Hand-feeding is a slow process and takes up a lot of operator time, this adds to the cost of the DRC's waste handling operation.
     A horizontal baler, constructed with the baling chamber (also called the charge box) lying on its side rather than upright like a vertical baler, can utilize more steel in its construction because the weight of all that steel is not an issue, such weight actually makes the baler more stable. Wheres a vertical baler has to be constructed in such a way

that the device does not become too top heavy. While certain vertical balers can have an in-feed conveyor, those conveyors tend to be designed for small items and can only feed into the back of the baling chamber, out of the way of the large door that accesses the baling chamber. The layout of a vertical baler limits how material can be fed into it.
A horizontal baler can accommodate a wider variety in in-feed systems such as hand-fed, an in-feed hopper or conveyor. Horizontal balers are better for material throughput.
A horizontal baler can use the power of it large compressing ram to push finished bales out of the baling chamber whereas a vertical baler has to use a sideways force to remove the bale from the baling chamber. Typically this sideways force is a dump-tray mechanism located on the bottom of the baling chamber. This dump-tray is activated by the upstroke of the baling ram. The dump-tray mechanism in not as robust as the extrusion process of a horizontal baler.

- What health, safety, environmental, compliance, infrastructure, or economic problems or opportunities does it address?
  As mentioned elsewhere in this document. The density of the bales produced at the DRC has direct bearing on shipping costs for recyclables and the longevity of the facility's MSW waste mound.

3. Where did the idea for this project originate? (Public comments, Council direction, committee work?)
   DRC Manager/ Operator Paul Berry.

4. Is this project part of a larger plan? (For example, the Gustavus Community Strategic Plan, or committee Annual Work Plan?)
   This project is part of the DRC's General Operations Plan on file with the Alaska Department of Environmental Conservations Solid Waste Program. This project is also a component of the City's annual Capital Improvement Plan document.

5. What is your timeline for project planning?
   - By when do you hope to implement the project?
     It would be most efficient to have the new baler installed as part of the construction process on the DRC's New Main Building Project. The DRC existing main building is too small to house a horizontal baler. The exact schedule for the New Main Building Project is not known at this time.

   - Will the planning or final project occur in phases or stages?
     No.

6. What is your budget for the planning process? Will you be using a consultant?
   No expenditure for planning is anticipated. No consultant has been used to date.

7. What is your rough estimate of the total cost of the planning and final product? At the least, please list cost categories. See Part 4. (Ques. 4-8) and Part 5 (Budget) for guidance.
   Currently this project is estimated to cost $222,800.00

Baler purchase	$190,000.00
Seattle – Juneau Shipping	$5,160.00

Juneau – Gustavus Shipping	$2,400.00
Installation	$5,000.00
Item Total	$202,560.00
Contingency 10%	$20,240.00
Grand Total	**$222,800.00**

Parts 3 - 6. Project Investigation and Development
Parts 3.—6. refer to social, environmental, and financial impacts of various options. These questions will help you document your consideration of alternatives and your choice of the option providing the best value for the community. Your goal is to generate alternatives and make a recommendation from among them. Return to Part 3., "Summary" after applying Parts 4.—6.

Summary:
1. What alternative approaches or solutions were considered? Make a business case for your top two or three options by discussing how effectively each would fulfill the project goals, and by comparing the economic, social, and environmental costs vs. benefits of each one.
There is no real alternate to baling in the DRC's operation. However, there are a variety of balers available – from vertical to horizontal layouts; single-ram or two-ram balers; and open-end or closed-end (also called closed-door) balers. There are also auto-tie balers and hand-tie balers refering to the mechanims for fastening the steel wire ties that hold the bale togeter after it has been removed from the baling chamber.
There are several feeding styles for a baler: hand-fed; in-feed hopper and conveyor-fed. Additionally, the conveyor-fed layout can have an above-ground hopper at the base of the conveyor where material is lifted and dumped into the hopper which then feeds the base of the conveyor and a below-grade conveyor design where the low end of the conveyor is below grade, situated in a vault like area which allows a loader to simply push material into the base of the conveyor with no lifting.

2. What solution was chosen as the best and why is it the best?
Based on the importance of the baler in the DRC's operation, the variety of materials to be baled and the current and projected volume of materials to be baled by the DRC, a horizontal, single-ram baler with a closed-door, manual-tie design was chosen. Additionally, a baler having the option of either an in-feed hopper or an in-feed conveyor was selected.

Identified models:
Max-Pak HCE60FE-9 horizontal baler
American Baler NF4560-1050 horizontal baler

While vertical balers are less expensive and need less operating area than a horizontal baler, the DRC will have occasion, such as the busy summer season, where a lot of material will need to be baled an an on-going basis. It is best to chose a baler design that can more easily handle times of high volume. All vertical balers must be hand-fed unless they have an in-feed conveyor option and such conveyors are designed for smaller materials like aluminum cans or plastic bottles and are not well suited for MSW, scrap metal/ white goods or even cardboard. It was deemed more important to have a baler design that can handle machine feeding, which depend on in-feed hoppers or conveyors, than to rely on a baler which forces the operator to hand-feed materials. The horizontal, closed-door, in-feed hopper design was chosen so that the DRC could process a

lot of material without having to add more operating time when processing waste during a busy season.

3. Identify your funding source(s).
   - How will the project be funded initially, and for its operating life?
     Initially a grant or grants will be pursued for funding of the project. Operating expenses will be covered by the DRC's utility and equipment maintenance budgets. A well cared for horizontal baler will not have a high maintenance cost.

   - Is there a matching fund requirement? Please provide details.
     At this time it is not known what or how much of a grant match will be. A 10% - 50% match from the City would not be outside of the City's financial means.

Part 4. Environmental, Social, Financial Impacts

1. Project Impacts Checklist

Will this project affect:	No	Yes (+/-)	Maybe
Environmental quality? (+ = impact is beneficial; - = harmful)			
• Climate change	x		
• Streams/groundwater quality	x		
• Air quality	x		
• Soils/land quality	x		
• Fish/wildlife habitat, populations	x		
• Plant Resources (timber, firewood, berries, etc)	x		
• Invasive or pest species	x		
• Natural beauty of landscape or neighborhoods	x		
• Neighborhood character	x		
• Noise or other environmental impacts	x		
• Environmental sustainability		+	
• Hazardous substances use	x		
• Community waste stream		+	
• Light pollution at night	x		
Recreational opportunities?			
• Public land use and access	x		
• Trails/waterways	x		
• Parks	x		
• Public assembly/activities	x		
Education/training/knowledge & skill development?	x		
Public safety?	x		
Public health?	x		
Medical services?	x		

Emergency response?	x		
Economic performance & sustainability?	x		
• Employment of residents	x		
○ Short-term (i.e. construction)		+	
○ Long-term (operating and maintenance)		+	
• Cost of living reduction	x		
• Return on investment		+	
• Visitor opportunities/impressions/stays/ purchases		+	
• Competitive business environment		+	
• Support for existing businesses		+	
• New business opportunities	x		
• Economic sustainability		+	
• Attractiveness of City to new residents/businesses		+	
City government performance?			
• Infrastructure quality/effectiveness/reach (more people)		+	
• Existing services		+	
• New services	x		
• Cost of City services		+	
• Tax income to City	x		
Transportation?			
• Air	x		
• Water	x		
• Roads	x		
Communications?			
• Internet	x		
• Phone	x		
• TV/radio	x		
Other? (type in)			

2. How does this project provide benefits or add value in multiple areas? (E.g., benefits both to the environment and to business performance.)

3. Are other projects related to or dependent on this project?

- Is this project dependent on other activities or actions?
  This project depends on the construction of the new DRC Main Building. Without the building there is no where to house the new baler.

- If yes, describe projects, action or activities specifying phases where appropriate.
  Look to the New DRC Main Building scoping document.

4. Will the project require additional infrastructure, activity, or staffing outside the immediate department or activity? (E.g., will the construction of a new facility require additional roads or road maintenance or more internal City staffing?)

As mentioned this project depends on the construction of a new DRC Main Building. Three phase power will also be required for this project. Project does not add to the staffing requirements at the DRC. Project should reduce operator time needed at the DRC for a given amount of materiel to process.

5. What regulatory permits will be required and how will they be obtained?
None anticipated.

6. What are the estimated initial (e.g., construction or purchase) and continuing operational costs of the project?
Purchase and installation costs were addressed earlier in this document.

7. Is an engineering design or construction estimate necessary?
Not anticipated.

8. Will operation of the project generate any revenue for the City such as sales, user fees, or new taxes? If so, how will the new revenue be collected?
No.

Part 5. Project Budget

Please refer Part 2 item 7 for the cost breakdown of the capital costs.

Proposed Budget Line Items

Construction project Budget estimate	Cost	Operational budget estimate (annual)	Cost
Administrative	$	Personnel	$
Project management	$	Benefits	$
Land, structures, ROW, easements	$	Training	$
Engineering work	$	Travel	$
Permitting, inspection		Equipment	$
Site work	$	Contractual	$
Construction	$	Supplies	$
Waste disposal	$	Utilities	$2,000
Equipment	$	Insurance	$ 400
Freight	$	Repair & maintenance	$1,000
Contingencies	$	Other (list)	$
Other (list)	$	Other (list)	$
Other (list)		Total direct costs	$3,400
		Indirect costs	$
		Income (fees, taxes)	$
		Balance: costs-income	$

Part 6. Jobs and Training (required by some granting agencies)

1. What service jobs will be needed for operation and maintenance?

DRC Operator will be responsible for baler operation and maintenance.

2. How many full-time, permanent jobs will this project create or retain?
_____1_____Create/retain in 1-3 years
_____1____Create/retain in 3-5 years

3. What training is necessary to prepare local residents for jobs on this project?
None.

4. How many local businesses will be affected by this project and how?
All businesses using the DRC will be indirectly effected.

Part 7. Business Plan (Upon Council request)

Upon Council request, please prepare a business plan for the operating phase of your leading option(s). Plans will differ according to the nature of the project.

There are a number of good Internet sites that will assist you in developing a business plan. One example (05/2018) is: http://va-interactive.com/tools/business_plan.html

Basic components of a business plan:

- The Product/Service
- The Market
- The Marketing Plan
- The Competition
- Operations
- The Management Team
- Personnel

Part 8. Record of Project Planning and Development Meetings

1. Please document the manner in which public input was received.
   - Public comment on agenda item at committee or Council meeting
   - Special public hearing
   - Dates and attendance for the above.
   - Written comment from the public (please attach)

2. Please use the following chart to document committee meetings, Council reports, and so on. Did the committee make recommendations or requests? Did the Council make requests of the committee?

Meeting Record

Event (Meeting of committee, Council report, public hearing, etc.	Date	Agenda Posted (date)	Minutes or record Attached? (yes/no)	Outcome Rec to Council, requested action of Council, etc.	No. of atten-dees

Part 9. Feedback to the Council

$3,000
$1,000
$1,000

With the understanding that this form must be adapted to a variety of projects, please provide feedback on how the form worked for your committee. Thank you for your suggestions.