

CITY OF GUSTAVUS, ALASKA
PROJECT SCOPING and DEVELOPMENT FORM

This form is to be used to document project planning and approval 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: GVFD Building Heating System

City Department: Fire Department

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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?

- What are its goals and objectives?
 - The goal of this project is to replace the heating system in the Gustavus Firehall to make the building more efficient and cost effective and to prevent an emergency if the current system fails. The recommendation is to install at least one toyo stove in the garage and a heat pump to heat upstairs. Ideally, it would be best to consider an additional heat pump discharge for the garage in addition to the Toyo. The heat pump would be utilized when it is cold, to ensure adequate heat coverage, and to use as an alternative to the Toyo during less cold temperatures, particularly when work or training needs to be done in the garage.
- Who/what will be aided by this project? Who are the targeted stakeholders/customers?
 - The Gustavus Firehall and equipment will be better protected if the aging and problematic boiler system fails.
- Is a preliminary survey necessary to identify the number of potential customers/users?
 - No. The potential customers are the citizens of Gustavus who rely on the EMS and fire protection equipment being ready and available.
- What is NOT covered by this project? What are its boundaries?
 - The project does not cover any new insulation, structural upgrades, or expansion of the building.

2. Why is the project needed?

- What community problem, need, or opportunity will it address?
 - This was brought to the attention of the fire chief by Mark Berry during Spring of 2023 when he was repairing the current heating system. He mentioned that the condensing oil fired furnace and the unit that neutralized the acidic condensate was not functioning correctly. This creates a corrosive biproduct and drips onto other parts in the furnace degrading the parts and wires and the burner itself. Parts are hard to come by as this is a Canadian manufacturer. It is also hard to find a replacement. He feels that in its current condition, it presents an unsafe situation and the repair, if it can be repaired, would cost as much as a newer more efficient alternative. Currently it is working, but if the parts in question degrade to a point where it no longer functions, it may not be repairable.

- What health, safety, environmental, compliance, infrastructure, or economic problems or opportunities does it address?
 - The Gustavus Firehall houses medical supplies which if frozen, will no longer be able to be used, which will cost the city in to reorder supplies and could jeopardize our capability to provide patient care. The fire engine has water gauges which can easily freeze, cracking the tubing, causing them to leak and no longer give an accurate reading.
 - The current heating system does not allow the top story to be separated from the garage which causes us to heat the garage to the same temperature as the office space. Allowing separate heating from the office space in the garage would mean we are heating the better insulated building to the temperature we want or need on both building floors.
 - The separate heating units will lower fuel costs and move heating to more electrical energy with the use of the heat pump(s).

3. Where did the idea for this project originate? (Public comments, Council direction, committee work?)

See Number 2 - This was brought to the attention of the fire chief by Mark Berry during the Spring of 2023 when he was repairing the current heating system. Parts are hard to come by as this is a Canadian manufacturer. It is also hard to find a replacement of the same model. The City direction has been looking to replace heating systems with more modern type of systems such as heat pumps. Even though we cannot rely solely on those, it would still be more efficient to have both sources and not have to heat the entire building from just fossil fuel systems.

4. Is this project part of a larger plan? (For example, the Gustavus Community Strategic Plan, or committee Annual Work Plan?)

The fire department itself does not have a larger plan but the City is looking for more efficient energy options for operations and maintenance.

5. What is your timeline for project planning?

- By when do you hope to implement the project?
 - The current plan is to implement this project in two stages. Once approved, stage one (see next question) should allow us to install the unit sometime this summer or early fall of 2024. The next stage is dependent on access to funding and council approval.

- Will the planning or final project occur in phases or stages?
 - The project will be done in two stages. The first stage will be getting a toyo stove rated sufficiently to cover at least 2,000 square feet of the garage but to keep - a backup for the current heating system so if the boiler does break down, we are not left without a heating system in the garage.
 - The second stage would be the installation of potentially another Toyo. This will require a lift pump to be installed to transport the fuel from the tank to the second toyo stove. Then procurement and installation of the heat pump with potentially two discharges. One for the upstairs office and training room space and one for the garage to help heat the garage when needed. From what I have heard and observed at City Hall with the Mr. Cool Heat pumps, is that brand will not work well with a larger building like the firehall as a standalone. It was recommended to use a Daikin heat pump which according to Berry Specialty Contracting, is a higher end brand (not do it yourself) and is being used in the community with success. It is also the brand that Berry Specialty Contracting is equipped to install and there are pressure tests and other installation considerations involved with this installation.

6. What is your budget for the planning process? Will you be using a consultant?

I have already secured an estimate for both phases of the project. The estimate is attached.

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.

The total project cost is estimated to cost \$22,860 according to Berry Specialty Contracting's estimate and includes both an electrical hook up estimate and 10% contingency costs. There are no current plans for a consultant for the job, other than the necessary contractors.

Phase one of the project is broken down below, phase two will be created when the estimate is received.

Parts 3., 4., 5., 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.
 - a. An option is to go with just heat pumps, this would eliminate the fuel consumption, however we would be reliant on heat pumps and cause higher electricity use and costs. With a rate increase looming, the certainty of higher electrical costs should be considered. The jury is still out on the effectiveness of heat pumps when it is very cold out. Also, it is better to heat the building from the floor up in terms of the vehicles and other equipment. We cannot risk compromising our equipment and supplies by only having heat pumps.
 - b. The other option is a combination of heat pumps and toyo stoves, ideally an L731/732 vented heater. This would still have the building half reliant on fuel, however this would create multiple back ups to keep the building heated. The L731/732 heater is rated for a 2,000 square foot house, and the largest heater sold by Toyo. This heater, in addition to the heat pump, will, according to the manufacturer’s rating, cover the heating for the garage which is about a 2,386 sq.ft² footprint.
2. What solution was chosen as the best and why is it the best?
 - a. While both options use electricity, option B would be the best solution as it would provide both efficiencies, a backup system and lower reliance on fossil fuels.
3. Identify your funding source(s).
 - a. Due to the urgency in part 1 of this project, it is suggested that we fund at least Part 1 in-house so we have a backup and will also buy us some time while looking for city wide funding for heat pumps. Bulk ordering of the heat pump units could likely realize some savings.

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		+	
• Streams/groundwater quality			+
• Air quality		+	
• Soils/land quality		+	
• 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			+
• Noise or other environmental impacts		+	
• Environmental sustainability		+	
• Hazardous substances use		+	

• Community waste stream	X		
• 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?		+	
Public health?		+	
Medical services?		+	
Emergency response?		+	
Economic performance & sustainability?		+	
• Employment of residents			
◦ Short-term (i.e., construction)		+	
◦ Long-term (operating and maintenance)	X		
• Cost of living reduction	X		
• Return on investment		+	
• Visitor opportunities/impressions/stays/purchases	X		
• Competitive business environment	X		
• Support for existing businesses	X		
• New business opportunities	X		
• Economic sustainability		+	
• Attractiveness of City to new residents/businesses	X		
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			+
• Water			+
• Roads	X		
Communications?			
• Internet	X		
• Phone	X		
• TV/radio	X		
Other? (type in)			

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

Switching the building from fuel heating to electrical, even by half, would allow the building to be more efficient and in turn lower the carbon footprint of the firehall. The cost of annual fuel consumption will be lower; however, the overall cost of electricity will increase, but it is unclear at this time until the firehall and city hall are on two separate meters.
2. Are other projects related to or dependent on this project?
 - a. Is this project dependent on other activities or actions?
 - i. Phase one of this project is not dependent on any other activity or action before the project starts.
 - b. If yes, describe projects, action or activities specifying phases where appropriate.
 - i. For Phase II, we may want to have a separate electrical meter installed but it would not stop the capability of being able to proceed with the installation of heat pumps.
3. 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?)
 - a. No.
4. What regulatory permits will be required and how will they be obtained?
 - a. None
5. What are the estimated initial (e.g., construction or purchase) and continuing operational costs of the project?
 - a. No initial costs are anticipated unless we must go out to bid. I do not think that will be necessary, particularly if we purchase the Toyo and then have it installed.
6. Is an engineering design or construction estimate necessary?
 - a. While a mechanical engineer could provide an overall recommendation of the building and perform certain calculations, I do not believe it is necessary for this project. Because the contractor has thirty plus years of experience installing heating systems in Gustavus and as the former fire chief, knows the building design and is familiar with our Southeast weather I trust his judgement in the decision for the appropriate equipment to heat the firehall. If the council believes we need an engineering design for this project, we will need to add an estimated cost for the plan and add it to Part 2 of the project. Probably no less than \$7,500 or the cost of the second Toyo and fuel pump installed.
7. Will the 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?
 - a. There will be no added revenue for the city.

Part 5. Project Budget: Phase one only.

Berry Specialty Contracting is updating an estimate for Phase II

Proposed Budget Line Items

Construction project Budget estimate	Cost	Operational budget estimate (annual)	Cost
Administrative	\$0	Personnel	\$0
Project management	\$0	Benefits	\$0
Land, structures, ROW, easements	\$0	Training	\$0
Engineering work	\$0	Travel	\$0
Permitting, inspection		Equipment	\$0
Site work	\$0	Contractual	\$0
Construction	\$1,552.50	Supplies	\$0
Waste disposal	\$0	Utilities	\$0
Equipment	\$ 2,511.65	Insurance	\$0
Freight	\$200	Repair & maintenance	\$
Contingencies	\$1,000	Other (list)	\$0
Other (list)	\$	Other (list)	\$0
Other (list)		Total direct costs	\$
Total	\$5,264.15	Indirect costs	\$00
		Income (fees, taxes)	\$
		Balance: costs-income	\$

Updated Latest Estimate Budget Line Items if Changed Date: _____

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	\$
Demolition and construction	\$	Supplies	\$
Waste disposal	\$	Utilities	\$
Equipment	\$	Insurance	\$
Freight	\$	Repair & maintenance	\$
Contingencies	\$	Other (list)	\$
Other (list)	\$	Total direct costs	
		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? Toyo service person, Heat pump service person
2. How many full-time, permanent jobs will this project create or retain?
 ___N/A___ Create/retain in 1-3 years
 ___N/A___ Create/retain in 3-5 years
3. What training is necessary to prepare local residents for jobs on this project? N/A
4. How many local businesses will be affected by this project and how? 2-

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 (12/2010): is http://www.va-interactive.com/inbusiness/editorial/bizdev/ibt/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 attendees

Part 9. Feedback to the Council

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.