EPA 910-B-18-002
September 2018

Solid Waste Program Budgeting for Alaska Tribal Communities: A Beginner's Guide

Tamara Ablowaluk, Teller, Grade 6, Age 11

Step by Step Instructions on How to Develop a Budget for Your Solid Waste Utility

U.S. Environmental Protection Agency
Region 10

Thank You and Contact Information

The U.S. Environmental Protection Agency acknowledges and thanks Zender Environmental Health and Research Group for their work in developing "Solid Waste Program Budgeting for Alaska Tribal Communities: A Beginner's Guide, Step by Step Instructions on How to Develop a Budget for Your Solid Waste Utility." Zender Environmental Health and Research Group and U.S. Environmental Protection Agency hope that you will find this guide to be useful.

For more information on this Guide, and additional information and resources on addressing solid and hazardous waste in Alaska, please contact Zender Environmental Health and Research Group. Additional information can be found on their website: http://www.zendergroup.org

To reach Zender Group, please contact them by email at info@zendergroup.org, or by phone at 907-277-2111.

To reach Alaska Solid Waste Technical Assistance and Training Providers, please contact the organizations and contacts listed in Table 3-1.

To access this Guide online, visit:

https://www.epa.gov/tribal/solid-waste-program-budgeting-alaska-tribal-communities

To request a printed version of this document, or for more information on U.S. Environmental Protection Agency, Region 10's Tribal Solid and Hazardous Waste program, please contact:

Angel Ip
Tribal Waste Coordinator
U.S. Environmental Protection Agency, Region 10
Tribal Solid and Hazardous Waste Program
ip.angel@epa.gov
206-553-1673

This guide would not have been possible without the amazing help from the fourteen Tribal Environmental Coordinators interviewed by Zender Environmental Health and Research Group who researched every solid waste expense in their community.

This guide greatly benefitted from the work of the following individuals and organizations. Thank you.
Zender Environmental Health and Research Group: Simone Sebalo and Dr. Lynn Zender
EPA Region 10 Staff: Kris Carre and Angel Ip
EPA Region 10 Contract Support: Kevin Brown and John Livingston

Where to find answers...

Abbreviations and Acronyms

ADEC	Alaska Department of Environmental Conservation
AFE	Alaska Forum on the Environment
ALPAR	Alaskans for Litter Prevention and Recycling
ANTHC	Alaska Native Tribal Health Consortium
ATCEM	Alaska Tribal Conference on Environmental Management
ATV	all-terrain vehicle
CPI	consumer price index
CRT	cathode ray tube
EPA	U.S. Environmental Protection Agency
ESC	code on W-2 work form for unemployment taxes
E-waste	electronic waste
FICA	Federal Insurance Contributions Act
FTE	full time employee
Gal	gallons
GAP	General Assistance Program
GSA	General Services Administration
HAZWOPER	Hazardous Waste Operations and Emergency Response
Hrs	hours
I.D.	identification
IGAP	Indian General Assistance Program
Lb	pound
LCD	Liquid-crystal display
LF	landfill
Li	Lithium
MOU	memorandum of understanding
O & M	operations and maintenance
PPE	personal protective equipment
RALO	Rural Alaska Landfill Operator
SSI	Supplemental Security Income
SWAT	Solid Waste Alaska Taskforce
SWM	solid waste management
TPI	teeth per inch
WOTEC	Waste Oil to Energy Converter

1. Why We Wrote This Guide and a Thank You Note

Protecting subsistence and health is the number one priority for Tribal peoples, and managing wastes as best as possible helps keep people safe and healthy. **But paying for what you want is a challenge and involves a lot of tough decisions.** In making those decisions, the first place to start is developing a budget. **You need to know how much your program will cost before deciding what to cut and what to add.**

The U.S. Environmental Protection Agency (EPA) funded Zender Environmental to write this Beginner's Guide to help rural Alaska Tribes make a budget for their community's waste management program. Anyone can use it, but we especially wrote it for Tribal Environmental Planners and Directors, General Assistance Program (GAP) Coordinators, and Solid Waste Managers. If your Tribe is like many Tribes, that's probably all the same person. And if you are reading this guide, it is probably you.

If you have been in your job for many years, you may know enough about budgets. If that is the case, you may wish to just read the waste management information that we learned in compiling this document.

We absolutely could not make this Guide without **the amazing help we had from the fourteen Tribal Environmental Coordinators** that we interviewed. They researched every little solid waste expense that they had. Thank you so much for helping us!

And this Guide would not look as good without the **amazing artwork from the children featured here,** as part of our artwork contest. Thank you so much too!

The art is a reminder about why we wrote this Guide. We left the little feet in this picture as a way to say that budgeting for your solid waste utility is not about numbers. It is about community and our families, and protecting them for seven (and more) generations to come.

"Recycling Man" by Riley Ablowaluk, Teller, Grade 5, Age 10

2. How to Use This Guide

We tried to write this guide for all levels of budgeting experience. **The bolded text and the stories and notes that are highlighted in the boxes are intended to capture important points. Also look at what we call in this guide "Figures"**— they contain a lot of information in a pretty easy to understand way. When you might need technical assistance, we tell you.

We also provide details for people who have more technical budgeting experience and need less (or no) assistance from agencies or consultants. This way, they don't need to wait on the phone drumming their fingers. Instead, they can spend time drumming at Yuraq's! And instead of paying a consultant, they can pay for backhaul!

There are a lot of Tables in this Guide that put all the information that you need on a single page. **Most of the Tables are harder to read than the "Figures."** Tables are meant to be handy reference guides—they are packed full. Don't expect to understand them right away. Refer back to the Tables when you're ready to sit down with a cup of coffee and concentrate on numbers.

In compiling this Guide, we talked to many villages to get their detailed budgets. We looked for patterns to see if there were tips we could share; we learned a lot. You will see our tips on what to spend money on, and how to spend it, in fireweed colored boxes throughout the guide. These are important. Here is our first tip:

Don't just spend your money. Use it efficiently and effectively to get a landfill that protects your community. With the saved money and time, you can work on other problems!

If you see a blueberry colored box, please read what is inside:

Blue shaded text tells a story, describes an idea, or defines a word or phrase.

Orange shaded shaded text shows examples:

Annual operator salary = hours per week x hourly wage x 52 weeks

On pages 30 and 40, you'll see our example numbers placed into a formal budget template, and on page 55, we provide you a blank budget template to copy and use. Please keep in mind that costs change every year. If you are using the Guide in or after late 2017, go to page 42 to learn how to update the costs provided in this tool.

We at Zender Environmental and U.S. Environmental Protection Agency hope that you will find this guide to be useful. You will find information on additional contacts on Page 5. Please call Zender Environmental at 907-277-2111 or come by our Anchorage office, 400 D St. Ste. 200. Let us know how you like it and we'll buy the coffee.

3. Where Do We Start?

Chapter 3 will provide you with the background information that you should know before you get started. It takes you through what a budget is, why you need it, how to get help, what the process entails, and what a completed budget looks like.

3.1 What is a solid waste budget?

First things first. What is a solid waste budget? It is a detailed list of all the costs of your solid waste program. Your solid waste program is the strategy that your community chooses to manage its waste. Your program includes every planned aspect of how your waste is safely disposed or recycled. It includes features such as a solid waste committee, school outreach, ordinances, whether you have a collection program, etc. Some of these features cost money and need to be included in the budget, and some do not. But all of these features contribute to how much waste your workers must handle, how much time it takes them, and what equipment they need to perform their job properly and safely.

3.2 Do we need a budget?

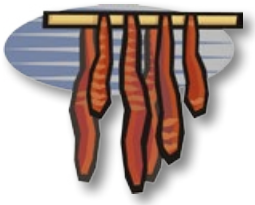
Does your electric utility have a budget? What about your water or wastewater utility (for those who are lucky enough to be plumbed)? YES! These public utilities need to maintain their services. For example, bulk fuel must be purchased every summer. So the utility needs to know how much it will cost them. But the fuel doesn't load itself, and the equipment doesn't run by itself either. So staff, training, billing time, and other costs also need to be calculated.

Waste disposal is a utility, just like water and electricity.

Your solid waste staff, equipment, landfill, recycling shed, and any other infrastructure form a utility that provides a very valuable service to its customers. **You are a utility manager or utility planner.**

Without knowing how much it costs to provide your service, you will run into trouble. You can overspend and then not have any money left. You may need to lay off your landfill staff, stop operating equipment, or end your backhaul program. Like too many of our villages, you might end up with, or never get rid of, an open, spreading dump site full of horrible risks for your community and subsistence. **Without a budget, your utility could be a public health catastrophe waiting to happen instead of a shining service that represents community values.**

Even though our Tribal cultures vary throughout the State, we have several values in common with each other: **thriftiness; disposal practices that respect the Tribe, Council, children, and Elders; responsibility for the land and its animals; and subsistence treated as the way of life that it is.**



Why have a budget? The berries are the picture worth a thousand words. See Figure 3-1 on page 6 for questions to ask yourself if you still wonder whether you need a budget.

3.3 What if we already have a great solid waste program?

If you don't want to change anything, you still need a written, known budget that you can discuss with your community and point to for funding purposes. Figure 3-2 shows the steps to take in writing out a budget that accurately describes your program. If you want to change your program, or if your utility's past bookkeeping/recordkeeping is so poor that reconstructing your costs would take a lifetime to determine, then stick with us — we can make sure you will end up with an estimated budget.

3.4 Community involvement — An absolute must!

Warning! We cannot say enough about how important community involvement is. Talking with people in the community are the first and last steps, and at every step in-between. **Your budget will affect people's lives and probably their wallets, too.** People are more committed to making their own ideas work. So making the community part of the budget process can reduce the cost of enforcement and landfill maintenance. And it can be easier to get grant funding with community support. The more discussions you hold with folks about this process and what they want to see, the better! Community leaders need to lead, or get involved in, these discussions if that is how decisions are traditionally made.

A successful budget reflects what the community wants, and how ready they are to pay for it.

3.5 Technical assistance

You can't be an expert in everything. You want to protect your community from the serious health risks that can occur with a poorly operated landfill and/or poor community disposal practices. You need real solid waste management expertise to evaluate and select the best solid waste options for your community. And you need some experience with numbers. If you can't wear both hats, **team up with experts in your village (like your operator or bookkeeper).**

Cathy Okbaok, Teller, Grade 6, Age 11

It might be a good idea also to get input from a favorite agency or technical assistance organization. They can provide you with the technical information you need. They can also help you define the technical "story" of your waste disposal situation and calculate costs. But they may not know your community, so you must help them to define the details. That way, the solutions to your budget challenges will work. Don't know who to call? Call or email us at 907-277-2111 or info@zendergroup.org, and we can provide a list of contacts to choose from or help you ourselves. The table below also lists contact information for solid waste technical assistance and training providers in Alaska.

Table 3-1 Statewide Technical Assistance & Training Providers.

Organization and Contact Information	Contact with Questions about:
Solid Waste Alaska Taskforce (SWAT), comprised of individuals from various agencies/organizations. www.907swat.org Contact: 907SWAT@gmail.com	Any solid waste questions (you will be referred to an expert based on your question)
Zender Environmental Contact: Simone Sebalo ssebalo@zendergroup.org, 907-277-2111 www.zendergroup.org	Solid waste program information, solid waste equipment, backhaul, budgeting, solid waste GAP workplans Trainings: Integrated Solid Waste Management
Alaska Department of Environmental Conservation (ADEC) Contact: Rebecca Colvin rebecca.colvin@alaska.gov, 907-269-7802 http://dec.alaska.gov/eh/solid-waste ADEC Contacts by Community: http://dec.alaska.gov/eh/solid-waste/rural-contacts/	Solid waste regulations, permitting, landfill inspections, funding sources, household hazardous waste collection, backhaul
Alaska Native Tribal Health Consortium (ANTHC) Contact: Desirae Roehl droehl@anthc.org, 907-729-3496 https://anthc.org/what-we-do/community-environment-and-health/tribal-capacity-and-training/	GAP workplans for solid waste Trainings: Seven Generations Conferences: Alaska Tribal Conference on Environmental Management (ATCEM), Alaska Solid Waste Summit
U.S. Environmental Protection Agency (EPA), Region 10 Contact: Angel Ip, Tribal Waste Coordinator ip.angel@epa.gov, 206-553-1673 Contact: Sherry Davis, Tribal Coordinator davis.sherry@epa.gov, 907-271-6322 EPA Region 10 Tribal Coordinators by geographic region: https://www.epa.gov/tribal/region-10-tribal-contacts#coordinators As of Fall 2018, EPA Region 10 will have a new Tribal Waste Circuit Rider who will provide one on one waste technical assistance for Alaskan Tribal communities. Contact Angel/EPA for this contact information.	Contact Angel with questions on solid waste tools, resources, contacts, funding sources, trainings, and plans. Contact Sherry with questions relating to solid/hazardous waste management in the GAP program and GAP Guidance. Contact Tribal Coordinators in EPA Region 10 Tribal Trust & Assistance Unit with solid/hazardous waste questions that relate to the GAP program in their assigned regions.
Looking for a company or organization not on this list? We can help you contact regional organizations as well as recyclers that can also help with backhaul questions.	

Figure 3-1 Should I spend my time developing a budget?

Answer these questions:

Funding Problems? A budget is required to find more money or to change how utility resources are spent.	Do you sometimes lack the money to do program tasks? Is your source of funds going away or getting smaller? Will you be seeking grants to improve or close your site?
Community Involvement Problems? A budget affects people's wallets so they want to get involved.	Do you have residents who don't care about the solid waste utility? Do some residents feel that they shouldn't have to pay fees or wonder what they are getting for their fees? Do some residents dump their trash where they are not supposed to?
Planning Problems? A budget provides a detailed listing of how your utility operates – what are the priorities and where can resources be changed, and by how much.	Do you have battles about what is most important to fund for solid waste? Do you wonder where your money goes? Do you want to change operator hours or wages? Do you want to start a recycling center or expand backhaul? Do you want a new piece of equipment? Do you want your landfill permitted?

If you answered YES to any of the above questions,
you should probably keep reading about budgets.

Figure 3-2 How do I make a budget for my existing program?

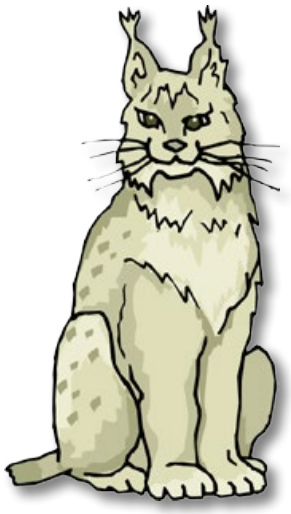
1	Write out your program in list form. Worry about the costs later. List out every effort, facility, equipment, worker, training, meeting, and event that your program depends on.
2	Group and organize the list like the budget template on page 55.
3	If your city funds any solid waste work, list that information too. Later, you can separate out who pays for what areas. It is very handy to have the full community solid waste budget—for funders, for City/Tribe Memorandum of Understanding (MOU), and for future changes.
4	Identify "hidden costs"—what costs money but isn't a planned part of the program/utility? For example, do you pay council members to attend meetings? Who does the accounting and cuts the payroll checks? What about replacing all-terrain vehicle (ATV) tires, or other costs that don't happen every year?
5	Got it all down? Now write out your yearly costs for each line. If you have a great accounting system, sit down with your bookkeeper, who will give you the costs. If anything doesn't make sense, ask, or correct the way that costs are organized.
6	If you don't have a great accounting system, interview the operator, technicians, mechanics, educators, and others to find out the costs of each program line. For part-time and temp workers, write out all the hours they work each year.
7	Stuck on costs that don't happen each year, or costs that are shared—like accounting or heavy equipment use? Go to page 41 learn how to account for these costs.
8	Have someone check your work. If you like, you can contact Zender staff and we will walk through it with you.

3.6 Organization

Too many of our village projects fail because they are not organized. Going through all the budget steps will take time and it might get some council or community members upset. So you definitely want to end up with the right budget!

Make sure that you have been given the official authority and time to:

- Develop a full picture of all the components in your solid waste operation
- Research costs
- Develop your budget
- Set up and facilitate meetings
- Recalculate the budget numbers as needed



3.7 What does a budget look like, and what are cost categories and line items?

Your budget will list each component of your program that costs money, like staff, supplies, training, and equipment. These are called budget line items because they each are written on a different budget line, and then added up. To better organize the budget, the line items are grouped into categories, sometimes called "cost categories." The cost categories for a federal grant are usually Personnel, Fringe, Travel, Supplies, Equipment, Contracting, Other and Indirect.

Cost Categories	Costs
Personnel	$22,000
Fringe @ 10%	$2,200
Travel and Training	$1,000
Supplies	$2,000
Equipment	$6,000
Other	$7,500
Indirect costs @ 10%	$4,070
Total	$44,770

Want to see what a finished budget looks like, with all its line items? Go to Section 6 at the end. We have included six real-life budgets from villages that have good landfills and programs. Each green-shaded row is a cost category. Each category has from one to several rows under it. Those rows are all line items for that cost category. Detailed budgets break down the cost categories into separate line items. The simplest budgets just list the total line item cost for the whole category on one line, like the table to the right:

3.8 Decisions, decisions. Making tradeoffs is part of the job...

Like most things in life, settling on a program budget involves a lot of decisions, and each decision has a good side and a bad side. In settling on each budget line item, there are two things to consider:

- What you want
- What it costs

You can't have everything you want if the cost is more than you have. **If you increase spending on one thing, you need to decrease spending on something else.** You trade the "good" you get from what you want, with the "bad" of what you gave up to afford it. This scenario is called a "tradeoff."

For example, to afford more conference travel, you may decide to allow residents to load the burnbox, so you can lower operator hours and the overall budget. Great, right? But allowing residents to load the burnbox is dangerous, and you are placing your community at risk in doing so. ***That's the tradeoff.*** And allowing residents to load the burnbox will make more landfill maintenance work for the operator. So if operator hours are not adjusted for more cleanup work, your site might expand, producing even more community risk and an even bigger tradeoff.

As another example, you can design a program with all kinds of fancy equipment and high staff hours. But if total program costs are more than you can afford, you'll need to get the money from somewhere else. Otherwise, your program, and perhaps even the Tribe, **gets into money trouble.** In the worst case, you will need to pay back a lot of money – maybe through cutting out other programs, like helping out Elders, search and rescue, paying for funerals, etc.

Effectiveness and Efficiency

Sometimes to pay for everything you need, you can increase user fees, or improve the success rate of collecting those fees. But sometimes, these changes just do not work. It takes a long time to convince folks to pay more.

Your budget should reflect the best choices for your community that you can afford.

In other words, the community is more likely to pay more for their waste service if your **program spending is effective and efficient.** Effective means that your landfill is protecting community health like it is supposed to. Efficient means that you are operating that landfill for a low cost.

When you have low efficiency and low effectiveness, you may have a new landfill with all that fancy equipment and it might not even work! Your community would be better off choosing an old dump and a program that **prioritizes a good operator and keeping residents away from the wastes.**

Anyone hungry? Budgeting is like serving pie.

Designing a budget really is like slicing a berry pie. You or someone spent a lot of time picking berries and a lot of time making it. It's valuable. And it's delicious, but it is only as big as it is. Once it's eaten, there is not any more. You need to think out several different ways of cutting it before you find the option that works for your family. Similarly, you want a budget that best fits your community and divides the money (the pie) among staff, equipment, training, and other costs in the way that protects your community the most. Everyone wishes the pie was bigger, but it's not. Who should get the first slice?

Your first spending priority is a trained operator/technician who is dedicated to his/her/their job, passionate about protecting the community, and tries to do the best job possible in the time they have.

After you've made decisions about your technical staff, think about how you should slice the other pieces of the pie. **Table 3-2 lists the common solid waste budget line items** and sample considerations when deciding whether to include the items, and how much you should allot to them. You may have all or some of the line items. You may also call a line item a different name. We found a lot of different titles for the landfill staff, for example. We will be looking at the same Table 3-2 line items in Chapter 4. If you forget what the line item means when you are going through that Chapter, you can refer to the Table here.

3.9 Can I just pick and choose what I spend my money on?

Yes and no. Yes, you can choose thoughtfully what system is best for your community with money that you have. And no, there are some costs that you will always have to pay. These line items cannot be cut to "zero." They have a minimum cost associated with them which is their "fixed cost." Office heat is an example. You can cut your staff down to one person at 10 hours a week. But one person still needs the office heated and a full-time phone and internet. If you are renting, you still need to pay the rent. That's why many financial advisors say to keep your fixed costs low. That way if you are low on funds to run the utility, the money you do have can be spent on things that count, like operator hours. So remember to think about fixed cost.

3.10 Will this Guide teach me about paying for the budget I want?

No, this Guide focuses on how to develop a budget, which is the cost side of things, called your program outlays. The Guide doesn't provide information on finding resources to support your program, but we do provide a lot of tips to make your program outlays count! The more effective and efficient that your budget outlays are, the easier it will be to find enough money to pay your program. See Chapter 5 and the top ten tips for a summary.

3.11 What are we getting into with a budget process?

A big headache! But unless something is done about it, the concerns that your dump causes won't go away. And they often get much worse. A temporary headache now is better than our lands and people being sick for years!

Artwork from Tununak's Youth to Work Program
from Youth Ages 14-17 in Grades 7-12

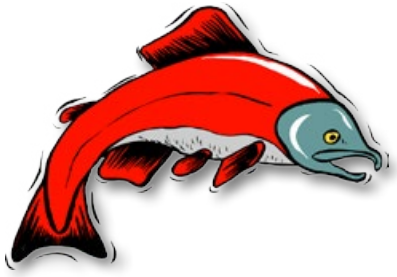
Table 3-2 Budget Line Items, Their Role in a Waste Utility, and Cost Operations.

Item	Role	Options
Personnel	The people who make the utility work. That garbage isn't going to compact itself!	The jobs listed below are the most common. **Often, these jobs are shared and performed by a single person.** The more staff, the less time they each need to do their jobs. If an operator has a waste collector who also serves as a landfill technician, the operator needs less hours to maintain the landfill.
Heavy Equipment Operator	A trained, often certified, person that operates typically larger heavy equipment for occasional compaction and consolidation, or digging new trenches. In most communities there is no separate heavy equipment operator. When there is, they are often paid at higher wages than the main landfill operator (see below).	Heavy equipment operators are sometimes shared between departments/projects. For example, they may work for the city and the main landfill operator works for the tribe.
Landfill Operator/ Technician	The main person(s) that manages the landfill. If they have heavy equipment, they are the ones that use it to consolidate and compact. Additionally, or instead, some communities have specific heavy equipment operators that might work on the landfill occasionally. Landfill Operators are often the "burnbox" operator, whether it's a stacked purchased model, burncage, old fuel tank, or barrels, and they may direct visitors to the correct location in the landfill for discarding recyclables and trash. They maintain and inspect the fence and evaluate if there is runoff. They organize the scrap/salvage yard.	To reduce operator hours, the landfill should be closed to public. Less mess is less to organize and cleanup.
Waste Collector/ Hauler/Landfill Technician	Primary duties are waste collection and disposal at landfill, may include burn box operation, and other maintenance duties at the landfillll. Usually under the direction of the operator, but not always.	The more that the community does to discard their wastes properly, the less hours your technicians need. For example, it takes less hours to collect waste from shared dumpsters than from each household. On the other hand, residents may pay more for household collection – so more collection hours might mean that you can pay for more.
Recycling Manager/ Technician	Assists or manages inventory, collecting, packaging, shipping backhaul	More recycling/backhaul work hours might mean that you will need to reduce critical landfill operation hours. You could have a great backhaul program and horrible environmental risks if you build up your recycling program more or faster than you have funding for. Consider temporary hire for your recycling project if you have trouble paying for your landfill operator.
Temporary Laborer: Site cleanup/Spring Cleanup	Helps the operator and/or landfill techician with occasional landfill cleanup or other duties	Temporary hire sometimes can be difficult to find at the right time.

Table 3-2 Budget Line Items, Their Role in a Waste Utility, and Cost Operations.

Item	Role	Options
Manager/ Planner/ Coordinator	This person is often the supervisor to the program staff, but they most often find funding, conduct outreach, develop budgets, draft ordinances, organize and run community Solid Waste Management (SWM) committees, etc. They often are the lead Recycler/Backhaul Coordinator, or at least arrange for backhaul shipping.	Duties are critical, but must be weighed against ensuring the landfill operator and technician positions are adequately funded. But without someone finding funds and conducting outreach, nobody will work!
Bookkeeping/ administration	The bookkeeper usually handles accounting, payroll, and taxes. An administrator may handle some of these duties if a bookkeeper isn't available, or may just oversee staff and projects and ensure that reporting is carried out.	Bookkeepers and administrators are often shared between departments/projects.
Miscellaneous Positions	Other SWM jobs include Mechanic, Youth Corps, SWM Committee	These might be temporary positions, or very part-time hire, or may take the form of stipends for meeting attendance.
Travel and Training	Training staff can motivate them and ensure they are doing the job correctly.	A trained operator might need less hours to do a better job. A trained planner/technician can save money as well, and reduce potential liability risks. However, travel is expensive. While landfill operator, backhaul, and Hazardous Waste Operations and Emergency Response (HAZWOPER) training is best done in-person, some types of staff training can be done online. Rural Alaska Landfill Operator (RALO), the landfill operator training, is recommended every 2 – 3 years.
Supplies	Safety gear keeps staff safe. Proper desks, chairs, computers, can save backs and save time.	Do not skimp on safety gear. You might find good deals online for office supplies and computers should they need to be replaced if they are broken, or even deals in person when you are in Anchorage (faster than ordering online).
Equipment, Fuel, and Maintenance	The right piece of equipment for the job is key. It can save personnel time and reduce health and environmental risks.	Look for the smallest equipment that will do the job. Otherwise fuel will cost more and performance is often not optimal, e.g., a large burner might overheat a building or require more used oil than your village has. A large baler will take too long to load and switch to another waste type, and make bales that you can't move. Try purchasing used equipment. For ATV's and snowmachines, look at something that will last – and don't purchase just because it's the latest model.
Rent, Utilities, Other Overhead	The right space for the job. A separate location for recyclables can really improve participation. A place for landfill staff while recordkeeping to get warm can keep them from quitting.	Really nice spaces help staff morale, but can cost a lot. These are part of your fixed costs (see Section 3-9). Fixed costs are hard to sell/leave/change when needed. And again, **your first spending priority is funding the operator/technician, and arming them with "good enough" equipment to keep wastes from harming your community.**

4. How Do I Make a Budget?



Chapter 4 will show you how to build your utility's budget. You can make a simple budget that is a ballpark estimate of your costs, or you may want a detailed budget. We start with a simple budget estimate, and then show how to create a more detailed budget.

Why keep it simple? Sometimes you just need an estimate of what you are spending. When you are planning out a program, or choosing between different options, a ballpark cost estimate of each is often better when you don't have the time or information to get more detailed.

Why detail your budget? Grants often request detailed budgets. Your council or community might want to see exactly how you are spending your money. You might want to know exactly how you are spending it too. Detailed budgets make it easier to justify user fees.

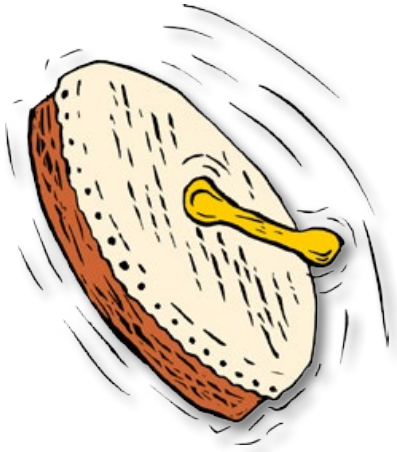
4.1 Before we start building a budget... Not comfortable with math?

If you're not used to working with lots of numbers, estimating the cost of the program that you want can be confusing. You'll need to devote several hours, or more likely, days. **Try skimming the text and tables to get a rough idea of your costs and what budget considerations are important, then:**

- Grab a pen or a computer,
- Make some coffee, and
- Turn off the phone and shut the door.

You will be able to do it!! And don't hesitate to ask for help from one of the nice technical experts listed in Section 3.5.

4.2 Estimating your total program cost



Drumroll please! A budget estimate is actually just a best guess at the total cost for your utility. An estimate doesn't give you any idea about how to budget for each Cost Category (i.e. Personnel, Supplies, Travel, etc.). But it's still **a budget because it tells you how much that you will spend and how much revenue that you will need to make!**

The following Table lists the annual program costs for 14 villages to give you an idea of the range of waste utility budgets across the state. To give you an idea of what their program is like, we also list their region, a brief program description, staff hours, population, and Waste Index Score. The Waste Index is essentially a grade for your landfill, and it is explained more on page 16, after the Table. You can use the Table to estimate a rough program cost. We'll walk you through the steps over the next few pages.

Table 4-1 Comparison of YR 2016 Annual Program Costs and Waste Index Scores for 14 Villages.

Identification	Region	Population	Utility Description	GAP Staff Solid Waste Time (Hours per Week)	Other Staff Time (Hours per Week)	Annual Utility Cost, Includes Staff Time, Equipment Maintenance, Training, Overhead	Waste Index
1	Central Yup'ik	642	Voluntary household collection, wetland tundra, moderate equipment use, alternating operators collect waste and do some separation. GAP staff do basic backhaul/recycling.	75	58	$162,902	31%
2	Inupiaq	483	Voluntary household and business collection for fee, moderate equipment use, regular landfill maintenance and collection by operator. GAP staff do basic backhaul/recycling.	14	22	$53,072	34%
3	Central Yup'ik	368	Voluntary household collection (will be starting fee soon), wetland tundra, landfill technician collects and separates waste, carries out some landfill maintenance, heavy equipment operator available to empty burnbox and cover. GAP staff do basic backhaul/recycling.	9	13	$57,367	42%
4	Central Yup'ik	1230	Voluntary household collection, wetland tundra, minimal heavy equipment use. GAP staff carry out annual backhaul.	20	20	$73,978	42%
5	Central Yup'ik	477	Voluntary household collection, wetland tundra, moderate equipment use, alternating operators collected waste and do some separation. GAP staff do basic backhaul/recycling.	57	96	$177,602	45%
6	Central Yup'ik	130	Mandatory collection program (for fee), regular operator collects waste, controls access, and operates burnbox, regular heavy equipment operator maintains the landfill and grades the roads. GAP staff are highly involved in solid waste and work with Council on fees, protocols, backhaul/recycling.	8	60	$109,547	60%
7	Central Yup'ik	247	Voluntary household collection for fee, wetland tundra, minimal heavy equipment use, regular landfill maintenance, and basic backhaul/recycling.	9	20	$55,366	62%

Table 4-1 Comparison of YR 2016 Annual Program Costs and Waste Index Scores for 14 Villages.

Identification	Region	Population	Utility Description	GAP Staff Solid Waste Time (Hours per Week)	Other Staff Time (Hours per Week)	Annual Utility Cost, Includes Staff Time, Equipment Maintenance, Training, Overhead	Waste Index
8	Central Yup'ik	464	Voluntary household collection, wetland tundra, moderate equipment use, regular operator. GAP staff do some waste technician work, and basic backhaul/recycling.	36	28	$102,179	68%
9	Athabascan	256	Mostly self-haul, voluntary collection for a fee, daily part-time landfill maintenance & burnbox management, wet forest land, minimal heavy equipment use, and basic backhaul/recycling. GAP staff does some waste tech work.	36	12	$81,316	77%
10	Athabascan	99	Voluntary household collection to all homes but only every 3 weeks, wet forest, some heavy equipment, heavy backhaul/ recycling, mostly in-kind transport with seasonal workers.	5	7	$60,092	73%
11	Inupiaq	294	Voluntary household collection for fee, seasonal landfill laborers, coastal community, heavy equipment use is limited, fairly advanced backhaul/recycling. GAP staff serve partly as waste techs.	50	13	$106,048	89%
12	Alutiiq	258	Mandatory collection program (for fee), coastal community, fairly frequent heavy equipment use, fairly advanced backhaul/recycling.	--	106	$184,434	91%
13	Inupiaq	207	No collection program (community members self-haul to well-maintained landfill), wetland tundra, advanced heavy equipment use, advanced backhaul/recycling. Residents pay a monthly fee for solid waste.	9	7	$42,511	94%
14	Inupiaq	205	Voluntary household collection, wetland tundra, heavy equipment use, and basic backhaul/ recycling. Residents pay a monthly fee for solid waste.	3	3	$21,541	104%

What are "GAP staff" and "Other staff"?

Table 4-1 lists the weekly hours spent on solid waste for both GAP staff and non-GAP staff. What's the difference? If you are reading this Guide, you are likely GAP staff, and already know the answer. Throughout this Guide, **"GAP staff" refer to the Coordinator and/or Assistant who are paid by their Tribe's EPA General Assistance Program (GAP) grant to perform the GAP workplan,** not just to perform solid waste management duties. If they are not working on waste, they are working on other environmental problems, like air and water. Just like in most villages, your operator and technician staff may be paid by GAP funds, but are not called GAP staff. We note the difference in this Guide because it may help villages in compiling their GAP workplan to know how much time that other GAP staff spend on solid waste.

What is a Waste Index score?

The last column in Table 4-1 lists the community landfill's Waste Index score. The friendly Solid Waste Program staff at the Alaska Department of Environmental Conservation (ADEC) evaluate rural landfills as often as they can — typically every 1 – 5 years. **They use a checklist of different landfill operation and program features, called the Waste Index.** They assign each feature from 0 to 5 points depending on its relative merit.

Alaskan Native youth in Huslia and Fort Yukon, Alaska, Courtesy of Tanana Chiefs Conference

You can access your Waste Index score at http://dec.alaska.gov/eh/solid-waste/ (click on "SWIMS DATABASE") A score of 70% is considered passing. Some Index features may not relate directly to community health and environment. It is not an exact measure, but it is easy to access and easy to understand. **And an Index score can be a relative estimate of how well a utility protects community health.** In Chapter 5, we bring up the Waste Index as a tool to assess and increase your staff's effectiveness in achieving a health-protective waste utility.

What costs does an annual utility budget include?

The budgets listed in Table 4-1, and the budgets that you will see throughout this Guide include all outlays for a solid waste program. That means that even if a Tribe pays for their operator and equipment fuel with GAP, those outlays (i.e. expenses or costs) are still there. And even if the City pays the operator, the outlay is still there.

Why did we include outlays that grants or the City already cover? **Because you never know when your source of funding may dry up.** Your Council may want to use GAP for climate change activities, your city may go broke, or bingo might be voted out.

You can use Table 4-1 to calculate a ballpark estimate of your utility's cost. With that estimate, you can start calculating your user fees, and how much other money, like GAP, bingo, city funds, etc. that you'll need for any shortfall. See the yellow-shaded example on the next page.

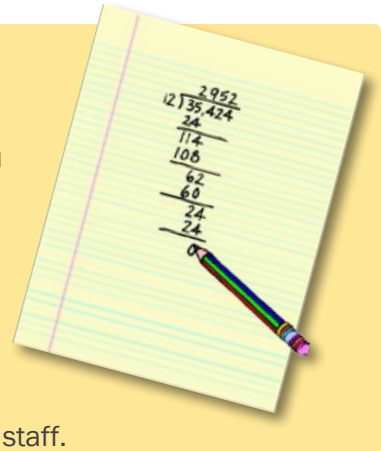
However, solid waste costs are very village-specific. As Table 4-1 shows, **some villages are able to get a great score on a low budget,** regardless of region, population, or circumstances. **Others have low scores on a high budget.**

Does more solid waste spending always mean a better landfill? NO!!!

Table 4-1 shows that **there is not a strong relationship between spending and a good landfill.** The communities are arranged in order of increasing Waste Index scores. As you can see, **the last two communities are able to achieve the highest Waste Index scores, despite having the lowest annual program costs!** We can tell you that they have a couple of things in common. **They have a really dedicated, thrifty, and knowledgeable operator.** The operators are dedicated to making their communities safe, thrifty in using the hours that they have to do a really good job, and knowledgeable about what to do. They also both have a supportive regional backhaul partner.

What else? **You can access their full budgets, and the budgets of the other villages with the top six scores, in** Section 6**.** We also provide a brief description of their landfill program. Look up the ID number in the first column of Table 4-1, and then view that budget in Section 6.

How to Create a Rough Estimate of Your Solid Waste Program Costs



Use Table 4-1, which lists several real villages and their ADEC Waste Index score. Find a village(s) with a population and region similar to yours, and a score that you want to achieve. This ideal score will give you a range for your program budget. If you want an exact estimate, choose the middle of that range.

For example, suppose I want to improve my existing Waste Index score to 60%. A Central Yup'ik community of 110 people is spending $109,547 to achieve that score. They employ landfill staff for 60 hours per week. That sounds like a good fit. But there is a central Yup'ik village that spends only $55,366. I can see that their weekly staff hours are only 20 hours for landfill and 9 hours for GAP staff. I think we need more staff time than that, but maybe we can operate our utility halfway between these two costs:

($109,547 + $55,366) / 2 = $82,456

That cost is your first rough estimate of how much money that you need to run your utility! It includes the GAP Coordinator and GAP Assistant's time spent on solid waste activities. If you want an estimate without GAP staff time, then subtract the portion of salary that is spent on the waste program. Get comfortable with estimating. You won't know the exact number unless you have quotes for every line item. That is nearly impossible when you start a program.

A Simplified Way to Create a Rough Estimate:

Looking for just a real ballpark number for operating a waste program? The mean average total cost for operating a village solid waste utility is: $194.15/resident excluding GAP staff or other management type positions.

For example, on average, for a population of 400 people: Each resident costs $194.15 to operate a waste utility:

400 folks x $194.15 dollars each = $77,660

This is the cost excluding wages paid through the GAP grant for the GAP coordinator and/or GAP assistant. That is because we found that how many hours the GAP staff works doesn't depend on the number of residents they serve. You already know how much is spent by GAP staff working on waste components of their workplan. So you can add that cost to get a fuller ballpark estimate of the value of your program.

Use this quick average cost calculation with caution. It will be a better rough estimate for medium sized villages, 200 to 800 or so. **Large villages typically will have a lower cost per resident to operate a program, and a small village might have a bit higher cost per resident.**

Now that you have a program budget estimate, what does it mean?

Yikes!!! These waste utilities are expensive! **Does $77,660 mean that each 4-person household pays about $64.71 each month for solid waste?** Well, sort of. It means the value of the program is worth that much, and that much is being paid to carry out the program. Most Alaska Villages use GAP funds to pay for all or part of their landfill staff time, equipment fuel, office overhead, and other items. Other funding might be general funds, city taxes, bingo revenue, and other miscellaneous grants. What is left is covered by homes and businesses through user fees. The average user fee is only about $20/month, so households and businesses are receiving a great deal.

Alonza Topkok, Teller, Grade 3, Age 8

How can you use this information? You can show your community what a good deal they are getting. Maybe they will be more willing to pay a fee increase.

Being dependent on grant money is scary. Grants are never sure things. **As a planner/manager, your job is to reform your program as much as possible to cover your costs mostly by user fees and other sources of local revenue.** Your goal is to save GAP funds for program administration and management, and not use them for operation. You want a program that doesn't rely on grant funds and still protects the community from serious health risks. What does that look like? How can you get there? What fees can you charge and what changes can you make to lower program costs? What responsibilities might community members take on? It might take a few years to get there, **but your community will then have the capacity to protect their people and lands forever.**

4.3 Creating a more detailed budget

If you have a decent sense of where your program might be compared to other programs, there is a way to develop cost estimates for each budget category. Remember how we said that we researched the actual cost of village programs throughout Alaska? We used the information collected to make charts showing the cost range for each main budget category described in Table 3-2. For each separate budget category, you can use these charts to estimate where your program is along the spectrum of lowest cost to highest cost. We'll walk through how to do that here.

Keep in mind that it is always better to use your actual cost for any line item. You will have a more accurate budget. A more accurate budget will help you plan your program that much better. You may end up without money at the end of the year to run your program if your estimated budget doesn't reflect your actual expenses. So in Section 4.4, we talk about using actual costs or quotes you've obtained for different line items, and incorporating them into your budget.

Overview of Using the Range Charts

There are three Range Charts on the following pages that show the range of costs for operating a solid waste utility in a rural Alaska village. For each main category, evaluate where your program is compared to the descriptions on the low-end and high-end. Then select a cost that is proportionate to where you fall on that range.

"Keep our river clean" by Talisa Komok, Teller, Grade 2, Age 7

If you aren't familiar with other programs, we recommend getting help in evaluating how your program compares to others. You can always contact one of the technical assistance resources in Table 3-1. Looking at the Range Charts might seem a bit complicated, but it is really just using your common sense, and then choosing a cost. The resulting budget won't be exact, but it should be a good starting point. Be careful with your estimates when you're unsure. Choose a cost that is a bit higher than you think it might be, so you will be budgeting enough money. If you end up with extra funds, you can revise your estimates for next year.

What if you don't know anything yet about what your program will look like? You can use the average cost for each category. The upside-down triangles in the Range Charts mark the average cost of personnel, equipment, backhaul, etc. In this case, the average means that half of the programs had higher costs, and half had lower costs. If you feel that your program is about average in all the cost categories, or you want to build a program that is somewhere in the middle of other programs, the quickest way to get a cost estimate is to follow the page down along the triangles and choose the middle value. Refer to the examples in the yellow boxes for additional guidance.

Using Range Charts 1 and 2 for Estimating Personnel Costs

The following two range charts are based on real information from 14 communities around the state, and will help you estimate your personnel costs. Chart 1, on pages 20 and 21, lists the low-end and high end number of weekly hours for each position. Chart 2, on page 22, lists the range of hourly wages for each position. To estimate the cost of each position, multiply the estimated number of hours by the estimated wage. An example is given in the yellow-shaded box after Chart 2. Please see charts on the following pages.

Using Range Charts to estimate your budget is all about comparing your utility with others. Visualize how you want your program to look. Think about your waste situation.

How much work effort is it? What do you want it to look like? Can staff do what they need without increasing hours, or are staff overworked? Do they seem like they are often not occupied with tasks or could they do their tasks more efficiently? Then decrease your hours. Be comfortable using your best guess. The example below is just one out of thousands on how you might decide the right hours and wages for you and your staff. Sit back, talk it over with others, and give it a try!

Chart 1 Range of weekly personnel hours for a Rural Solid Waste Utility.

Manager/Planner Positions, Hours per Week			
GAP Staff Hours Per Week (Total for Coordinator and Assistant)	Management done by other Tribal/City staff, or established good program makes low need for GAP staff 3	Half of the programs have less hours, half have more hours than: 19	All or nearly all of the GAP workplan is solid waste related. Solid waste management program areas include outreach, planning, management, recycling, significant travel, bookkeeping, collection fee processing, household subscriptions, managing will-call garbage pickup, and having a larger community/program. 75
SWM Manager	Planning, grantwriting, billing, collecting duties done done by GAP or other staff or small community 20	Half of the programs have less hours, half have more hours than: 30	Manages and helps with backhaul, true supervisor, writes grants, plans, tracks performance, outreach, orders supplies, education for medium to larger community, or lead in fully developed recycle center 40
Total Management/ Outreach Type Hours[1]	23	Half of the programs have less hours, half have more hours than: 49	115
Operator/Technician Staff Positions, Hours Per Week			
Landfill Equipment Operator[2]	Good access control, involved community, the right equipment for the job, or small community 1	Half of the programs have less hours, half have more hours than: 5	Poor access control, larger community, untrained operator, inadequate equipment, and operator also does waste haul, tundra wetland, or other landfill circumstance needing more hours 25
Landfill Technician/ Operator	Good access control, easy burnbox, the right equipment, little waste separation required 1	Half of the programs have less hours, half have more hours than: 20	Inadequate equipment, poor access control, non-involved community, large community, tundra wetland, or duties also include other tasks such as recycle center management 64

Chart 1 Range of weekly personnel hours for a Rural Solid Waste Utility.

Operator/Technician Staff Positions, Hours Per Week			
Waste Hauler/ Landfill Technician	A few dumpsters, working vehicles, low collection program use 2	Half of the programs have less hours, half have more hours than: 14	House to house for full village, long landfill road & route, poor equipment 25
Recycling Technician/ Laborer	3	Half of the programs have less hours, half have more hours than: 14	20
Temp landfill Laborers: Site Cleanup, Other Occasional Projects	Landfill under control, fenced, adequate equipment 3	Half of the programs have less hours, half have more hours than: 14	Uncontrolled landfill, tundra wetland, poor equipment 20
Mechanic/Public Works/Handyman	Small community, good equipment 1	Half of the programs have less hours, half have more hours than: 4	Large community, a lot of poor equipment 7
Total Technical Staff	11	Half of the programs have less hours, half have more hours than: 71	161
Administration Positions, Hours Per Week			
Bookkeeper/ Clerk/Payroll[3]	Responsible only for simple bookkeeping/Payroll 5	Half of the programs have less hours, half have more hours than: 10	Responsible for billing, fee collection, bookkeeping for program, and payroll for large community (mandatory household participation) or not highly trained 20

[1] You don't need to have both GAP staff and Manager positions. Just be sure the total hours are within range so you have someone to manage the program, plan, write grants, and conduct outreach.

[2] Landfill operator/waste haulers, laborers, recycling technicians generally share jobs – each community does it differently. You don't need every technical position, just ensure your total staff time is within the normal range.

[3] Unnecessary if your tribe's indirect costs pay for these functions.

Chart 2 Ranges and Median Values for Rural Waste Utility Staff Hourly Wages.

Manager/Planner Positions					
GAP Coordinator	$17		$22		$32
GAP Assistant	$15		$18		$25
SWM Manager	$15		$19		$25
Operator/Technician Staff Positions					
Landfill Equipment Operator	$15		$23		$35
Landfill Technician/Operator	$13		$20		$35
Waste Hauler/Landfill Technician	$13		$19		$24
Recycling Technician/Laborer	$15		$19		$24
Temp Landfill Laborers: site cleanup, other occasional projects	$10		$14		$16
Mechanic/Public Works/ Handyman	$10		$15		$20
Total Technical Staff	$76		$110		$154
Administration					
Bookkeeper/Clerk/Payroll	$15		$20		$25

Using Chart 1 and 2 to Calculate Personnel Expenses.

GAP staff hours. Let's assume that you aren't new and have attended at least one 3-day solid waste training so you know what the health risks are, what the issues are, and the different options for collection and landfill operation.

On the very low end, GAP staff spend 3 hours (hrs) each week on solid waste activities. Their utilities have no problems for them to work on. Or the utility might have problems, but the GAP staff is not who works on them. The high end of 75 hours per week for GAP staff is for large villages, extreme conditions, brand new GAP staff that need to learn everything, etc.

There is no "right" number, but small communities who know their issues and how to solve them are likely in the lower range between 3 and 19 hours. Suppose you already do the basics. You present to the council, community, and school regularly, and run the Flying Cans program. But you want to supervise your landfill staff better, and also find funding for a new landfill. Choose closer to 19 hours per week, try 16 hours. You work 12 hours and your assistant works 4 hours a week organizing cans, and conducting outreach. If you make $18 per hour, your cost is:

16 hours x $18/hr x 52 weeks = **$14,976**

Technical staff. You talk with your technical staff and experts like those in Table 3-1. You decide your landfill situation is better than most and it is mostly under control. You don't have much backhaul since you took care of several battery batches last year. Look at Chart 1. The total technical staff hours range from 11 to 161 hours.

You are in a pretty good situation, so 20 hours total for your operator and waste technician each week is a reasonable place to start. If the waste technician collects and unloads wastes for 12 hours each week (two 6-hour days), the operator can easily compact and consolidate in just 4 hours per week, and use 2 hours to alternate each week with inspecting the fence, picking up litter, and conducting equipment maintenance. You worry about having time for them to do an annual electronic waste (e-waste) event, and add 5 days of work (40 hours) for both staff:

Technician: (12 hrs x 52 weeks) + (40 hrs x 1 week) = 664 hours per year. Look up technician pay ranges from $13 to $35. Select a wage to keep them at their job. Let's say $16/hr. So your technician will cost:

664 hrs x $16/hr = **$10,624/yr**

Operator: 4 hrs x 52 weeks for heavy equipment operation + 2 hrs per week x 52 weeks for maintenance/ inspection + 40 hrs x 1 week= 352 hrs/yr

Let's pay our operator the average wage of $23/hr:

352 hours x $23 /hr = **$8,096/yr**

Total Personnel = GAP Staff + Technician + Operator = **$33,696/yr**

Want to see how these costs would look in a formal budget? Go to page 30 - we stuck the costs in a budget table so you can see! The rest of the budget is filled by numbers obtained from the other yellow-shaded example boxes further down. So in the end, you can see how a complete budget is built.

Estimating Other Category Line Items Using the Range Charts

So now you have an estimated Personnel budget for your utility that is fair and keeps your staff in their job. Let's move on to the other line items you need to build your budget. **Chart 3 lists the ranges for Fringe, Supplies, Travel, Equipment, Rent and Utilities, Backhaul, and Indirect.** An example follows the Table in the yellow shaded box. Data is based primarily on 14 village program budgets throughout the state.

A median average value is the point where half of the programs have a smaller value and half of the programs have a larger value. A mean average value is the mathematical middle of the programs. We provide the median value because the program budgets are all different in how they address waste issues and how well they address them. If your program wants to hit at around the middle mark in all budget categories compared with other programs, use the median value as a starting basis.

Chart 3 Range and median value of yearly expenses for common budget line items.

Item	Low-end Value of Range and Example Scenario(s)	Median Value	High End Value of Range and Example Scenario(s)
Fringe			
Fringe	Minimal, mostly required taxes like unemployment insurance, Social Security Income (SSI).		Retirement benefits, health benefits, possibly other perks
	14%	23%	45%
Travel and Training			
Travel & Training Total Expense (Airfare, lodging, per diem, incidentals)	Operator & technicians gets RALO training every 3 years, Manager goes to Alaska Tribal Conference on Environmental Management (ATCEM), Alaska Forum on the Environment (AFE), or management related training, bookkeeper gets Quickbooks. Total 1 to 2 trips per year.		GAP staff both go to ATCEM/AFE and another conference, plus water quality training. Operator & technicians go to RALO, Council goes to AFE or ATCEM, miscellaneous other training. Potential for inappropriate use of funds at this high-end. More travel than needed.
	$3,000	$10,960	$19,000
3- 5 day Alaska Training, per person	Achievable for most of Alaska with exception of Aleutians, and some rarely served villages with complex routing. Federal meals per diem and hotel stay is conference rate or better (or stay at cheaper hotel), advance non-refundable fares. No car rental. PURCHASE EARLY and SHOP AROUND.		Higher per diem rate policy, complex or remote routing, high-end hotels, non-advance tickets, refundable versus non-refundable tickets, etc. Car rental when one isn't really needed, other purchases.
	$1,000	$2,112	$3,220

Chart 3 Range and median value of yearly expenses for common budget line items.

Item	Low-end Value of Range and Example Scenario(s)	Median Value	High End Value of Range and Example Scenario(s)
Supplies			
Safety Gear For Landfill Staff	Some programs spent $0 which is not recommended. ALWAYS protect your workers. Low-end would be minimal landfill staff hours with new working heavy equipment, little manual tasks that force staff to come into contact with wastes.		Hard to spend too much on safety gear, but the high end is typically larger villages with more staff positions. Very dirty jobs can demand more with more wear and tear.
	$240	$1,000	$5,000
Misc (items under $5,000 e.g. backhaul supplies, tools)	Examples – hand tools, litter bags, landfill signs, visqueen, bander		Examples – bags of lime for septage, concrete for post shoring, pallet jacks, connexes, pallets
	$46	$523	$1,000
Office Supplies (desk, chair, computer, etc.)	1 office staff, small community, furniture and computer treated well, minimum infrastructure, or larger staff and more office equipment but refurbished, older models used (these should be acceptable for a SWM program as long work is productive and ergonomics are safe).		2-3 office staff, reasonably new furnishings and computers adequate for the job OR 1-2 office staff with high-end equipment and furnishings possibly more than is needed to do the job (inappropriate use of funds)
	$240	$2,400	$3,185
Supplies Total (All supplies together)	Small population with a small to medium size program, 1 landfill staff position		Larger population, more landfill staff positions, and medium to large program
	$240	$1,200	$8,400
Equipment Fuel			
Heavy Equipment – Diesel, Gallons Used	Small landfill under control		Large landfill under some control or medium landfill out of control
	30 gallons	365 gallons	1,114 gallons
Heavy Equipment – Diesel, Total Cost	$216	$2,304	$7,798

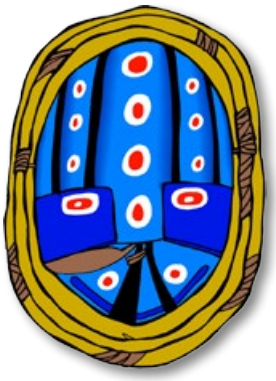
Chart 3 Range and median value of yearly expenses for common budget line items.

Item	Low-end Value of Range and Example Scenario(s)	Median Value	High End Value of Range and Example Scenario(s)
ATV & Snowmachine - Gasoline, Gallons Used	Use is minimal for errands, occasional will call, backhaul, household surveys, etc.		Heavy house to house collection, or cart collection with multiple trips to landfill, distant landfill, many errands
	60 gallons	240 gallons	1,040 gallons
ATV & Snowmachine – Gasoline, Total Cost	$146	$1,468	$7,280
Truck (not a waste collection vehicle) Gasoline, Gallons Used	Small landfill, occasional use by staff for SWM, landfill errands, recyclables transport to airport.		Medium to large landfill, comprehensive program with regular truck use for errands, backhaul, supplies, many landfill trips
	86 gallons	283 gallons	480 gallons
Landfill Truck – Gasoline, Total Cost	$516	$1,984	$3,451
Equipment Maintenance, Repair and Replacement, Insurance			
ATV & Snowmachine – Repair & Replacement	See description of ATV/snowmachine use min fuel category above. Assumes average care of equipment.		See description of ATV/snomachine fuel use above. Note: misuse of equipment or outside storage increases this cost. A good lube gun is “golden” to keep costs down.
	$148	$1,020	$1,500
Heavy Equipment - Parts & Maintenance	See description of heavy equipment use above. Assumes average care of equipment. Note: Older equipment may have slightly higher maintenance requirements, but parts might be cheaper (if available).		See description of heavy equipment use above. Note: misuse of equipment or storing it outside will increase this cost. A good lube gun is worth its weight in gold to keep the parts costs down.
	$286	$500	$3,000
Insurance for Heavy Equipment (Total)	Often, insurance policy covers all the Tribe’s equipment together, which makes it cheaper. Also, smaller equipment is less costly, and any safety features help. SHOP AROUND.		Multiple pieces, larger equipment, no bulk pricing. Shop around.
	$245	$2,205	$4,164

Chart 3 Range and median value of yearly expenses for common budget line items.

Item	Low-end Value of Range and Example Scenario(s)	Median Value	High End Value of Range and Example Scenario(s)
Office Operation			
Phone, Fax, Internet	Small office, 1 phone, good bundled pricing, proportional share for full Tribal office		2 phones or poor pricing, separate service from rest of Tribal office may also be higher cost.
	$279	$1,800	$4,560
Utilities (electric & heat)	Dependent on fuel prices mostly. Smaller offices might be lower.		Dependent on fuel prices mostly. Larger offices might be higher.
	$240	$2,598	$3,660
Office Space Rent	Rent is typically part of the Tribal Building rent, so depends on what share of the building rent is owed and the total rent of building.		Rent is typically part of Tribal Building rent. Depends on what share of the building rent is owed and the total rent of building. If separate, high-end rent tends to be larger, newer, or scarcer office spaces.
	$570	$1,800	$4,200
Backhaul Transportation and Vendor Costs (Freight and fees)			
Maintenance Backhaul of E-Wastes, Batteries, Lights	Smaller village, or medium larger village that uses in-kind transport donations		Larger village
	$1,250	$3,361	$8,500
Administration			
Bookkeeper/Clerk/Payroll	Responsible only for simple bookkeeping/Payroll		Responsible for billing, fee collection, bookkeeping for program, and payroll for large community (mandatory household participation) or not highly trained.
	$720	$1,500	$12,375

The process of using these numbers to estimate the rest of your budget is basically the same as creating your Personnel budget. Follow along in the yellow-shaded example below to get more practice at visualizing your program and estimating where it falls in the range of other programs.



After you're finished, or as you go along, see how we place these numbers into the Sample Budget in Table 4-2. What's the next step? Well, if you know any actual costs or quotes and you want your budget more accurate, you can add them in. The next Section discusses how and gives you a number of costs for a range of solid waste items.

Using Chart 3 to Build the Rest of Your Budget

You are a small community and your landfill staff is moderately experienced. Your administrator says that expenses for solid waste are too high. You want to estimate what an average program would spend. Then, you customize that budget to reflect your actual, known costs.

Fringe: Obtain your fringe rate from your bookkeeper and multiply that by your personnel total. Be sure your fringe includes workers compensation insurance. Let's use the average 23% on our personnel total salary of $33,696. Fringe = 23% x $33,696 = $7,750

Travel and Training: You haven't been keeping track of travel costs and they seem to always change, so you use the average of $2,112 per trip for the one operator training, two ATCEM, and one AFE trips your staff makes. Travel = $2,112 x 4 = $8,448

Supplies: You are a pretty small village, so you select a cost in the lower half range of Supplies, between $240 and $1,000 for safety gear. If you haven't purchased any for a while and need to restock, $800 is a decent estimate. For miscellaneous supplies like tools and backhaul – you have no idea. So you can go with the median $523. Office supplies – you have what you need, so select the low-end value of $240. Your total supplies add up to $1,563. It's over the median of $1,200, but a lot less than $8,400. So it is reasonable.

Fuel: Let's say you have just a dozer. Let's select halfway between the median and low range for gallons used. You're a small program, but don't know enough about your costs yet to budget for the lowest cost.

Dozer gallons of fuel used = (median value + low-end value) ÷ 2 = (365+30) ÷ 2 = 395÷2 = 197.50 gal. or about 198 gal.

Your village's diesel costs $6 per gal so your fuel = 198 gal x $6/gal = $1,188/year

Heavy Equipment Parts and Maintenance: Let's select the halfway point between the lowest cost of $286 and the mid-range cost of $500, which is $393/year.

Insurance: If costs are about mid-lower range, it would cost $1,225 (halfway between $245 and $2,205)

Office Operation: Your office has two phone lines and internet. Each month, you pay $75 for internet and $100 for the phone/fax lines. Select $2,100 for phone, internet, and fax ($175 x 12 months). That value fits the range well, so you can move on. For utilities, you heard that the barge might not make it this year and you

will have to fly in fuel. So choose at the very high end, utilities = $3,660. For office rent, your Tribe owns the building, so your rent is $0.

Backhaul Transportation and Recycling Charges (Freight): You're not at all sure about this one, but since you just started your program and don't think you'll get much to backhaul this year, you choose the lower end = $1,250

Bookkeeping: You must account for the person that processes payroll and tracks your expenses. Let's say they don't have to collect fees or bill. They work for the full Tribe, and mostly on other programs. Select the middle range, $1,500.

Total: $7,750 + $8,448 + $1,563 + $1,188 + $393 + 1,225 + $2,100 + $3,660 + $0 + $1,250 + $1,500 = **$29,077.**

Table 4-2 incorporates all of these line items plus the personnel costs in the prior example.

Table 4-2. Sample Budget Using Yellow Shaded Example Numbers.

Item	Unit Cost	Units	Quantity	Annual
Personnel				
GAP Coordinator/Director presents to community regularly, and runs Flying Cans. Supervising landfill staff, finding funding for a new landfill.	$18	hour	624	**$11,232**
GAP Assistant works 4 hours a week organizing cans, conducting outreach	$18	hour	208	**$3,744**
Solid Waste Technician: Collects and unloads wastes each week, assists operator, annual backhaul e-waste event, for 5 days of work	$16	hour	664	**$10,624**
Operator: compact and consolidate each week, inspects the fence, picks up litter, and conducts equipment maintenance, backhaul and annual e-waste event for 5 days of work	$23	hour	352	**$8,096**
Total Personnel (without fringe)				**$33,696**
Total Fringe, including FICA, workers compensation, benefits	23%			**$7,750**
Travel and Training				
Rural Landfill Operator Training (operator and technician, alternate years)	$2,112	people	2	**$4,224**
ATCEM & AFE (Coordinator goes to both, Assistant to one)	$2,112	people	3	**$7,496**
Training & Travel Total				**$8,448**
Supplies				
Office supplies	$240	lump	1	**$240**
Miscellaneous	$523	lump	1	**$523**
Safety gear for Solid Waste Technicians	$800	lump	1	**$800**
Supplies Total				**$1,563**
Equipment Fuel and Maintenance				
Equipment Fuel				
Dozer fuel	$6	gallon	198	**$1,188**
Equipment Maintenance & Equipment Insurance				
Dozer - Parts & Maintenance (Be sure to read 3.5 on this value!)	$393	yearly	1	**$393**
Insurance	$1,225	yearly	1	**$1,225**
Equipment Fuel and Maintenance Total				**$2,806**
Rent & Utilities				
Phone, fax, internet				
Phone & fax	$100	month	12	**$1,200**
Internet	$75	month	12	**$900**

Table 4-2. Sample Budget Using Yellow Shaded Example Numbers.

Item	Unit Cost	Units	Quantity	Annual
Public Utilities and Rent				
Utilities	$3,660	year	1	**$3,660**
Rent	$0	year	1	**$0**
Rent and Utilities Total				**$5,760**
Backhaul Shipping and Vendor Costs				
Freight and Fees, backhaul	$1,250	year	1	**$1,250**
Total Backhaul Shipping and Vendor Costs				**$1,250**
Indirect Administrative and Overhead Costs				
Administration (payroll, bookkeeping)	$1,500	year	1	**$1,500**
Total Indirect Overhead Expenses				**$1,500**
Total Annual Expense				**$62,773**

4.4 Customizing your budget

In the Range Charts, we provide examples of staff time and wages for programs throughout the state. In designing a more specific budget for your program, estimate as best you can, and then test it out. How you test and what to look for is beyond the scope of this Guide, but here are the types of questions to ask.

How is your utility working? Can you cut any personnel hours (including yours)? Do you need more management hours to make sure the landfill staff is working on the tasks that will help community health? Need more administration hours to get your collection rate up? Need more landfill staff hours because they don't have the time to pick up the trash outside the fence?

Developing just the right mix of personnel hours for your system and your community is a process, and what is right will change over time. What about the other line items?

In Chart 3 above, we provided typical fuel usage and maintenance costs for common waste equipment and vehicles. But there are many different supplies and other needs that might be part of your budget one year, and not the next.

Table 4-3 lists costs for many types of waste utility supplies, equipment, and services. See anything that you need? Then add it as a line item in your budget. An example can be found after Table 4.3 on page 39. Important notes about Table 4-3:

1. The costs listed do not include shipping. **Don't forget to call your transport companies to get shipping quotes to include in your budget.**

2. The "M" superscript on an item means that it is a maintenance item and the cost will be typically incurred each year. Items without an "M" are things that typically are purchased less frequently. See Section 4.6 on time-averaging those costs, so that you are budgeting enough to pay for them when time comes to replace goods or purchase services.

4.5 Replacement costs and expenses that don't happen every year?

Accounting for costs over time is actually quite simple. We will demonstrate the most basic way that assumes you can't make interest from any savings in your bank account, which would be true of any grant funds anyway.

Item Cost / Number of years it lasts = Yearly cost

The good news! This formula works for both replacement costs and for averaging an expense.
We give you an example of how to calculate these costs on page 39.

Always have a replacement cost line item in your budget for equipment that you are unable to finance through a grant.

Table 4-3 Costs of Various Solid Waste Supplies and Equipment.

Note: Costs do not include freight. Vendors listed are those most commonly used by villages and their inclusion is not intended as an endorsement.

Item	Approximate Cost in 2016 (costs listed here do not include shipping costs)	Comments, Where to Purchase, Resources
Backhaul Supplies And Fees: For more information on these items and vendors, see http://www.zendergroup.org/docs/backhaul_supplies.pdf		
Totes	$400-$550 each, with lids	For a list of companies that sell totes, see: http://www.zendergroup.org/docs/backhaul_supplies.pdf
Connex (for storing hazardous wastes or recyclables).	$2,500 and up. The price will depend on the shipping companies cost for the connex. Chances are you can get a free one for your backhaul use from the barge company, so call first.	Call your barge company and ask first if they have any you can use in the community or if they can drop one off (for free). If not, ask if there are any connexes in your community for purchase. If there are some, they will give you the identifying numbers on the outside of the connex. You can check them out to see if you'd want to purchase them if they have any available in your community to use, or can drop one off for you to fill.
Pallets[M]	$5.00-$8.50 each.	
	Some regional airlines have provided communities with free pallets but communities pay the shipping.	Please see http://www.zendergroup.org/docs/backhaul_supplies.pdf for information on how to purchase.
	Some villages buy their pallets locally from companies that have projects going on (usually for $5 - $10 per pallet).	

Table 4-3 Costs of Various Solid Waste Supplies and Equipment.

Item	Approximate Cost in 2016 (costs listed here do not include shipping costs)	Comments, Where to Purchase, Resources
Shrink wrap[M]	$20 for a roll, and $75 for a case of 4	
Polypropylene strapping (for securing wrapped pallets and tying down pallets within a connex)	$285 for an 8x8 roll	See this factsheet for additional information on how to purchase. http://www.zendergroup.org/docs/backhaul_supplies.pdf
Freon removal equipment	About $2,500	See http://www.zendergroup.org/docs/Freon_removal.pdf
ALPAR bags for community litter cleanup[M]	$10 for 200 bags from Alaskans for Litter Prevention and Recycling (ALPAR)	Contact Mary Fisher at ALPAR, 907-644-7968 alpar@gci.net
Banding kits	Banding machine: $375	See this factsheet for additional information on how to purchase. http://www.zendergroup.org/docs/backhaul_supplies.pdf
	Steel 3/4” banding: $130 for a 2,000 foot roll.	
	Tensioner: $210	
	Sealer: $70	
	Seals: $80 for a box of 2,500	
	Cutters: $60	
	Total for all listed above = $925 for the kit.	
Lead Acid Battery supplies[M]	Plasti-dip spray (for insulating Lead Acid Battery terminals): $11	See this factsheet for additional information on how to purchase. http://www.zendergroup.org/docs/backhaul_supplies.pdf
	Spray foam (for filling cracks/ holes in broken batteries): $10	
	Bag of vermiculite (for neutralizing battery acid in a tote): $65 per bag	
Full Battery Acid Spill Kit	$175	Kit items can be purchased separately from a number of vendors and combined for a spill kit. Some vendors sell assembled kits. See backhaul supplies factsheet for item list and vendors: http://www.zendergroup.org/docs/backhaul_supplies.pdf
Field Mercury Spill Kit	$63	Kit items can be purchased separately from a number of vendors and combined for a spill kit. Some vendors sell assembled kits. See backhaul supplies factsheet for item list and vendors: http://www.zendergroup.org/docs/backhaul_supplies.pdf

Table 4-3 Costs of Various Solid Waste Supplies and Equipment.

Item	Approximate Cost in 2016 (costs listed here do not include shipping costs)	Comments, Where to Purchase, Resources
Absorbent pads for spills	Just Oil Pads - white pads (15x19): $125	For more information see http://www.zendergroup.org/docs/Safety_gear.pdf
	Universal Absorbent Pads, 100 count (15"x 19"): $125	
Pallet Jack	$450 for a pallet jack that can lift up to 5,500 pounds (lbs)	See this factsheet for additional information on how to purchase. http://www.zendergroup.org/docs/backhaul_supplies.pdf
	$2,700 for a pallet jack with a built in scale that can lift up to 5,000 lbs	
Boxes for shipping lights[M]	Available free from your Alaska recycler	See this factsheet for additional information on how to obtain. http://www.zendergroup.org/docs/backhaul_supplies.pdf
Tools and supplies for preparing vehicles for backhaul (cars, ATVs, sno-go's, etc.)	Punches (3/16" Steel): $35	In the summer of 2012, Hooper Bay prepared a large amount of scrap metal for backhauling. All of the supplies and equipment they needed for the preparation are shown in the invoice at this link: http://www.zendergroup.org/docs/scrap_metal_supplies.pdf You can view this invoice for an exact list of equipment purchased, and the amounts and prices of each item.
	Brass Punches (for Fuel Tanks): $70	
	2-3 lb sledge Drilling hammers: $28	
	Sawzall or Hackzall Kit (battery operated): $42 Extra 18 volt Lithium (Li)-Ion Battery: $140	
	Sawzall Blades – 6", 12-18 teeth per inch (TPI) (5-packs): $35	
	Hand Pumps for removing Fluids: $21	
	Extra Hose (3/4", 5/8", 1/2") 3 ft lengths": $42	
	Jack Stands (3-Ton, 2-pack): $53	
	3-Ton Floor Jack: $350	
	Diagonal Cutters (Dikes) - 7-8 inch: $35	
	Steel Drain Pans: $13	
	Plastic Funnels: $9	
	5-gallon Buckets w/screw top lids: $7	
	Hand Scrub/wipes (self-cleanup): $35	
	Socket Set-148 piece-both Metric and American: $145	
	4-way Tire Iron: $25	

Table 4-3 Costs of Various Solid Waste Supplies and Equipment.

Item	Approximate Cost in 2016 (costs listed here do not include shipping costs)	Comments, Where to Purchase, Resources
Backhaul shipping costs[M]	Transportation costs vary throughout the state. Contact your local barge or air company for quotes. If you are shipping by barge, you can ask your barge company for a quote for shipping a 20' container. They will usually give you a minimum weight price which means that you can fill the connex with as many materials as you have for the set price. A good placeholder cost would be: $6,000	Tip: It doesn't hurt to ask if the barge company can provide any free or reduced cost transportation. Many communities have received free shipping or additional connex shipping for free, or reduced cost shipping just by asking.
		If you are shipping by plane, ask the air companies for a similar donation, or reduced rate, or if you have a hub organization that you work with, ask if they have a lower negotiated rate.
Safety gear	Average costs for safety gear:	For more information about safety gear and companies that sell it, go to: http://www.zendergroup.org/docs/Safety_gear.pdf
	Neoprene gloves: $11/pair	
	Cut resistant work gloves: $21/pair	
	Emergency medical bag: $90	
	Field first aid kit: $35	
	Nylon apron: $22 each	
	Anti-fog goggles: $3-$12 each	
	Ear plugs (box of 200): $46	
	Tyvek suit: $7 each	
	Half mask respirator: $26 each	
	P-100 particulate cartridge: $9 each	
Recycling fees[M]	Call the recycling company that you are shipping to. Everyone has different pricing and different materials they will accept. As an estimate, 2016 recycling fees are listed below:	See this document for a list of other recycling companies in Alaska and Seattle area http://www.zendergroup.org/docs/recycling_buyback.pdf
	Cathode Ray Tube (CRT) monitors: $18 each Liquid-Crystal Display (LCD) TV's & monitors: $15 each All electronics: $0.20/lb	Can't find what you are looking for? Contact Zender Environmental or any of the resources listed on page 5.
	CRT TV's: $10-$50 each Refrigerators: $25 each Appliances: $10 each Lead acid batteries: no charge Mixed batteries: $3.50/lb Fluorescent bulb tubes: $1.14/lb Mercury devices: $15/lb	
	To recycle used tires, estimate tires for $150 per 2,000 pounds of tires	

Table 4-3 Costs of Various Solid Waste Supplies and Equipment.

Item	Approximate Cost in 2016 (costs listed here do not include shipping costs)	Comments, Where to Purchase, Resources
Recycling Equipment		
Recycling baler	Cost depends on the type and size of baler purchased but range from $10,000-$15,000.	For more information about recycling balers and companies that sell them, go to: http://www.zendergroup.org/docs/baler_recyc.pdf
Recycling bins	Cost depends on the type and size of bins/containers purchased.	For more information about recycling bins/containers and companies that sell them, go to: http://www.zendergroup.org/docs/Recycling_bins.pdf
Waste Oil to Energy Converter (WOTEC) (used oil blender)	$24,000-$54,000 depending on the size.	For more information about WOTEC's, go to: http://www.zendergroup.org/docs/WOTEC_print.pdf
Used oil burner	$8,000-$12,000 depending on the size and model.	For more information about used oil burners and companies that sell them, go to: http://www.zendergroup.org/docs/oil_burners_print.pdf
Antifreeze recycling unit	Smaller units cost between $1,500 and $3,000. Note that on an annual basis you will also need to purchase coolant additives to add to the recycled antifreeze as well as filters, so an annual amount to add to your budget might be about $300 per 80 gallons of antifreeze recycled, or $3.75/gal.	For more information about antifreeze recyclers and companies that sell them, go to: http://www.zendergroup.org/docs/Antifreeze_Recycling_print.pdf
Drum crusher	Costs vary depending on type and size but can range from $10,000-$16,000.	For more information about drum crushers and companies that sell them, go to: http://www.zendergroup.org/docs/drums.pdf
Glass crushers or palletizers	Costs vary depending on type and size. $11,000 for a medium sized unit (call to update)	For more information about glass crushers and companies that sell them, go to: http://www.zendergroup.org/docs/Glass_Crushers.pdf
Landfill Equipment		
Fencing	Cost of fencing varies too much to give an average estimate (depends on how much is needed, the layout, the terrain etc.). See the document to the right for tips on getting quotes for fencing.	For tips on getting quotes for fencing and fencing company contact information, go to: http://www.zendergroup.org/docs/fencing.pdf
Garage for heavy equipment	See line item for connexes.	Connexes can store equipment. A skid steer can fit in a regular 20' connex. For bigger equipment, some communities have stacked connexes and joined them together, or built lean-tos or roofs on top. You can also purchase Fabric Structure buildings to store equipment. Search the internet for Fabric Structures for Equipment Storage and you will find companies and their pricing for these types of structures.

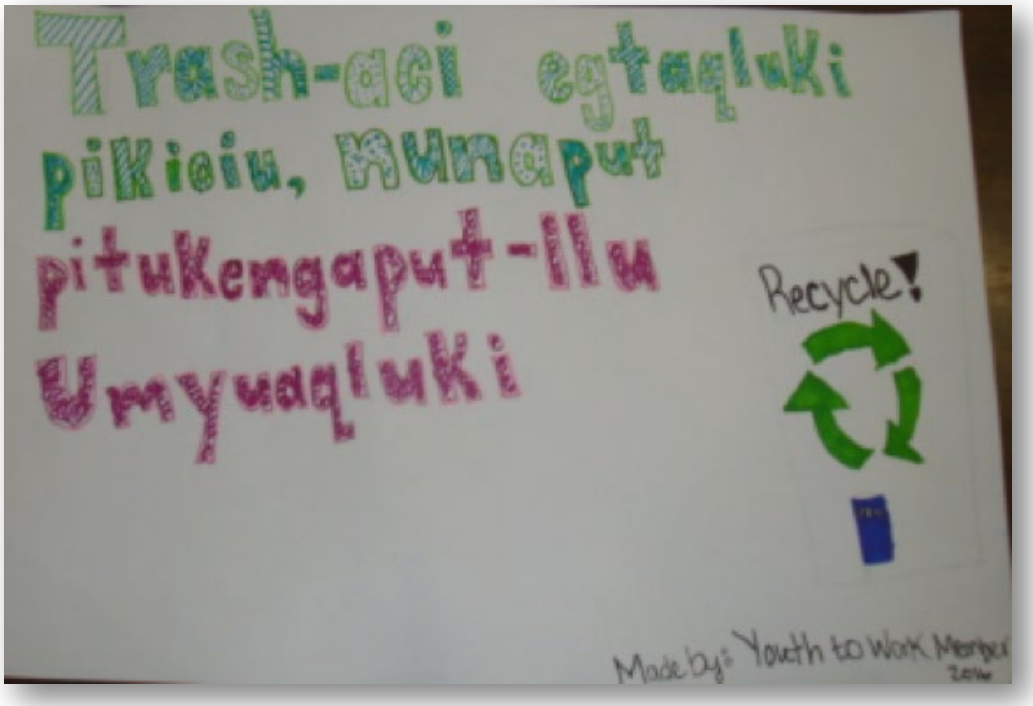
Table 4-3 Costs of Various Solid Waste Supplies and Equipment.

Item	Approximate Cost in 2016 (costs listed here do not include shipping costs)	Comments, Where to Purchase, Resources
Landfill Signs	Cost depends on the size of the sign and its properties. Costs of a basic 4x4 metal sign with posts start at about $600 per sign.	For tips on getting quotes for landfill signs and companies that sell them, go to: http://www.zendergroup.org/docs/lf_signs.pdf
Burnbox	Skid mounted Burn Unit for $35,000 and a trailer mounted Burn Unit for $32,000.	For more information about burnboxes and companies that sell them, go to: http://www.zendergroup.org/burnbox.html
Heavy Equipment for the landfill	For an exact quote you will need to call equipment companies. Average costs for Skid steer and Dozer are found below.	Ted Jacobson from EPA is a great, free resource for information about landfill equipment (researching, purchasing, maintaining, etc.). Give him a call or email at 907-865-7363 tjacobson@ruralcap.com
Skid steer	New skid steer with and auxiliary hydraulics and tracks is ~$52,000, using the government General Services Administration (GSA) rate that tribes are eligible for (see www.gsa.gov) Used: ~$40,000	It is recommended to get one that has auxiliary hydraulics hooked up on the mast and one that has solid rubber tires, or tracks (tracks are preferred). Used equipment can be a good option and can save you a lot of money. When looking for used equipment, contact companies that sell AND rent heavy equipment (companies that rent equipment usually have high maintenance standards, so the used equipment they sell are generally in good condition). Fall is often a good time to buy as rented equipment is back from the field and companies are anxious to get rid of it. Getting the best price is a matter of waiting for just for the right piece to make its way from Lower-48 distributors or Southcentral construction projects.
Dozer	Cost of a used dozer that is sized smaller than a D5 or JD450 and has around 4,000-10,000 hours on it ranges from $60,000-$80,000. Call equipment companies for a more exact quote.	
Collection Equipment		
Trash carts	A 4x8 trash haul trailer costs $2,900 to $3,500 A stationary trash bin costs about $1,950	See this document for more information about trash collection carts and companies that sell them: http://www.zendergroup.org/docs/collection_carts.pdf

Table 4-3 Costs of Various Solid Waste Supplies and Equipment.

Item	Approximate Cost in 2016 (costs listed here do not include shipping costs)	Comments, Where to Purchase, Resources
Dumpsters	Costs of dumpsters vary too much to give an average estimate (depends on the type of dumpsters, size, etc). See the document to the right for the types of dumpsters available and companies that sell them.	See this document for tips on getting quotes for dumpsters and dumpster company contact information: http://www.zendergroup.org/docs/Dumpsters.pdf
Training		
HAZWOPER Training	There are several companies in Anchorage that provide HAZWOPER training (both in Anchorage and on-site). See document to the right for more information.	See this document for information about HAZWOPER training and companies that provide training: http://www.zendergroup.org/docs/HAZWOPER.pdf
Freon Removal Training	See document to the right for a list of companies that provide Freon removal training both on-site and in Anchorage. Call for quotes.	See this document for information about Freon removal and training and companies that provide training: http://www.zendergroup.org/docs/Freon_removal.pdf

[M] An "M" superscript denotes that the item is typically a maintenance item, and the cost is typically incurred each year.



"Do throw your trash away, think about what we are provided from the land."
Youth to Work Group, Tununak, 8th Grade

Customizing Your Budget Example

Let's say you've built your budget using all median values in the Range Charts. But 1) You want to be sure you have all the supplies your program needs for backhaul, 2) You realize that you need a pallet jack, and 3) Your used oil burner needs replacing in 5 years. Leave the other categories the way they are and refine your Supplies and Equipment Repair, Maintenance, and Insurance categories.

1) Look at the list of backhaul supplies on pages 32-37 and add up all of the item costs. Let's say you have lots of vermiculite and all the banding supplies you'll need for a while. But you need more plastic wrap, and insulator spray and foam for lead acid batteries. Also, you need to purchase a mercury spill kit. So, for this year you'll add those line items under Miscellaneous Supplies, along with any other items you might have, like ALPAR bags or a hammer and drill. Let's assume that this is all you need:

Miscellaneous Supplies	
Plasti-dip spray:	$11
Spray foam:	$10
Polypropylene strapping:	$285
Mercury Spill kit:	$63
Total:	**$369**

The total $369 is different from the $523 that is listed as median for the Misc. Supplies in Chart 3. **If you start tracking your budgets now, in a few years you will know your own average Supplies cost and can use that in your future budgets.**

2) Add the $2,700 pallet jack cost under the Supplies category. The range of Supplies costs does not include larger one-time purchases such as pallet jacks. The Supplies category cost in Chart 3 only accounts for items that are generally purchased each year. For most grants and budgets, items under $5,000 are still considered supplies. If they are in continued need after their lifespan is up, they need to be replaced. If you think you need to save up each year to replace a supply, then add a replacement cost every year after the purchase year.

3) Add a repair and replacement fund for the used oil burner. You should have made one when you purchased the burner, but it is never too late! To calculate the annual cost for your repair and replacement fund, divide the cost of the burner (see Table 4-3, page 36) by how soon you'll need to replace it (5 years in this case).

($10,000 average burner cost + $1,000 freight estimate) ÷ 5 years = **$2,200**.

So remember Table 4-2, the sample budget? Using the yellow shaded numbers from the budget customization example, your Supplies and Equipment categories now look like this:

Item	Unit Cost	Units	Quantity	Annual Cost
Supplies				
Office supplies	$240	lump	1	$240
Miscellaneous: Plastic strap, insulator spray, foam for lead acid batteries, mercury spill kit	$369	lump	1	$369
Safety gear for Solid Waste Technicians	$800	lump	1	$800
Pallet jack (this year only)				$2,700
Supplies Total				**$4,109**
Equipment Fuel, Maintenance, and Insurance				
Dozer fuel	$6	gallon	198	$1,188
Used oil burner replacement	$2,200	lump	1	$2,200
Heavy Equipment - Parts & Maintenance (see Section 4.5)	$500	yearly	1	$1,300
Insurance	$1,225	yearly	1	$1,225
Equipment Fuel, Maintenance, and Insurance Total				$5,913

Okay, let's continue with Section 4.5.

We included a replacement cost in the yellow shaded example on page 39, but in case you skipped that and are just reading the main text right now, here is what we are talking about.

Replacement Cost Example: You purchase an ATV for $12,000 in Year 2016 dollars. It lasts for 5 years before it needs to be replaced. You will plan to be using your GAP grant by then to work on your Indoor Air Program, so you need to cover the cost through your utility revenue. Your yearly replacement cost is:

$12,000 / 5 years = $2,400

Expense Example: A backhaul every 2 years costs $5,000. Your annual backhaul costs are:

$5,000 / 2 years = $2,500

For heavy equipment, Tribes and cities usually get those from grant monies. They are really expensive to purchase, and would add a substantial amount of repair and replacement costs to your annual budget. There is varying advice on this matter. **The bottom line, it never hurts to add a replacement fund for your heavy equipment. We recommend you do add it.** Your user fees and other revenue might not be able to cover it, but at least you can make saving for a new dozer a goal.

4.6 What if I share my equipment or staff or office with another program?

Sharing items and staff with other programs and projects is a great idea for our small communities. **It helps reduce the cost.** It is common to share the dozer with a construction project or the water utility. Our waste utilities benefit because we can share the costs of insurance and repair. **If we share the dozer with the City or an outside project, we can even earn revenue to pay for the program.**

It is common to share the payroll clerk with every other Tribal program. Otherwise the Tribe needs to hire ten people for 2 hours a week and train all of them in bookkeeping.

Sometimes referred to as "proportional" or "allocated" costs, shared costs must be calculated. The good news? It is easy to do.

1. **Find out the total cost of the item.**
2. **Determine or estimate the percent of time that you use the item for solid waste.**
3. **Multiply these two numbers together.**

Shared Costs

Example 1. You share your dozer with the City water utility. They let you borrow it for 4 hours each week. You find out that they use the dozer an average of 416 hours each year for their construction work. That is an average of 8 hours each week. It costs the City $3,000 to insure and maintain the dozer. What is your shared cost for the dozer?

1. The total cost is $3,000.

2. The total time the dozer is used is 4 hours (solid waste) + 8 hours (City) per week, or 12 hours each week. The percent of time the dozer is used is:

4 hours / 12 hours = 1/3 or 33%

3. The solid waste cost is 33% of $3,000 = **$1,000**

Example 2. You share your bookkeeper with the rest of the Tribal programs. She works fulltime – 40 hours each week. She makes $32,000 each year. You ask her how much time she spends processing the checks for your solid waste time, other solid waste staff time, and tracking expenses in Quickbooks. She tells you about 4 hours each week.

1. The total cost is $32,000.

2. The total percent time is 4 hours / 40 hours = 10%

3. The solid waste cost is 10% of $32,000 = **$3,200**

Even if the Tribe doesn't pay their share of the costs, it is important to include the cost in your program budget. As a planner/manager, you need to know the full costs of your program. If the City stops loaning their dozer and starts charging, you will be prepared. Also, in applying for solid waste grants, you need to show the full program cost.

4.7 How do I update my budget and costs?

Costs usually change over time (mostly they go up, but sometimes down). In the Range Charts and Table 4-2, we provide cost information that reflects the year when we wrote this Guide – 2016. If you are reading this Guide past July 2017, and you want a rough estimate for any budget item increase, you can use the change in the Anchorage Consumer Product Index (CPI)[1]. To calculate this, the Alaska Department of Labor has a great site.

Go to: http://live.laborstats.alaska.gov/cpi/calc.cfm. You will see something like the following figure. Note, because the page updates each year, when you look at this page in 2017, the button will say "Get 2017 value" and the green shade will say "Anchorage 2017 value".

On the site, simply enter 2016 in the blank white box as the year you want to compare, and the Guide cost that you want to update as the "$ value". Click on the "Get value" button. Your cost will appear in the green shaded box. Use the Anchorage value, not the U.S. value.

Looking for more accuracy in your updating? Read on!

Wages: Wages in our villages depend more on local conditions than the CPI. That is because there are only so many jobs and so many people to fill them. In updating the wages in Chart 2, be aware that you should always just choose the wage that will hire and retain the right worker. Applying the CPI to the salary ranges might make them more accurate, but be aware that it might not. How much have wages in your community gone up in the past 5 or 10 years? In most villages, it is not nearly as much as the CPI.

[1] The CPI isn't provided for villages, and since most goods and services are purchased there, this CPI is best.

Transportation, Travel, Utilities, and Fuel: In rural Alaska, airfares, shipping costs, electricity, and heat are tied to fuel prices. If you are reading this Guide after July 2017, and you want a more exact update, look up the most recent average fuel price here: https://www.commerce.alaska.gov/web/Portals/4/pub/Heating_Fuel_Prices_by_Region_2005-2016_Source_DCRA.xlsx and calculate the percent change from the 2016 January price of $4.71. The most recent average price will be at the far right end of row 7. Let's say it is $5.00. To calculate the percent change:

(5.00 – 4.71) ÷ 4.71 = 0.062 (this is a 6.2% increase)

Apply this percentage to your fuel cost. For example, in Chart 3, page 27, the low end cost for utilities is $240. Simply multiply by 1.062:

$240 x 1.062 =$254.88, or rounded up, $255.

4.8 Congratulations!!

You've completed the chapter on budget calculations. Hopefully, you have a pretty good sense of what it takes to make a budget. The next chapter provides some critical information related to the budget decisions you make. After reading the next chapter, you'll be armed with everything that you need to build a budget that works for your community.

Rebekah Oquilluk, Teller, Grade 7, Age 12

5. Budgeting Considerations, A Happy Operator, and the Top Ten Tips to Improve Your Landfill!!

Keeping within a budget is hard, whether it's for your family or your solid waste utility. Chapter 5 will give you some budgeting tips. We'll discuss how important your landfill staff are, and how to make a budget that supports them. We'll conclude with a summary list of everything that we learned from reviewing solid waste budgets throughout Alaska.

5.1 Training and experience are worth their weight in berries.

In analyzing 14 village waste utility budgets, we found that wage levels don't depend on what region you're from, they depend on your community. It's up to you to decide what wage will retain a good operator/technician in your community. Why be concerned about keeping them in their job? We did find that utilities with high Waste Index scores had experienced and trained operators and/or technicians. What does that mean? **Don't make the mistake of skimping on operator training.** Utilities with experienced and trained staff have the best operated landfills. **A good landfill staff protects your community and lands from the effects of landfill contaminants.**

What makes a trained and experienced landfill staff? You can have a **trained staff** by sending them to the Rural Alaska Landfill Operator's course. As your utility develops, send them to other trainings that can help them with backhaul, reuse sheds, and monitoring for any landfill contamination. See Table 3-1 for training contacts.

It is critical to have trained staff, but **why do you need landfill staff with experience?** Because training won't cover all the situations that your operator and technicians will face. They also need experience in what works and what doesn't for your utility and community. **Experience is critical. But they can't get experience if they quit.** It is important for the staff to know how to do their job, and for them to show up at work!!

You'll need to budget enough money to fairly compensate them for their work.

You need experienced staff. Be sure to offer your landfill and waste collection staff a wage that will keep a good worker working for your community.

If your operator or technicians quit because of low-wages, *it may take weeks or months to find someone to replace them.* In the meantime, **your landfill may become a real public health threat.**

5.2 Motivation is also worth a lot of berries.

What else does the budget have to do with good staff? Training and experience mean staff know how to do their job. Remember our discussion about effectiveness and efficiency? Knowing how to do their job means they can be effective. **Motivation is something that makes them efficient.** If staff are motivated, they will be efficient. They will work hard to get a lot done in the time they have.

How do you motivate them? **Consider an incentive for operators and technicians that improves your utility's ability to protect public health.** Maybe you can budget enough money to give them a raise in their wages.

Budgeting means making tradeoffs to accomplish your priority goals.

If giving your technical staff a higher wage to keep them-- or enough hours to properly do their job-- means cutting the budget somewhere else, **do it.** There are lots of ways.

- Purchase used and smaller equipment instead of new and larger-than-you-need equipment.
- Cut out a conference trip for Council and/or GAP staff or other travel that is not truly critical.
- Decrease GAP solid waste time. Get a volunteer to do a spring cleanup or school carnival, write a shorter plan, purchase a refurbished instead of a new computer, make do with an older ATV, and look at other innovative ways to save money in your utility program.

You may not need to cut your budget. You save money by not training someone new. **You save a lot of money by having someone who can do their job in less time.** When we looked at Landfill scores and operator time, it was very clear that in Alaska villages:

A good operator can do a great job with just a few hours per week. An unmotivated or untrained operator can do a lousy job with a full 40 hours.

And if your budget doesn't allow a raise to reward your staff, you can throw a party, give out gift cards, or the store can donate a new net. **Or what about declaring a community potluck in honor of the staff?** All of these things can help to motivate and retain staff without costing a lot.

How do I know if my staff is improving the landfill and protecting health?

When do you give that reward to staff? **We suggest using the Waste Index for at least one evaluation tool.** In general, the better the score that you have, the more that your solid waste health risks are reduced. You can select a category(ies) that most improves your landfill's ability to protect public health. When you or your staff attain a "5", or even move up one point, it's community potluck time! The actions listed in the Waste Index that landfill staff can take to most reduce community risks are listed on the next page.

The bottom line is that the number of hours and the kind of work you have for your utility staff affects your landfill performance as a public health utility, AND it affects your budget bottom line. Your personnel structure is the most important decision that you'll make when developing a budget. So take your time, ask questions, discuss your options with experts, and don't be afraid to adjust your decisions once you test them out.

Top Waste Index Categories that your Operator and Technicians can work on so that your personnel budget is better at protecting community health:

Access Control - Controlling who goes to the site and where they can access.

Burn Management - Control when you burn, what you burn, and where the smoke goes. See Burning Tips at http://www.zendergroup.org/burning.html

Collection Program - Keep people out of the landfill so they don't come in contact with wastes and they don't discard or burn wastes improperly. See collection resources at http://www.zendergroup.org/collection.html

Operator Training - A knowledgeable operator knows how to manage the landfill safely. See Operator resources at http://www.zendergroup.org/operator.html

Separate Salvage Area - This area helps ensure that residents are not in contact with hazardous or disease transmitting wastes.

Working Face - Minimizes the active waste disposal area in the site.

Special Wastes - Keep harmful wastes like lead acid batteries, used oil, household hazardous waste, electronic wastes, septage, and animal carcasses stored or discarded properly.

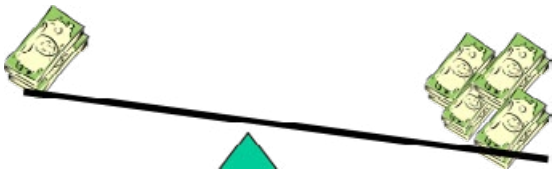
Backhaul Program - Don't let the landfill become a hazardous waste storage area – an accident is bound to happen. Backhaul out hazardous wastes. Scrap, cans, and plastics are an eyesore but can remain at your landfill until your priority issues are over. See backhaul resources at http://www.zendergroup.org/backhaul.html

5.3 Other cost considerations

There are many ways to lower costs for your waste utility. Which one is best for you depends on your situation. Think it through, ask your community, and consider asking a solid waste expert in the region or state. They are familiar with the different types of programs, ways to cut costs, and what actions most safeguard community health. Table 5-1 below lists some example cost factors that don't affect how well your program protects health. If you want a lower cost utility, **adopt more features on the left-hand side of Table 5-1.**

Table 5-1 Some Cost Factors in Solid Waste Programs that Can Be Changed without Affecting Community Health Protection

Actions That Safeguard Community Health	Actions That Do Not Affect How Well Your Program Protects Health
Staff hours limited to what is useful in reducing risks	Large fuel guzzling equipment just because grant money was available to get it bigger than needed.
Used/refurbished/smaller equipment	Cutting edge office, all the bells and whistles that that aren't needed in a computer, desk, etc.
Older office equipment and computers	Per diem that pays more than the actual cost (staff don't need to make money when traveling).
Travel only for absolute needed reasons, like operator training	Working on whatever program happens to be next on the list, not on what will make progress
Less time spent on programs that reduce non-harmful wastes	Traveling to conferences that don't help improve the waste situation.
Motivated staff	
Full-time staff with time to work on non-waste related duties.	



5.4 The top ten tips to improve your landfill

What did we learn about landfills in writing this Guide? A lot. We wanted to be sure that we shared it all. The actions and policies that we recommend are based on the extensive, long talks we did with our 14 village volunteers, their waste index scores and other village scores, and additional discussions with regional experts to verify regional situations. You will be serving your Tribe very well if you adopt these tips and create a budget that supports them. It might take a few years to get there completely. But even if we struggle with how much money to spend on a dozer or staff wages or supplies, we always know how valuable our community and lands are. Priceless.

5.5 Ready to build your own waste utility budget?

After you take a look at our ten tips below, you've read through the entire Guide!! Now it is time to build a budget that fits your program. Think about what works with your program now, and what you want your program to do in the future. If you are looking for grant monies to change your operations, you'll need to have both current and future budgets in your proposal. Chapter 6 gives six examples of what your completed budget can look like.

Top Ten Tips to Improve your Landfill!!

10. You can have a great landfill even if your community is poor. We found communities with high poverty levels and great waste utilities, and communities with relatively low poverty levels and "bad" utilities.

9. A landfill doesn't maintain itself, so you need some staff time and equipment. That means that, in general, your program can get better with more money and even small communities need to spend something to protect their people and lands.

8. Larger communities might need more work to get a good landfill. Larger communities tend to have worse landfill scores. After all, there are a lot more people discarding wastes. So there are more wastes to manage and more community outreach is needed.

7. How much you spend on GAP staff might not matter. There isn't a clear connection between how much GAP staff time is devoted to solid waste and how good a landfill and waste programs is. But if you work hard on improving specific issues with your landfill that protect community health, then your time does matter.

6. How much time your operator and waste technician spend at their jobs might not matter. Some villages had low hours for their staff but had very high landfill scores. Others employed several staff full time and still had a bad score.

BUT some things do count:

5. The importance the community places on your program matters. Do they treat it like a utility or like a dump?

4. Restricting access to the landfill is an effective way to improve it. Communities that restrict access to their landfills have better ADEC Waste Index scores.

3. A good operator makes a good landfill. The ability of your landfill operator and waste technician to perform their jobs at a high level is one of the most important aspects of your solid waste program.

2. What the community wants is important. If your utility doesn't accomplish the community's goals and address your community's situation, then you are unlikely to get their support or money. Focus on community participation/involvement.

1. You can make a difference. What you as the planner/manager/outreach staff do at your job matters. Prioritizing your landfill activities helps keep people safe. Depending on your waste situation, you might need to work fulltime, or part-time, but you must prioritize to make progress.

6. What Does a Finished Budget Look Like?

Six examples of actual solid waste budgets from Alaska communities with Waste Indexes of 68% or higher are provided below. The ID corresponds to Table 4-1. Remember, your budget will be different. This layout is one example of how to display your budget. But also budgets don't need to look this detailed – just the item and annual costs can be fine. There is a blank budget on page 55 to copy and use over.

Village ID #11, in Inupiaq Region, Population 294.

Item	Unit Cost	Units	Quantity	Annual Cost
Personnel				
Landfill Laborer: The laborer collects solid waste from homes three times a week along with conducting landfill maintenance activities.	$15	hour	312	$4,680
Laborers/Temporary Hires: Conduct solid waste activities as needed.	$15	hour	360	$5,400
Indian General Assistance Program (IGAP) Environmental Coordinator: Solid waste administration/oversight is performed by the Coordinator and she also handles recycling and backhaul.	~$20	hour	1300	$25,922
IGAP Environmental Assistant: Assists with recycling and trash collection. Solid waste work is 60% of her time which is reflected here.	~$18	hour	1300	$23,231
Total Payroll (without fringe)				$59,233
Fringe, including FICA, Workers Compensation, benefits	24%			$14,216
Personnel Total				$73,449
Travel and Training				
RALO or HAZWOPER training for Landfill Tech	$3,220	person	1	$3,220
AFE	$1,610	person	2	$3,220
ATCEM	$1,610	person	2	$3,220
Regional Conference in Nome	$1,610	person	2	$3,220
Environmental Advisory Committee	$300	person	6	$1,800
Training & Travel Total				$14,680
Supplies				
Personal Protective Equipment (PPE), Office and Program Supplies	$1,050	annual costs		$1,050
Postage/Mailing	$46	annual costs		$46
Supplies Total				$1,096
Equipment Fuel, Maintenance, and Insurance				
ATV & Snowmachine - Gasoline	$6.25	gallon	300	$1,875
ATV & Snowmachine - Parts & Maintenance	$148	annual costs		$148
Equipment Fuel, Maintenance, and Insurance Total				$2,023
Rent & Utilities				
Internet Services	$50	month	12	$600
Heating Fuel	$300	month	12	$3,600
Rent and Utilities Total				$4,200
Backhaul Shipping and Vendor Costs				
Backhaul - Supplies, Transport Costs, etc.	$8,500	annual costs		$8,500
Backhaul Shipping and Vendor Costs				$8,500
Additional Administrative and Overhead Costs				
Administration (payroll, bookkeeping, supervision, etc.)	$25	hour	84	$2,100
Total Additional Administrative & Overhead Expenses				$2,100
Total Annual Operations & Maintenance (O & M) Expense				**$106,048**

Village ID #13, in Inupiaq Region, Population 207.

Item	Unit Cost	Units	Quantity	Annual Cost
Personnel				
City Landfill Operator/Waste Technician: A Technician works 8-16 hrs/ week collecting trash, and separating out burnables and haz. waste. He maintains the landfill, covers and consolidates waste and uses a cat tractor.	$35	hour	328	$11,480
City Landfill Tech Backup: This person works minimal hrs/yr assisting the main Landfill (LF) Tech with the same duties.	$30	hour	20	$600
IGAP Environmental Coordinator: Solid waste work includes recycling and backhaul (collection, preparation, shipping out etc.), annual spring cleanup, biannual river cleanup	$30	hour	234	$7,020
IGAP Environmental Assistant: Duties similar to Environmental Coordinator above	$25	hour	234	$5,850
Total Payroll (without fringe)				$24,950
Fringe, inc. Federal Insurance Contributions Act (FICA), Workers Compensation, benefits	14%			$3,493
Annual Insurance for the City LF Tech to operate equipment & perform duties	$245	annual		$245
Personnel Total				$28,688
Travel and Training				
ATCEM	$3,220	person	2	$6,440
LF Tech is RALO trained (thus far receives free training from Kawerak)	$0	person	1	$0
Regional solid waste training for IGAP coordinator and assistant	$500	person	2	$1,000
Training & Travel Total				$7,440
Supplies				
PPE for Solid Waste Technicians (gloves, Tyvek) and backhaul supplies such as shrink wrap and other packaging materials (through IGAP)	$500	year	1	$500
PPE for Solid Waste Technicians (gloves, boots, masks) (through City)	$700	year	1	$700
Supplies Total				$1,200
Equipment Fuel, Maintenance, and Insurance				
Heavy Equipment - Fuel for Cat Tractor (paid by City)	$4.80	gallon	480	$2,304
ATV fuel for solid waste related activities (through IGAP)	$900	year	1	$900
ATV fuel for recycling and backhaul specific activities (through IGAP)	$450	year	1	$450
Heavy Equipment - Parts & Maintenance	$350	annual		$350
Equipment Fuel, Maintenance, and Insurance Total				$4,004
Rent & Utilities				
Phone	15.75	month	12	189
Internet	7.5	month	12	90
Tribal Utilities	75	month	12	900
Rent and Utilities Total				$1,179
Backhaul Shipping and Vendor Costs				
Backhaul Shipping and Vendor Costs				$0
Additional Administrative and Overhead Costs				
Administration (payroll, bookkeeping, supervision, etc.)	$1,500	annual costs		$1,500
Total Additional Administrative & Overhead Expenses				$1,500
Total Annual O & M Expense				**$44,011**

Village ID #8, in Central Yup'ik Region, Population 464.

Item	Unit Cost	Units	Quantity	Annual Cost
Personnel				
Landfill Technician: A Technician works 5 hrs/day, 5 days/week He keeps the landfill clean and organized, separates out non-burnables from the wastestream, and loads and operates the burnbox. He operates the heavy equipment. He collects trash each week from bins around the community.	$19.25	hour	1300	$25,025
Laborers: A few weeks a year, laborers are used to help the landfill technician cleanup in and around the landfill and fix fencing.	~$16	hour	160	$2,637
IGAP Environmental Coordinator: Solid waste administration/oversight is performed by the Coordinator and she also handles recycling and backhaul. Solid waste work is 60% of her time which is reflected here.	$19.25	hour	936	$18,018
IGAP Environmental Assistant: Assists with recycling and trash collection. Solid waste work is 60% of her time which is reflected here.	$16.75	hour	936	$15,678
Total Payroll (without fringe)				$61,358
Fringe, inc. FICA, Workers Compensation, benefits	21%			$12,885
Personnel Total				$74,243
Travel and Training				
RALO or HAZWOPER training for Landfill Tech	$2,173	person	1	$2,173
AFE	$2,965	person	2	$5,930
ATCEM	$2,173	person	2	$4,346
Quickbooks training for accountant	$2,173	person	1	$2,173
Training & Travel Total				$14,622
Supplies				
PPE for Solid Waste Technicians (gloves, boots, masks, and also trash bags)	$500	year	1	$500
Supplies Total				$500
Equipment Fuel and Maintenance				
Equipment Fuel				
ATV & Snowmachine - Gasoline	$5.00	gallon	240	$1,200
Heavy Equipment - Diesel	$5.00	gallon	960	$4,800
Equipment Maintenance & Equipment Insurance				
ATV & Snowmachine - Parts & Maintenance	$350	annual costs		$350
Equipment Fuel and Maintenance Total				$6,350
Rent & Utilities				
Phone Service	$33	month	12	$396
Utilities	$150	month	12	$1,800
Internet Services	$39	month	12	$468
Rent and Utilities Total				$2,664
Backhaul Shipping and Vendor Costs				
Backhaul of batteries to Bethel and a Connex to Seattle (every other year)	$2,300	load	1	$2,300
Total Backhaul Shipping and Vendor Costs				$2,300
Additional Administrative and Overhead Costs				
Administration (payroll, bookkeeping, supervision, etc.)	$1,500	annual costs		$1,500
Total Additional Administrative & Overhead Expenses				$1,500
Total Annual O & M Expense				**$102,179**

Village ID #12, in Alutiiq Region, Population 258.

Item	Unit Cost	Units	Quantity	Annual Cost
Personnel				
A Heavy Equipment Operator is employed to conduct landfill operations approximately 8 hours per month at a rate of at least $25.	$25	hour	96	$2,400
Two Solid Waste Technicians are employed for landfill operations and collection services. Both technicians work 16 hours weekly on landfill maintenance and 16 hours weekly on solid waste collection services. Solid Waste Technicians are paid $15 to $18 an hour depending on experience. The annual pay is divided equally between the City and Tribal governments.	$18	hour	3,328	$59,904
A Solid Waste Supervisor is employed to oversee the administrative aspects of the solid waste program at a rate of $18 to $25 an hour depending on experience. The Supervisor is a full time employee.	$25	hour	2,080	$52,000
The City government employs a Solid Waste Administrative Assistant that works 4 hours per day at a rate of $15 to $20, depending on experience. The Administrative Assistant is responsible for answering public inquiries and billing for collection services.	$20	hour	1,040	$20,800
Total Payroll (without fringe)				$135,104
Fringe, inc. FICA, Workers Compensation, benefits	15%			$20,266
Personnel Total				$155,370
Travel and Training				
RALO & 40 Hr HAZWOPER				$3,000
Training & Travel Total				$3,000
Supplies				
PPE for Solid Waste Technicians	$5,000	annually	1	$5,000
Office Supplies (ink, paper, etc.)	$200	month	12	$2,400
Hand Tools (shovels, rakes, etc.)	$1,000	annually	1	$1,000
Supplies Total				$8,400
Equipment Fuel and Maintenance				
Equipment Fuel				
Skid Steer - Diesel	~$5.30	gallon	240	$1,272
Solid Waste Collection ATV - Gasoline	~$7.20	gallon	208	$1,496
Landfill Truck - Gasoline	~$7.20	gallon	480	$3,451
Tree Chipper & Generator - Gasoline	~$7.20	gallon	240	$1,725
Equipment Fuel and Maintenance Total				$7,944
Rent & Utilities				
Telephone	$120	month	12	$1,440
Internet	$90	month	12	$1,080
Office Rent (Includes most Utilities)	$300	month	12	$3,600
Recycling Center Electricity	$300	month	12	$3,600
Rent and Utilities Total				$9,720
Backhaul Shipping and Vendor Costs				
Backhaul Shipping and Vendor Costs				$0
Total Annual O & M Expense				**$184,434**

Village ID #6, in Central Yup'ik (Bristol Bay) Region, Population 130.

Item	Unit Cost	Units	Quantity	Annual Cost
Personnel				
Equipment Operator: 0.50 Full Time Employee (FTE) Works 4 hrs/ day. Maintains and operates the equipment to cover solid waste from residential, businesses, lodges, and commercial customers. Assists the Landfill Operator with the handling/placement of solid and hazardous waste brought to the landfill and recycle center for proper disposal. Grade road in winter months as needed. Assists the Landfill Operator as needed on burn unit when it becomes too full to burn waste.	$18	hour	1040	$18,720
Landfill Operator: 0.50 FTE Works 4 hrs/day. Collects, maintains, and oversees disposal of solid waste from residential, businesses, lodges, and commercial customers. Opens and closes the landfill and controls access. Operates burn unit.	$18	hour	1040	$18,720
Solid Waste Manager: Solid Waste work is 0.5 FTE Duties similar to Environmental Coordinator.	$16	hour	1040	$16,640
IGAP Environmental Coordinator: Solid waste work is 0.26 FTE and includes recycling and backhaul (collection, preparation, shipping out etc.), annual spring cleanup, management and coordination of solid waste grants, work with Council on fees and protocols for solid waste, and attend trainings.	$31.50	hour	398	$12,537
Total Payroll (without fringe)				$66,617
Fringe, Social Security @ 6.2%, Medicare @1.45%, Alaska Unemployment Security (ESC) @ 1.89% (9.54% rounded to 10%), and Workers Compensation at an estimated 10% of total wages per Alaska National Insurance Company.	20%			$13,323
Personnel Total				$79,940
Travel and Training				
RALO or HAZWOPER Training (alternate each year)	$2,112	person	2	$4,224
AFE	$2,350	person	1	$2,350
ATCEM	$2,112	person	2	$4,224
Training Registration Fees	$550	year	2	$1,100
Training & Travel Total				$11,898
Supplies				
Worker Supplies (protective gear needed to operate landfill such as gloves, Tyvek suits, boots, goggles, masks, earplugs, and medical kit)	$2,250	year	1	$2,250
Office Supplies (paper, pens, and printer cartridges, blank CD's or memory sticks, billing receipt books, clip board or storage clip board)	$200	month	12	$2,400
Supplies Total				$4,650
Equipment Fuel and Maintenance				
Heavy Equipment Fuel	$6.75	gallon	240	$1,620
Heavy Equipment - Parts & Maintenance	$483	annual costs		$483
Equipment Fuel and Maintenance Total				$2,103
Rent & Utilities				
Phone Service (including long distance)	$175	month	12	$2,100
Internet Services	$150	month	12	$1,800
Fax Services	$55	month	12	$660
Utilities	$183	month	12	$2,196
Office Space	$350	month	12	$4,200
Rent and Utilities Total				$10,956
Total annual O & M Expense				**$109,547**

ESC: ESC is a code that can be found on W-2 forms for unemployment taxes.

Village ID #9, in Athabascan Region, Population 256.

Item	Unit Cost	Units	Quantity	Annual Cost
Personnel				
Heavy Equipment Operator/Maintenance Staff person: A few times a year, this person uses heavy equipment to collect and haul gravel to the landfill and cover the non-burnable trash.	~$16.50	hour	60	$989
Landfill Technician: A Technician works 2 hrs/day, 5 days/week plus an additional 30 hrs a year for clean up after big community events and occasional clean up of windblown litter (on the land and fence). He keeps the landfill clean and organized, separates out non-burnables from the wastestream, and loads and operates the burnbox. He does not operate heavy equipment.	~$16.50	hour	550	$9,064
IGAP Environmental Coordinator: Solid waste administration/oversight is performed by the Coordinator and she also handles recycling and backhaul and picks up trash from paying households in the winter.	$17	hour	936	$15,912
IGAP Environmental Assistant: Assists with recycling and trash collection.	$15	hour	936	$14,040
Total Payroll (without fringe)				$40,005
Fringe, inc. FICA, Workers Compensation, benefits	28%			$11,201
Personnel Total				$51,206
Travel and Training				
ATCEM	$2,126	person	2	$4,252
AFE	$2,126	person	2	$4,252
HAZWOPER or other solid waste Training in Galena (5-6 days) for Landfill Tech or Maintenance staff person	$2,200	person	1	$2,200
Training & Travel Total				$10,704
Supplies				
PPE for Solid Waste Technicians (gloves, boots, masks, and also trash bags)	$1,000	year	1	$1,000
Gravel (cover at landfill)	$60	load	30	$1,800
Supplies Total				$2,800
Equipment Fuel and Maintenance				
Equipment Fuel				
Heavy Equipment - Diesel	$3.78	gallon	150	$567
ATV & Snowmachine - Gasoline	$5.40	gallon	240	$1,296
ATV Oil				$148
Equipment Maintenance & Equipment Insurance				
Heavy Equipment - Parts & Maintenance	$1,200	annual costs		$1,200
ATV & Snowmachine - Parts & Maintenance	$1,020	annual costs		$1,020
Equipment Fuel and Maintenance Total				$4,231
Additional Indirect administrative and overhead costs				
Indirect (base amount is $56,250)	0.22	%	$56,250	$12,375
Total indirect overhead expenses				$12,375
Total annual O & M Expense				**$81,316**

Table Prototype.

Item	Unit Cost	Units	Quantity	Annual Cost
Personnel	-	-	-	-
Total Personnel (without fringe)				
Total Fringe, including FICA, Workers Compensation, benefits				
Total Personnel (with fringe)				
Travel and Training				
Training & Travel Total				
Supplies				
Supplies Total				
Equipment Fuel, Repair, Replacement, Insurance				
Equipment Fuel				
Equipment Repair, Replacement, Insurance				
Equipment Fuel and Maintenance Total				
Rent & Utilities				
Phone, fax, internet				
Rent				
Rent and Utilities Total				
Backhaul Shipping and Vendor Costs				
Total Backhaul Shipping and Vendor Costs				
Indirect Administrative and Overhead Costs				
Total Indirect overhead expenses				
Total Annual O & M Expense				

United States
Environmental Protection
Agency