

Integrated Solid Waste Plan for the Community of Chefornak



July 2008

Last reviewed/updated on: _____

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Integrated Solid Waste Plan for the Community of Chefornak

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Additional Special Acknowledgements:

We would like to thank the Elders in our community for their valuable words of guidance. We would like to show our gratitude and thankfulness to Theresa Abraham and Simeon Agnus for their volunteer time giving guidance and advice towards cleaning and keeping our environment clean. Theresa and Simeon have been very helpful by sharing our traditional values and principles, as well as their ideas and comments, that will benefit our community towards improvements. Our Waste technicians, Jobe Abraham, Jr. and Timothy Tirchick, maintain our dumpsite and help keep the community safe and clean. Vernon Burnett, heavy equipment operator, has been instrumental in developing our trenches and cleaning our dumpsite.

July 2008

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1. INTRODUCTION AND DESCRIPTION OF COMMUNITY

Mission and Values Statement:

The Native Village of Chefnak developed this plan because our subsistence way of life is our number one priority. The solid waste management plan will guide us into developing safe disposal practices using available resources in our community so that we can help protect our subsistence as well as our environment and the health of our people. Our Elders say that we must respect our land and animals, so that in return, the land will flourish with what we could hunt and gather. Our community abides by its traditional Yup'ik unwritten laws that our Elders pass down to us.

History of the Community:

The area of Chefnak has historically been occupied by Yup'ik Eskimos. In the early 1950s, Alexie Amaqigchik founded a small general store at the site. He had moved from a village (Cevv'arneq) on the Bering Sea to the new location one mile inland to escape potential floodwaters. Others from the original village followed and settled in Chefnak. The City was incorporated in 1974.

Demographics and Utilities:

The number of residents is 450 (2007 DCCED Certified Population). There is a clinic, two schools (the 'Old School' is an old BIA building used for the AVCP Headstart Program and a Lower Kuskokwim School District Amaqigciq elementary/Caputnguaq high school), a Tribal and City Office, two stores, a Coastal Villages Region Fund Fisheries and Support Center, a Coastal Villages Seafood, LLC plant, an electrical generator plant, and a water treatment plant. Treated water can be obtained from 12 watering points. However, most residents obtain their drinking water from rain catchment systems in summer and from melted ice and snow in the winter. There are 99 houses, 24 houses connected to tank haul/flush units, 6 houses with plumbing, and the remainder using honeybuckets. The school has its own sewage lagoon and is piped. The sewage lagoon is on the west part of town and is primary treatment only, after which the water drains to the surrounding wetlands then to the Creek. The sewage lagoon has had several problems, including seeping out and flooding. The honeybucket lagoon is located next to the dumpsite and is over-capacity. A water upgrade project that will hook-up homes and provide an improved sewage lagoon is scheduled to occur within a few years. However, it is several years overdue, and as is the case with most water upgrade projects, it is unclear if the original project scope will remain the same, and also when the project will start or finish. Electrical power is supplied by Naterkaq Light Plant and the phone and internet services are provided by United Companies, Inc.

Location and Climate:

Chefornak, a federally recognized tribe is located in the southwest region of Alaska, 98 air miles southwest of Bethel (the major hub of surrounding villages) and 490 air miles southwest of Anchorage, at approximately 60.160000° North Latitude and -164.265830° West Longitude. (Sec. 19, T001N, R086W, Seward Meridian.) The village is on the south bank of the Kinia River, at its junction with the Keguk River, in the Yukon-Kuskokwim Delta. Chefornak lies within the boundaries of Clarence Rhode National Wildlife Refuge, established for migratory waterfowl protection.

Chefornak, which is located within the maritime climate zone, averages 22 inches of precipitation, with approximately 43 inches of snowfall annually. Summer temperatures typically range from 35 to 57 degrees Fahrenheit, and winter temperatures range from 6 to 24 degrees Fahrenheit. Travel to and from other villages is by air, boat, or snowmobile as there are no connecting road systems to the villages. Different small passenger airlines operate daily from Bethel. Fuel, freight and other large bulk items are barged from Anchorage to Bethel and either barged or flown to Chefornak. Shipment costs continually increase each year. Freeze-up usually occurs in the month of October, and break-up usually occurs in late May for the Kinia River and lasts for at least two weeks causing flooding towards the creek that drains from the lagoon and the dumpsite. See more details on dumpsite impacts in Chapter 4.

Additional Important Community Logistics:

Our community is isolated and close and we must depend on each other in emergencies. We do not have extra people or departments or places to go. So there are several common events where the full community is involved. These events include:

- Search and Rescue
- Funerals (attended by full community)
- Extreme Weather
- Flooding
- Erosion and loss of structures
- Fires (house or surrounding lands)
- Running out of fuel oil
- Subsistence activities which must be performed in a short time or the opportunity for the food is lost

These events take priority in our community in order to survive. Solid waste collection, backhaul opportunities, site maintenance, and community practices may be disrupted for a time period during these events. In order to write a plan that works best for our community, these realities are reflected in this plan to the extent possible.

2. ELDERS' GUIDANCE ON TAKING CARE OF OUR WASTES PROPERLY

Elder Guidance:

We interviewed our Elders and our Elders took part in the Nelson Island Consortium meetings. They told us what we needed to do to keep our community safe and clean and protect our subsistence. We have recorded their words and have their tapes. Their words included rules about taking care of wastes in the subsistence areas and also how to live life properly so that we will not have these problems. Their rules are about respect and how this will bring good opportunities and help when we need it. This plan is based on their words and explains how to carry out what they say as it relates to our wastes.

Elders' words:



Dennis Panruk- 'Panruk': born in Cevv'arneq on January 24, 1910:

- ✦ *Back then our ancestors believed in keeping our environment clean.*
- ✦ *Do not wait for others to tell you what to do if you have already heard what you were told to do. Kinguketuq- It has a good ending.*
- ✦ *In the mornings, they were told not to lie around because all the dust would go on them from people walking in and around.*
- ✦ *Nowadays, we hear of different things and different sicknesses that people are getting.*
- ✦ *Dangerous equipment that is going to be reused should be properly placed where people wouldn't come across to prevent injuries.*
- ✦ *Didn't like the location of the dumpsite since it was too close to the village, but nobody listened to him. On warm/hot days we see the land with heat waves, the odor is too strong it could harm the people.*
- ✦ *The Elders/leaders would have to plan for a new dump. It's a priority to face, where the dump wouldn't be too close to the village and where the wind (N) wouldn't blow towards the village. The community as a whole would have to agree on the new site.*
- ✦ *Dump- cover- surrounding first with sacks.*
- ✦ *When the snow melts at the dump, it is really bad and you know that kids like to play around. The melting snow that's coming from the dump goes down towards the river and becomes intact to the children and their clothing and it goes with them where ever they go.*



Maria Kairaiuak- 'Naivvkuk': born in Cevvarneq on October 31, 1928:

- ✦ *If a person is not searching or asking for advice or word of knowledge, that person is like as if he is sleeping*
- ✦ *Subsistence catches were to be enough for winter storage and even more when they were to celebrate dance festivals*
- ✦ *All subsistence food that is able to be dried were to be worked on right away, even if the hunter had brought home only one catch*
- ✦ *If we see trash on the ground, pick it up and dispose of it properly.*
- ✦ *Long ago babies were not deformed or such, but nowadays more babies are born not normal. It was rare back then.*
- ✦ *If one who is talking a good way of living, stop and listen.*
- ✦ *When I became aware, I never found anything lying around (trash). We didn't have much like what you have now (food, clothes, boxes, etc...) the way of our living was quiet and our people were quiet. We were told to do things and would obey right away without any conflict.*



David Jimmy, Sr. - 'Akagalria': born in Kawarelegalik on February 6, 1940

- ✦ *Was an operator for the dumpsite under City back then*
- ✦ *Dug trenches/ditches for the trash, compacted them, and covered them with a bulldozer*
- ✦ *It was good when they use to cover the trash; there was no windblown trash.*
- ✦ *Some appliances should not be damaged so people could reuse them for parts.*
- ✦ *No scattered trash was visible back then because we didn't have as much wastes generated as there are now.*
- ✦ *Before the dumpsite, they had drums near the river where trash was burned. They dumped the ashes in the river and that is why trash was never littered. They would burn the trash in the drums when the wind was not blowing towards the village. Tanks are not disposed, they are rotting where they are.*



Theresa Abraham- 'Paniliar': born in Cevvarneq on April 9, 1941

- ✦ *Work as a community and strive*
- ✦ *It would be good if we had only one person who hauls honey buckets to the lagoon and one person who hauls the trash to the dumpsite, so they wouldn't be improperly disposed.*
- ✦ *Don't really like using chemicals in honey buckets but everybody uses them so they wouldn't smell awful in the houses.*
- ✦ *When human wastes are dumped in the lagoon, it leaches to the river and is not safe for our food- fish. And since people dump where ever they please that is a problem because they are dumped anywhere now.*

3. COMMUNITY PARTICIPATION

Community participation for the best solid waste plan is very important to us. Community disposal practices play a big part in whether our plan protects our health and environment. In addition to listening to our Elders speak and including our youth (as they are the future caretakers of our land), our community participation included the following:

Nelson Island Consortium Meetings: We held community meetings at the following villages and dates. At each meeting we had Elders from our community (and all the other Nelson Island communities), and we had our Environmental staff and a council or administrator attend. We offered free travel to these meetings to our community members.

- 1 Tununak: January 4-6, 2005
- 2 Newtok: June 13-15, 2005
- 3 Cheforak: August 3-5, 2005
- 4 Toksook: January 11-14, 2006
- 5 Nightmute: September 17-19, 2007
- 6 Cheforak: June 30 – July 2, 2008

When we hosted the meeting here, we had 50 community members attend, including 8 Elders. A Nelson Island Consortium Elders Council was formed during the June/July 2008 meeting in Cheforak which includes two elders from each of the Nelson Island Consortium villages. The Elders Council include: Paul Tunuchuk and Theresa Abraham from Cheforak, Sophie Agimuk and Martina Chagluak from Toksook Bay, Helen and John Walter, Sr. from Tununak, and Elsie Tommy and Michael John from Newtok.

Community Survey: We carried out a community survey on concerns and suggestions. The full results are included in the appendix. This survey was conducted in spring 2008 by the IGAP staff.

The top concerns of our residents were:

- 🚩 Raw Sewage (Honey bucket) (34)
- 🚩 Toxic/ Hazardous waste (32)
- 🚩 Beach/ River Erosion (31)
- 🚩 Tie: Mercury, Asbestos, and Lead acid batteries (30)
- 🚩 Water Quality (29)

The most common suggestions were:

- 🚩 New Lagoon Site
- 🚩 New Water Treatment Plant
- 🚩 Running water for households
- 🚩 Dump Site
- 🚩 Disposal of hazardous liquids/ Used motor oil
- 🚩 Material Safety Data Sheets
- 🚩 Education of HazMats disposal methods

Council Meetings and Presentations:

We held community Council meetings where we discussed solid waste issues and what our community wanted to do. We held these meetings from August 2005 to October 2007. We presented during the village meeting about our dumpsite, on which we received concerns and comments from the community members, some of which are: the dumpsite is too close to the community- voiced by health aides, parents, council members; health risks stemming from the contaminants/hazardous chemicals/ toxins from the dumpsite (such as boils, pathogens, and new diseases/viruses being born from the dump.

Community Solid Waste Committee:

We do not have a Community Solid Waste Committee at this time. A committee will be formed to mainly address solid waste issues pertaining to community health and the environment. This committee will be comprised of 10 members and they will represent the whole community- a mix of two of each: youth, young adults, parents, concerned community members, and elders. Their job is to give advice to the Environmental Department when issues arise and to give comments/feedbacks on ongoing/future projects.

School Presentations:

Our Environmental Staff met with the school classes and teachers. They educated the youth about:

- The Environmental Protection Agency and The Indian General Assistance Program
- Hazardous wastes
- Recycling
- Being careful at the dump
- Proper Disposal Practices
- How the contaminants from the dump can get into our waters
- Keeping our community clean and that each person plays an important role
- Protecting and respecting camp sites

Community Education and Outreach:

Nelson Island fish monitors and subsistence camp monitors speak to the hunters at our camps. They educate them about littering and toxic chemicals in the oil and gas. We learn from them what people are concerned about and what education they need. Our environmental staff, including our Nelson Island Consortium representatives, went to homes to educate people about environmental issues. They talked to the people at the stores. They also found out from our people what the big concerns were. This is what people are saying in our community that is related to solid waste management:

- Honeybucket dump is polluting our river and people are getting sick
- When will they install piped water into our homes?
- Dumpsite is too close to our community

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- Town is dirty
- Too much plastic bags and litter on the tundra
- Need to move the old ATVs, snowmachines and boats out of town
- People are not respectful and should be picking up their trash
- People do not listen to the Elders. If they listened to Elders, we would not have this trash all over

Public Outreach Printed Materials:

We develop newsletters that teach people about our solid waste programs. They include information on reducing household hazardous wastes, recycling cans, batteries, fluorescent lights, and print cartridges and how to reduce energy use. They are distributed quarterly. We post them at the store, tribal office, city office and post office. An example is provided below.



Chefornak T.C. Environmental Department

Chefornak T.C. Environmental Department Newsletter

April 2008

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Freon Removal

Freon is a trade name of DuPont for chlorofluorocarbons (CFC's) that are found in refrigeration equipment such as refrigerators, freezers, air conditioners, water coolers, and dehumidifiers. CFC's, comprised of carbon, fluorine, chlorine, and hydrogen, were once thought to be non-toxic to humans, but it was found that CFC's harm our environment. When exposed to our environment, it rises to our atmosphere, where the chlorine atoms damage our ozone layer. The ozone layer is like our "security blanket" that keeps out the harmful ultraviolet rays.

It is very important that the Freon be removed from our unwanted refrigerators and freezers before discarding them. Last fall, the IGAP Department received their Freon Removal Equipment from Total Reclaim, Inc. which they will be using to remove Freon from discarded refrigerators and freezers. Jobe Abraham, Jr., IGAP Waste Technician is certified as a Type I Technician by ESCO institute, who are EPA approved. Timothy Tachok, IGAP Waste Technician, however, missed his test by one point to be certified to remove Freon, but he had a stake during the 2008 Alaska Forum on the Environment.



So, if you have any junk refrigerators and freezers, we urge you to contact the Environmental Department. The Waste Technicians have done ten pickups so far, and we still accept any calls for pickups. They will be starting the Freon removal this spring once the subsistence season is over.

Proper Waste Disposal Practices

What are the practices that we should follow?

- Have the trash hauler dump your wastes
- Dump all honey bucket wastes in the lagoons instead of the river
- Follow the posted signs at the dumpsite
- Separate the recyclables

Why should we follow these practices?

The dump is not a safe place, especially for our children.

- To protect our subsistence

Special points of interest:

- Recycling is a great way to reduce trash that goes into our dumpsite. You can receive money for recycling soda cans!
- Help keep our dumpsite clean - have an adult dump garbage if you don't receive service from Waste & Sewer!
- Check our Shabbles.com for environmentally safe cleaning products.
- Attachments to this newsletter are the very last pages. C11

A Poem by Ms. Mac

April 23rd
by Sandra McCulloch

Just a week ago
Brown patches dappled a yet white world
Now white spots brown
And there is just a hint of green
Haze at ground level
Moss and new grass
The sun rises before eight
And sets after ten
Warming the frozen earth

Mudacious said e e cummings
Small flies invade thru open windows
Time for screens
The cat wants out
To chase birds
He settles for the little flies
Flaps thru ribs
I wish like I've never written before
Driven to make sense of a world turned upside down
From always dark to always

light the seasons go
Here in the far North
Spring takes her time and lingers
So little summer
Fall is a flash of less than a month
Then winter
So much winter
My life seems a reflection
Shall I move south to where summer dominates
And winter is but a whisper on the wind

Chefornak Traditional Council Members

- President: Mr. John Jimmy, Sr.
- Vice-President: Hunter
- Treasurer: Jeremy Mr. Noble Neal
- Member: Mr. David Blawman
- Elder: Mrs. Theresa Abraham
- Elder: Mr. David Jimmy, Sr.



Chefornak T.C. Environmental Department

Chefornak T.C. Environmental Department Newsletter

Volume 1, Issue 1 May 2007

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Chefornak Traditional Council Indian General Assistance Program (IGAP)

The Chefornak Traditional Council's IGAP grant is funded by the Environmental Protection Agency (EPA) and was granted to the Chefornak Traditional Council to address our environmental issues - mainly our solid waste issues.

This is the third year of a four year grant. Each year there are certain tasks that are to be completed that pertain to our solid waste issues. This year's 'components' are continuation and expansion of the previous years' components or tasks. We recycle soda cans, lead-acid and household batteries, used printer/toner, etc. (We will mention what we recycle later in this newsletter.)

Positions funded under this IGAP grant are: 1. an Environmental Coordinator, 2. an Environmental Assesant, and 3. Waste Technician.

These positions are open only to the IGAP components and programs started under the IGAP can be carried out and as that if the Chefornak T.C. receives another environmental grant, there will be people with the capacity to run the program and grant.

We are able to partner and work with local organizations and entities when the work is environmental-related. The only thing that we can not do under this IGAP grant is physically touch honey bucket wastes, we can help Water & Sewer with planning on paper, but cannot handle the waste.

Examples of programs we started include the paper recycling program. We currently work with the Bethel Recycling Center on this program. Another recycling program is the lead-acid battery recycling program, and we work with the Bethel NAPA Auto Parts for this program. Although it is not a "program", we have an

Special points of interest:

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Community Development Information for Solid Waste Planning

Current Community Population:

We have 450 people living here now, including 11 school staff that leave during the summer. Additionally, we have about 10 to 20 people who leave for commercial fishing or firefighting. On most days in the summer, about 5 to 15 people are camping overnight at fish camps. During fall hunting, we have about 5 to 10 people out hunting overnight. During Winter, about 10 to 20 people are gone from the village on most days for subsistence. The average number of people gone from the village for other reasons, like visiting, shopping, and medical appointments on most days is about 2 to 10. About 3 to 5 visitors come and stay over in our village each day in the summer. In the winter we have about 50 people for tournaments and gatherings. We usually have about 2 to 7 people each year who live here during summer for construction, and 0 to 3 people for winter projects. For about 1 to 3 weeks during Spring Breakup, and 2 to 4 weeks during Fall Freezeup, most people stay in the village because it is dangerous to travel by boat or snowmachine.

Expected Community Development:

We have no development projects at this time that are expected to impact our population or our population growth rate.

Planned projects Incorporated into Our Solid Waste Planning

The Association of Village Council Presidents housings are currently expanding homes in the south end of the village. A new site in the future must be located away from this area. The current dumpsite is too close to the village and runway. The City of Chefnak dump is currently in the process of relocating the dumpsite. The City of Chefnak is currently developing a new airstrip and once it is settled, the Chefnakmute Inc. will be utilizing the old airstrip for future generation usage of land.

Average yearly community growth expected for next 20 years:

See the ***Projected future population and waste generation*** for the impact of our projected future population on the waste generated that we must manage.

Our expected growth rate for the next 20 years is 2.0%.

Growth Rate Calculation Process:

Our expected growth rate is based on the average growth rate we had in the past 7 years. We used population numbers from the US Census and the current State Community Database. As described above, in the future, we do not expect any development projects that will affect our population numbers. We do not expect to see a significant difference in the number in people

moving in and out that would affect our rate. So we expect our growth rate to remain about the same.

4. SOLID WASTE DISPOSAL SITE INFORMATION

The existing primary solid waste disposal site is located west of the airstrip on the edge of a hillside. Fencing was purchased in 2001 with a grant from the Central Council of Tlingit and Haida Indian Tribes, and was just installed in 2007 by the IGAP waste technicians, which covered ¾ of the dumpsite. Solid wastes are now deposited in trenches. There is also an area to separate out scrap metal wastes, including empty 55 gallon drums, vehicle parts, and large appliances.

The table below describes the primary features and conditions of our current dumpsite. There are additional Tables in later Chapters that discuss the site operation and maintenance, waste collection system, waste recycling, and waste burning.

Table 1 Solid Waste Site Features And Situation

Feature	Current Description	Changes Planned?
Land Ownership	The land where the dumpsite is located is owned by the City of Chefnak.	
Dumpsite Location	The dumpsite is located one-half mile from the town edge. The dump is west of town. There is one occupied house that is located about one-quarter mile from town.	Eventually, we'd like to move the location further away. This is part of our long-term planning.
Dumpsite Operation Responsibility	The city is responsible for operation and the Tribe provides their Environmental Department to assist in environmental planning.	We'll review often.
Summer Dumpsite Access	The access to the dump is in fair condition. The boardwalk which needs repair and maintenance regularly ends at the start of the dump. People travel to the dump by ATV in summer. Once people enter the dumpsite there is a path that they follow through the dump. People do litter along the sides of the access.	
Winter Site Access	In winter, people travel to the dumpsite by snowmachine. They enter the site from the North, East, and South. This may be dangerous when they enter at the West and South because there are hidden scrap metal and a lagoon that does not freeze through.	Make markers for a path that people could follow so that they could access the site from one point to avoid anything dangerous and to ensure proper disposal of trash brought to the dump.
Path/area inside the Dump for unloading wastes	Once you get to the dumpsite there is a path that goes through in a loop. The path is covered with wastes however. It is difficult for people to dump their garbage without contacting other wastes. Their vehicle wheels must track over garbage	We need to ensure a clear access path to greatly reduce disease transmission and injury risks. We will need to fund the staff more time so that they are able to keep

Table 1 Solid Waste Site Features And Situation

Feature	Current Description	Changes Planned?
	and if they get out of the vehicle they must stand on the garbage. Because people are in direct contact with other people's garbage, this creates a high risk for injury, blown tires, and disease transmission.	a path clear and we need to keep everyone out of the dump at least in summer (except for the salvage yard), and they must use in-town dumpsters and a collection service.
Wind Direction	The wind blows from the dumpsite into town some of the time.	Relocate dumpsite where the wind wouldn't blow towards the village and subsistence sites.
Site Size	The dumpsite is about 205' by 205'. This does not include the windblown litter (i.e. plastic bags, paper), and the area of the dump. The windblown litter goes out about 400 feet from the dump in most directions.	
Site Shape	The dump area is shaped like a rectangle, and the dumpsite is shaped like a square. About 75% of the dumpsite is covered by waste, which covers 25% of the dump area. The rest is ground, a pathway, or windblown litter. There are four trenches (excluding the old dumpsite area) that are full, of which two of them are covered with mud from the land used to excavate the trenches and fifth trench which is currently in use and is halfway full. The current trench is 88 ft by 20 ft and 15 ft deep. Trench 1 is 100 ft by 25 ft and 12 ft deep, trench 2 is 30 ft by 15 ft and 20 ft deep, trench 3 is 10 ft by 10 ft and 20 ft deep, and the fourth trench is 50 ft by 20 ft and 12 ft deep and the scrap wastes are about 15 ft by 50 ft by 20 ft. There is also a 10' by 7' by 5' covered carcass/food wastes pit.	
Estimated Waste Weight (± 30%)	4,737.5 tons	
Type of site management	Burnbox with ashes dumped out when full. Trench and little heavy equipment compaction when full.	
Heavy Equipment used at Dump	We have a used excavator. The model is EX300LC. It is owned by Water and Sewer Utilities. This excavator is used for the water/sewer projects in our town too.	
How often wastes are consolidated or compacted	We consolidate twice before Summer and twice after summer.	
How often	Zero times each year.	Cover full trenches when funding

Table 1 Solid Waste Site Features And Situation

Feature	Current Description	Changes Planned?
wastes are covered		is available.
Operator/Tech nician Staff	We have 2 waste technicians who work 24 hours each week. His duties are: trying to keep dump organized and the access path clear so that people do not need to walk or drive on wastes (which keeps our community much safer from disease and injury), collecting heavy metals, shipping out recyclables and operating the burnbox in a safe manner.	
Burning wastes	We burn our wastes by using a burnbox. It is loaded with wastes by the waste technician. It is lit on fire by the waste technician. The wastes that are burned include burnable trash taken to the dump. This includes regular trash brought by households and regular trash brought by collection service, school, or businesses. Large items like drums, appliances, vehicles are not burned.	
Salvage Pad/Area	An area of about 155 feet wide by 130 feet long is used by people to find usable items. It is located in the south of the dump. The type of wastes here are vehicle parts, appliances, scrap metal, lumber, and other wastes that people can use.	
Additional Waste Segregation at Site	There is no additional waste segregation at site.	Designate area for people to drop off hazardous materials.
Recycling Shed/Area	The recycling shed is located in town, near the airport. Recyclables are dropped off or picked up by the IGAP staff. Some items include the following: lead-acid batteries, fluorescent lights, computers, aluminum cans, and household batteries.	
Dumpsite Age	The site was started in 1983.	
Fencing	A wind fence is covering $\frac{3}{4}$ of the site.	
Types of Wastes that Are Now at the Dump		
Residential wastes:	Cardboard, paper, plastics, tin and aluminum cans, diapers, Styrofoam, old or broken household items like furniture, toys, clothes, rugs, appliances, dishes, glass, tires, ATV's, snow-machines (only the parts that are not salvaged), computers, TV's, small batteries, tires	
School wastes:	Cardboard, computers, copiers, Styrofoam plates and cups, cans, old equipment, paper	Styrofoam is banned in our community. Inform new site administrator.

Table 1 Solid Waste Site Features And Situation

Feature	Current Description	Changes Planned?
Store Wastes:	Cardboard, paper, plastics, aluminum cans	
Utility wastes:	Antifreeze, transformers, old equipment, used oil, batteries, fluorescent lights, tires	
Construction Project Wastes:	Pipes, demolition, insulation, asbestos from old torn-down buildings, drywall, cardboard, electrical wires and electrical equipment, old plumbing, broken-down heavy equipment, fluorescent lights, concrete	
Honeybucket Wastes	The lagoon is next to the dump. There are some honeybucket wastes that get thrown out at the dump. Some garbage gets thrown out at the honeybucket lagoon.	
What goes into the burnbox that shouldn't:	Cans, dead animals	
<p>Additional Seasonal Factors that affect dumpsite maintenance or collection or access. (Note any common events that happen during the seasons. You can also break up the seasons how you want.)</p>		
Winter (from November through mid April)	Days below -20 F, it is dangerous for our operator to work for more than 2 hours because we don't have a warming shed there. Below -35, equipment will not work. Also, it gets dark outside the hours of 10am and 3pm. People will not go to the dump in storms, or generally when it is below -30 with wind chill, and they will pile up their garbage outside or in Arctic entry ways. Snow piles up over wastes by December. Wastes are frozen hard-frozen and cannot be moved or consolidated much between mid-October and mid-April.	
Summer (from mid-June to end of August)	Early summer, access can be difficult due to a lot of ponding from Breakup. The tundra is mucky and equipment can't be used or it will be stuck.	
Fall (from September to mid-November)	Early fall time people must hunt all types of game. Fall time is good for using heavy equipment because the wastes are frozen not hard and there is little snow, the ground is hard enough for equipment to not be stuck.	
Spring (from mid-April to mid-June)	Just before Breakup is a good time for site maintenance with the ground still frozen, with warmer weather and longer light. Breakup is a dangerous time to access the dump because we cannot use a snowmachine. This period lasts about one month. Our dumpsite and town floods for about 3 weeks.	

Dump site Photographs

The following pictures show the dumpsite and its key features.
Before Clean Up:



During Clean Up:





5. CURRENT SOLID WASTE MANAGEMENT PROGRAM and practices

Waste Collection Program:

Table 2 Waste Collection Program

Item	Description
Number of collection services, including any private services that an individual offers:	1
Operated by:	Chefornak Water & Sewer (City of Chefornak)
Average of households that use the service each month	20 (number varies monthly)
Total number of households in village	80
Estimated average number of households who self-haul some or all of their garbage to the dump at least once per month.	45 households.
Estimated number of people each week who use the dump per for salvaging parts or other goods.	10 people.
Fee charged for collection service (if more than one service, list fees for each service)	\$10 per month for households \$10 per month for businesses and offices \$10 per month for school
Fee charged for salvaging parts	\$0
How fee is collected	Households/Businesses go to the water/sewer Department to pay for services.
Any discounts or other ways for households to receive collection service?	No discounts.
Besides the fees collected, what other money is used to pay for the collection service?	Bingo revenue pays about \$5,000 per year for management.
How often garbage is collected:	Two times per week

Waste Collection Resources Section

Topic	Link
Exploring and evaluating collection systems: ANTHC/ANHB SWM Guide Workbook 4	View pages 401-430 of this document http://www.zender-engr.net/anhbguide/4.pdf
Waste collection on SWAN	http://www.ccthita-swan.org/Planning/1B_waste_collection.cfm

Table 3 Sewage Collection And Disposal (Honeybucket And/Or Flush-Haul)	
How are honeybuckets disposed? (lagoon, slough, ponds, etc.)	Most honeybuckets are usually dumped at the lagoon and some are dumped in the river. Sometimes during winter, people dump them closer to town, or they will dump them out at the river. Some people store their honeybuckets alongside their house until they are able to borrow a vehicle or afford the fee.
Is there a collection service offered?	Yes
What is the fee for honeybucket collection or bunker maintenance?	\$25 per month
How many households pay the fee each month, on average?	Between 10 to 20 households, depends on the season.
For Tank-haul, what is the fee for Tank-haul of water?	\$10 per fill
Can people haul their own water to their holding tanks?	No, but the School does.
About how many tank-hauls are purchased each month, total for the town?	We have 24 tank-haul houses.
What is the fee for hauling the sewage/used water?	\$25 per haul
About how many flush hauls are paid for each month, total for the town?	About 9.

Site Operation and Maintenance:

The IGAP Waste Technicians push the wastes together and clear a path when we are able to afford it, and the equipment is operating. This happens about twice each year. Three years ago we had a major cleanup. We had another cleanup during Spring 07. Wastes were put in trenches and two trenches were covered with mud used to make the trenches. A path was marked for people to follow using wooden stakes and twine. Our environmental staff goes out to the dump each summer to look for lead-acid batteries to remove them to the shed and to evaluate the progress of the dumpsite.

Table 4 Summary Table For Site Operation
And Maintenance

Program Feature	Description
Operation Type	Basic monitoring by waste technician, occasional consolidation, burnbox, and some temporary clean-up
Certifications or trainings?	Waste collector: None Environmental staff: ITEP Solid Waste Management, IGAP Grant Management, HAZWOPER, Freon Removal, RALO
Available Local Cover Material	None, no gravel or silt source.

**Table 4 Summary Table For Site Operation
And Maintenance**

Program Feature	Description
for Dumpsite?	
How Often Cover Material is used, or wastes buried:	About once every two years for part of the wastes with mud excavated from the trenches.
Cover material is not used, or not used very often, because:	It is hard to find cover material and we can't operate the equipment during summer because it gets stuck.
Heavy Equipment:	Used Excavator
Heavy Equipment Uses (Past and Current Uses):	<ul style="list-style-type: none"> ▪ We use Water & Sewer's excavator to push wastes together. ▪ The excavator is used to dig trenches when we can. The last time was in 2007 and when the trenches are full. ▪ We use the excavator to move big junk metal.
Heavy Equipment Seasonal Limitations	The times we can use it are just before Breakup and just before Freezeup. The ground must be hard enough so it does not get stuck or sink, and the wastes cannot be frozen solid or covered with snow. Also, we cannot use it if a project is in town.
Equipment Storage:	None. The excavator has to be stored outside.
Estimated Cost to repair heavy equipment needed for dumpsite:	To repair the dozer: \$7,000. Not working and parts are outdated. To repair the excavator: \$25,000
Additional Waste Operation Information that is important	It is really the summer months that we need a waste operator the most. The dump gets very messy because it is difficult for people to dump their trash. People are gone for subsistence and we also run out of operator funds. In winter it is easier to access the dump and it doesn't smell as bad.

Site Operation Resources Section

Topic	Link
Improve operation of dump or waste collection	http://www.ccthita-swan.org/Planning/1improve_operation.cfm
Solid waste training	http://www.ccthita-swan.org/Tutorials/training.cfm
Reducing health and environmental risks	http://www.ccthita-swan.org/main/health_risks.cfm
Making your dump safer	http://www.ccthita-swan.org/pdf/MakingYourDumpSafer.pdf
Rural Landfill Design and Operations	http://www.ccthita-swan.org/main/rural_landfill_dec.cfm
Protecting communities through PASTE	http://www.ccthita-swan.org/pdf/PASTE.pdf
Comparing Solid Waste Management	http://www.zender-engr.net/anhbguide/5.pdf

Table 5 Waste Burning Practices

Feature	Current Description	Any Planned Changes?
Is burning waste a normal way to manage some or all of your wastes?	Yes.	Not soon.
How many households burn waste in barrels in town?	None.	No changes.
Do businesses burn any wastes in barrels that are in town? What wastes are burned by them?	Store(s): None Office(s): None School: None Clinic: None Electric Utility: Used oil and used oil filters in a drum that looks like a closed barrel with vent Water Utility: None Other: None	Want to get the Electric Utility to stop burning their used oil and used oil filters in town.
Is waste burned on the ground at the Dump? Who lights the fire?	Our staff has informed the public not to open burn and is not recommended in our community. Sometimes residents light the dump on fire 1 or 2 times each year.	After our staff informed the public open dump burning has decreased. Educate community of hazards of open burning.
Burnbox Information		
Burnbox Type and Age and How Ash is Emptied.	Purchased Burnbox from "Tok Welding", 4 years old, ash is emptied by tilting burnbox and buried into a trench solely for ashes.	No changes.
How often is the burnbox used?	Usually waste is burned about 4 days per month. It is not burned when the operator is gone for training on subsistence or when the wind is blowing towards the village.	No changes.
What is the longest period of time that waste is not burned?	There was about 3 months when waste was not burned because too much snow was inside the burnbox that froze.	No changes.

<p>Does the operator wear an approved mask and long sleeves, glasses, steel-toed boots?</p>	<p>Yes, most of time.</p>	
<p>Is there a signed statement by the operator that he is expected to wear protective gear and operate the burnbox in a correct and safe manner?</p>	<p>Yes.</p>	
<p>Are there rules about which wastes are acceptable in the burnbox?</p>	<p>Operator separating wastes: They are supposed to pull out anything they see that looks dangerous to burn. Household and Businesses Separating wastes before bringing to dump: They are supposed to take out their plastics, Styrofoam, batteries, any leftover household chemicals. Prohibited Wastes: Tires, batteries, computers, TVs, fluorescent lights, hazardous wastes, PVC pipes, big plastics</p>	
<p>How Well the Rules are Followed:</p>	<p>Operator does pretty good job, but cannot go through everybody's trash. Most of the wastes are piled up and their hours aren't enough to separate wastes.</p>	
<p>Rules about when the operator lights the burnbox on fire:</p>	<p>Wind Direction: Wind must be blowing away from town. Predicted Winds: If Elders are predicting the wind to shift to town soon, then the burnbox cannot be used. Subsistence or water sources: No burning if the smoke will go over berry pickers or seasonal drinking water sources. Hours: Load during day, burn at night when people are inside homes. Wind Speed: Burn below 20 miles per hour Public access: Public is encouraged to not visit dump when burnbox is on fire. Burning Frequency: Unless the winds are not right, the burnbox should be lit on fire at least 2 times per week.</p>	

	Otherwise too much garbage piles up. Airplane schedule (visibility from smoke): We don't have a rule about whether to burn when planes are expected.	
How well the burnbox fire rules are followed:	Okay, they are following the rules on proper burning.	
Where does the ash go? How often is it emptied?	The ash empties in a trench and is buried. The burnbox operators dump the ashes after they are done burning wastes.	
Other burnbox or waste burning information that is important:	None at this moment.	

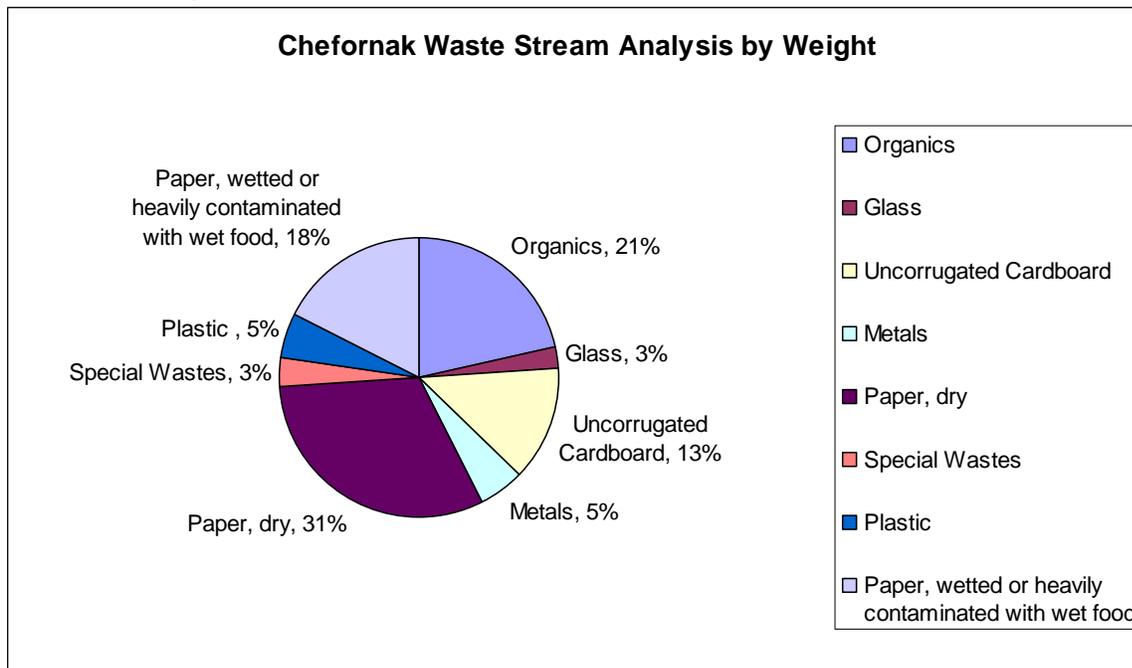
Burning Wastes Resources Section

Topic	Link
Where to locate our burnbox	http://www.ccthita-swan.org/Tutorials/burnbox.cfm#13 http://www.zender-engr.net/docs/Burnbox.pdf
Burning regular trash	Chemicals contained, what to do as alternative, health risks, tips on safer emissions http://www.ccthita-swan.org/pdf/open_burning.pdf
Burning, general tips	http://www.ccthita-swan.org/pdf/burning_wastes.pdf
Health effects from burning trash	http://www.zender-engr.net/docs/health_effects_burning_trash.pdf
Burnboxes, incinerators	http://www.ccthita-swan.org/Planning/2C_burning.cfm ,
What type of burnbox does my Village need?	http://www.zender-engr.net/docs/Burnbox.pdf
Explore and evaluate waste combustion alternatives: ANTHC/ANHB SWM Guide Workbook 4	View pages 529-540 of this document http://www.zender-engr.net/anhbguide/4.pdf

6. HOW MUCH WASTE IS GENERATED

As part of our Nelson Island Consortium project, we learned how to conduct a waste characterization in our communities at the ITEP workshop we sponsored along with the Toksook Consortium meeting in January 11-13, 2006. As a follow-up, an assessment was carried out in Chefnak with the help of a consultant to generate good numbers for our region. The assessment was carried out in August 2006. The total waste generation rate was found to be 2.13 pounds/person/day which include: residential waste, business waste, diapers and other special wastes, and estimated construction waste.

The population of our community is 450 people. Thus, the approximate amount of waste generated by our community each year, using the results from the Chefnak waste assessment is 349,853 lbs per year (or 175 tons per year). A breakdown of the waste stream (by weight) is shown in the figure below.



Here are some photos from separating and weighing the trash



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Table 6 Special Wastes Stockpiled In Our Community Now

Column A	Column B	Column C	Column D
Waste	How many of these wastes are stockpiled or sitting around your community now:	Average Weight of Single Item in pounds (lbs)	Estimated Total weight of wastes in your community now (=Column B x Column C)
Lead-acid batteries	45	40 lbs	1800 lbs
Aluminum skiff (exc. engine):	15	1000 lbs	15000 lbs
Atv's:	6	800 lbs	4800 lbs
Sno-gos:	14	1000 lbs	14,000 lbs
Refrigerators and freezers	17	250 lbs	4250 lb
Stoves, Washers, Dryers	12	200 lb	2400 lb
Office fluorescent lights	783	4 ft tube=0.7 lb	548 lb
Empty 55 gallon drums	25	50 lbs	1250 lbs
Full 55 gallon drums of used oil	5	600 lbs	3000 lbs
Full 55 gallon drums of used antifreeze	4	600 lbs	2400 lbs
Full 55 gallon drums of unknown or mixed waste	6	600 lbs	3600 lbs

Table 7 Special Waste Generation Rates And Storage Space Needed

Waste	Column A About this many households have at least one of the item:	Column B Average number that these households own (average number owned by households listed in Column A)	Column C Average number of yrs before the waste item will need to be discarded	Column D (=AxB ÷C) Total number generated each year	Column E How many total of these wastes do businesses have? (e.g. if 5 businesses have atvs, then write 5)	Column F (=E÷C) Total average number each yr discarded from business, schools, offices, utilities.	Column G (=D+F) Total from households and businesses	Column H Average Weight of Single Item in pounds (lbs)	Column I (=G x H) Estimated Total weight generated	Column J Estimated % that is not salvaged for parts or reused	Column K Estimated total weight each year generated that is not salvaged for parts or reused (=I x J)
Lead-acid batteries	Boat:: 50	1	2	25	1	0.5	25.5	40 lbs	1020 lbs	100%	1020 lbs
	ATV's: 55	1	3	18.33	7	2.33	10.7	12 lbs	128 lbs	100%	128 lbs
	Sno-gos: 30	1	3	10	3	1	11	12 lbs	132lbs	100%	132 lbs
	Car or Truck: 0	n/a	n/a	0	0	0	0	0 lbs	N/A	N/A	N/A
Total Lead-acid Batteries											1280 lb (about 67% of this weight is lead)
Aluminum skiff (exc. engine):	56	1	8	7	1	0.12	7.12	1000 lbs	7,125 lbs	90%	6412 lbs
Other boats:	6	1	15	0.4	0	0	0.4	2000 lbs	800 lbs	100%	800 lbs
ATV's:	45	1	5	9	7	1.4	10.4	800 lbs	8,320 lbs	50%	4,160 lbs
Sno-gos:	80	1.5	5	24	4	0.8	24.8	1000 lbs	24,800 lbs	80%	19,840 lbs
Car or Truck:	0	0	N/A	0	0	N/A	N/A	2000 lbs	N/A	N/A	N/A
Household refrigerators and freezers	80	3	25	10				250 lbs	2500 lbs	100%	2500 lbs
School/Store			20		15	0.75		1000 lbs	750 lbs	100%	750 lbs

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Table 7 Special Waste Generation Rates And Storage Space Needed

Waste	Column A About this many households have at least one of the item:	Column B Average number that these households own (average number owned by households listed in Column A)	Column C Average number of yrs before the waste item will need to be discarded	Column D (=AxB ÷C) Total number generated each year	Column E How many total of these wastes do businesses have? (e.g. if 5 businesses have atvs, then write 5)	Column F (=E÷C) Total average number each yr discarded from business, schools, offices, utilities.	Column G (=D+F) Total from households and businesses	Column H Average Weight of Single Item in pounds (lbs)	Column I (=G x H) Estimated Total weight generated	Column J Estimated % that is not salvaged for parts or reused	Column K Estimated total weight each year generated that is not salvaged for parts or reused (=I x J)
refrigerators and freezers											
Wood Stoves, Cooking Stoves	80	1	20	4	3	0.15	4.15	200 lb	830 lbs	100%	830 lbs
Washers, Dryers,	80	1.5	20	6	3	0.15	6.15	200 lb	1230 lbs	100%	1280 lbs
Fluorescent tube lights in homes	54	4	1.5	144	See below	See below	144	4 ft tube=0.7 lb	100.8 lbs	100%	100.8 lbs
Fluorescent tube lights in offices	N/A	N/A	1.5	N/A	7 4 ft tubes	4.66	4.66	4 ft tube=0.7 lb	3.26 lbs	100%	3.26 lbs

Table 8 Important Additional Wastes With Different Estimation Methods

Disposable Diapers	Number of babies in village that use disposable diapers: 48	Number of diapers each day for each baby: 6	Number of diapers each day: 288	Number of diapers each year: 105,120		N/A	105,120 total from households and businesses.	Average weight of full diaper = 0.4 lb	Total Weight: 42,048 lb	
Used oil from vehicles (household and businesses)	Number of households that have vehicles that use oil: 80	Average number of vehicles per household (boats, ATVs, snowmachines): 1.125	How often old oil is drained on purpose and new oil put in: 4 times each year for each vehicle	Average number of quarts that are drained per vehicle: 3	Number of quarts drained each year by houses: = 1,080	Total number of vehicles for businesses = 12	Average number of times per year that old oil is drained per vehicle = 6	Average number of quarts that are drained per vehicle: 3	Number of quarts per drained per year businesses: 216	Total quarts each year that are drained: 1,296
Antifreeze (from vehicles)	Number of households that have vehicles that use antifreeze: 45	Average number of vehicles per household (boats, ATVs snowmachines): 1.125	How often old oil is drained on purpose and new oil put in: 1 times each year for each vehicle	Average number of quarts that are drained per vehicle: 3	Number of quarts drained each year by houses: = 152	Total number of vehicles for businesses = 12	Average number of times per year that old oil is drained per vehicle = 1	Average number of quarts that are drained per vehicle: 3	Number of quarts drained per year for businesses: 36	Total quarts each year that are drained: 188

Table 9 Estimation Of Aluminum Cans, Plastic Bottles, and Styrofoam For Recycling Or Waste Reduction/Banning Purposes

Recyclable Material:	How Many pieces the stores order each year:	About how many households bring in or order their pop cans directly:	Average number of items these households bring in each year:	Total posted or brought in from households each year	Number posted or directly shipped to businesses other than stores (e.g. school):	Total estimated number:	Total pounds per year:	Total potential revenue per year:
Aluminum Cans (<i>not cases</i>)	Store 1: 180,000 cans Store 2: 27,648	4	96 cans	384	0	208,032	6,935	\$1,387
Plastic Bottles	Store 1: 57,600 Store 2: 6,000	0	0	0	2,000	65,600	5,248	\$0
Styrofoam	Store 1 & 2: None, banned from the village	0	0	0	0	0	0	\$0

Table 10 Estimation of Construction & Demolition Waste

Column A	Column B	Column C	Column D	Column E	Column F	Column H
Project	Building Area (sq ft)	Salvage Factors	Total Project Wastes (pounds)	How often built (years)	Average waste per year (pounds)	Average waste per year (tons)
	(estimate the approximate area of the buildings)	(Estimate how much of the project waste is salvaged by the community.)	(Find the right waste number from Table A below. Multiply it by the average sq ft of the building type, multiplied by (1- column c))	(every x years)		
			$B \times (1-C) \times$ (Table A factor)		$D \div E$	$F \div 2,000$
School construction	20,800	80%	16,182	25	647	0.3
Clinic construction	9,600	90%	3,734	30	124	0.1
Post office construction	9,195	80%	7,154	30	238	0.1
Store(s) construction	6,400	80%	4,979	20	249	0.1
House(s) construction	1,000	70%	1,314	1	1,314	0.7
Renovation, residential	500	75%	2,209	1	2,209	1.1
Renovation, non-houses	750	80%	2,651	7	379	0.2
Demolition, residential	750	70%	25,875	7	3,696	1.8
Demolition, non-residential	1,000	75%	116,250	5	23,250	11.6
Total Average Tons Per Year of C&D Waste					32,107	16.1

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Table A: Construction and Demolition Waste Numbers Researched for New Construction, Renovation, and Demolition in lbs (pounds) per sq ft

	Residential (lbs/sq ft)	Non-residential (lbs/sq ft)
New Construction	4.38	3.89
Renovation	Varies	17.67
Demolition	115	155

C&D Waste Resources Section

Topic	Link
Information about writing C&D waste ordinances	http://www.ccthita-swan.org/pdf/construction_and_demolition.pdf
Sample ordinances	http://www.zender-engr.net/ordinances.htm
C&D waste information on ADEC's site	http://www.dec.state.ak.us/eh/sw/Guidance/Building%20Demolition%20%20Renovation%20and%20Construction%20Projects%20-%20final.doc
EPA's Tribal Waste Journal on C&D waste 2006	http://www.epa.gov/epaoswer/non-hw/tribal/pdf/twj-5.pdf

Projected future population and waste generation: Our population growth was discussed in Chapter was discussed Chapter 3. The Table below applies the estimated growth rate to the estimated annual waste generation rate, discussed above. This ISWMP is based on the projected figures. Additional equipment will be sized to reflect these numbers. Future programs, such as expanded education and recycling efforts will incorporate the projected population.

Table 10 Projected Population and Waste Generation for the Next 20 Years for Chefornak		
Year	Population	Waste (Tons)
2008	450	175
2009	459	179
2010	468	182
2011	477	185
2012	487	189
2013	497	193
2014	507	197
2015	517	201
2016	527	205
2017	538	209
2018	549	213
2019	560	218
2020	571	222
2021	582	226
2022	594	231
2023	606	236
2024	618	240
2025	630	245
2026	643	250
2027	656	255

7. RECYCLING, REDUCING, AND REUSING PROGRAM

Elders have always recycled and their grandmothers and grandfathers did and their grandmothers and grandfathers did. This was something that everyone in the community did. Then around the 1960s and 1970s people starting making a lot of trash that came from the stores and Bethel. We did not have a way to recycle all the new wastes. Elders say we got lazy and wasted things because these things were new to us. Now there are ways to recycle some of these wastes and we have started following our Elders' advice about not wasting. We also know that many of these wastes are harmful to us, so we are trying to reduce our use and also to keep them out of our dump and our camps. All of our current efforts and our procedures are detailed in the Table below.

General description of program's most important accomplishments/aims: Our first recycling waste was aluminum cans in 2005. Now we are collecting lead-acid batteries, household batteries, computers (In progress) and fluorescent lights. We got a recycling shed in 2006 to store these recyclables. We are educating the community about why it is important to drop-off their batteries. We are trying to reduce the use of plastic bags. We are trying to reduce plastic bottles by encouraging stores to buy aluminum or glass instead, and reuse plastic bottles by using them to store household batteries.

Table 11 Wastes That Are Currently Collected Or Dropped-Off For Recycling, Backhaul, Storage, Or Reuse Programs

Waste	How collected or separated?	What for?	Where it is stored?	Is it shipped out? How often?	Who takes it?	Where does it go to?
Aluminum cans:	Dropped off at EPA office or in containers around town. If people have a full bag of cans we will pick them up.	Recycling for money, respect for our land and for communities where new aluminum is mined and their environment is being harmed.	In the recycling shed near the airport.	About 6 times each year.	ATS flies it. Contact #: 867-8693 Contact name: Alexie Flynn	Bethel Recycling Contact #: 543-7072 Contact: Bill Burnard
Plastic Bottles:	<i>Not part of program yet.</i>					
Newspapers:	<i>Not part of program yet.</i>					
Cardboard:	<i>Not part of program, but reused by households a lot.</i>	Cardboard used by homes for cutting boards and tables.	Stored at the store shed/sled, at	Cardboard isn't shipped out but reused		

Table 11 Wastes That Are Currently Collected Or Dropped-Off For Recycling, Backhaul, Storage, Or Reuse Programs

Waste	How collected or separated?	What for?	Where it is stored?	Is it shipped out? How often?	Who takes it?	Where does it go to?
		Also used in steam baths or burned at the dump.	people's homes, and at the dump.	in the village		
Paper:	<i>Not part of program yet.</i>					
Ink jet cartridges	Dropped off at IGAP office	Recycling	IGAP Department or recycling shed	Yes. 1-2 times each year	Post Office	Dell Recycling Center; freerecycling.com, LLC
Plastic Bags:	<i>Not part of program yet, but reused by households.</i>	Storage of all kinds, knitting bags	Usually in homes			
Glass:	<i>Not part of program yet.</i>					
Styrofoam:	Banned from this village					
Food Wastes:	<i>Not part of program</i>	Fed to dogs	In homes or arctic entry ways			
Household (small) batteries	Dropped off at EPA office	Respect for our environment, and to be shipped out of our community	In the recycling shed	About 2 times each year	ATS flies it.	NAPA Auto Parts Contact #: 543-2673
Lead-acid (Vehicle) batteries	Store in recycling shed	To keep lead and other contaminants out of our waters to maintain human and environmental health	In the recycling shed in fish totes	About 5 times each year	ATS flies it.	NAPA Auto Parts Contact #: 543-2673
Used oil	<i>Will update</i>					
Antifreeze	<i>Nothing yet</i>					
Vehicle fluids that are not oil (contain	<i>Nothing yet</i>					
Computers (all	Store in shed	Recycle	Recycling	Not shipped		

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Table 11 Wastes That Are Currently Collected Or Dropped-Off For Recycling, Backhaul, Storage, Or Reuse Programs

Waste	How collected or separated?	What for?	Where it is stored?	Is it shipped out? How often?	Who takes it?	Where does it go to?
<i>electronics contain unsafe metals when burned)</i>			Shed	out yet.		
T.V.s	<i>Will update on survey</i>					
Other electronics	<i>Will update on survey</i>					
Fluorescent lights <i>(These contain mercury and phosphor powder)</i>	Dropped off at office or picked up	Recycle	Recycling Shed	2 times each year	ATS flies it.	Total Reclaim, Inc.; ABSN
55-gal drums	<i>Will update on survey</i>					
Scrap copper (e.g. pipes)	<i>Will update on survey</i>					
Scrap Aluminum (boats, etc.)	<i>Nothing yet</i>					
Junk vehicles	Store at dump salvage area	Backhaul in future				
Junk appliances	Store at dump salvage area	Backhaul in future				
Freon from appliances	Picked up and brought to dump area	Removal of Freon	Nothing yet-in progress			Total Reclaim, Inc.
Unused hazardous materials like paints, cleaners, degreasers, lube oil, disinfectants, sprays, mosquito repellents, insect killers, mold removal, weed killers	<i>Nothing yet- will update on survey</i>					

Recycling, Reducing, and Reusing Resources Section

Topic	Link
Recycling info on SWAN	http://www.ccthita-swan.org/Planning/2D_recycle.cfm
Examples of village thrift store/recycle facilities:	http://www.ccthita-swan.org/main/reuse.cfm#thriftstore
Evaluating and comparing solid waste management methods including recycling, reducing, composting etc. ANTHC/ANHB SWM Guide Workbook 4	http://www.zender-engr.net/anhbguide/4.pdf

Table 12 Recycling Equipment Description, Status, And Plans

Item	Description	Own Now?	Will purchase in next year with existing funds	Want to have in next 5 years	Plan later than 5 years when we are ready or have the need for it.
Recycling Shed to store wastes for later backhaul?	15 feet long and 15 feet wide, it is in okay condition, but needs to be bigger.	Yes- Chefornak Traditional Council	N/A	Yes- with more space	N/A
Storage bags for Aluminum Cans	Black trash bags and ALPAR bags	Yes	N/A	N/A	N/A
Recycling Baler?	Sized for us, to use for cans, plastics	No	Don't have funds for this now	Yes.	Yes
Reuse-Share Shed		No	Don't have funds now	Yes.	
Connex or Shed to store hazardous wastes for safety	Used Connex	Yes			

Table 13 Recycling Management Program

Item	Where can people drop off their wastes?	Who is in charge of this program?	Where do we plan to have drop-offs?	What is the priority for increasing recycling or starting it? (1 = highest, 2 = medium concern, 3 = lower concern)
Aluminum can recycling	At the shed, or at the 8 containers around town	EPA Chefornak IGAP		1
Newspapers	We don't recycle these yet.			3
Cardboard	We encourage people to reuse for cutting boards and to roll as logs			3
Plastic Bottles	We don't recycle these yet.		EPA IGAP office or recycling shed	1
Plastic bags	We don't collect these yet		Stores for reuse, EPA IGAP office, or recycling shed	1
Used oil	Nothing yet- Used connex			2
Vehicle Batteries	Recycling Shed	EPA IGAP		1
Computers, TV's	Recycling Shed			1
Household Batteries	EPA IGAP office	EPA IGAP		1
Printer cartridges/toners	EPA IGAP office			1
Fluorescent Lights	Recycling Shed	EPA IGAP		1

Recycling Revenue and Payments

We make about \$50 from recycling cans in one year from previous years recorded. We distribute this money to the people that recycled the cans.

Backhaul Program

We have been shipping out the lead acid batteries through Arctic Transportation since we started the recycling program in 2005. The lead acid batteries are stored in the recycling shed and are packed by the IGAP Waste technicians in fish totes. The batteries are wrapped with plastics and each battery is separated by using a few layers of cardboards. When the totes are filled, they are securely covered. The broken lead acid batteries are packed in a different tote. The lid is taped to the tote and plastic straps are placed on all four sides after which holes are drilled to put the straps. The airline agent is then contacted when they are ready to be shipped out to Bethel NAPA Auto Parts and they are shipped out to the designated facility. We also have been shipping fluorescent lights, household batteries, and aluminum cans through ATS.

This summer, we are planning to backhaul the batteries through a barge for the first time. We were contacted by Larsen from Coastal Villages in Anchorage in regards to backhauling the lead acid batteries. Eight totes filled with lead acid batteries are prepared for the possible backhaul of lead acid batteries.

Table 14 Wastes Already Backhauled

Waste item	Amount backhauled (count or weight)	Date(s) backhauled
Refrigerators and freezers	None yet	
Junk vehicles (this is sold as scrap metal)	None yet	
Other scrap metal	None yet	
Batteries (lead acid)	In progress- 1356 pounds	1. Summer 2008
Computers	None yet	
Other e-waste	None yet	
Fluorescent lights	None yet	
Ballast	None yet	
Toners	None yet	

Table 15 Wastes To Be Backhauled Within Five Years

Waste item	Estimated amount to be backhauled (count or weight)	Where are the items being stored?	Estimated date for backhaul
Refrigerators and freezers	25	Dump area	Unknown
Junk Vehicles		Dump Salvage Area	Unknown
Miscellaneous scrap metal		Dump Salvage Area	Unknown
Batteries (lead acid)	8 totes	Recycling Shed	Summer 2008
Computers		Recycling Shed	
Other e-waste		Environmental Dept.	

8. HAZARDOUS WASTES

We know that hazardous wastes can be harmful to us, so we are trying to reduce our use and also to keep them out of our dump and our camps. We are now collecting aluminum cans, lead-acid batteries, household batteries, computers and fluorescent lights. We are educating the community about why it is important to recycle or properly dispose of hazardous wastes. We are trying to encourage the use of less toxic alternatives such as propylene glycol instead of ethylene glycol for antifreeze and green cleaners for household cleaning.

Table 16 Table For Hazardous Wastes And Some Reasons Why They Harm Our Community

Waste	Where/how it is disposed now	Why it is harmful
Medical Wastes	Sharps are sent to YKHC.	Diseases from medical waste can be spread by contact with soiled bandages, sharps etc.
Disposable Diapers	At the dump or in the honeybucket lagoon	Has a lot of germs from the poop that people can step on and track back to homes. If burned, there are many chemicals which are irritants if they are breathed and can cause illnesses if they

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Table 16 Table For Hazardous Wastes And Some Reasons Why They Harm
Our Community

Waste	Where/how it is disposed now	Why it is harmful
		are at a high level.
Plastic bottles, PVC pipes, and Styrofoam	At the dump.	Causes dioxins and furans and hurts to ozone which can cause climate change. Smelling a lot of the smoke or eating the settled ashes over a long time might cause illnesses, including cancer. This is why operator must always wear a mask and burning should not be done if wind blows into town all the time.
Household (small) batteries	Stored at the recycling shed to ship out	
Lead-acid (Vehicle) batteries	Picked up and stored at the recycling shed to ship out	
Used oil	Nothing yet	
Antifreeze	Nothing yet	
Vehicle fluids that are not oil		
Computers	Picked up and stored at the recycling shed	
T.V.s	Picked up and stored at the recycling shed	
Other electronics	Picked up and stored at the recycling shed	
Fluorescent lights	Picked up and stored at the recycling shed	

Hazardous Wastes Resources Section

List of Hazardous Waste Resources

Topic	Link
Household and lead-acid batteries	http://www.zender-engr.net/battery.htm
General info on hazardous waste training, identification, and starting a program	http://www.ccthita-swan.org/Planning/haz_wastes.cfm http://www.ccthita-swan.org/Tutorials/haz_wastes.cfm ,
Household haz wastes	http://www.ccthita-swan.org/pdf/household_haz%20_feb05.pdf ,

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	Some more home cleaning recipes: http://www.ces.ncsu.edu/depts/fcs/housing/pubs/fcs3682r.html , For a simple tour through a house's hazardous products and identifying alternatives (a great site!): http://www.checnet.org/healthhouse/virtualhouse/index.asp
ANTHC/ANHB SWM Guide Appendix 3 Household Hazardous Waste Guide	http://www.zender-engr.net/anhbguide/App3.pdf

Table 17 Table For Hazardous Waste Recycling And Staging For Future Backhaul

Item/Task	Do we have this?	Who operates it? Who is in charge? Where is it?	Do we want this in the next five years? What are the details of what we want?	What is priority to get or improve? (1 = highest, 2 = medium, 3 = lowest)
Place for people to drop-off?	No		Yes	1
Used Oil Burner? Who operates?	No			
Totes for storage of lead-acid batteries?	Yes	EPA IGAP office	Yes. 6 more totes	2
Antifreeze Recycler?	No		Not enough made. We are going to switch to propylene glycol instead. This is safer for the environment	3
Freon Removal?	Yes	EPA IGAP Waste Technicians		
Fluid Pumps for Draining Vehicles?	No			2
Connex for storage and eventual backhaul?	Yes	EPA IGAP, near the tank farm, but will be moved hopefully to		

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Table 17 Table For Hazardous Waste Recycling And Staging For Future Backhaul

Item/Task	Do we have this?	Who operates it? Who is in charge? Where is it?	Do we want this in the next five years? What are the details of what we want?	What is priority to get or improve? (1 = highest, 2 = medium, 3 = lowest)
		the dump area during fall		
HAZWOPER Certified Technicians	Yes	EPA IGAP Waste Technicians		
Spill Response Kit	Yes	IGAP, Naterkaq, City, Corp		2
Hazardous Waste Plan, including operational steps	No		Yes	2
Clinic Medical Waste Plan	No	YKHC	Yes	2

Entities in the Community and what Types of Hazardous Wastes They Produce

Below is a table with amount and type of hazardous materials and wastes generated or handled by entities in our community.

Table 18 Annual Hazardous Waste/Material Generation, Storage, And Disposal In Chefornak, Estimated From A Summer 2006 Waste Survey.

Generator	Hazardous materials reported	Maximum amount used or stored yearly	Comments
Hardware Store	Motor oil	Motor oil: approximately 500 gal/yr	Motor oil is ordered monthly, depends on the season.
Clinic	Medical waste		Needles put in red container and sent to Bethel.
School	Oil, antifreeze	Generator Oil: 2,200 gal Glycol: 110 gal	Generator oil and Glycol are ordered 1-2 times a year.
Naterkaq Light Plant	Oil	Oil: 63,000 gal/yr	Oil is ordered annually.
Tank Owners (Number of tanks and capacity of each):		School (72,200 gals.); City/Naterkaq Light Plant (46,200 gal); Corp store (136,630 gal)	
Observed hazardous material drums (55-gal)		By School: 6 unknown By Old Naterkaq Light Plant Generator: 15 unlined– Used Coolants, Diesel Fuel, and Ballasts	
Town population (including homes and businesses)	(Unreported): Small batteries, household cleaning products, motor lubricants, thermometers	Lead-acid batteries: approx. 120 - 150 batteries are in use. Motor oil: Approx. 200 gal/yr	Motor oil discarded yearly: Assuming 180 snowmachines, ATVs, and boats used in Chefornak, approx. 40 - 80 gal/year of motor oil are discarded (at dump or burned in steam baths). An additional 20 - 100 gal leak into ground or river during vehicle operation. Batteries: Assuming a 5 yr life, approx. 50 lead-acid batteries, containing approx. 600 lbs of lead , are discarded on the ground. Other household hazardous wastes: Approximately 0.2 tons per year.

9. OLD/CLOSED DUMPSITES

We do not have any known old dumpsites, but within the current dumpsite's boundaries, there are several pits of old buried trash. The pits are unmapped, and can only be identified by talking to one of the individuals who closed out the pits. By recalling their memory, these individuals are able to point out approximate areas of trash where these old pits are located. We have yet to make a map and 'draw out' where these pits are. This will greatly help with our Brownfield plans and to recall the areas that have pits, trenches, and which areas are clear.

10. ADDITIONAL RELATED WASTE CONCERNS FOR SUBSISTENCE

Families and individuals practicing their subsistence lifestyles and leave their trash behind create a concern of what types of trash is being left behind- it might be batteries or empty oil canisters that contaminate the land, plants, and ultimately the animals that we eat. We need to keep reminding each other not to litter and to bring trash home where they could be properly disposed.

The Nelson Island Consortium which includes members from Chefornak, Newtok, Nightmute, Umkumiut, Tununak, Toksook Bay, and Kipnuk was formed in 2004. The tribes with assistance from Elders are working together towards protecting our subsistence ground and ways of life, and that will in turn protect human health and the environment. Some activities they have successfully accomplished include a water quality monitoring program for subsistence areas, ensure fish nets are not left in waters, and monitoring campsites for littering and appropriate vehicle use. They are currently in the planning process of making bylaws for our subsistence sites which will greatly help in protecting our subsistence areas. Since our main diet comes from subsistence foods such as birds, fish, and land and sea mammals, it is important that we take care of our environment.

11. REVENUES AND COSTS FOR SHORT TERM AND LONG TERM SOLID WASTE PRACTICES

Table 19 Current Or Near-Future Annual Operation And Maintenance (O & M) Costs For Solid Waste.				
Item	Unit Cost	Units	Quantity	Annual Cost
Personnel				
Solid Waste Site Operation and Maintenance, Labor, 2 people, burnbox, compact and consolidate and clear/fix access path 2 times per year for 60 hours each time (60 hours x 2 times x 2 people)	\$15.75	hour	240	\$3,780
Solid Waste Collection, Labor, 1 person, 12 hr per week for 12 months, including all paying households and businesses and dropping off wastes at correct dump site location or placing in burnbox when appropriate.	\$15	hour	624	\$9360
Administration, (4 hr per month, \$15/hr)	\$15	hour	48	\$720
Fringe , inc. FICA, workmen's comp, benefits	20%	lump	\$13,860	\$2,772
Travel and Training				
Training, (e.g. HAZWOPER, RALO, Forum on Environment)	\$1,500	Lump sum	1	\$1,500
Other				
Fuel for ATV, equipment operation at site, 5 gallons per week	\$7.55	gallon	260	\$1,963
Heavy equipment repair, maintenance, and replacement fund (Used excavator average of 60 hrs twice per year for compaction and consolidation of wastes, clearing access).	\$10	hour	120	\$1,200
Other equipment repair, maintenance and replacement fund, ATV for collection, 12 hr per week for 52 weeks, set-aside funds	\$2	hour	624 hrs	\$1,248
Supplies				
Safety gear needed each year	\$500	Lump sum	1	\$500
Total annual O & M expense				\$23,043

The below Table reflects our planned annual program expenditures.

Table 20 Long-Term Annual Operation And Maintenance (O&M) Costs For Solid Waste

Item	Unit Cost	Units	Quantity	Annual Cost
Personnel				
Solid Waste Site Operation and Maintenance, Labor 8 hr/week for 52 weeks, \$16/hr, 2 people, including 4 hr/week at burnbox, lighting twice per week, maintaining dumpsite, operating equipment.	\$16	hour	832	\$13,312
Solid Waste Collection, Labor, 1 person, 18 hr per week 47 weeks per year including all households and businesses and dropping off wastes at correct dump site location or placing in burnbox when appropriate.	\$15	hour	846	\$12,690
Administration, (4 hr per month, \$15/hr)	\$15	hour	48	\$720
Fringe, inc. FICA, workmen's comp, benefits	20%	lump	\$26,772	\$5,344.40
Travel and Training				
Training, (e.g. HAZWOPER, RALO, SWMP, Forum on Environment)	\$1,500	Lump sum	1	\$1,500
Other				
Fuel for ATV, equipment operation at site, 25 gallons per week	\$7.55	gallon	1300	\$9,815
Heavy equipment repair, maintenance, and replacement fund (Used Excavator average of 4 hrs/week for 42 weeks for compaction and consolidation of wastes)	\$10	hour	168	\$1,680
Other equipment repair, maintenance and replacement fund, ATV for collection, 18 hr per week for 27 weeks, Snowmachine 18 hr per week for 20 weeks	\$2	hour	846 hrs	\$1,692
Supplies				
Safety gear needed each year	\$500	Lump sum	1	\$500
Total annual O & M expense				
				\$47,253.40

Current Annual Revenues for Solid Waste

The below Table lists the current revenue sources for our solid waste program.

Table 21 Current Annual Revenue For Solid Waste Program

Item	Annual Revenue
Household fee 20 of 80 households @ \$10 per month	\$2,400
Business fee for 4 businesses (2 Stores, clinic, post office), \$10 per month	\$480
School, \$10 per month	\$120
Offices (3) \$10 per month	\$360
EPA IGAP funds <i>(IGAP funds are used to help cover waste technician wages, supplies, training.)</i>	\$8,690
City funds	\$5,000
Construction Project waste tipping fees	\$0
Equipment rental fees to outside projects, \$100 per day at 20 days (one time: beginning)	\$2,000
Other Grant Revenues or Funding Sources	\$0
Total annual revenues for solid waste	\$19,050

Long-Term Annual Revenues for Solid Waste

The below Table reflects our revenue sources for our planned program changes.

Table 22 Revenue Sources For Planned Solid Waste Program Improvements

Item	Annual Revenue
Household fee 80 households @ \$15 per month	\$14,400
Business fee for 4 businesses (2 Stores, clinic, post office), \$60 per month	\$2,880
School, \$100 per month	\$1,200
Offices (3) \$50 per month	\$1,800
EPA IGAP funds <i>(IGAP funds are used to help cover operator wages, supplies, training)</i>	\$10,172
City funds	\$6,000

Table 22 Revenue Sources For Planned Solid Waste Program Improvements

Item	Annual Revenue
Construction Project waste tipping fees, \$250/yard at 20 yards of non-salvageable material per year average of landfill life – (Planning to implement in future)	\$5,000
Equipment rental fees to outside projects, \$450/d for 14 days average per year. – (planning stages)	\$6,300
Total annual revenues for solid waste	\$47,752

Solid Waste Costs and Revenues Resources Section

Topic	Link
Exploring and evaluating collection systems: ANTHC/ANHB SWM Guide Workbook 4	View pages 401-430 of this document http://www.zender-engr.net/anhbguide/4.pdf
Financial situation and future availability of funds ANTHC/ANHB SWM Guide Workbook 3	View pages 303-309 of this document http://www.zender-engr.net/anhbguide/3.pdf
Landfill program costs ANTHC/ANHB SWM Guide Workbook 4	View pages 519-526 of this document http://www.zender-engr.net/anhbguide/4.pdf
Funding your SWM Program	http://www.zender-engr.net/anhbguide/App6.pdf
Evaluation form for proposed alternatives ANTHC/ANHB SWM Guide Workbook 5	View pages 556-566 of this document http://www.zender-engr.net/anhbguide/5.pdf

12. NEEDS FOR SOLID WASTE IMPROVEMENT

Table 23 Needs For Solid/Hazardous Waste Improvement

Item	What it would be used for	Why it's important for the community	Approximate Cost <i>(don't forget about costs for shipping)</i> <i>See the SWAN website for help with researching costs</i> www.ccthita-swan.org	Ideas for how to obtain it (grants, funding sources etc.)	Realistic timeframe for obtaining it	What is the priority for this item? <i>(1 = critical, 2 = high, 3 = medium)</i>
Totes	To store and ship batteries	Will help reduce the amount of lead from entering our water and land	\$300 plus \$75 shipping per tote	IGAP funds	Within 3 months	2
Dozer	To improve dump maintenance	The dozer will help us improve our dumpsite and reduce contact of wastes at the dump	We want to buy a good used dozer so the costs are less.	Open dump grant	Early 2009 or sooner the better	1
Spill guards for barrels of used oil	To contain any potential oil leaks	Protect the land and water from potential leaks and from exposure.				2
Parts for fixing heavy equipment	To get the equipment up and running again	Compact, consolidate, and get all necessary work done at the dump.		Open dump grant		2
Safety gear	To protect the dump operator when working with wastes	To protect human health and safety from hazardous risks.	\$500	IGAP funds, Open Dump, wetlands, or other available grants		1
Dumpsters	To put around the community to store trash	To reduce the number of people going to the dumpsite				2
Recycling Baler	To reduce volume of recyclables for storing and shipping	For storage space, to prevent any windblown litter, increase in recycling.				2

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WOTEC (used oil blender)	To filter used oil into new oil that can be used by our community	To reuse used old in which will reduce number of used oil in the community				2
Antifreeze recycling unit	To filter used antifreeze into new antifreeze that can be used in our community	To protect human health and the environment, reuse to minimize number of antifreeze in community				2
Vehicle fluid draining pumps	To drain fluids (brake, fuel, antifreeze etc.) from vehicles so the vehicles can be shipped out and recycled as scrap metal	Vehicles are becoming a rising number for communities and this will help us in backhauling the vehicles without any potential leaks				3
Drum crusher	To reduce the volume of empty 55-gal drums	For ease future backhaul and reduction of volume at the dump				2
Oil filter crusher	To crush and drain oil filters for recycling	Minimize size to make more room to recycle and to keep out of community				3
Composting bins	To start small-scale composting projects for solid wastes	Reduce health risks to humans and environment				3
Recycling bins	To put around the community to store recyclable materials	To separate recyclables from the wastes going to the dumpsite				2
Can crushers	To put in households to reduce the volume of cans for storing and shipping for recycling	To reduce the volume of wastes going to the dumpsite and have more people participate in the recycling program				2
Glass crushers or palletizes	To pulverize glass to a material that can be used for art projects, glasphalt etc.	To reduce number of wastes going to the dumpsite and glass lasts for quite some time as do plastics				3

ALPAR bags for community litter cleanup	Free bags (shipping not included) for community cleanups	To keep recycling and to increase the number of people to recycle.				2
Engineering design for new landfill	For the best management	Our current dumpsite is too close to the community, school, and the airport.		Denali Commission, Open dump, EPA, or other grants	Sooner the better	1
GEOBLOCKS	To have a safe and good access to and at the dumpsite	Prevent any hazards for people dumping wastes to the dumpsite and protection from contaminants		IGAP, Denali, USDA, or other grants	Sooner the better	1

13. NEW COMMUNITY SOLID WASTE GUIDANCE FOR PROTECTING HEALTH AND SUBSISTENCE

These rules are based on the Elders' Guidance on protecting our subsistence and respecting each other and keeping healthy. Please see Section 2 for a full list of Elders' guidance. Using our Elder's wisdom about what we should do, we researched the best ways to change community practices so that we can follow Elders' words. We used our own experiences in the past four years to determine what will work best for our community. We worked with other communities and learned from them what works well too by talking to them at conferences and meetings, using the SWAN message board, reading on the internet about successes at SWAN, Alaska IGAP stories, www.zender-engr.net.

In Town

Recycle all recyclables, backhauling, no littering, notify IGAP of any hazards or spills, follow City, TC, and all other rules and regulations.

At Dump

Follow signs at the dump, separate hazardous items, dump trash in trenches, do not light dump on fire, do not use burnbox without consultation, no loitering, dispose wastes at designated areas, and all other rules and regulations.

Subsistence Camps

Bring all trash and equipment (nets, buoys, etc) home, do not litter, respect land, water, and animals. Follow the ordinances.

All Places

Respect one another as well as our land, water, and animals.

Ordinances, Resolutions, and Enforcement Resources

Topic	Link
Ordinances, Resolutions, MOU's, and MOA's, including Tribal law traditional resolutions	http://www.zender-engr.net/ordinances.htm
Developing Codes, Laws & Regulations ANTHC/ANHB SWM Guide Appendix 8	http://www.zender-engr.net/anhbguide/App8.pdf

EXAMPLE “DEMONSTRATION OF APPROVAL LETTER”

. *******Print this letter on your Tribe’s Letterhead*******

Date

The Solid Waste Management Plan developed by the **Native Village of Chefnak’s** Environmental Department in **April 2008** has been reviewed by the community and approved by the **Native Village of Chefnak** Tribal Council **and the City Council**.

Tribal Council President

Date

Tribal Administrator

Date

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