



Reducing and Recycling

LOGISTICAL CHALLENGE

“To bring it, or not to bring it, that is the question”

Nile Aguchak | Scammon Bay IGAP | October 20, 2015

Scammon Bay Landfill Operations - Transfer / Staging Area Custom Storage Shed for Recycling operations

This demonstration grant was established over two years ago. This was the arrival of a grant that also almost took one year for completion of the project since one of the challenges is “logistics” in Alaska. This was the issue for almost all applications for landfill operations. In all four applications that was applied for since 2012. The final part of the current process was the application that was applied for through BIA – AVCP as a supplemental for logistic issues for the shed that is applied for the Custom Shed/Recycling Center which will reduce overall “Solid” waste that is after Burn outs from Landfill operations.

The story

Scammon Bay IGAP and the Native Village of Scammon Bay drafted a plan for a demonstration grant in 2012. After the process Scammon Bay was awarded the grant along with a contributing factor with the city of Scammon Bay who also purchased a burn unit along with the burn unit that the Native Village also purchased from Tok Welding. Other equipment included;

- (8) Eight trash bins
- ATV- Four wheeler
- Wide Track snow-machine
- **Vertical Baler*- (Zender Environmental custom storage shed & AVCP/BIA)**

The tribal administrator had all of the equipment in Scammon Bay that was purchased from the USDA grant in the fall of 2013.

The complete process took one year to get all the components that is mentioned here. Despite the efforts for the equipment to get here from different parts of the state and out of state. The problem of housing the vertical baler was still an issue because of space availability and power need. Scammon Bay did not have a transfer or staging area ever in the past and the planning is still happening today. The plans for a transfer/Staging area also requires BMP's that can reduce public exposure to any possible hazards with a transfer/staging area. (18 AAC 60 - Solid Waste Management)

The burn unit was suggested to help give a complete burn of the trash since the burn unit makes the trash hot enough to burn more completely. After one year of operations it was evident that cans was still a bulk of what is left over after burn outs. This encouraged more from operations because the baler was available but not in use because of power need and heating. Space availability was and still is an issue. But with the assistance of Kristin Keit and Jacqueline from Zender the funds to get the shed to Scammon bay was not discovered until the facts from Kristin on supplemental funding made available.

Scammon Bay residents voluntarily had brought in aluminum cans but in this case this would be the first time door to door collections would be practiced for recycling. This call for source segregation came after realizing that the baler is needed because of the leftover cans from a burn out. The burn out had a lot of leftovers from pop cans and steel cans.

With source segregation there is a possibility that Scammon Bay can recycle 12,000 - 13,000lbs. The recycling efforts can assist in paying for the power need and heating required for the hydraulic components of the baler.

A trench and fill operation is hard to do with no equipment and one of the challenges that Scammon Bay has had was equipment to manage landfill issues. There was no operator and or no equipment to keep the landfill clear. This was a challenge because equipment use for Scammon Bay is for Water and Sewer. Scammon Bay was recently introduced to ARUC and the water and sewer project was catching up to a lot of things that was needed for water and sewer. So the equipment was tied up and if not no operator was available.

This was one of many challenges that Scammon Bay IGAP solved with the application of a T550 Bobcat. This tracked skid steer can do most of what is needed for landfill operations for the scale of the Scammon Bay Landfill. This equipment can keep the entrance clear, clear out the trash that is left over from burn-outs, keep the workface clear so the operator and the public can freely “manage” their trash.

The award for the storage shed came after the T550 Bobcat because Scammon Bay IGAP was trying to get local resources to establish the recycling aspect of solid waste management. Since the Native Village did not have an excess of space availability and resources to establish a recycling program. This was also the case for the city of Scammon Bay since the available space was dilapidated or not available for use.

Unsolved Mystery;

One of the pieces that was purchased from the grant was a vertical baler that is made for crushing and compacting material. This Baler with components that needs heating and power. This meant housing for the unit, and with a needed 12 foot ceiling and clearance for the use of the baler. Shipping vans would be almost be not ideal for this equipment and application. Hydraulics can't operate efficiently in the cold and with possible power issues for a three phase power need. Housing and planning will be needed for operation of this equipment.

Scammon Bay IGAP took a couple solutions on the table that included building of a shed. Done locally with local resources. With local resources limited that included material for housing the unit. The baler is nearly 2 tons and to bring up slope can be dangerous in the winter time. Unfortunately the baler did not have a place for storage, no heat and power source for operating.

With these problems lacking an answer, Zender Environmental had a grant available to purchase these supplies and equipment to build a unit and or a prefabricated unit that can house the baler. Since the local store did not have all of the available supplies and material needed to make an insulated shed Scammon Bay IGAP looked at possible lumber outlets and eventually the customized storage shed was drafted from SBS to be the good idea because of the insulated building and a custom 12 foot ceiling for operating the baler.

This shed will house the vertical baler that was supposed to be used with the demonstration grant that was awarded from USDA. This vertical baler will assist in taking cans out of the equation at the landfill. This will help in the recycling efforts for Scammon Bay since the vertical baler can be used on more than one type of recyclable material.

The baler can also process these materials;

- Plastic bottles
- Card board
- Steel cans

To get the shed here was a challenge on two fronts. The shed itself and to get the shed here to Scammon Bay was a challenge because of budget constraints on the grants. Since the funds left over from the IGAP grant couldn't be used for freight costs, Scammon Bay IGAP reached out to Zender Environmental to assist in getting the shed to Scammon Bay. Zender assisted in finding funds with BIA which was actually went through AVCP. The process took time but eventually got the funds through with AVCP.

Thanks to Zender Environmental the Native Village of Scammon Bay was awarded a grant to purchase the customized storage shed which needed the custom 12 foot ceiling to actually house the baler. The shed was customized by Spenard Builders Supply. The shed comes with a garage door that will assist in getting material in and out of the shed easier than that of a conventional shed. With the customization was insulating the shed. The shed does need to be heated for the electronic and hydraulic components of the baler.

For the funding for the shed it also included labor costs that it might take to get the shed together after it gets here to Scammon Bay. With all of the leftover funds from grants that included the Zender Environmental and BIA/AVCP funds is to purchase a heater that will heat the 16'x20' storage unit.

One of the challenges of this shed will to place the shed. This placement needs the public in mind to avoid vandalism and exposure that can be a hazard like snow-berms and erosion. The shed itself can be a hazard or where the transfer station will be since people do not manage trash the way it's supposed to all the time. Out of high traffic areas and minimized exposure to the public will need to be planned when selecting a sight for the transfer station.

The baler can now be used for reducing and recycling solid waste in Scammon Bay. This Baler will be reducing overall solid waste at the Scammon Bay landfill. Now that there is a shed to house the baler, community support is one of many things needed for this to work. Postings are always a good thing when it's a notice that includes that participation has made things work at the landfill.

Yes, Scammon Bay IGAP applied for a Shed, Yes IGAP applied for a Bobcat to keep it clear. But it was for the reason of educating and encouraging BMP's that was directed by ADEC and EPA. These BMP's encouraged ordinances that are created by the city of Scammon Bay to disallow open dumping in an unauthorized area. These BMP's also assisted in problem solving with issues on how to dispose of these things properly that included the pits for carcasses and H-Bucket dumping.

These BMP's without Gates and signage through repetitive notices and postings on what the problems were with Scammon Bay's landfill encouraged action to deliver solid waste management for Scammon Bay. Even if this was accomplished does not mean this is the end of open dumping, keeping a steady hand on the issue helps prevent the issue from arising again. Open Dumping happens. It will happen again. The choice to take action from the community was the primary reason these actions took place and why it succeeded.

Landfill Operations Review

The landfill operations came a long way and the biggest reason it has been applied was because the environmental committee, which consists of;

1. Native Village of Scammon Bay
2. The City of Scammon Bay
3. Askinuk Corporation
4. At large member from the community

Scammon Bay IGAP also is a part of this committee and is the founder. Scammon Bay Environmental committee has always stressed the importance of protecting our subsistence use lands that Scammon bay traditionally uses year around.

In 2010 Scammon Bay sensed the issue was out of hand because open dumping was done with all things and everything the photos depicted here in 2010 was something we were familiar with. This was something that wasn't seen as a problem before IGAP educated the committee members on landfill operations and how it benefits the land and waters that surround the landfill.

Since statehood Scammon Bay was a small, now Scammon Bay with over 600 permanent residents and a staff of teachers with the school. The waste generation of the community increased with the population. With 300 kids averaging 2-3 cans of pop a day, that's almost 600-900 cans a day generated. This can be evident in the burnouts from the burn unit that was purchased from TOK Welding. As a reminder, the City of Scammon Bay assisted in the contributing factor of purchasing a burn unit. There was supposed to be a dump truck but mechanical issues and the sheer size of it was a little impractical for landfill operations. The dump truck will assist in operations in the future where gravel can be moved or replaced by the dump truck.

The people of Scammon Bay realized that open dumping was a problem with community. Even if it was recognized as a problem there was not a real landfill operation till 2013.

For every piece of equipment and supplies that was purchased for landfill operations, it was just not enough. The vertical baler that was purchased through the demonstration grant was not housed and not be able to be used. The issue was either, not enough space, weather conditions, operator, and power need.

Finally with the assistance of Zender Environmental came along with a grant to purchase a shed to house the baler and it can be insulated to hold heat. With some information that AVEC had concerning three phase power needs such as;

- Where to place the power need
- Length of the run before AVEC starts to charge you for additional material needed

Despite these issues planning how to follow BMP's associated with transfer/staging areas needs to be followed. This is where the environmental committee comes in to resolve the issue to prevent hiccups that can come from the community.

The transfer station needs an area that will not disturb the public health and safety. Also if in operation and not in operation safety requirements are needed to ensure that the building is safe for use and will not be a hazard to the community when not in operation.

Currently the Native Village of Scammon Bay is planning a couple of places that include the road to the landfill because there are power lines that can serve the three phase power need for the equipment and out the community to the landfill.

One thing that was thought of was the exposure to the building. If the building was placed on the road to the landfill it would be out of sight out of mind. The problem with that is no one will be able to prevent vandalism or the exposure of a wide open area.

The other suggested place was across from the UUI building near the AVEC power plant. Meaning a stronger power need for the UUI building and stretching out the power line to extend the length of where the power need can be. This is a low traffic area and is only busy in transit there are no "immediate" dwellings in the area. But this is still in the community, so the suggested BMP's need to be followed for safe operation.

Shall this happen the shed will need to be strictly used for recycling and partial storage of some "re-usable" material that can't be a hazard to the community. IGAP does have information on what can and can't be stored in a facility to prevent a hazardous situation. This is why it's important to educate staff with HAZWOPER. This can educate staff and community on how to handle hazardous material and how to recognize hazardous markings on materials.

Just to understand an operations plan was a challenge because Scammon Bay did not have an operations plan before so we contacted city of Bethel to see what their landfill operations looked like to have an example to mimic.

With that information Scammon Bay IGAP used similar format used in Bethel. Also to help "sustain" landfill operations we looked to Saint Mary's as an example for a model on how it is sustained. This is difficult for Scammon Bay currently because certain revenue can't be subsidized to landfill operations from water and sewer services.

To keep landfill operations as is, is difficult because of no agreements between the tribe and the city of Scammon Bay. One of the pressures of it is keeping Landfill operations staff. Without agreements and understanding the struggle will be to keep things "As Is" because of budget constraint and practices.

The beginning and a means to an end of open dumping

With-out many components that is not there for a fully regulated landfill. Critical components such as signage and accessibility to the landfill is not regulated. There is not high visible signs and gate to regulate the landfill. No gate to control open dumping. No signs to explain where to manage their waste. Until these are satisfied there will be a problem with;

1. Open Dumping
2. Human waste issues with Honey buckets
3. Open dumping with carcasses
4. Open Dumping with other waste that is hazardous;
 - Used oil & Antifreeze/Coolant
 - Vehicles & White goods
 - Construction debris



(This was in 2010 before landfill operations)



(This was in 2010 before landfill operations started in 2013)

This can be any village. This can be any village's problem. In this case its Scammon Bay's problem. Solid Waste management is not something that is settled only by IGAP and or the native village of Scammon Bay. This will take all efforts from the village which does include the city of Scammon Bay and the local corporation. Since the land is allotted from somewhere it will most likely be the local corporation to "Give" land for a landfill. Community projects does take community participation for it to be successful. No matter how well Scammon Bay IGAP or the environmental committee creates a "Plan", what makes it successful is when the community does its part to eliminate the issues of the landfill.

Landfill's need BMP's to open and close a landfill. When the landfill has used its life, the landfill needs to be closed to open a new landfill. This process will need to be settled through ADEC to allow landfill operations and permit for operations.

This landfill was erected in 1997 and this was after the closure of the open dump that used to actually be next to the junk yard where it is today. When the current landfill was erected the landfill was only outfitted with an open burn unit that no doors or chimney to make trash hot enough to burn completely.

Years after the landfill was created, open dumping with open burning was the primary management of the landfill. Yearly or at the most three times a year the landfill would get a clearing to throw trash but slowly Scammon Bay IGAP which started in 2005-06 and the environmental committee started a solid waste management plan that was completed by 2007. Scammon Bay IGAP efforts included the USDA grant to make things possible for landfill operations today which was applied for in 2012 and completed in 2013 and even then there were issues with logistics as an issue.

To help understand the challenges for Scammon Bay IGAP locally. Scammon Bay IGAP trained staff and the native village of Scammon Bay in Landfill operations and the BMP's that are suggested through ADEC and EPA. Scammon Bay IGAP staff is trained in Rural Alaska Landfill Operator and Rural Alaska Landfill Administrator trainings produced by ADEC and Rural Cap.

This RALO and RALA training assisted in getting understanding to the community. With notices and practices with landfill operations on BMP's that was learned from these trainings. Through a Newsletter. This newsletter had a informal report on class III landfills. This was to help the community understand why IGAP was encouraging the BMP's from ADEC and EPA on class III landfills. Since it is not regulated same as larger landfills and not the same for monitoring. What can be done same as the larger landfills, small class III can have a landfill operation.

After this training the Landfill operator discovered a lot was wrong with landfill operations. At this time Landfill operations did not receive any types of equipment to manage the landfill and operator use was still an issue for the equipment with the city of Scammon Bay.

The greatest of these challenges was the fact that open dumping was a problem and it still is. Since the public was never asked in the past to manage their "Dumping", the open dumping was an epidemic that seemed to never have an answer.



(This is spring 2015, The landfill was cleared by the city of Scammon Bay, one of the many challenges for the landfill was an operator and equipment use for landfill operations. So IGAP applied for the equipment grant from Rural-Cap)



(This was just after the snow melted)

The more we posted on it on public media and the more Scammon Bay IGAP did out-reach to the city of Scammon Bay, people of Scammon Bay realized that the landfill needed assistance from the community. The community used the trash bins more often and used the pit that was provided by the city of Scammon Bay for honey bucket dumping and carcasses. The city of Scammon Bay even started H-Bucket hauling that dramatically reduced its open dumping issues with the human waste.



(The summer of 15' Landfill operations received a Bobcat T550 to help manage Loose trash and keep things clear for the operator and public.)



(With the multiple attachments solid waste issues that goes beyond the landfill was getting the treatment too) *illustrated here is the grapple forks picking up an old motor to be disposed



(To assist in keeping in the work face the grapple forks was used to move boulders)



(A clear workface is one of many BMP's for a landfill and with resources pulling together to get a handle on it was the city of Scammon Bay pulling cover material from within the landfill the bobcat was able to move the dirt throughout the landfill



(The bobcat dramatically changed the way the landfill looked)

Although open dumping can be an issue, Scammon Bay landfill operations now has tools and understanding on how to control these problems. Signage and more regulations that includes a gate for open dumping control. These will be solved in time. For now the tools for reducing solid waste is here in Scammon Bay.



(Aside from open dumping, the cans from burn outs needs an answer it is the bulk of leftovers from a burnout.)