

## DRAFT Planning a site cleanup

Planning a site cleanup can be complicated. There are a lot of issues to think about. And there isn't much information about previous cleanups to provide a planning template. So you need to **rely on your knowledge and instincts** to evaluate your circumstances. And realize that you will likely be revising your plan a lot, as your budget, timeline, and issues become clearer.

### General Questions to ask

- **What are your goals here?** Is it consolidation? Covering the dump? Moving the dump? Litter pickup? Site closure? Regrading/upgrading the dump?
- **IS what the community wants you to do the same as what you plan to do?** If not, probably best to conduct education and outreach first.
- Will you be **separating out hazardous wastes** - such as e-wastes, batteries, etc.?
- If so - where & how will you **stage and store** these? See <http://www.zendergroup.org/docs/storing%20print.pdf> for storage ideas.
- What will you use to **move the trash?** To move heavy /bulky items? (supersacks, bags, carts, heavy equipment, totes, etc.)
- Does your **equipment limit** what you can do?
- What about your site circumstances might limit what you want to do?
- Will your budget limit what you can do (this is typically the biggest limiting factor)?
- Will you be **compacting and covering wastes** as well as consolidating or collecting?
- If you are covering the wastes, **where is your cover material** from - how much does it cost and when/if can it be available?
- Is there a big concern about **Unknown drum contents?** Did military or DOT or other commercial/industrial entities use this to dump hazardous wastes? If you think you may partially full containers -- you will need to prepare much more. And you will have to make a decision about whether you even want to use heavy equipment in the area to **avoid rupture of containers**, and what type of protective gear is appropriate and whether you have enough funds to manage the event of finding and handling hazardous wastes. Don't proceed with cleanup until you've spoken with a contaminated sites expert. You might contact ADEC SPAR Program for advice -- <http://dec.alaska.gov/spar/perp/>
- **Burning wastes** - this is not a preferred option at all because of the health risks. But if sometimes it makes sense to separate out better burnables and burn in a container. Occasionally, burning wastes can be the best option especially if you are unable to logistically or financially transport the wastes elsewhere. More planning is needed however. For example, You'll need to allow for not burning during days the wind blows to town, and you'll need to figure out how to transport the burnbox to the site.

Probably the **biggest driving factor** in your site cleanup is **how much waste you have** and **what is the area** you will be cleaning up. This determines the amount of time you'll need, the labor, and equipment. So a good place to start is evaluating your site and making a first estimate of the waste amount and time you'll need:

## Calculating the amount of wastes and area size to be cleaned up.

**Draw a diagram** of the full site or area that you want cleaned up. It doesn't need to be completely "to scale". To get a decent representation, you should spend a day or so out in the field walking around the site and area you are going to clean. Bring a tape measure, camera, notebook, and a GPS unit if you have it.

Unless your dump is pretty much uniform throughout—the same waste depth, the same types of wastes, and the same waste denseness, you should **break up your site into different sections**. For each section of the site-- you should have the **1) section shape, 2) the general types of wastes there, 3) how deep** on average the section is, **4) whether the section has been compacted** by heavy equipment, **5) and how scattered (or consolidated)** the wastes are over the area. Note - if you have trenches, be sure to treat a trench as a separate section. Don't include it in a larger area.

### 1. Section/Site Shape

**GPS:** To get GPS positions, you can download free applications onto a cell phone, and many cell "smartphones" now come with that feature. Take GPS readings around the boundary - you don't need that many. For example, if the site is approximately a rectangle, you can take just the corner points. With GPS Units, you'll need to have a program that calculates the area for you, or maps the points on a scale map so that you can measure the dump shape.

**Tape measure/pacing** You can also take your tape measure (100 ft is usually adequate) or pace off the distances. This method can work just as well as GPS because it is impossible to get very accurate with waste volume and weight with open dumps anyway.

**2. Waste type and source (if known):** For each section, list the general type of wastes found there. For all your sections, it might be the same, e.g. mixed household wastes. But for some sections, it might be different, such as "household trash bags unloaded from garbage truck", "mostly store cardboard", "scrap metal", "emptied burnbarrel content", "housing project contractor wastes". The reason you will be listing the type of wastes is because different types of wastes have different densities and different weights. If you plan on backhauling wastes, you'll be charged by the ton. So you want to have an estimate of how much waste weight you'll need to pay for. Also the type of wastes can help you with your cleanup plan by telling you if you will need HAZWOPER certified laborers in that section, or if you will need mostly manual labor, or machine labor, and how long it might take to pick up certain kinds of wastes.

**3. Depth of wastes:** You want the depth of wastes to help you calculate the section waste volume. A site section that is 2 feet deep in wastes will take longer than a section of the same area that is just 1 foot deep in wastes. Note - for trenches it is especially important to know the depth. Sometimes you will not be able to measure the depth of trenches. It is actually better to interview the operator who dug the trench (or look up the design if it was planned). If you can't find the operator, a typical trench dug from typical size heavy equipment in villages would be 6-8 ft deep, with an inside slope of 2:1 to 3:1 on the ends.

**4. Waste Compaction:** You want to know the general level of compaction for the same reason you want to know the waste depth. Some dump sections have had equipment operation and 1 ft depth of household trash that is compacted by heavy equipment will contain more trash than 1 ft deep of household trash that was just discarded by folks, but never had compaction. Some trash might not have had heavy equipment over it, but might have been compacted in a garbage truck. Also, weathering can compact wastes. Piled wastes that have been wetted by rain and snowmelt, and have had a chance to settle will be more compact than wastes that were recently discarded. It is really difficult to know how compact wastes are - but a general description will still be better than none.

**5. Waste Scatter/Consolidation:** Often at open dumps there is a lot of ground in the dump that does not have much garbage. At sites where there is a lot of area and easy to access - folks might drive to different areas to dump. Most people don't like stepping on wastes if they don't have to when they are unloading their garbage. So there is a lot of bare ground. You need to estimate how much ground is covered by waste within your section. Look closely at the ground and make your best guess. It is most common to overestimate the amount of waste at a site or in a section. A good method is to use a yardstick to draw to envision on the ground. How much bare ground do you see in the square? Go to another part of the section and do the same thing. Do this a few times within the section and average your results.

For scattered windblown litter - you can just note "windblown litter", and for highly scattered wastes in general, just note highly scattered wastes.

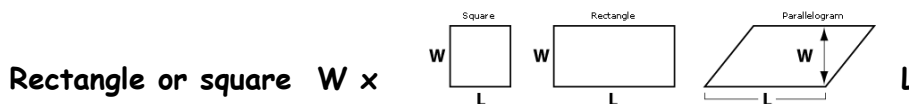
**Something to Remember - Estimating wastes is not a very precise procedure. So if you spend too much time on getting every detail correct, you are wasting your time.**

## Now You're Ready To CALCULATE

*Hint: Be sure all of your numbers are in either feet or yards before you start.*

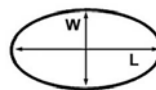
### 1. First, calculate the Area to be cleaned:

Break up your section into approximately one of the below shapes or a combination of the below shapes, and add up the areas:

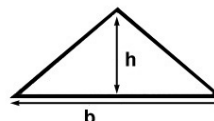


**Circle Area Calculation:**  $= 3.14 \times \text{diameter} \times \text{diameter} / 4$ . The diameter is the full length of the circle (i.e. the diameter = two times the radius of the circle).

**Oval Area Calculation (estimate):**  $L \times W \times 0.8$

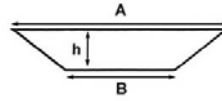


**Triangle** =  $h \times b \text{ triangle} \times 0.5$



**Rectangle** = length  $\times$  width.

Trapezoid =  
 $B \times A \times 0.5 \times h$



### **Waste Volume and Area Calculation EXAMPLE:**

The area to be cleaned is shaped like an oval (i.e. a long circle). Its width is about 300 feet, and it is about 600 feet long. About 25% of the dump area is covered by piled waste. The rest is ground, a pathway, or light windblown litter. Where there is piled waste, the average depth is about 2 feet high. For this site cleanup, there will be a backhoe available, but because waste is somewhat scattered, there is a need for several laborers to help out.

Using the above numbers, and the area formula for an oval, the dump **area** is :

$300 \text{ feet} \times 600 \text{ feet} \times 0.8 = 144,000 \text{ square feet}$

$144,000 \text{ square feet} = 144,000/9 \text{ square yards} = 16,000 \text{ sq yards} = 16000/4840 \text{ acres} = 3.3 \text{ acres}$

The waste **volume** to be cleaned up is:

$(\text{Area}) \times (\text{average waste depth}) \times (\text{estimated percent of ground that is covered by wastes})$   
 $= 144000 \text{ square feet} \times 2 \text{ feet deep} \times 25\% \text{ of ground covered} = 72,000 \text{ cubic feet} = 72000/27 \text{ cubic yards} = 2,667 \text{ cubic yards.}$

*(Note a cubic yard is about the size of a fish tote or an ATV cart. It is 1 yard wide, 1 yard deep, 1 yard long. It )*

### **Next, estimate the amount of time and labor needed.**

*Every cleanup is different because there are different wastes, terrain, weather, workers, equipment. The following cleanup rates are the best available for estimating the time and laborers needed.*

#### **Some Sample Rates (using 8 hr days):**

**Rate #1:** For cleaning up a typical dumpsite (1 -4 ft waste depth, nearly 100% cover of mixed community garbage), and moving the wastes to a nearby location (i.e. moving a dump back from an eroding riverbank), including separating out batteries and other noticeable hazardous wastes:

**0.25 acres/week** using 1 operator, 1 small backhoe, and 7 laborers to  
**2 acres/week** , using 4- 6 operators, 4 large backhoes & support equipment, 6 - 10 laborers, 2 -4 field supervisors, 2 project managers.

**Rate # 2:** For collecting garbage mostly with a clamshell or other bucket heavy equipment - and the wastes are piled together - very little manual labor:

**120 cubic yards day can be cleaned up with an operator and 2 laborers**

**Rate #3: All manual labor, picking up wastes at typical open dump, including separating out hazardous wastes and recyclables:**

5 to 10 cubic yards per day with 4 laborers at 7 hours/day of actual cleanup (another hour for getting on and off protective gear, etc.).

**Rate #5: If you have highly scattered waste (e.g. a large site with sporadic dump piles ):**

1 - 2 ac/week with 4 laborers, ATV's, supersacks, carts

**Rate #6: Windblown litter (i.e. tundra birds—plastic bags and paper that borders unfenced dumpsites for hundreds of yards).** A typical 1 acre community dump windblown area can be picked up into litter bags in 5 days with 4 paid, motivated laborers or 3 days with 20 volunteers.

**Rate #7: Site consolidation with equipment**—This is where you have a planned site and the wastes need to be consolidated and compacted to make more room at your site. Typically folks dump near the entrance and the access becomes overcrowded. If you consolidate the wastes toward the back of the site into 4 - 5 ft berms, or into trenches, you'll get more room.

1 operator for 6 days for 3 acres.

### Calculating the Time Needed for Cleanup Example:

Continuing with our example site cleanup, we have about 3.3 acres and 2667 cubic yards to pick up with significant manual labor and with the help of a small backhoe. Looking at Rate #3 and Rate #4, we can estimate that we might pick up about 130 cubic yards with a 4-person crew plus one operator (i.e. 1 operator + 2 laborers would be about 120, and 2 additional laborers would be another 10).

Because there is a lot of manual labor we're likely to be closer to the lower estimate of Rate #1— 0.25 ac /week, but because only about 25% of the ground is covered, that will make it closer to 1 ac/week.

1 ac/week for a 3.3 ac site = 3.3 weeks.

2667 yards/ 130 yards/d = 20.5 days = about 4 weeks.

Use the longer estimate that you come up with. **Plan for 4 weeks with 4 laborers and 1 operator.**

### If you will be separating out recyclables and hazardous wastes: Estimate the amount of recyclable/separable items

Refer to Waste Characterization Tables 9 - 12 at

[http://www.zendergroup.org/docs/SWM\\_Plan\\_tables\\_2010.xls](http://www.zendergroup.org/docs/SWM_Plan_tables_2010.xls) . These tables calculate the amount of each special waste that is generated each year. Once you do that for each waste you will be separating out, you need to determine: 1) **how long people have been dumping** at the site to be cleaned up, 2) **the portion of the community dumping** there, and 3) **the portion of the waste that did not go to the site**, but to a recycling program (if there is one).

### Example 3:

Using Table 9, we calculated that a community generates 100 lead-acid car batteries each year. The site section to be cleaned up was started 10 years ago. A battery drop-off was started 3 years ago, but about half the community still uses the dump for their batteries. How many batteries can you expect to come across when cleaning the site?

*Total Maximum number of batteries:*

100 batteries x 10 years of dumping = 1,000 batteries at dump

*Accounting for a recycling program in last 3 years of 50% participation:*

1000 batteries - 3 program years x (100 batteries x 50% participation) = 1000 - 3 x 50  
= **850 batteries** at the dump to plan for separating, staging, storing, backhauling.

*To calculate the weight for shipping cost or other purposes, refer to "Column I" to see how much one battery weighs:*

**Total battery weight = 850 car batteries x 40 lbs/car battery = 34,000 lbs !!**

At current backhaul prices by cargo plane --- that is at least \$0.20 x 34,000lb = \$6,800 needed to pay the shippers. Your best bet is to try to find free backhaul with a barge company on a space available basis.

### After you have an idea of how long you will need to cleanup your site—Start thinking about a **budget and timeline** for important tasks

Often a budget and timeline are done together. As you look at your budget, you might realize that you need to cut down on some efforts. That might change your tasks. And as you think about tasks, some of these might change your budget. Below are listed many of the questions and activities that are often part of a cleanup. But every cleanup is different. Every village has different circumstances. You will need to evaluate as best you can what you might need.

## Task and Timeline

### Questions to ask

- What wage will you need for enough laborers during this season?
- Do you have enough Hazwoper trained workers - will you need to train people and how long will that take?
- Will you be burning any wastes? Do you have a good burnbox or will you need to purchase or make one? How will burning that affect your cleanup schedule if you need to burn only when wind is downwind of village?
- Can you afford to do the full cleanup in one phase, or do you need to prioritize certain areas, etc.?
- What season/time of year do you need to do the cleanup (i.e. do you need freezeup so equipment doesn't sink?) and are there parts of your cleanup that need both summer and winter conditions?

**Timeline Issues - What are the factors/tasks that determine when you start your efforts and when the actual cleanup takes place?**

**Stakeholder buy-in & permissions & permits if necessary:**

Who is the landowner here? Are they ok with the cleanup? If this is federal or state land, technically you should contact the agency and apply for a permit. Usually though, cleanups are something the landowner wants, and most site cleanups have been done without a permit.

**Ordering supplies :**

What supplies do you need and how long will they take to come? Do you have any supplies or equipment that must be barged to save costs? Then you might need to order the summer before the cleanup. If you are ordering supplies, remember too that you need to follow your organization's "procurement" policies. Usually that means you'll need to obtain quotes for larger supplies and all equipment. You need to prove that you found the lowest, best cost deal. This process can take a few extra weeks.

**Finding and hiring laborers -**

Will you have enough workers for the cleanup? Do you need an operator? How much will you need to pay them to make sure you have workers? Is there another project during summer that workers will want to do instead? Maybe you will need to shorten your cleanup to accommodate project or subsistence schedules so you have enough workers. For example, you can hire more workers over a shorter time period to accomplish the cleanup.

**Backhauling schedule** - Can you do cleanup in time for the last barge to backhaul?

**Funding schedule** - Are there Grants or work programs that you should apply to for financial help?

**Outside Project Schedule** - Besides using up workers that you might want to hire, consider a project schedule because you can often arrange to borrow their heavy equipment when they are not using it. If the project for example stops in August, you could schedule cleanup in September.

**Possible Equipment & supply needs.** (You'll need to order or construct or rent these before the cleanup begins. ) Some common needs are:

- Protective clothing and gear (Required!) See [http://www.zendergroup.org/docs/Safety\\_gear.pdf](http://www.zendergroup.org/docs/Safety_gear.pdf)
- Supersacks?
- ATV/snomachine cart(s)? see [http://www.zendergroup.org/docs/collection\\_carts.pdf](http://www.zendergroup.org/docs/collection_carts.pdf)
- Burnbox? See <http://www.zendergroup.org/burnbox.html>
- Totes for separating? (Try for example, Arctic Wire and Rope, 562 0707)
- Trash bags? (ALPAR provides free trash bags, though you'll have to pay for shipping. To contact ALPAR call 274-3266 [www.alparalaska.com](http://www.alparalaska.com))
- Flags, stakes, hand sanitizer You can order general field supplies at most hardware stores.
- Supersacks? <http://www.zendergroup.org/docs/Supersacks.pdf>
- First Aid Kit

## Additional Big Costs & Budget Considerations

- *Personnel (remember not just the operator and laborers - what about the time needed to plan the cleanup, etc.)*
- *Oil and gas*
- *Backhaul costs*
- *Packing material costs*
- *Offsite disposal costs (e.g. for hazardous wastes)*
- *Insurance??* Sometimes the landowner will want to purchase insurance first.
- *Equipment purchase* (If you think you need heavy equipment, consider used heavy equipment. Also, you should pick heavy equipment that you can use later for the landfill or other task. IF you don't have funds for heavy equipment keep in mind that it takes at least one year to apply for and receive a grant - but typically it will take 2-5 years. You are often better off working with what you have in town and using more manual labor.
- *Equipment rental* (This is usually too expensive unless you are renting in-town)
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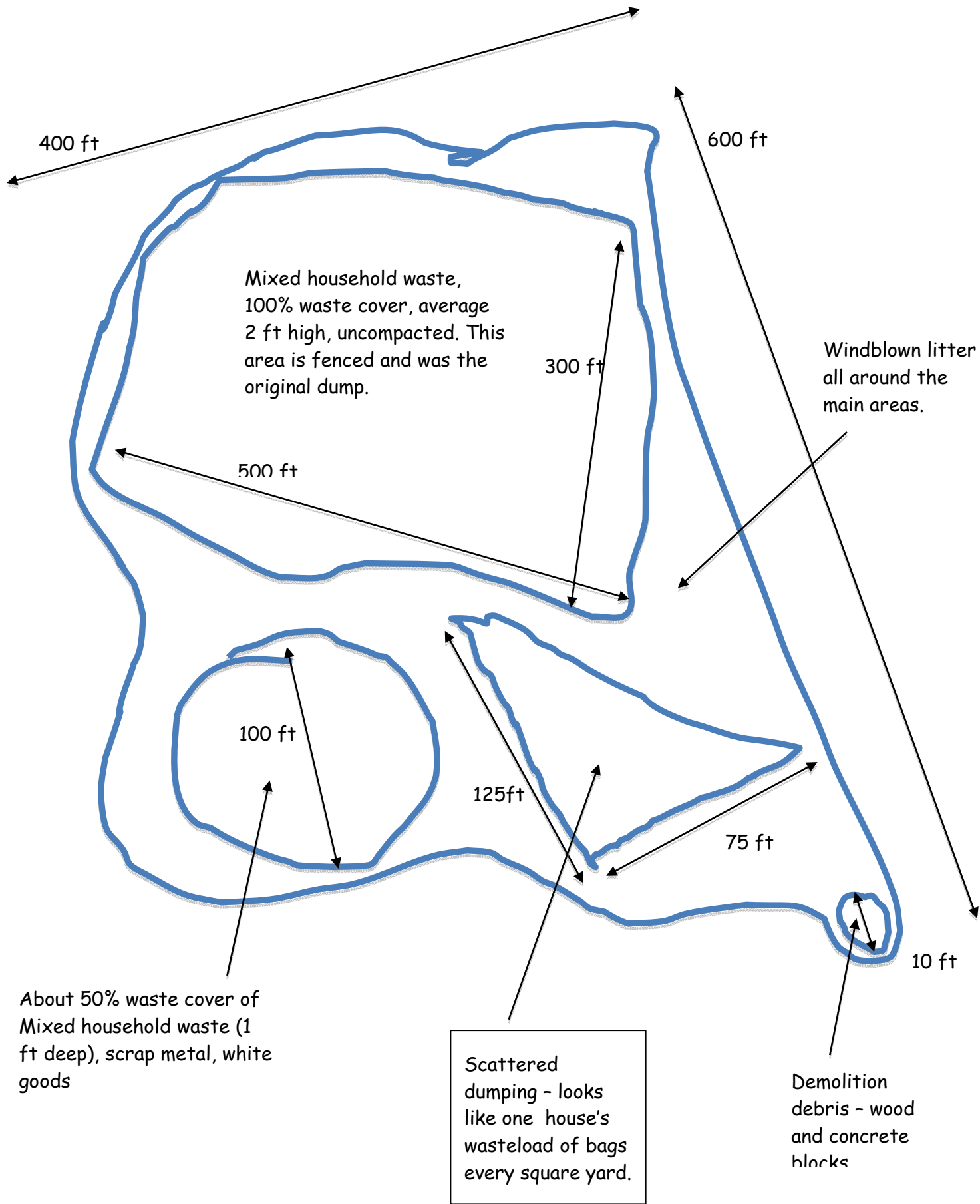
### Community

*Volunteers?* What efforts can be done to get the community involved? You might get volunteers or you might at least educate the community to support the project and stop dumping at the site, etc.

*Donations?* You might get local donations of food, money, gloves, etc.

Equipment—Note for many cleanups you are limited with budget. Because heavy equipment is very, very expensive to bring into a village, you are usually limited to using the equipment that you have. If you have only one piece of equipment, backhoes are often the most helpful, but a loader is fine or most other heavy equipment— You just need something that can crush with a bucket, drag or lift with chain or forklift, and preferably if you are looking to consolidate with equipment it should be something that can carry or push wastes.... It really depends on what you want to do with the wastes. A dumptruck is nice for roaded communities, but site cleanups generally don't need a dumptruck, unless it is used for bringing cover material.





## EXAMPLE WITH SITE DIAGRAM

The community of Alotofsnov, Alaska wants to clean up their dumpsite so they can protect the river that is nearby. They sketched out the diagram above. There are 500 people. Their dumpsite is 10 years old. They started a battery recycling program 1 year ago. 50% of people drop their batteries off there, the rest dump them at the site. They have no other recycling programs. The original site design was to keep the wastes in Section A. The problem is that their equipment broke down for a bit, and the wastes got out of hand. They have a project coming into town that will let them use their backhoe. The community wants to use this opportunity to consolidate and compact the original site area to make more room, and cleanup up the unauthorized dumping areas outside the fence and bring that trash into the site as well. If possible, they would like to recycle what they can, they would like to create a separate scrap metal pile for possible future backhaul.

### One way to approach this site diagram:

Calculate all the individual shapes and waste amounts as much as possible. To get the windblown litter pickup area - take the total area and subtract all the smaller areas. Then calculate the estimated time and relative manual versus equipment requirements for each section.

### Different sections require different labor, equipment, and cleanup rates:

1. The **main rectangular** shape should be consolidated and compacted mostly with the project equipment. Use Rate #7 for this, and remember you'll need an experienced operator.

Rectangle area =  $500 \times 300 = 150,000$  square ft =  $150000/43500$  acres = 3.44 acres

So  $3.44$  acres  $\times 6$  days/3 acres = 6.9 workdays = 1 workweek + 2 days of work.

2. **The circle section** - if there is mostly just trash bags that are somewhat sparsely set - this would be a good section for manual labor and an ATV cart or supersack. You could either calculate about how many piles of bags there are, and multiply that by the amount of time you think it would take to pick up 5 to 6 bags and drop them into a cart, or you could estimate the amount of wastes and estimate the time based on that. Figure how many bags will fit into the cart and think how long of a trip it will take to drive to the dumpsite, unload bags there, and drive back.

### *For example:*

Area =  $3.14 \times 200 \times 200 / 4 = 31400$  square ft = 3488 square yards = 0.72 acres . If there are trash bag piles every square yard - that is 3488 piles of trash. And if an average pile is about 5 bags of trash, and your atv cart fits 30 bags on average, then for every 6 piles, you will need to make a trip back and forth to your fenced area :

$3488 / 6 = 581$  trips.

You can time yourself how long it takes you to sling 1 pile of trash bags into a cart and multiply that by 581. Then you can estimate the time it would take to drive an atv from that section to your fenced area and unload the trash. Multiply that time amount by 145 trips. Remember to account for whether you can drive straight there, or whether you need to take an access road to avoid trampling plants or getting stuck.

Let's say it takes about 2 minutes to throw piled bags in a cart, and 20 minutes roundtrip:

Total time needed for 1 person and a cart = 2 minutes \* 3488 piles + 20 minutes \* 581 trips = 18596 minutes = 309 hours = 309/40 work week hours = 7.74 weeks.

If you want to cut this time down to about 2 weeks, you can employ 4 workers and 4 atv/carts. You should also add an hour each day for workers to get suited up and to drive over to the site.

**The triangle section** - you'll need a combination of equipment (because there are bulky wastes to either move or crush) and manual labor. Try estimating using Rate #1. The lower range might be a bit low because this site is near the town (easier to setup & plan) and the wastes aren't being moved very far. So maybe it would be closer to 0.5 ac/week for 1 operator and 7 laborers—or 0.25 acres with just 3 or 4 laborers.

So triangle area =  $225 * 175 * 1/2 = 19687$  square ft =  $19687/43500$  acres = 0.45 acres. This section should take about one week.

**The demolition wastes** - with this - you will need to evaluate whether it is worth cleaning up. The description is pretty harmless waste. But there is a lot of it and not easy to move. If there is any untreated wood, you can bring that to elders. But treated wood can't be burned. Ask your community how important this is to move this waste.

#### **Windblown wastes section**

Total area =  $400 * 600 = 240000$  square ft = 240000 square ft.

Subtracting the rectangle, square, and circle areas in square ft:

$240000 - 19687 - 31400 - 150000 = 38913$  sq ft =  $38913/43500 = 0.89$  acres.

Since windblown litter from about a 1 acre site can be picked up in about one week, the windblown litter here should take about 1 week as well.

### **Finally, calculating the Total Time:**

= windblown + triangle + rectangle + circle = 1 week + 1 week + 1.4 weeks + 2 weeks = 5.4 weeks

We calculated using 4 laborers. The operator is only needed for cleaning up the rectangle and triangle, though. So the operator is needed for a total of 2.4 weeks = 96 hours.

However - Unless you feel very confident, you will want to add onto this a "contingency" of 20%. This just means that since we are estimating only—we want to be sure we are leaving enough time and money in case there are difficulties.

So total cleanup time would be  $5.4 + 20\% \text{ contingency} = 5.4 + 0.20 * 5.4 = 6.5$  weeks

**We're now ready to draft out a full budget.**

The below is a very basic budget. This level of detail is helpful to start out with, and you might think of other items to add as you plan further.

Item	Basis	Quantity	Cost	Total
<b>Personnel</b>				
Operator	per hr	96	\$20	\$1,920
Laborer	per hr	260	\$15	\$3,900
Laborer	per hr	260	\$15	\$3,900
Laborer	per hr	260	\$15	\$3,900
Laborer	per hr	260	\$15	\$3,900
Planner/manager	per hr	160	18	\$2,880
				<b>\$20,400</b>
<b>Fringe</b>	lump	\$20,400	15%	<b>\$3,060</b>
<b>Supplies</b>				
Totes for batteries	per tote	17	400	\$6,800
Litter Bags	per shipment of 500	1	40	\$40
trash cart	per cart	2	2500	\$5,000
safety gear	per workcrew	1	500	\$500
misc field supplies	lump	1	200	\$200
				<b>\$12,540</b>
<b>Equipment</b>				
(backhoe is free)				
<b>Other</b>				
O & M for backhoe	per hr of operation	96	35	\$3,360
Backhaul fees	per lb	34000	0.2	\$6,800
oil & gas for atvs	per day for 2	32.5	50	\$1,625
				<b>\$11,785</b>
<b>Total</b>				<b>\$47,785</b>

## Timeline

A draft timeline is important for many things. You will need it if you want to request money for cleanup. And you will need it to make sure the cleanup can take place on schedule. When developing a timeline, it reminds you of different items to put into your budget. It is a good way to outline your overall plan. Start out with less detail, then as you get more information you can get more specific, with dates, and exactly what supplies to order, etc.

Note that if you are planning to ask for grant funds from the federal government, you'll need to find out the grant deadline in the previous year. The federal grant cycle is oct 1 - sep 30. Most grants to apply for are in the previous fall or winter—8 to 12 months before the money comes.

Here is an example of a simple draft timeline. AS you work through this, you can get more specific dates and more specific tasks.

Month	Task/Milestone	Comments
October	Falltime before it snows is a really good time to take a look at the site you want to clean up.	If there are any federal grants, such as IGAP, the grant period starts here. So look up your grant requirements.
November	Evaluating site, developing a plan. Assessing your workforce. Getting quotes for supplies.	
December	Any training needed for workers? Are there projects in town with which you need to secure equipment use from? Start talking to agencies now.	
January	Start drafting a full list of supplies & equipment you might need on the first barge. complete quotes - and start ordering	
February	Contact barge company, get any final rates, etc.	
March	Start hire process - interview, etc.	
April	Continue hire process	
May	Laborers should be hired.	
June	Barge with supplies	
July	Cleanup	
August	Cleanup	
September	Report to granting agencies	