

## INTRODUCTION

***Congratulations...you are now beginning the final step in your integrated waste management planning process. You have now reached the point where you are now ready to develop and write a integrated waste management plan for your community!***

In Workbook One, you got yourself ready to develop a integrated waste management plan. You have since gone on to complete four more workbooks that have helped you understand what is solid waste management and planning. In Workbook Two you created a vision for your community, defined goals and objectives for your community's integrated waste management plan, and identified your community's biggest concerns regarding waste management. As you completed Workbook Three you evaluated your community's current solid waste management situation and assessed your community's waste stream to determine how much and what type of waste is being generated in your community. In Workbook Four you explored several methods of solid waste management and disposal to determine which methods would be most suited for use in your community. Finally in Workbook Five you developed alternatives and compared them so that you could then select a preferred alternative that would be an integrated approach for addressing the solid waste management needs of your community and would serve as the foundation of your integrated waste management plan.

A integrated waste management plan is a practical document that can help guide your community's solid waste management efforts. It can help you:

- Define and understand current waste management practices and the system already in place in your community.
- Identify problems and deficiencies with your community's existing waste management system.
- Identify opportunities for improvement in your current system.
- Set priorities for action to address problems and improve your community's existing waste management system and practices.
- Measure progress toward implementing actions.
- Identify the resources needed and develop budgets and schedules.
- Revisit and modify priorities as the plan develops.

Your integrated waste management plan will help your community take institutional, social, financial, economic, technical, and environmental factors into consideration as it manages waste generated in your community's waste stream.

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All integrated waste management plans are not the same. Although this outline is based on the review of several existing integrated waste management plans, the order of the material and specific information presented here is not the only approach. Change the outline to fit the individual needs of your community. Depending on your community's situation you may decide to eliminate certain questions or entire sections of the outline. Also, as you go along you may find that there are questions or topics that you want to add. For example, if you are writing your integrated waste management plan to meet State of Alaska requirements for a landfill permit you will need to include cost estimate information that is not ordinarily included in a integrated waste management plan.

**What Does the State of Alaska Require in a Solid Waste Management Plan?**

***\*New Regulations will come out in 2007: See memo in attachment ADEC attachment\****

Essential components of a integrated waste management plan as stated in the Alaska Administrative Code Sec.18 AAC 60.205 Solid Waste Management Planning include:

- 1) An estimate of the quantity and source of each type of waste to be managed.
- 2) A general description of the waste collection, treatment, and disposal methods to be used and the end points of the various waste stream components.
- 3) If the system includes a landfill:
  - a calculation of the space available for disposal; and
  - the estimated total life cycle costs for a proposed new landfill or the estimated remaining life cycle costs for an existing landfill.
- 4) The expected useful life of the components of the solid waste management system, including the proposed closure date of any landfill included in the system; and
- 5) The lowest available cost estimate to transport the waste to another facility, including a general cost breakdown for each feasible waste transport alternative.

Once you have completed your draft plan, provide an opportunity for community members to review your draft plan. All interested parties should have a chance to review and comment on your draft plan. Use their comments to help you revise and finalize your draft plan. When your plan is in draft form, this is the best time to refine or change aspects of your preferred alternative. Once your draft plan is revised, it becomes your final plan that will be adopted and implemented by your community. Typically, your city or tribal government will adopt final draft of your integrated waste management plan by passing a resolution or issuing a formal letter of adoption. This is a very important step in your planning process because funding agencies like to see that this formal step has been completed. It shows that your community has accepted the final plan and made a commitment to implement and follow it.

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- 8→ Keep in mind, however, that before you implement your community’s integrated waste management plan, it may undergo many revisions because of questions raised during community review or presentation to other interested parties.

By completing Workbooks One through Five, you have already done the preparation and research necessary to make decisions about solid management options for your community. With this information you can begin to write your plan and chart a course for solid waste management in your community.

Using the worksheets in the first five workbooks, you can begin your next step in your integrated waste management planning process – writing your integrated waste management plan. Workbook Six is designed to help you with this final step. There are no worksheets in this workbook. Instead, this workbook presents an outline of the major parts of a typical integrated waste management plan. Typically a integrated waste management plan is made up of the following sections:

- Introduction;
- Community Background;
- Community Goals and Objectives;
- Past and Present Solid Waste Management Practices in Your Community;
- Solid Waste Generation in Your Community;
- Solid Waste Management Alternatives Considered for Your Community;
- Selected Alternative - Integrated Solid Waste Management Approach; and
- Implementation Strategy

Read through each section of this workbook and the accompanying questions to determine if there are any parts that you want to omit or change. As you progress through your writing your plan, you may find that you want to add sections or rearrange your format. Remember—this is your plan, and only you can decide the most appropriate way to present your information and recommendations.

Once you are done with your plan, your finished product will be a comprehensive integrated waste management plan. It will provide your community with a description of its current waste management situation, its goals and objectives, and how your community plans to achieve its goals and handle waste management over time.

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**WRITING YOUR INTEGRATED WASTE MANAGEMENT PLAN**

The outline you will be following provides a list of suggested topics that you may want to consider when writing each part of your plan. It also includes questions that you may want to answer in your plan. Before you start writing your plan, you may want to follow these steps:

- Compile all of the worksheets that you completed in Workbooks One through Five, and any other information that you think you want to include in your plan (maps of your community, copies of existing solid waste policies, results from community surveys, etc.).
- Read over the outline presented in this workbook. Are there any additions that you want to make? Are there any sections that you wish to leave out of your written plan? Are there any additional pieces of information that you may need when you start to write your plan?
- When you are ready, take Workbook Six, gather your solid waste planning work group together and begin writing your plan, using the outline as your guide.

As you write your integrated waste management plan remember that you are trying to create a working tool and document that:

- ☞ Is easy to read and understand.
- ☞ Is based on local and traditional knowledge.
- ☞ Encourages community support and participation.
- ☞ Specifies and encourages appropriate actions for your community.

You will be using information that you collected while completing the various workbooks to help you write your plan. You are now ready to go on and begin to complete Workbook Six. When you are done with this workbook you will have all the information you need to finish writing your integrated waste management plan.

## **I. Introduction**

The introduction to your plan should provide an overview of the contents of your plan. It should include the purpose of your plan, a brief summary of your community's solid waste problems, how you plan to address these problems, and a brief overview of the rest of your plan. The introduction may also include information your integrated waste management planning process, and a list of your solid waste management work members and their roles and responsibilities.

### **1. Purpose and Need for Action**

*What is the purpose of your integrated waste management plan?*

State the reason(s) why your community made the decision to establish a integrated waste management plan. For example, was it to:

- Develop short and long-term strategies for handling wastes in your community?
- Develop a framework for community based solid waste management policies?
- Undertake ways in which to correct past and present disposal practices?

*[Refer to Workbook One for information]*

### **2. Integrated waste management planning Work Group (if applicable)**

*When was your work group established?*

*What was the purpose of your work group?*

*Who established your work group?*

- Is your work group part of your city or tribal government?
- Is your work group appointed by your city or tribal council?

*Who are your work group members?*

- Are they city or tribal employees?
- Are they volunteers from your community?
- Are they Americorps members or a community or environmental planner?

*What are their responsibilities?*

- Describe the structure, make-up and functions of your solid waste management planning work group.

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*[Refer to Workbook One for information]*

**3. Timeframe**

*Over what period of time was your plan developed?*

**4. Overview of your integrated solid waste management approach**

*What alternative have you selected?*

- Briefly explain what you will be doing in your community to manage waste generated in your community and why this is the best way to handle your community's waste.

*[Refer to Workbook Five for information]*

**5. Preview of what follows**

*What is included in your integrated waste management plan?*

- List the topics included in the parts of your integrated waste management plan that follow the introduction.

**6. For additional information**

*Who is the contact for community residents' questions about the plan?*

*Who in your community should federal and state agency staff or other organizations call for information about your plan?*

*Who should other communities contact for additional information about your plan?*

## **II. Community Background**

It is helpful to include background information about your community in your plan. Information of this nature helps people living outside of your community understand the character and qualities that make your community unique. This information is often required by agencies who provide funds for planning, design and construction of solid waste facilities.

*[Refer to Workbook Two for information]*

### **1. Community Characteristics and Qualities**

*What are your community's characteristics, special features, and qualities?*

All plans need a general summary description of the community. A general discussion of your community includes the location, important geology, climate, water source and other important facts needed to understand your community. For example:

- How long has your community existed?
- What are significant features of your community (is it near a river or a lake)?
- How far is it from nearest regional hub?
- What type of transportation is available to and from your community?
- Is your community on the road system or a river?

*What are your community's environmental conditions?*

- Where does drinking water for your community come from?
- What is the geography of your area (i.e., climate, land features, and location)?
- What type of soils are found in your area (e.g. gravel, clay, tundra)?
- Is there permafrost in your area?
- How high is your groundwater table?
- Is your area susceptibility to flooding and where are they located?

*What makes up your community's economic and public infrastructure?*

This information will help identify potential waste generators in your community.

- What businesses (e.g., store, cannery, etc.) are located in your community?
- What community facilities (e.g., school, tribal building, health clinic, community hall, washeteria, generator building, etc) are located in your community?
- Does your community have a water and sewer system or does it use honeybuckets?
- What utility services are provided in your community and how much do local residents and businesses pay for these services?

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*Are there important subsistence areas near your community that local residents utilize on a regular basis and where are they?*

*Are there any other services or organizations located in the community?*

**2. Social Characteristics of Your Community**

*What is the size of your community?*

Knowing about your community's population characteristic is important when planning for solid waste management needs. It is important that you know how many people live in your community and how fast your community is growing.

- How many people are living in your community now?
- How many houses are there in your community?
- How many people were living in your community population in 1990?

*What is the political structure of your community?*

- Are there any state or federal offices in your community?
- How many schools are there in your community?
- What is the structure and form of your local government?

### **III. Goals and Objectives**

In the first two parts of your plan, you provided an overview of your integrated waste management planning process and your community's characteristics. In this section of your plan you will focus on describing your community's vision and solid waste management goals and objectives. In addition, you will provide an overview of your community's solid waste problems. Use this part of your plan to clearly describe the goals and objectives that you developed for your integrated waste management plan based on the results of your community survey and community meetings. You may decide to arrange the goals according to your community's priorities or can divide them into short and long term goals. You should also describe specific objectives that will help you reach each goal.

#### **1. Community Vision**

*What is your community's vision for its future?*

*[Refer to Workbook Two for information]*

#### **2. Integrated waste management plan Goals**

*What are your community's solid waste management goals?*

*[Refer to Workbooks Two and Three for information]*

#### **3. Solid waste management objectives**

*What are your community's solid waste management objectives so it can achieve its goals?*

*[Refer to Workbook Two for information]*

#### **4. Community Needs**

*What are your community's solid waste management issue and concerns?*

Provide an overview of your community's solid waste management problems and a description of community needs with respect to addressing these problems.

*[Refer to Workbook Two for information]*

## **IV. Past and Present Solid Waste Management Practices**

In this part of your plan, use the information you compiled in Workbook Three to explain the history of solid waste management in your community, including waste disposal practices and actual or potential problems caused by these practices. Describe community attitudes about your current situation, such as concern for the land and willingness to participate in a solid waste management program (this information comes from your community survey you conducted). You may also wish to discuss the resources available to the community for solid waste management, and management opportunities that you have explored. Once again, before you start to write, read through the outline to determine if there are sections that you want to change or leave out or add.

*[Refer to Workbook Three for information]*

### **1. History of Waste Management Practices**

*How is solid waste currently managed in your community?*

*What are the most common waste disposal practices used by local residents and businesses?*

*What actual problems are related to these waste management practices?*

*What are some potential problems that could occur in your community if these waste management practices are not changed?*

*What solid waste management codes/policies (if any) does your community currently have in effect?*

*Does your community need to develop a code as part of its plan or change any parts of its present code (if your community has one)?*

### **2. Community Attitudes about Solid Waste Management**

*What are the common attitudes about solid waste management in the community?*

*Are your community members and businesses willing to participate in a community-based solid waste management program? In what ways?*

### **3. Available Resources**

*How much money is currently available for solid waste management?*

*What is your best estimate about how much money you can obtain to cover capital costs?*

*What sources have you located to assist in funding parts of your solid waste management program?*

*What are applicable state or federal regulatory requirements?*

## **V. Solid Waste Generation**

You probably spent significant effort preparing for and conducting your waste stream assessment and analysis. Use this part of your plan to describe the process that you used to conduct your assessment and its results. A detailed explanation of your efforts and the results will help support why you selected your preferred alternative. For example, your waste stream assessment may have shown that a large percentage of the waste generated in your community is paper that can be incinerated. This could help explain the reason for including waste combustion (i.e., burn box) in the integrated solid waste management approach presented in your plan.

*[Refer to Workbook Three for information]*

### **1. Waste stream assessment planning process**

*How many households and businesses did you sample?*

*How did you select which households and businesses you sampled?*

*What was the process you used for conducting your waste stream assessment?*

*How do you think the season in which you conducted your waste stream assessment affected your results?*

### **2. Waste Stream Analysis**

If your community has not completed a waste stream analysis you should consider going back and doing one. This is basically an estimate of the amount and type of waste that your community generates and needs to manage and dispose of properly. You will need this information to make decisions about what are the best methods of waste disposal for your community.

*Based on your waste stream assessment, what is your estimate of how much household waste is generated per day, per person in your community? And how much waste do businesses in your community generate per day?*

*Based on your waste stream assessment, what is the total quantity of waste generated per day in your community?*

*What types of waste are most commonly found in your community's waste stream? Be sure to identify how much of each type of waste is being generated.*

*Based on your estimated changes in your community's future population size and economic activities, what is the projected future waste stream for your community?*

*Based on your community's waste stream describe any opportunities for waste reduction and recycling that might be used to reduce the volume of waste in your community's waste stream?*

## **VI. Integrated Solid Waste Management Approach**

The integrated approach that you selected in Workbook Five is the core of your integrated waste management plan. All of the information you have developed to this point should support the decisions you made. As part of your plan you should briefly describe each waste management alternative that you evaluated, including a brief description of the advantages and disadvantages identified for each alternative. After describing what you considering then the next part of your integrated waste management plan should provide a detailed description of the alternative that you selected for implementation. Be sure to include the reasons why your selected this alternative. In addition, you should identify which goals that your preferred alternative will help your community achieve. The more information that you provide in this part of your plan, the fewer questions you will have from community members, and the more support you will have for implementing your integrated waste management plan.

In order to have an integrated waste management plan your written plan should include a description of the following:

### **1. Selection Process for Preferred Alternative**

Briefly describe the process you used to evaluate the solid waste management alternatives you explored and evaluated. Explain the following:

Public participation process

- a. Advisory group participation (i.e., solid waste planning work group)
- b. Community survey
- c. Community meetings

Briefly describe each of the solid waste management alternatives that you explored and evaluated. For each alternative, explain the following:

- a. Concept or methods you considered;
- b. How it could be implemented;
- c. Costs
- d. Financing Options (how would your community pay for it);
- e. Advantages and disadvantages (i.e., pros and cons);
- f. Changes to existing solid waste management practices and codes, if any, that would be necessary; and
- g. Other issues or uncertainties.

**[Refer to Workbook Four for information.]**

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**2. Integrated solid waste management approach**

This part of your integrated waste management plan is a detailed description of the waste collection, treatment, and disposal methods you will be using in your community for the various types of waste being generated in your community. For example, you may have selected an alternative where your community will: burn cardboard in the local incinerator; recycle aluminum cans and ship them to Anchorage for processing; burn waste oil in a waste oil burner that is hooked up to the community public works building to heat the building; use Super-Sacks to store waste at your landfill; and establish a composting program for local residents to compost their food wastes.

**[Refer to Workbook Five for information.]**

Describe the integrated waste management approach that your community selected. Be sure to describe any waste combustion, recycling, shredding, baling, compacting, composting, and salvage/reuse that will be done in your community or at your landfill. Your description should include the following:

- a. Description of the methods that you selected;
- b. Explanation of how your preferred alternative will be implemented;
- c. Description of your community will pay for implementing and operating each waste disposal method that you include in your plan;
- d. Description of the advantages and disadvantages of the alternative you selected;
- e. Description of any changes to existing solid waste management practices and codes, if any, that will be needed to successfully implement your plan; and
- f. Discussion of any other issues you consider important to your solid waste management plan.

Other waste management issues to consider for inclusion in your solid waste management plan.

- a. Describe how will you operate and maintain your solid waste management system.
- b. How will your community manage special wastes including junk vehicles, old appliances, used batteries, honeybucket waste, and construction debris?
- c. How will your community handle and dispose of hazardous wastes, especially household hazardous wastes?
- d. Will your integrated waste management plan include closing your open dump? If your community is planning on closing its open dump, then provide a description of your plans for how you will close your open dump

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**3. Plan implementation**

This part of your integrated waste management plan should include a timeline and identify the various steps that must be taken to implement your plan and establish a solid waste program for your community. Something you should consider when thinking about implementing your plan is what will need to be done in the future. This part of the plan should include an estimate of the number of people that will be served by the solid waste program. If your community has more than 1000 people , you may be generating more than five tons of solid waste a day and will need to plan for developing a Class II landfill. Other things to consider are whether or not your community has suitable land available for landfill sites and how much will be needed. If your community already has equipment and buildings that it will be used as part of your community’s solid waste program, then it is important to know their expected life so plans can be made for replacement when the time comes.

*What is your timeline for implementing your integrated waste management plan?*

*What needs to be done in order to implement your integrated solid waste management plan and establish a solid waste program in your community?*

Describe the following:

- Financing Options;
- Grants that may support your solid waste management program;
- Opportunities for partnerships with other communities, businesses, or state and federal agencies;
- Public awareness and public education activities;
- Code development, compliance and enforcement;

**MONITORING AND EVALUATING YOUR WASTE MANAGEMENT PLAN**

Integrated solid waste decision making is an ongoing process. Monitoring and evaluating your plan and solid waste management program performance allows community decision makers to determine whether objectives are being met and whether goals will be reached. Areas that may not have been considered potential trouble spots during the planning process may be identified, and monitoring and evaluation can also provide insight into possible ways of improving your program and waste management system.

## **VI. Conclusion: Wrapping It All Up**

**CONGRATULATIONS!** *You have completed the first draft of you Integrated Waste Management Plan.*

The adoption of an integrated approach for managing your community's solid waste isn't just the development of an "*Integrated waste management plan*". It is the adoption of a style of waste management and living which is unfamiliar to most rural communities and residents. For your plan to be successful, it will require the commitment of your community's leaders and the acceptance and involvement of all members of your community, including local businesses.

The results of adopting such an approach to solid waste management will be better management; management that is in step with your community's vision for the future. Over time a higher level of community pride and awareness will be developed. In addition, a higher level of participation in properly managing waste in your community will occur and local residents will develop a much better understanding of how to properly manage and dispose of waste they generate.

Adopting an integrated approach to solid waste management will result in a strong expression of local control over waste in your community and further community efforts to protect the environment and public health.

### **1. Review of the Draft Plan**

Identify several individuals who are willing to review your draft plan, and then have them read and provide comments about any changes they see as necessary to make your plan more appropriate for your community. Be sure local residents and businesses are given an opportunity to review and comment upon your draft plan.

Your reviewers can be members of your city or tribal council, community members, or staff from state agencies, depending on your relationship you have established with these agencies. Remember that the purpose of your plan is to introduce members of your community and other interested parties to your community's new solid waste management approach. In the end, you will want your plan to be as clear as possible. Additionally, other communities may be interested in your decision-making process. Be prepared for some questions and suggestions, and possibly to re-write your plan document because of suggestions made by those reviewing your draft plan. Remember your plan is the first step toward changing the way that waste has been handled in your community for many years.

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If you selected as part of your integrated approach closure of your existing dump and construction of a new landfill, you will probably need to work with experts to conduct more detailed analyses of your waste stream, assess risks to human health and the environment, develop a closure plan and landfill design, and determine exact costs. Other approaches may also require more analyses, but you can probably work with what you already have. In summary, the review of your plan should include:

- Having others review your plan;
- Sharing your plan with local residents and businesses to gather public input;
- Seeking experts to review your plan to ensure it is feasible for your community.

Revise your draft plan based on comments received during the review of your draft plan.

**2. Adopt Your Integrated Waste Management Plan**

City and/or Tribal government should take action to adopt the final draft of your integrated waste management plan. Adoption can be by letter of acceptance, resolution, or other formal process used locally to implement community policies and plans.

**3. Begin Process to Implement Your Integrated Waste Management Plan & Program**

For many years, not much attention was paid to where landfills were located in rural communities or how these communities handled their garbage and wastes. As communities have grown, people have become more aware of problems associated with open dumps and improper disposal of waste. We now know that improperly disposed of waste can cause serious environmental and public health problems. With these public concerns and awareness, your community's choice of how it manages its waste will be looked at more closely in the coming years.

We hope that this *Resource Guide* and the accompanying workbooks have helped you better understand how you can properly manage waste in your community. In addition, we hope it has provided you with the information and guidance needed to prepare and write a integrated waste management plan. Now that you have completed your plan, you are ready to begin implementing it and setting up a solid waste program for your community. A well-developed integrated waste management plan with realistic goals is one of the best tools your community can have for securing state and federal funding. With your plan completed, you now have the vehicle needed to set your community on a journey that will lead to a clean and healthy environment around your community.

**ARE YOU READY TO MOVE ON?**

- Is your community vision reflected in your plan?
- Will your plan help your community meet its solid waste goals and complete the objectives that have been established?
- Is your plan based on an integrated approach to solid waste management?
- Have you included all the necessary information into your plan?
- Did you provide community members and others with an opportunity to review and comment upon your draft plan?
- Did you revise your draft plan based on the comments you may have received from community members and other reviewers for your plan?
- Have you written your final plan?
- Has your Tribal and/or City Council formally adopted or approved the final plan?

**If you answered yes to these questions, then you have a plan. You are ready to move on to establishing your solid waste management program and implementing your plan.**

**If you answered no to any of the questions, go back and try to complete the step. You should take whatever action is needed to complete that step. These steps need to be completed if you are to finish and adopt a community based integrated waste management plan for your community.**

## **IMPLEMENTING YOUR INTEGRATED WASTE MANAGEMENT PLAN**

**Once you have developed and adopted your integrated waste management plan, you need to figure out how to put it into action. This section is about how to implement your integrated waste management plan.**

### **Developing a Solid Waste Management Program**

A solid waste management program typically contains:

- A list of actions to undertake (things to do) in order of importance.
- A short description of each action.
- A schedule for seeking funded, if needed.
- A schedule for implementing your integrated waste management plan.

A solid waste management program should group related work items together into separate projects. For each project, your solid waste planning work group should estimate the cost of the project and maintaining it.

### ***Key Components of a Successful Community-Based Solid Waste Management Program***

#### **➔ Public Awareness and Public Education**

Everyone in your community and surrounding area needs to know how to follow your integrated waste management plan once it is adopted. Community members need to be informed of any new policies and requirements for disposing of waste in your community. There are many ways you can inform your community, including using posters, flyers, public announcements over the CB or local radio/tv stations, community meetings, or word-of-mouth to tell everyone. Announcing new programs at schools and community meetings can be very helpful. Poster contests or community activities to start a new program can help spread the word. If possible have individuals go to businesses, homes, the school, and various community meetings to explain your new plan.

When a community has developed a integrated waste management plan a public education program is essential to make sure that everyone understands how to use a community's new solid waste management system. Public education programs can include sending flyers to all landfill users describing the new system, including how, when and where wastes will be collected and disposed of. Posters can be placed in public places, describing the importance of following the integrated waste management plan and highlighting the benefits. Recycling programs and community clean-up days can be organized, and can involve the schools. For a integrated waste management plan to be successful, everyone must be part of the process, recognizing the successes, and discussing the problems.

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- a. What type of public education program will you use in your community?
- b. How will you educate and inform community members and businesses about your community's solid waste plan and program?

**➔ Plan and Program Administration**

Once you have adopted your plan and begin establishing your solid waste management you need to determine how you are going to administer and manage your plan and program on a regular basis. The primary activities for administering your plan include the following:

- Assigning responsibility for operating and maintaining your community's waste management system and program.
- Identifying resources that will be needed to implement your plan and program.
- Establishing a budget for implementing your plan and operating your solid waste management program.
- Determining how you will pay for your solid waste management system and program.
- Establishing methods for enforcing your plan and program requirements.
- Adopting policies or codes to implement your integrated waste management plan and program.

**A. Operation & Maintenance**

Responsibility for operation and maintenance should be assigned in your plan.

1. Training.

- a. What employee training will be necessary for operation, maintenance, sampling and self-inspections, record-keeping, hazardous materials handling, and emergency response?
- b. How many people within your community will need to be trained (at least three is recommended)?
- c. How often will staff need training updates?
- d. How will training be provided?

2. Operation.

- a. Who will operate your new waste management system?
- b. What responsibilities will your operator have?
- c. Will your operator be paid enough to do a good job?

3. Maintenance.

- a. Who will maintain equipment and facilities?
- b. What will be the maintenance persons' responsibilities?

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4. Sampling/Inspections.

- a. How will environmental sampling or inspections be conducted to detect and correct environmental problems?
- b. If waste, water, air, or soil sampling is necessary, who will collect samples? Perform analyses? Ship samples?

5. Record Keeping.

- a. What records should be kept?
- b. Will volume or weight of waste or recyclables be recorded?
- c. Who will keep these records?

6. Supervision.

- a. Will your collection center or disposal site be supervised? By whom? At what times?

7. Emergency Response Plan.

- a. How will accidents such as fires, floods, or toxic spills be handled?
- b. What other types of accidents might happen?
- c. What will be done to prevent such accidents?
- e. Who will respond to accidents?  
What training will they get?  
How will their safety be protected?

B. Resources

Identify the resources you need to implement your plan. Resources are those items that are needed to carry out your integrated waste management plan and operate your solid waste program. Typically, you will need staff, equipment, materials, facilities, and outside services. You can use the following checklist as a guide. Add anything that is missing.

C. Program Budget and Estimated Costs

The first cost of disposal is that we usually paid something for the products we later throw away. Even if waste we throw away did not cost us anything to start with, it will cost us something to throw it away. This is true regardless of whether or not your community charges local residents and businesses a fee for disposing of their waste. Even if your community doesn't manage solid waste now, it will still cost your community money down the road if a pollution problem is created which hurts your local economy or requires expensive cleanup. Different costs associated with a solid waste management program may include any of the following:

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1. Transportation costs

This cost includes all those expenses associated with transporting your community's waste to a disposal site, whether it is to your community landfill or a recycling center in Anchorage. Whether individuals haul waste to your disposal site or a community garbage service picks it up for businesses and households, it costs money to buy, maintain and operate the vehicles for transporting and hauling waste.

2. Land

Land has value. Although most communities do not have to buy the land that is utilized for the community landfill, this land still has a potential monetary value. There may be more profitable uses for a particular piece of land, than using it for a landfill. That value is lost when the site is turned into a landfill.

3. Time

It takes people's time to plan and run a community waste disposal site. Unless someone takes the time to maintain the site, it will become an eyesore, fire hazard, health threat and a nuisance. If someone is hired to maintain and operate your disposal site, it will also take time to oversee that person. Even if waste is shipped out of your community, it will still take someone's time to work out the shipping arrangements and prepare the waste or recyclables for shipping.

4. Equipment

If any equipment is used for transportation, maintaining your disposal site or treating your waste (such as burning or baling), that equipment will cost money to purchase, operate and maintain.

5. Facilities

Incinerators, landfills, transfer stations, storage sheds and other facilities all cost money for planning, design, construction, operation and maintenance.

6. Environmental Monitoring

Air and water quality monitoring are required for certain types of landfill facilities and dump closure sites. The amount and frequency of monitoring will vary depending on the facility or site being monitored. This can be very costly, but it is also important to ensure protection of your community and surrounding land and water areas by conducting monitoring and sampling activities when necessary.

7. Open Dump or Landfill Closure

When an open dump or landfill is closed, there are specific practices which must be followed to make sure that the site does not create any future pollution

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problems. For example, a landfill must be covered and maintained. Ongoing maintenance can be required for 10 to 30 or more years. If you are planning on closing an open dump or your existing landfill because it is full you need to budget for the cost of completing a dump or landfill closure project.

When completing your budget for implementing your plan and starting your integrated waste management plan you need to consider three types of costs: initial costs; ongoing costs; and replacement costs.

1. Initial Costs

- a. What are the start-up costs for implementing your community's plan?
- b. Which are capital costs?
- c. Which are one-time or ongoing education, research, and planning costs?

2. Ongoing Costs

- a. What are the costs of operating and maintaining your plan?
- b. What are the costs of operating and maintaining your solid waste program?

3. Replacement Costs

- a. What will it cost to replace equipment and facilities in the future?
- b. If your plan includes a landfill, what funds will be needed to close your existing dump or landfill?
- c. What will it cost to build a new landfill?
- d. What funds need to be set aside for future expansion?
- e. How will funds for equipment replacement or landfill expansion be collected over the span of your plan and program?
- f. Is inflation taken into account for future expenses?

4. Hidden Costs

Are there hidden costs associated with waste disposal in your community (e.g., toxic leaks from your landfill into your community's groundwater table or an open dump that is very expensive to close)?

D. Paying for Your Integrated Waste Management Plan and Program

A variety of options are available to finance a solid waste management program for your community, each with advantages and disadvantages. The key question to determining how you will pay for implementing your integrated waste management plan and operating a solid waste program for your community is to ask "Who pays for garbage disposal in your community?" Once you have answered this question you will be able to select the appropriate method of raising revenue to pay for your community's program.

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Many communities only charge a small fee for waste disposal, but then they charge higher sales or property taxes to help pay for waste disposal in their community. It is best if those who produce the waste to pay for the actual cost of its disposal. Not only is this fair, but it provides incentives to reduce and recycle waste and save money. Types of user fees to consider include the following:

*a. User Fees*

Variable rate/sliding scale fee (volume) can be based on the weight or volume of the waste, or on a “per container” or “per haul” (“tipping fee”) basis. The more waste, the higher the cost for disposing of it.

Variable rate fee (type) can be based on the type of waste, reflecting the higher costs of properly disposing of hazardous or special wastes. Household hazardous waste would cost more to dispose of than food waste.

Flat fee, based on the average cost, can be charged to everyone who lives in the community. Different flat fees could be charged for households, government, business, and commercial (canneries) users. If illegal dumping cannot be controlled, a flat fee charged to everyone might be easier to enforce than a variable rate. The problem with a flat fee is that it provides no incentives or rewards for reducing waste.

*b. Deposits, Surtaxes, Import Tax*

A deposit, surtax, or import tax could be charged when certain products are sold. Deposits provide incentive to properly dispose of waste and have been used successfully to reduce litter. Surtaxes or import taxes make the buyers of a product pay for the cost of its disposal up front, which then provides an incentive to choose products which are cheaper and easier to dispose of. Surtaxes, import taxes and deposits are becoming more popular to ensure proper disposal of hazardous and special wastes, such as batteries, tires, and vehicles.

*c. General Tax Subsidies*

General property or sales taxes can be used to subsidize solid waste management in your community. The big drawback with this funding source is that it provides no financial incentive or reward for reducing waste because the costs are indirect and essentially hidden. Also, most small rural communities in Alaska do not have the legal authority to impose sales or property taxes.

*d. Incentives*

Incentives can be offered to people who produce less garbage, or to those who sort recyclables, compost their organic waste, or burn their own wood and paper trash. Possible incentives are rewards, prizes, vouchers for services, and tax credits. The type of incentive is only limited by your creativity.

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*e. Grants.*

Grants are usually available only for one-time expenses, such as studies, planning, construction, equipment purchases, or demonstration projects. The availability of grants changes constantly. Some grants are administered by technical assistance agencies (EPA, ADEC, Denali Commission, etc), while others are administered by the community or organization receiving the grant. For grants which are administered by technical assistance agencies, have a community representative work closely with the agency on all aspects of your grant, including preparing the grant proposal and selecting the contractor so you're you ensure that your community concerns are satisfied.

**E. Enforcement**

If illegal dumping is a serious problem in your community or local residents or businesses need an incentive to participate in your community's solid waste management program, you may want to consider establishing guidelines for how you will enforce your plan and encourage community members to participate in your community's solid waste program.

1. Is your program voluntary or required?
2. What will be done if it is not followed?
3. Who will enforce it?
4. How will it be enforced?
5. What will be required of violators (fines, penalties, etc.)?

**F. Policies**

One of the most effective ways to encourage community participation in your solid waste program is to implement community policies or a community code that promote the proper disposal of waste, recycling and waste reduction in your community.

- a. Will policies, ordinances or tribal codes be used to promote waste reduction, reuse, and recycling?
- b. What policies, ordinances or tribal codes will promote other aspects of your plan? Are policies or ordinances needed to implement your plan or for funding your integrated solid waste management plan? Who must adopt these?

**➔ Time Schedule**

An important element of your integrated waste management plan is the timeframe you use to implement your plan and start up your solid waste management program. As part of your plan you will want to include an approximate timeline for accomplishing high priority objectives; identify key persons to work on each objective; and provide an

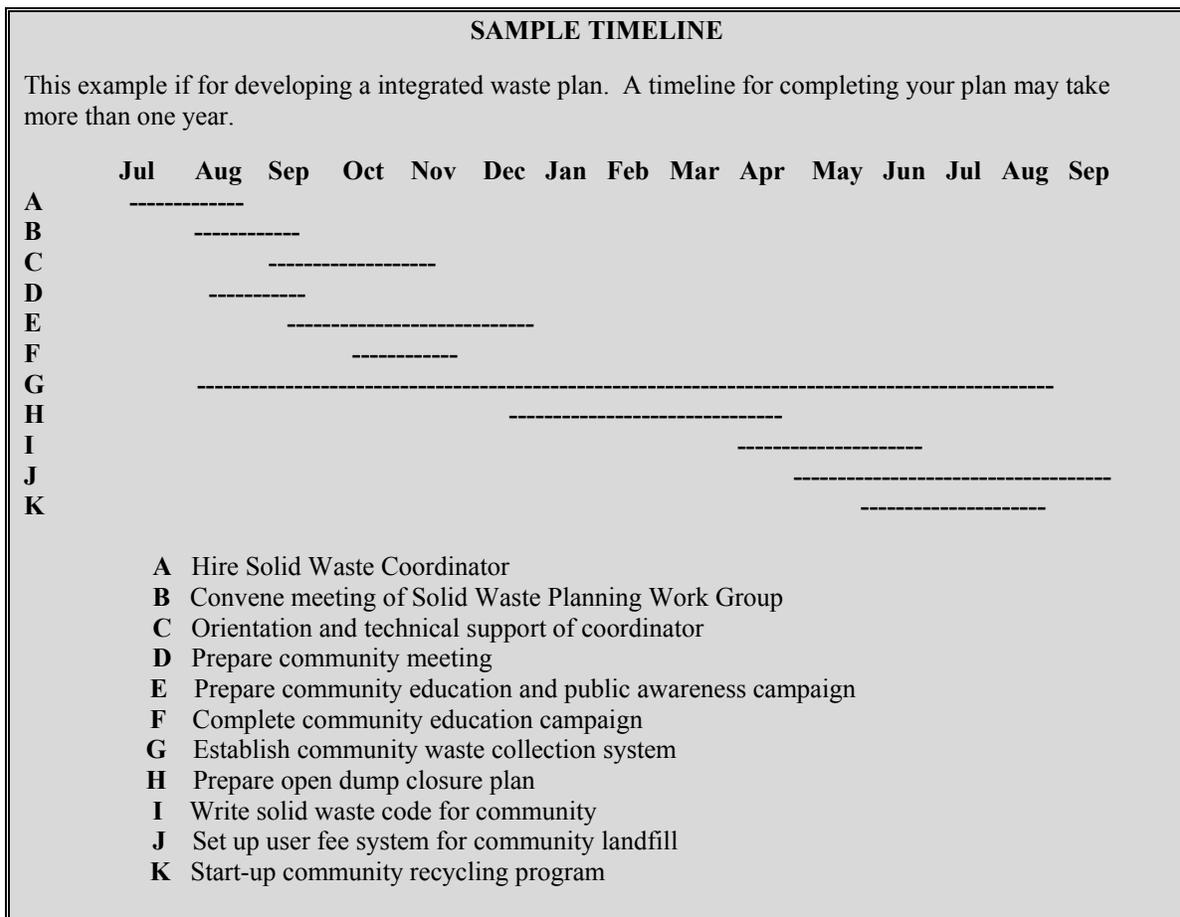
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estimate of the resources and costs that will be required to accomplish each of your objectives.

You can develop your time schedule by listing the tasks that must be completed in order to implement your plan and program. Your schedule will be the estimated timeline required to complete your plan. Each task will have an estimated starting and completion date. You should also note when tasks must be completed in a certain order.

If you do not want to create a timeline you can set up your planning schedule on a calendar. Simply put each task on the calendar, showing how long it will take and when it will be done. Remember it may take more than a year to implement your plan.



**➔ Self-Evaluation**

Solid waste management is an on-going process. Monitoring and evaluating program performance allows your community to determine whether objectives are being met and whether your community's goals will be reached. As you are monitoring your plan you may find that areas that may not have been considered potential trouble spots during the planning process may now be identified. Monitoring and evaluation can also provide

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insight into possible ways of improving your community's solid waste program and waste management system.

You should reevaluate your plan every six months to identify its strengths and weaknesses and make changes if needed. No single integrated waste management plan can foresee or prevent all possible problems or changes. You can use the questions below to re-evaluate your plan.

1. Will your plan be an improvement over existing conditions? If no, why doesn't it improve existing conditions?
2. Were the criteria you used appropriate?
3. Should the criteria be changed?
4. What new problems might be created by your plan?
5. Are there feasible options which satisfy the criteria better? If there are better options, what are they and why weren't they considered before?
6. Is your plan the best choice for your community? If it isn't the best choice, what can be done to make it better for your community?

**RESOURCES CHECKLIST**

*Required Resources for Plan & Program Implementation*

**STAFF**

- Describe positions needed and qualifications (e.g., landfill operator, supervisor, drivers, pick-up crew, bookkeeper, etc).
- Describe hours to be worked (full-time or part-time, year round or seasonal).

**SUPPLIES--EQUIPMENT--MATERIALS**

- Containers for collection and/or storage
- Vehicles for pick-up, transfer, maintenance, compacting
- Machinery for processing waste: weighing scales, balers, incinerators, burn boxes, crushers, etc.
- Personal protective equipment: gloves, coveralls, goggles, ear plugs, etc.
- Office equipment and supplies (computer, desk, telephone)

**FACILITIES – CURRENT AND FUTURE EXPANSION**

- Buildings and offices
- Collection centers or boxes
- Incinerators, burn boxes, waste oil burners
- Landfill, fences, salvage area
- Storage areas or sheds

**LAND – CURRENT AND FUTURE EXPANSION**

- Landfill site
- Expansion area
- Other facility sites

**SERVICES**

- Staff training
- Landfill design consultant or engineers
- Construction contractors for new landfill
- Shipping services for recyclables
- Sampling & laboratory analyses for certified laboratories

**OTHER**

- \_\_\_\_\_
- \_\_\_\_\_
- \_\_\_\_\_

**WORKSHEET Set 1:**

***SOLID WASTE MANAGEMENT IMPLEMENTATION PLAN***

**Once your community develops its solid waste plan, you solid waste planning work group needs to figure out how to put your community's plan into action. This worksheet will help you develop a strategy for implementing your integrated waste management plan.**

❖ **PUBLIC EDUCATION**

To educate our community about our new integrated waste management plan and program, we will do the following:

❖ **ADMINISTRATION**

**1. Operation and Maintenance**

- a. Our operation and maintenance plan will be developed by:
  
  
  
  
  
  
  
  
  
  
- b. Our operation and maintenance plan will be carried out by:
  
  
  
  
  
  
  
  
  
  
- c. Our operation and maintenance plan will ensure the following:

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**2. Budget**

- a. The budget to implement our integrated waste management plan is attached (attach a budget or cost estimate).
  
- b. The budget to implement our solid waste management program is attached (attach a budget or cost estimate).

**3. Revenue**

- a. We will pay for the implementation of our integrated waste management plan in the following way:
  
- b. We will pay for the implementation our community's solid waste management program in the following way:

**4. Enforcement**

- a. Our integrated waste management plan will be enforced in the following way:

**5. Policies**

- a. Policies or ordinances which have been proposed or adopted as part of our solid waste management plan are listed here:

