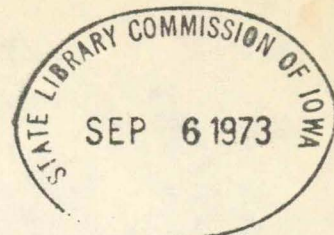


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IOWA STATE GUIDELINES FOR THE DEVELOPMENT OF  
LOCAL SOLID WASTE MANAGEMENT PLANS  
3rd Edition

Every worthwhile human effort is directed toward particular goals and successful planning is no exception. The goals themselves are the ideals which are strived for by both individuals or groups. A goal may be as simple as winning a game in individual competition or as complicated as the attainment of world peace. However all goals are approached by attainment of many smaller accomplishments or objectives, whether the objective be the attainment of the next point or a Presidential Summit Conference in Red China.

The goals of every solid waste management system are probably similar to the state goal, which is to protect the citizens of this state from such hazards to their health, safety, and welfare that result from the uncontrolled disposal of solid wastes by providing sanitary disposal projects for the final disposition of solid wastes which are both economical and efficient.

Solid waste management like any other worthwhile effort must be coordinated and directed. The formation of a planning group, consisting of interested and capable citizens or of permanent, paid, staff members with a director is the necessary vehicle for this coordination.

The purpose of any set of guidelines is to direct the thinking of those planning groups toward a common goal and to provide them with the tools necessary for the generation of a comprehensive solid waste management system. The planning

group must consider all the factors of a solid waste management system: storage, collection, transportation, processing, recycling, disposal, organization and management; in order for their plan to be truly comprehensive.

In many cases the guidelines are just a listing of requirements and provide the user with no other information. The purpose of the Iowa State Guidelines for the Development of Local Solid Waste Management Plans is two fold.

First, to provide local planning groups with a method for planning which will result in the total involvement of their members.

Secondly, to provide the local planning groups with the minimum requirements for a comprehensive solid waste management plan, regardless of whether the planning is done locally or by consultants.

The guidelines presented herein are more or less standard, however, the format for their presentation is not. The "Value Analysis" approach attempts to acquaint the group with a planning process which should increase their chance of success.

It is vital for a planning group to set up a planning process which allows it to operate with great efficiency regarding its own efforts, and which is at the same time, capable of a response to all external factors in a continually changing planning environment. In this regard the planning group must be able to base its decisions on reliable, timely, and relevant information. Thus, the structure of the information system for the project must be thoroughly planned.

The "Value Analysis" approach suggested in these guidelines will provide a planning process which will be both timely and relevant.

The "Value Analysis Method" consists of five phases which draw together and utilize any and all techniques necessary for achieving the desired goal. The first phase of the "Value Analysis" is called the Information Phase and as its name suggests it is informational in nature. Its purposes are to gather and tabulate data on the present system and its environment, to evaluate that data in order to determine the system's shortcomings and to set the study objectives.

The purpose of the second or Speculative Phase is to generate alternative approaches for accomplishing the objectives. The techniques involved here is the "brain-storming" approach in order to generate creative thinking.

The third or Analytical Phase is used to examine all the system alternatives proposed in the speculative phase. At this point all obviously unworkable or unpromising approaches should be eliminated.

The fourth or Planning Stage is where a formal program of investigation of each of the most promising alternative systems is carried out. In this phase the decision is reached as to the system of solid waste management that is to be recommended.

The fifth and final phase is the Plan Submission, a final plan for implementation is formally prepared from the recommendations previously generated.

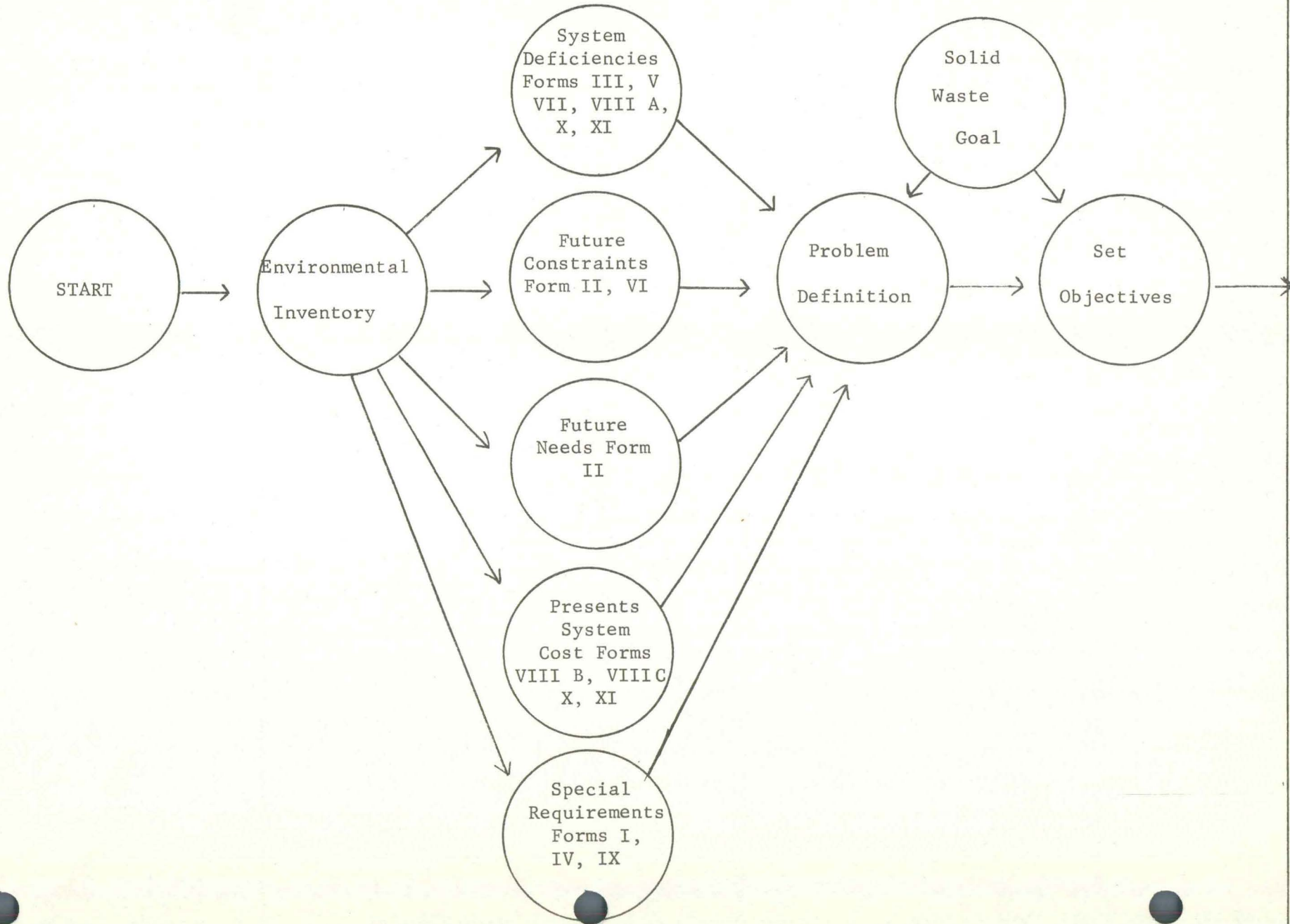
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The "Value Analysis" approach provides a practical method of generating a comprehensive solid waste management plan. However, the procedures suggested here represent a minimal approach to planning, and in all cases the final plan for any solid waste system will have to conform with Iowa State Law, Chapter 406, Code of Iowa, 1971 and the Iowa State Department of Health Rules under Title XXV Sanitary Disposal Projects.

SOLID WASTE PLANNING FLOW SHEET

INFORMATION PHASE

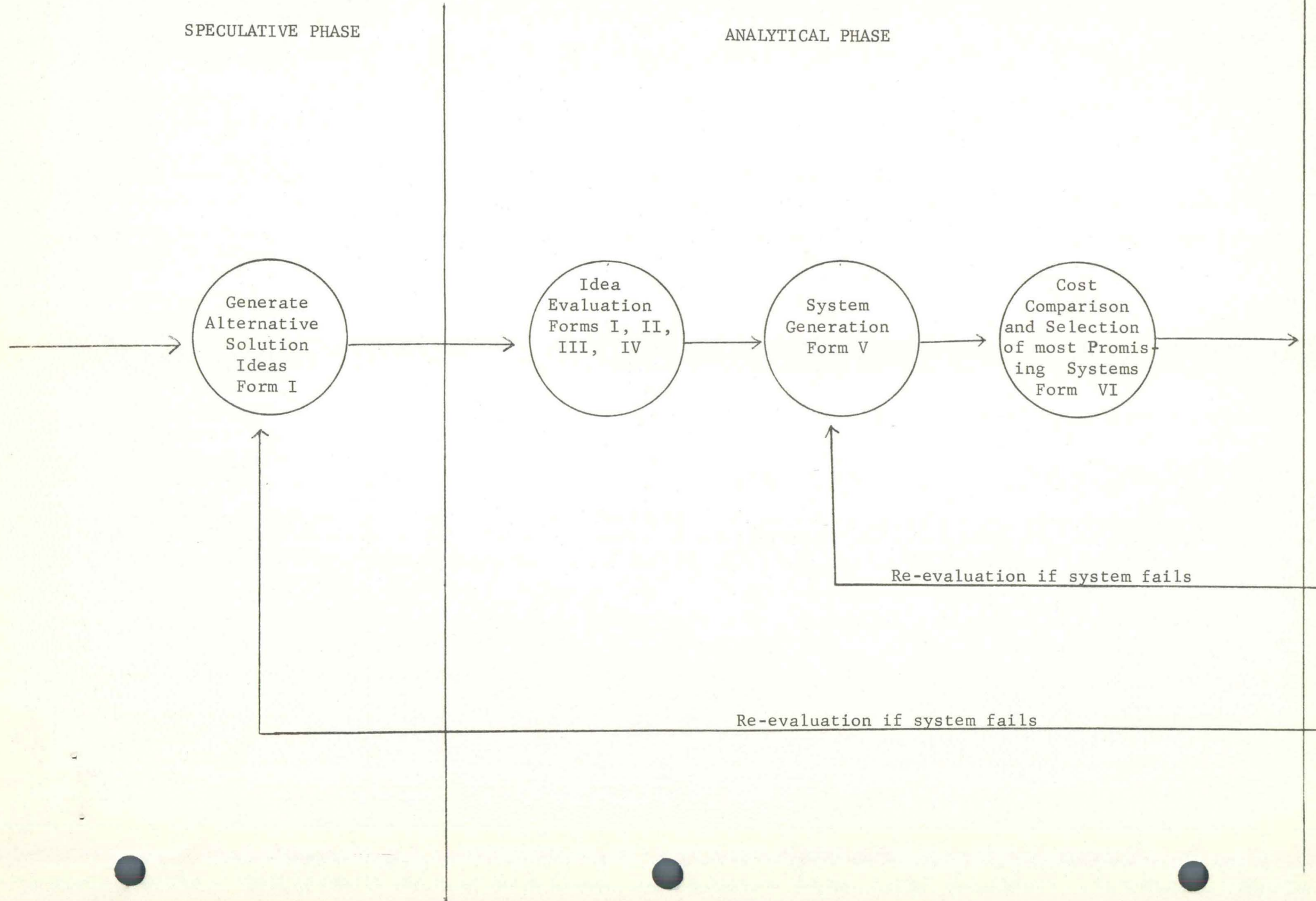
DATA EVALUATION



SOLID WASTE PLANNING FLOW SHEET  
(Continued)

SPECULATIVE PHASE

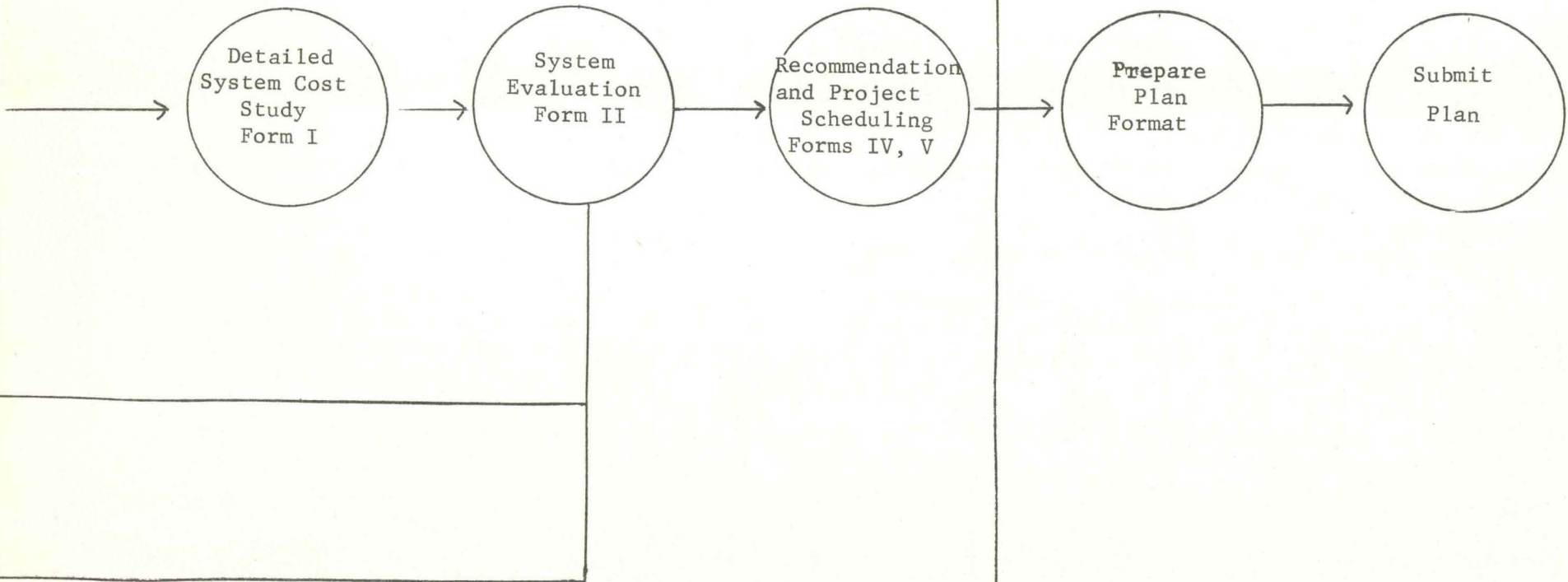
ANALYTICAL PHASE



SOLID WASTE PLANNING FLOW SHEET  
(Continued)

PLANNING PHASE

PLAN SUBMISSION PHASE



I Information Phase

Purpose

- A. To gather and tabulate data on the existing solid waste system and its environment.
- B. To compare this data with regard to the desired solid waste goals so that problem areas can be identified.
- C. To set workable objectives which are directed toward these goals.

Table of Contents

- A. Form I
  - 1. Description of the towns, cities, counties and proposed regions in the study area
- B. Form II
  - 1. Population
- C. Form III
  - 1. Growth patterns
- D. Form IV
  - 1. Climatological, geographical, geological characteristics
    - a. List all the climatic conditions affecting the study area
    - b. List all geographical constraints which will affect the solid waste management system (river, mountains, ground water table, underlying strata, etc.)
    - c. Generally describe the geological characteristics of the area
    - d. Generally describe the soil conditions of the area
- E. Form V
  - 1. Highway and rail networks
- F. Form VI
  - 1. Local transportation ordinances



Information Phase - Table of Contents (cont'd.)

G. Form VII

1. Analysis of waste

- a. Household refuse collections frequency score only those broad categories which apply
- b. Indicate amounts (measured or estimated) of solid wastes collected annually

H. Form VIII

1. Present collection practices and haul routes

- a. Collection work
- b. Estimated cost of collecting and transporting refuse
- c. Using maps like those of Form V, identify the present and/or proposed haul routes used by public and private collectors.

I. Form IX

1. Special waste

J. Form X

1. Inventory of existing sites and practices

- a. Storage (usual practices)
- b. Collection
- c. Processing if any (cost)
- d. Disposal

- (1) Promiscuous dumps
- (2) Regulated dumps
- (3) Sanitary landfills

K. Form XI

1. Present solid waste organization

L. Form XII

1. Data evaluation

Information Phase - Form I

Description of the Towns, Cities, Counties and Proposed Regions in the Study Area

The planning group is encouraged to include in the preliminary planning stages the largest geographic area feasible in an effort to achieve economics of scale possible in large scale operations.

Advantages of area-wide or regional solid waste planning are listed below:

1. Economy can be realized in planning, construction and operation. Cooperation between local governments in the performance of their solid waste management responsibilities has been found economically attractive by many studies and actual operations.
2. More latitude is available for selection of environmental and publicly acceptable disposal sites.
3. Technology may be recommended for utilization which is not economically feasible for small cities and towns.
4. Areas where solid waste services would probably not be provided without coordinated planning can be eliminated.
5. A coordinated public relations program can be undertaken to educate the public and increase its awareness of solid waste management needs.

All the population centers within the study area should be identified and described as indicated in "A" and "B" below.

- A. Identify the possible regional, county, or subcounty boundaries and identify the cities and towns served within these boundaries. (County or state maps are acceptable.)

Information Phase - Form I (cont'd.)

B. Fill out the following table describing each of these legal incorporations and any possible regions.

	Name	Population 1960 1970	Type of Government	Assessed Valuation
<u>TOWNS</u>				
1				
2				
3				
4				
5				
6				
7				
8				
<u>CITIES</u>				
1				
2				
3				
4				
5				
<u>COUNTIES</u>				
1				
2				
3				
<u>PROPOSED REGIONS</u>				
1				
2				
3				

Information Phase - Form II

Population

Population studies are important in the general assessment of the problem. They will show the extent of the problem and the future trends which will ultimately affect the area.

- A. Using the map of the study area describe the normal population densities and note peak seasonal fluctuations, if any.

The map should be shaded into general population categories, as suggested below:

1. Sparce (0-15 people/sq. mile)
2. Light (15-30 people/sq. mile) Blue
3. Medium (30-100 people/sq. mile) Red
4. Heavy (100- people/sq. mile) Yellow

- B. Project the future population growth or decline of the areas.

This information will be especially useful in determining the useful life of the project and in the total financial picture.

The calculations of population trends is done with previous population data using any number of standard methods.

	Present	1980	1990	2000
<u>TOWN</u>				
1				
2				
3				
<u>CITY</u>				
1				
2				
3				
<u>COUNTY</u>				
1				
2				
3				
<u>PROPOSED REGION</u>				
1				
2				
3				

Information Phase - Form III

Growth Patterns

In the development of a solid waste plan which will be as efficient in future years as it is at its inception, the future land use of the study area is necessary.

- A. Using a map of the study area describe present and/or proposed zoning and/or employment densities of industrial parks, shopping centers, and housing developments which are planned or under development should also be included.
- B. In a narrative describe the zones, industrial parks, etc. as to their potential for development. The potential for development is to include a description, population served or employed, and a project date of beginning operation.

Information Phase - Form IV

Climatological, Geographical, Geological Characteristics

A. List all the climatic conditions\* affecting the study area.

SEASONS

	Spring	Summer	Fall	Winter	Annual
Average Temperature					
Average Wind Velocity (Speed & Direction)					
Average Rainfall (inches)					
Average Number of Days of rain					
Average Annual snowfall (inches)	/	/	/	/	

\*You may contact Paul Waite, Director of Iowa Weather Service and Climatologist, 400 U.S. Court House, Des Moines, Iowa 50309. Phone #(515)244-0425

Information Phase - Form IV (cont'd.)

- B. List all geographical constraints which will affect the solid waste management system (rivers, mountains, ground water table, underlying strata, etc.).

Generally describe geographical features

Name	Location	Type of Constraint	Contemplated Difficulty Encountered in System
1.			
2.			
3.			
4.			
5.			

Information Phase - Form IV (cont'd.)

C. Generally describe the geological characteristics of the area.\*

\* You may contact either Mr. Fred Dorheim or Donivan Gordon, Geologists with State Geological Survey, 16 West Jefferson Street, Iowa City, Iowa 52240. Phone # (319)338-1173.

D. Generally describe the soil conditions of the area.\*\*

\*\* Such information can be obtained from the soil conservation service in your area.



Information Phase - Form V

Highway and Rail Networks

The mapping of highway and rail networks will aid the planning committee in the setting up of collection haul routes and in the economic analysis used in the location of facilities.

- A. Prepare or obtain maps\* detailing highway and rail networks within the study area. City or town maps may also be necessary to provide sufficient detail in locating municipal thoroughfares.

\*The Iowa State Highway Commission county and like maps are acceptable.

Information Phase - Form VI

Local Transportation Restrictions

In the selection of equipment and haul routes the transportation restrictions within the study area become very important.

- A. List all local transportation ordinances which might affect the collection and transportation of solid waste.

	Identification Road No.	Speed Limits	Restrictions Height Width		Load Limit	Other
<u>MUNICIPAL</u>						
1						
2						
3						
<u>COUNTY</u>						
1						
2						
3						
<u>STATE</u>						
1						
2						
3						
<u>INTERSTATE</u>						
1						
2						
3						

Information Phase - Form VII

Analysis of Waste

Provide an analysis which includes quantities of all solid waste produced within the study area.

- A. Household refuse collection frequency score only those broad categories which apply.

Types of Refuse Collection Separately	1 Per Week	2 Per Week	Other	Not Collected
Combined Collection				
Garbage				
Rubbish				
Yard Refuse				
Ashes				
Combustibles				
Non-Combustibles				
Bulky Items (Refrigerators, etc.)				
Other				

Information Phase - Form VII (cont'd.)

B. Indicate amounts (measured or estimated) of solid wastes collected annually.

Classification	One or Both		Check One	
	Tons	Yards	Measured	Estimated
REFUSE				
Household				
Commercial				
Combined Household & Commercial				
Industrial				
Agricultural				
Institutional				
Demolition & Construction Waste				
Street and Alley Cleanings				
Tree and Land- scaping Refuse				
Park and Beach Refuse				
Catch Basin Refuse				
Sewage Treatment Plant Solids and Pumping Station Cleanings Septic Tank Waste				
Dead Animals				
Other				
TOTAL				

Information Phase - Form VIII

Present Collection Practices and Haul Routes

The evaluation of the present solid waste management system is essential in the planning of any new system. The present costs and system deficiencies must be determined in order to assure that the new system does not duplicate those deficiencies at escalated costs. A study of collection practices and local routes will provide valuable information.

A. Collection Work

Estimate to the nearest 10% volume for each type of refuse, rows should total 100%\*.

\*Supplemental Form I may be used for obtaining information from private haulers.

Source	Public Agency	Private Collector	Not Collector or Individual	Total
a-Household				100%
b-Commercial				100%
c-Industrial				100%
d-Institutional				100%
e-Dead Animals				100%
f-Abandoned Vehicles				100%
Total a-f				600%
Total % Refuse Collection (total/6)				

B. Estimated Cost of Collecting and Transporting Refuse (Cost to the Public)

Collector	Estimated Cost	Total % Refuse
Public Agency		
Private Collector		
Individual		
Total		100%

Information Phase - Form VIII (cont'd.)

C. Using maps like those of Form 5, identify the present and/or proposed haul routes used by public and private collectors. The haul routes should be shown from the center of the collection area to the disposal sites. Costs should be estimated with the best accuracy available.

Collection Area	Frequency Trips/Week	Distance	Volume of Truck	% Truck Full	Weekly Operating Cost	Cost Per Trip	Cost Per Yd. of Re-fuse
<u>Sparce</u>							
1							
2							
3							
<u>Light</u>							
1							
2							
3							
<u>Medium</u>							
1							
2							
3							
<u>Heavy</u>							
1							
2							
3							

Information Phase - Form IX

Special Waste

A. Describe any special wastes (snow, leaves, oils, paints, hospital waste, auto bodies, rubber tires, water treatment and sewage sludge, and etc.) as to description, quantities and location.

Description	Quantities	Location
A. Agricultural - (crop residue, pauch manure, feed lot waste, dead animals and etc.)		
1.		
2.		
3.		
B. Autos, farm implements and white goods		
1.		
2.		
3.		
C. Industrial wastes - (oils, paints, etc.)		
1.		
2.		
3.		
D. Other		
1.		
2.		
3.		

Information Phase - Form X

Inventory of Existing Sites and Practices

A. Storage (usual practices)

	How Stored	Where Stored	Who Collected
<u>Residential</u>			
*Sparce			
*Light			
*Medium			
*Heavy			
<u>Recreational</u>			
<u>Commercial</u>			
<u>Industrial</u>			

\*All four items starred above are associated with Form II



Information Phase - Form X (cont'd.)

B. Collection

	Type and Number of Vehicles	Volume of Vehicle	Public or Private	Regulated Yes - No	Restric- tions, if any	Cost/ ton
<u>Residential</u>						
<u>Sparce</u>						
1						
2						
3						
<u>Light</u>						
1						
2						
3						
<u>Medium</u>						
1						
2						
3						
<u>Heavy</u>						
1						
2						
3						
<u>Recreational</u>						
<u>Commercial</u>						
<u>Industrial</u>						

C. Processing if any (cost)

Information Phase - Form X (cont'd.)

D. Processing

Any operation which is not directly connected with storage, collection or disposal and does not result in a saleable product (if applicable)

Identification	Type of Material	Quantity	Cost of Operation
1.			
2.			
3.			
4.			
5.			
6.			
7.			
8.			

Information Phase - Form X (cont'd.)

E. Recycling

Any process which converts solid waste into a saleable product (if applicable)

Identification	Type of Material	Quantity	Estimated Dollar Value
1.			
2.			
3.			
4.			
5.			
6.			
7.			
8.			

Information Phase - Form X (cont'd.)

F. Disposal

Locate present dump and landfill sites on county map. The following are the symbols suggested to use as the legend on the map:

- D - Dumps
- RD - Regulated Dumps
- SL - Sanitary Landfill

1. Promiscuous dumps

Identification	Daily Volume (if possible)	Total Acres of the Dump	Cost of Closing
1.			
2.			
3.			
4.			
5.			
6.			
7.			
8.			

Information Phase - Form X (cont'd.)

F. Disposal (cont'd.)

2. Regulated Dumps

Identification	Daily Volume and/or Weight	Total Acres of the Dump	Cost of Operation	Cost of Closing or Conversion
1.				
2.				
3.				
4.				
5.				
6.				
7.				
8.				

Information Phase - Form X (cont'd.)

F. Disposal (cont'd.)

3. Sanitary Landfills

Identification	Certified by Permit in Accordance with Section 406.6		Daily Volume and/or Weight	Cost of Operation
	Yes	No		
1.				
2.				
3.				
4.				
5.				
6.				
7.				
8.				



Information Phase - Supplemental Form I

SUPPLEMENTAL FORM I

INDUSTRIAL AND COMMERCIAL SOLID WASTE SURVEY\*

1. Name of Establishment \_\_\_\_\_  
\_\_\_\_\_
2. Address where waste is Generated \_\_\_\_\_  
\_\_\_\_\_
3. Person to Contact for Information: Name \_\_\_\_\_  
\_\_\_\_\_ Title \_\_\_\_\_  
Address \_\_\_\_\_  
Phone \_\_\_\_\_
4. General Description of Waste \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_
5. Present Quantity of Waste \_\_\_\_\_  
\_\_\_\_\_
6. Seasonal Variation \_\_\_\_\_  
\_\_\_\_\_
7. Future Quantities \_\_\_\_\_  
\_\_\_\_\_
8. Current Method of Collection and Disposal \_\_\_\_\_  
\_\_\_\_\_



Information Phase - Supplemental Form I (cont'd.)

9. Detailed Description of Waste \_\_\_\_\_
- a. Weight, gross \_\_\_\_\_
- b. Weight, unit \_\_\_\_\_
- c. Volume reduction in landfill \_\_\_\_\_
- d. Volume reduction in press \_\_\_\_\_
- e. Moisture content \_\_\_\_\_
- f. Moisture retention \_\_\_\_\_
- g. % combustible \_\_\_\_\_ % Ash \_\_\_\_\_
- h. % Non-combustible \_\_\_\_\_
- i. % Metallic \_\_\_\_\_ % Magnetic \_\_\_\_\_
- j. Potential for being wind blown \_\_\_\_\_
- k. Explosive \_\_\_\_\_
- l. Highly flammable \_\_\_\_\_
- m. Toxic \_\_\_\_\_
- n. Other hazard \_\_\_\_\_
- o. Soluble in water \_\_\_\_\_
- p. Potential pollution if in contact with water \_\_\_\_\_
- q. Odor problem \_\_\_\_\_
- r. Smoke or gas problem if burned \_\_\_\_\_
- s. Biological degradable or digestible \_\_\_\_\_
- t. Organic vs. inorganic \_\_\_\_\_
- u. Chemical Composition \_\_\_\_\_
- v. Salvage \_\_\_\_\_

## Information Phase

### Data Evaluation

The data evaluation is the most important section of the entire guidelines, in that here is where objectives are formulated which will direct all the future thinking. The planning group must evaluate all the preceding data with regard to the state solid waste management goal. The director will have the responsibility of coordinating all committee actions such that all decisions will yield satisfactory results. The data should be analyzed with regard to the following conditions:

1. List and describe the deficiencies in the existing system after taking and evaluating the data on that system. The deficiencies in collection, hauling, disposal and management should become readily apparent. The listing of these deficiencies makes the setting of objectives easier, in that, the elimination of these deficiencies may very well be some of the objectives.
2. List and describe future constraints. In the assessment of these constraints certain obstacles may appear which might tend to limit the scope of the planning process. These obstacles should be listed, described, and taken into account in the final planning effort assuring a greater chance of success for the entire project.
3. Formulate future needs. The population estimates and growth patterns should aid the planners in assessing future changes which will affect the system. No system which will operate for an extended period of time (20 years) should be planned without taking future conditions into account. List and describe any conditions which will affect future system operations.
4. Cost of the present system. The cost of the present system is a necessary base line for planning operations in that it serves as a bench mark for costing proposed alternatives. List and describe the costs of the present system.
5. Special requirements. List and describe any special requirements (political, physical, social and economic) unique to the study area. The planners should be aware of these requirements and they should be used in the final planning stages.

The evaluation of the conditions should enable the planning group to precisely define its solid waste problems and set objectives.

Information Phase - Data Evaluation (cont'd.)

6. Define the problem. Now the present solid waste problems should be defined based upon the evaluations of the data. Without a thorough analysis of the existing situation an accurate formulation of the problems cannot be made. The exact definition of the solid waste problems are necessary in setting the planning objectives.

7. Set objectives. The objectives are the necessary steps which must be accomplished in order to reach the goals of satisfactory solid waste management system. Each objective should be directed toward the solution of the solid waste problem. Careful setting of objectives is essential in that they will direct the emphasis of the planning effort.

With the setting of objectives the information phase of the project is concluded. The remaining phases of the project are concerned with developing the best method of obtaining these objectives. From this point on the planning group and director are paramount to the decision making process, in that it is their function to determine alternatives and to weigh objectively the selection of a solid waste management system.

## II Speculative Phase

### Purpose

To generate alternative methods of the solid waste management program.

Generate your ideas in a "blue sky" manner and do not try to evaluate any of them in this phase. The items should only be listed. In order to guide your thinking, a suggested outline is provided on Speculative Phase Form I.

### Table of Contents

#### A. Form I

1. Storage
2. Collection
3. Transportation
4. Processing
5. Recycling
6. Disposal
7. Organization and management

Speculative Phase - Form I (cont'd.)

B. Collection

1. Curb service
2. Set out service
3. Set out, set back service
4. Backyard-carry service
5. Green box
6. Other

Speculative Phase - Form I (cont'd.)

C. Transportation

1. Haul routes
  
2. Haul techniques
  
3. Unit capacity
  
4. Other

Speculative Phase - Form I (cont'd.)

D. Processing

1. None
2. Grinding
3. Separation
4. Bailing
5. Incineration
6. Transfer
7. Other

Speculative Phase - Form I (cont'd.)

E. Recycling

1. Glass
2. Metals
3. Paper
4. Cardboard
5. Plastic
6. Auto bodies
7. Pyrolysis
8. Composting
9. Other



Speculative Phase - Form I (cont'd.)

F. Disposal

1. Sanitary landfill
  
2. Other

G. Organization and Management (remember economy of scale)

1. Town
  
2. City
  
3. County
  
4. Regional
  
5. Private
  
6. Other

### III Analytical Phase

#### Purpose

- A. To develop a list of advantages and disadvantages of each idea developed during the speculative phase.
- B. To estimate the cost of each idea.
- C. To select the systems which offers the greatest potential cost savings and are otherwise acceptable.

#### General

Many of the practices will be automatically ruled out because of the physical nature of the management area, type of waste, social and political climate, and the economics of the situation.

Limit your selection in each area to a reasonable number (1-2-3) before beginning the planning phase.

#### Table of Contents

- A. Form I
  1. Idea evaluation
- B. Form II
  1. Notes and gross cost estimates on each idea
- C. Form III
  1. Plans for action on idea(s)
- D. Form IV
  1. Consultation summary
- E. Form V
  1. Cost comparisons
- F. Form VI
  1. Cost comparison by system

Analytical Phase - Form I

Idea Evaluation

Select the best ideas or combination of ideas and list them below. List both the advantages and disadvantages of each idea to determine where additional work must be done. This listing will help you select the idea or ideas that should be developed.

Idea	Advantages	Disadvantages
1.		
2.		
3.		
4.		
5.		
6.		
7.		
8.		
9.		
10.		

Analytical Phase - Form II

Notes and gross cost estimates on each idea.

1.

2.

3.

4.

5.

6.

7.

8.

Analytical Phase - Form III

Plans for action on idea(s). Plans for the disposition and development of each of the ideas (shown Analytical Phase Form I) should be outlined here -- specialist, company, government activity, etc. to be contacted.

List the plans for Action on Idea(s)

Analytical Phase - Form IV

Consultation Summary

Record the name of the person and company contacted for information received and the action planned based on this information.

Source of Information Co. No's & Address	Person(s) Contacted	Telephone Number	Information Received	Action Taken
1.				
2.				
3.				
4.				
5.				
6.				

Analytical Phase - Form V

Cost Comparisons

Develop cost information for each feasible idea to use for cost comparison purposes. Assemble ideas for storage, collection, transportation, processing, recycling, disposal and management into complete solid waste systems. Use the best cost estimates available.

Cost Information of System no. \_\_\_\_\_ by Ideas

Idea Definitions	Construction Cost	Equipment Cost	Labor Cost	Operational Cost	Total Cost
1.					
2.					
3.					
4.					
5.					
6.					
7.					
8.					

Analytical Phase - Form VI

Cost Comparison by System

Description of System

1.

2.

3.

<u>Items of Cost</u>	<u>System 1</u>	<u>System 2</u>	<u>System 3</u>
Construction Equipment Labor Operation			
Total			

REMARKS:



#### IV Planning Phase

##### Purpose

- A. To establish a program of formal investigation of each alternative method selected in the analytical phase
- B. To assess the technical feasibility of alternative methods
- C. To gain specific and firm information concerning the alternative methods
  1. Financial
  2. Technical
  3. Public acceptance
  4. Political acceptance
- D. To formulate the recommendations into a plan of operation
- E. To schedule activities for the plan enactment and operation

##### General

At this point the alternative solid waste management systems should have been narrowed down to a specific few (1-2-3). It is now necessary to determine the specific information as to how these systems will function within the specific circumstances of the particular study area. Therefore the specific data must be determined as to the technical and financial feasibility of these systems as well as the potential public acceptance of them.

##### Table of Contents

- A. Form I
  1. Systems investigated
  2. Recommended sources of equipment, consultation, etc., supplies, etc. for each system
  3. List other sources of information, persons, companies and/or government activities contributing to the successful development of the system
  4. Implementation actions
- B. Form II
  1. Test and evaluation
- C. Form III
  1. Test results

Planning Phase - Table of Contents (cont'd.)

D. Form IV

1. Recommendation

E. Form V

1. Scheduling

Planning Phase - Form I

Planning

A. Systems investigated:

List the systems that have developed to a point where a positive recommendation can be made.

1.

2.

3.

Planning Phase - Form I (cont'd.)

B. Recommended sources of equipment, consultation, etc., supplies, etc. for each system.

Item	Source	Scope or Quantity	Price
1.			
2.			
3.			
4.			
5.			
6.			

Planning Phase - Form I (cont'd.)

- C. List other sources of information, persons, companies and/or government activities contributing to the successful development of the system.

Planning Phase - Form I (cont'd.)

D. Implementation actions

List and describe major functions such as engineering, purchasing, construction and operation and etc. that are required to take action to have each of the recommendations incorporated.

Planning Phase - Form II

A. Test and Evaluation

Detail the analysis necessary to verify that the system can successfully obtain the objectives set forth in Phase I and still operate within local constraints. Financing, public acceptance, and the technical capability of those involved are typical local constraints.

Planning Phase - Form III

A. Test results

Detail the results of the tests that were performed to verify that the system will operate within the local constraints.



Planning Phase - Form IV

A. Recommendation

Formal recommendation for continued planning and operation of the solid waste management system, to include recommendations for continuous planning and management of the system, a complete cost breakdown of each part of the operational plan, recommendations for the final closing and/or modifications to the proposed solid waste facilities at the end of its life.

Planning Phase - Form V

A. Scheduling

To schedule\* all activities from the development of the final plan to the closing of the system operation and the beginning of a new system. The planning committee is to be reminded that there is a continuous function in that no solid waste disposal system will last forever and plans will have to be redeveloped at a subsequent date.

\* Any of the recognized scheduling techniques are acceptable.

## V Plan Submission Phase

### Purpose

- A. To prepare a final plan for implementation
- B. To formalize the recommendations and schedule implementation
- C. Implement plan

### Table of Contents

- A. Format of plan
  - 1. Foreward or preface (or both)
  - 2. Table of contents
  - 3. Section I Introduction
  - 4. Section II Summary
  - 5. Section III Background of planning area
  - 6. Section IV Existing Conditions
  - 7. Section V Future conditions
  - 8. Objectives
  - 9. Recommendations of solution (the plan)
  - 10. Appendices

Plan Submission Phase - Format of Plan

I. Foreword or Preface (or both)

II. Table of Contents

III. Section I Introduction

A. General background

B. Statement of the specific problem (short and concise)

C. Statement of goals and objectives

Section II Summary

This section should be at the last section prepared in the plan report

IV. Section III Background of Planning Area

A. Planning Jurisdiction

1. Towns
2. Counties
3. Cities
4. Region (if applicable)

B. Physical Conditions

1. Environmental conditions
2. Geology and soils
3. Climatology
4. Roads
5. Other

V. Section IV Existing Conditions

A. Storage, collection, transportation practices

B. Processing, recycling and disposal facilities

C. Quantities of waste collected, disposed of, and generated

D. General management practices

E. Population

F. Zoning or land uses

G. Transportation systems

H. Tax base (assessed valuations)

I. Boundary limits, etc.

Plan Submission Phase - Format of Plan (cont'd.)

VI. Section V Future Conditions

VII. Objectives

VIII. Recommendations for Solution (the plan)

A. The recommended system

1. Scheduling of activities and events
2. Locations of intended actions
  - a. Centroids of solid waste generation (centers of solid waste collection areas)
  - b. Haul route
  - c. Transfer station
  - d. Processing centers
  - e. Disposal sites (general areas are acceptable)
3. Who should act (agency, department, etc.)
4. Estimated cost of the system
  - a. Storage
  - b. Collection
  - c. Transportation
  - d. Processing
  - e. Disposal
  - f. Management
  - g. Overhead
  - h. Subtotal
  - i. Less private services, private haulers, etc.
  - j. Total out of pocket cost
5. The problems solved by the adopted system and how
6. Other

B. Procedures for system implementation

1. Legislation, rules and regulations
  - a. In effect
  - b. Proposed (if any)
2. Inspection and enforcement
  - a. In effect
  - b. Proposed
3. Licensing of facilities
  - a. State
  - b. Other

Plan Submission Phase - Format of Plan (cont'd.)

4. Training programs
5. Technical assistance to operating units
6. Certification of operating personnel
7. Public information and education program
8. Development of budgeting procedures, financing, cost effectiveness, special charge features, and other operating management features
9. Development of solid waste management operating procedures and jurisdictions
10. Recruitment, selection, and hiring of solid waste management operating personnel
11. Other

IX. Appendices

To include if necessary:

1. Charts
2. Tables
3. References
4. Legislation and regulations
5. Definitions
6. Methodologies of research analysis
7. Maps
8. Other

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