

RECLAMATION

Managing Water in the West

Creating More Meaningful Visitor Experiences: Planning for Interpretation and Education



U.S. Department of the Interior
Bureau of Reclamation
Denver, Colorado

September 2009

Mission Statements

The mission of the Department of the Interior is to protect and provide access to our Nation's natural and cultural heritage and honor our trust responsibilities to Indian Tribes and our commitments to island communities.

The mission of the Bureau of Reclamation is to manage, develop, and protect water and related resources in an environmentally and economically sound manner in the interest of the American public.

Creating More Meaningful Visitor Experiences: Planning for Interpretation and Education

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Acronyms and Abbreviations

ADA	Americans with Disabilities Act
BLM	Bureau of Land Management
I/E	interpretation and education
NPS	National Park Service
Reclamation	Bureau of Reclamation
USFS	U.S. Forest Service
VI	Visual Identity
WROS	Water Recreation Opportunity Spectrum

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CHAPTER I

Introduction

This is a planning handbook. It is designed to help you develop a useful plan for creating more meaningful experiences for all visitors to a Bureau of Reclamation (Reclamation) project.

Planning is important. It helps set a logical and rational course for action. We all plan. We do it every day. Planning an evening with dinner guests or an exciting birthday party for our children, for example, means that we take stock of the situation beforehand, we think about the desires and preferences of our guests, and we consider the time, cost, and materials needed to host a successful event. In planning a family vacation or planning what to wear each day, we go through these same steps to help us achieve our goals. In these examples, the planning process is almost imperceptible. It happens so quickly and so easily that we don't even realize the logical, deliberate effort of planning.

Planning for meaningful visitor experiences is a similar process—a process of informed and deliberate decisionmaking. Because agencies that manage natural resources, like Reclamation and its managing partners, are accountable to the tax-paying public, the planning process should be organized, logical, written, and relevant to the area for which it pertains. This document is designed to guide such planning efforts.

1.1 Purpose of This Handbook

The purpose of this handbook is to help staff in Reclamation and managing partners complete an appropriate yet expedient planning process for developing interpretation and education (I/E) products and services.

1.2 Why Interpretation and Education Planning is Important

Reclamation is the largest wholesaler of water in this country and the second largest producer of hydroelectric power in the Western United States, yet few Americans know much at all about Reclamation or its managing partners. More importantly, few citizens fully understand the complex and fascinating details about the source of their water and power and the many intriguing stories related to the history of water and power in the West.

Over the last century, Reclamation has hosted over 90 million annual visits to projects in the West (e.g., dams, canals, rivers, reservoirs) and has helped preserve a significant portion of the West's cultural history.

Reclamation and its managing partners have a tremendous opportunity to contribute to public understanding of power, water, dams, natural resources, history, cultural resources, and recreation through interpretation and education. As Jan Carlzon suggests,¹ each and every one of the millions of visits each year is an opportunity for Reclamation to connect with its visitors. Whether that connection is made on the Web site, at a marina, or in a visitor center, each connection forms an initial impression and eventually creates a perception of service quality. These experiences, in turn, create an appreciation for Reclamation, its managing partners, and the resources they manage, resulting in increased support among taxpayers. Planning helps focus strategic efforts on creating exemplary visitor experiences at Reclamation areas and those of its managing partners.

1.3 Who Should Use This Handbook?

The primary audience for this handbook is the staff of Reclamation and its managing partners. These users include area managers or park managers; staff in public affairs, marketing, cultural resources, security, recreation, and interpretation or education; and rangers, guides, volunteers, or others who have an interest in or job responsibilities for visitor experiences at Reclamation areas.

Other audiences for this handbook include interpreters, educators, managers, or administrators responsible for or interested in planning exemplary visitor experiences in informal education settings such as parks and recreation areas, nature centers, museums, zoos, botanical gardens, and arboreta. This handbook is for those who want to plan I/E initiatives but may not have the resources for hiring a professional interpretive planner.

¹ Jan Carlzon, Chief Executive Officer of Scandinavian Airlines in 1986, coined the term “*moment of truth*” to describe the moment a customer (visitor) comes in contact with a company (agency) and experiences some level of quality. Positive moments of truth lead to satisfaction, return visits, and positive word-of-mouth publicity. Negative moments of truth lead to frustration, confusion, and possibly negative word-of-mouth publicity.

CHAPTER 2

Planning Context and Concepts

2.1 Planning Context

Currently, Reclamation and its managing partners oversee a total of 289 developed recreation areas at Reclamation projects in the 17 Western United States. Reclamation alone manages 33 of the 289 areas. Eighty-four are managed by other Federal agency partners such as the National Park Service (NPS), U.S. Forest Service (USFS), Bureau of Land Management (BLM), or the U.S. Fish and Wildlife Service. An additional 159 are managed by State, county, or local government partners. One is managed by an American Indian Tribe, and the remaining areas are managed cooperatively with other partners.

The 289 Reclamation project areas draw over 90 million visits annually that are served by approximately 225 concessionaires who offer a variety of outdoor facilities and services such as marinas, campgrounds, lodging, food service, rental equipment, and other amenities. Recreation opportunities are available at highly developed areas that contain facilities such as campgrounds, boat launch ramps, and swim beaches, and at dispersed areas where fewer or no facilities exist.

In some circumstances, Reclamation is limited by the Federal Water Project Recreation Act of 1965 (Public Law 89-72) to providing only basic facilities. A limited number of Reclamation-managed projects have site-specific authority to fully plan, develop, and manage facilities and improvements. So, whereas there exists over 90 million possible “moments of truth” for connecting visitors to resources and opportunities in these areas, in some cases, there are limitations to planning. It is important that the planning effort recognize and honor an area’s authorizing legislation as part of the planning process.

A number of documents already exist that relate to visitor experiences in areas managed by Reclamation and their managing partners (sidebar A). This handbook was prepared to complement these materials.

2.2 Terms and Definitions

A number of terms and concepts relevant to the ideas and processes discussed in this handbook are included in the following sections.

SIDEBAR A

Reclamation Resources Related to Interpretation, Education, and Visitor Experiences

- *Water Recreation Opportunity Spectrum (WROS) Users' Guidebook* (July 2004) – A framework and procedure that helps planners and managers make better decisions for conserving a spectrum of high quality and diverse water recreation opportunities.
- *Interpretive Master Planning: A Reclamation Training Course* (June 2006) – A training manual that reviews the benefits of interpretation and describes the interpretive planning process using interactive exercises and examples.
- *Sign Guidelines for Planning, Designing, Fabricating, and Procuring, Installing, and Maintaining Signs for Outdoor Public Use Areas* (October, 2006) – A Visual Identity program-compliant update of the 2002 guidelines. This document provides guidance for developing all classifications as well as procurement, funding, and maintenance of signs.
- *Estimating Future Recreation Demand: A Decision Guide for the Practitioner* (January 2007) – A guide to help practitioners assess recreation demand in their routine administration and planning.
- *Visitor Center Policy, Directive and Standard, and Guidelines* (August 2007) – This document offers guidance related to proposing, planning, and designing publicly recognized education facilities or dedicated space for interpretive displays or programs.
- *Outdoor Recreation Business Plan Guidebook* (July 2008) – This guidebook provides instructions on how to develop a simple but effective business plan with limited resources.

2.2.1 Interpretation

Interpretation is the art and science of connecting visitors, such as recreationists, tourists, guests, clients, and customers with ideas, resources, and opportunities for engagement and learning. At its best, interpretation is:

- *A mission-based communication process* that engages visitors and helps them make a meaningful connection with the agency and the resources they manage.
- *A service* that considers the needs, wants, and interests of the visitor to enhance visitor experiences before, during, and after their visit

- *A management strategy* that can be used to increase visitors' appreciation of and sensitivity to site resources.

Interpretation is the way organizations facilitate connections between visitors and resources. For example, land management agencies across the country use signs, exhibits, publications, tours, and other media to connect visitors with natural, cultural, and recreation resources.

2.2.2 Interpretation and Education

For the purposes of this document, the phrase interpretation and education (abbreviated as I/E throughout) will be used to refer to the collective set of informational, interpretive, and educational materials, programs, media, and facilities that serve to enhance the visitor experience at areas managed by Reclamation and its partners (see appendix A for more detailed explanation of various I/E media). As such, I/E planning includes planning for:

- Visitor centers.
- Kiosks or bulletin boards with information, education, or safety messages.
- Publications such as educational brochures, booklets, checklists, or flyers.
- Exhibits.
- Interpretive signs and waysides.
- Guided walks, talks, tours, or interpretive demonstrations and programs.
- Orientation and way-finding information such as directional signs and maps.
- Safety information.
- Rules, regulations, and use policies.
- Educational programs or activities for families, school groups, or other visitors.

Therefore, I/E planning is most effective when it includes collaboration among area managers, resource managers, park managers, rangers, law enforcement, marketing, and public affairs (see section 2.8 for more on collaboration).

2.2.3 Interpretation and Education Planning

In this document, I/E planning refers to the deliberate process of making decisions about the most appropriate interpretive or educational opportunities for a Reclamation or managing partner area. This type of planning is sometimes labeled education planning or visitor experience planning.

2.2.4 Area

For the purpose of this document, an area will be considered any complex or site consisting of campgrounds, day use areas, parking areas, boat ramps, restrooms, road and trail systems, and/or visitor centers managed by Reclamation and its managing partners. This usually encompasses an entire reservoir area defined by an established exterior property boundary. An area may have multiple sites. The term “area” will be used in this document to denote a specific geographic unit for which an interpretive plan may be developed.

2.2.5 Visitor

For the purpose of this document, the term “visitor” will be used to refer to a person or party who may come in contact with Reclamation and/or its managing partners. A visitor may also be considered a customer, recreationist, guest, learner, user, or audience.

2.2.6 Deliverable

A “deliverable” describes any one of several I/E products or services that may be the result of an I/E planning process. Deliverables include exhibits, brochures, signs, waysides, kiosks, interpretive programs, and other interpretive or education media (see appendix A for list of additional media).

2.3 A Process for Interpretation and Education Planning

I/E planning is the process by which planners, such as educators, interpreters, managers, or administrators determine the most appropriate interpretive or educational prescriptions for their site and situation. Like other types of planning, I/E planning should be logical, rational, deliberate, and transparent. Most importantly, it should be an effort that is useful for making decisions about interpretive and education initiatives appropriate to an area.

There are many ways to plan, although similar questions will likely be addressed in most I/E planning processes. These include questions about an area’s mission, history, and current situation; existing resources, facilities, and visitor demand for goods and services; and proposed opportunities for connecting supply and demand. The general types of questions addressed in an I/E planning process are categorized below and are discussed in more detail in chapter 3.

Situation – What is our current situation? What is the mission of this area? What is the need for I/E at this place? How can I/E support the mission and strategic goals of the agency and the specific area? What is the benefit of this area to the taxpayer and area partners or stakeholders?

Purpose – What do we hope to accomplish in planning I/E at this area? What planning considerations need to be acknowledged? What specific goals do we have for I/E in this area?

Inventory – What resources, facilities, and expertise do we currently have? What, if any, management issues are we facing? Who are our current audiences, and what do we know about them? Is there interest in attracting more, less, or different audiences?

Analysis – What does the inventory tell us about possible options for I/E? How do we align what we have with the goals we have for this area?

Options – Based on the inventory and analysis, what specific I/E options are best for this area? What specific recommendations are appropriate?

Action – What specific actions are necessary to develop our I/E recommendations? What schedule is appropriate for implementing those options? What resources will be required for successful development of our recommendations?

Figure 1 puts I/E planning in a broader context of overall I/E media development and use. The left-most box (shaded) shows how I/E planning is the initial stage of that broader process. This shaded box summarizes the focus of this handbook and will be discussed using a series of boxes and arrows throughout chapter 3. However, the diagram is used occasionally throughout this handbook to remind the reader about the broader context. The middle and right-most boxes shown are discussed briefly in chapter 4.

2.4 Scope and Scale of Planning

I/E planning can vary by scope and scale. For example, an agency-wide or region-wide interpretive plan might be brief and address only overarching principles, broader market segments, and strategic goals. Such a national or regional plan will be broader in scope but shallower in scale than other more area-specific plans (figure 2).

On the other hand, an area- or site-specific plan will be narrower in scope and deeper in scale based on specific needs, goals, and audiences of that area. In most cases, the scope of an I/E planning effort should be commensurate with the anticipated public use of that area, but most of the principles and processes described in this handbook apply to any of these approaches.

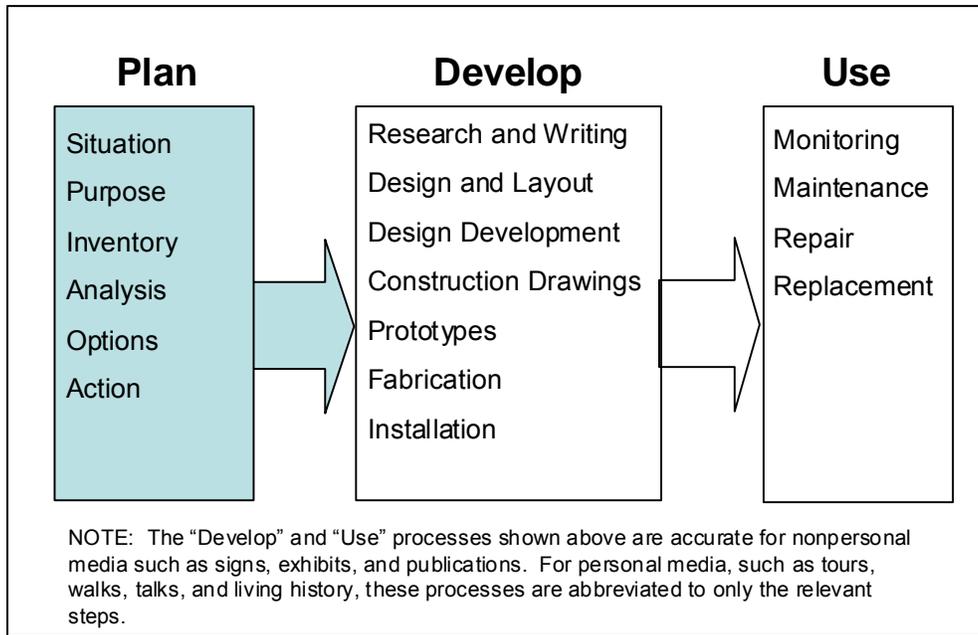


Figure 1.—I/E planning in context.

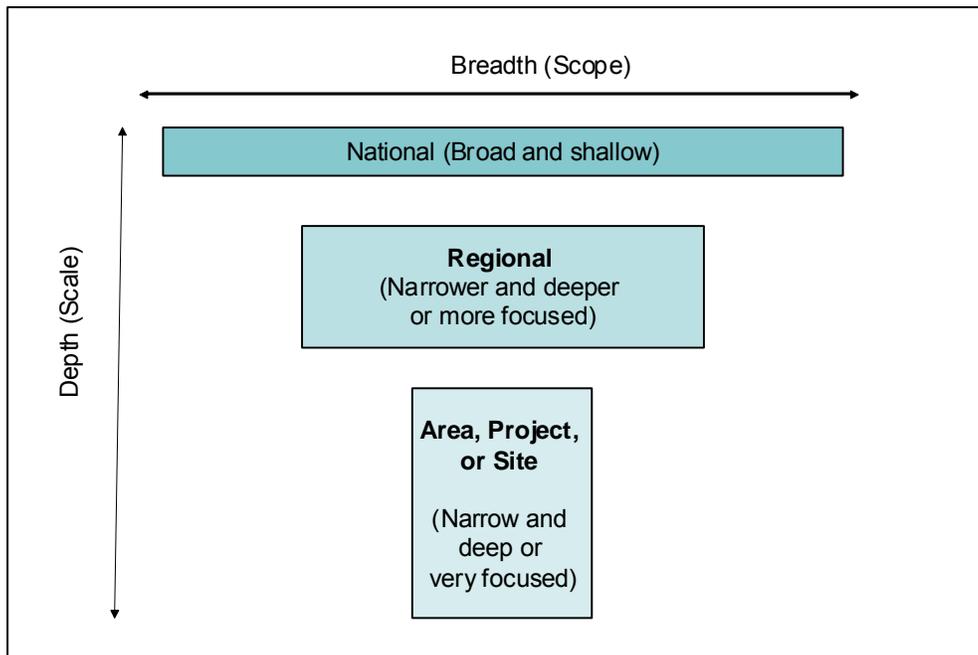


Figure 2.—Scope and scale of planning.

2.5 Alignment of Planning

Regardless the scope or scale, an I/E plan is only one type of planning an organization might pursue in an effort to achieve its mission. To ensure that the I/E planning effort is complementary to other organizational or area plans, planners should align the I/E plan with other planning efforts of that agency. In their book *Secrets of Institution Planning*, Merritt and Garvin (2008) provide some very useful guidance for synchronizing or aligning planning within an organization. Sidebar B outlines the diversity of choices for institutional planning. Not all organizations will pursue all of these plans, but this outline demonstrates the importance of defining and coordinating agency planning efforts and the importance of collaborating within an agency on planning efforts. Consider how plans for your area influence or are influenced by I/E planning.

SIDEBAR B

Types of Institutional Plans (Adapted from Merritt and Garvin, 2008)

Plans about the Whole Institution

- Strategic Plan, Institutional Plan, Long-Range Plan, or Master Plan
- Operational Plan

Plans Related to Finances, Fundraising, Public Relations, and Marketing

- Capital Campaign Plan
- Marketing or Communications Plan
- Development or Fundraising Plan
- Financial or Business Plan

Plans Related to Collections or Interpretation/Education

- Collections Plan
- Conservation Plan
- Interpretive or Education Plan ← **THIS HANDBOOK FOCUSES HERE**
- Research Plan

Plans Related to Management and Operations

- Diversity Plan
- Staffing plan
- Transition Plan

Plans Related to Facilities

- Maintenance Plan
- Emergency Response or Disaster Plan
- Historic Structure Master Plan or Restoration Plan
- Land Management Plan
- Landscape Plan or Site Plan
- Master Plan

In the case of I/E planning, alignment with other agency plans may mean:

- Researching and using information that already exists in a master plan or resource management plan.
- Researching and using information that already exists in a similar plan of another agency or organization such as BLM, USFS, NPS, State parks, tourism and visitor bureaus, chambers of commerce, or local leisure providers.
- Coordinating with marketing, communication, or public relations plans.
- Acknowledging the cost or budget limitations of an existing financial or business plan.
- Using situation descriptions, inventories, or planning considerations from a strategic plan or area master plans.
- Acknowledging inventory and analysis in collections or conservation plans (in the case of historic or cultural resource areas).
- Understanding the site and facility implications of a management plan or a site plan.
- Identifying existing I/E within the local area or region and identifying cooperators and partners in these efforts.
- Identifying possible funding sources for I/E.

In any case, an I/E plan should recognize other planning efforts within the agency and within the region.

2.6 Levels of Planning

For some, the thought of planning can be daunting. In order to get started, you may find it useful to consider these different levels of planning:

Level 1 Planning: This is a rudimentary outline containing a few ideas. The prevalent diagram in this handbook (figure 3, page 15) provides basic guidance for such an outline. In a very short time, a planner (or planning team) can describe basic but relevant content of a plan using this outline. A level 1 plan can be completed quickly and may only be a few pages long, but it can be used to show administrators the intent for planning or to track ideas until a greater level of planning is

possible. Putting preliminary ideas on paper begins an administrative record and provides some direction for discussion and decisions related to I/E.

Level 2 Planning: This level of planning elaborates on level I planning. It provides additional detail important to other salient sections. A level 2 plan can be developed in only a few weeks and may be several pages long. Important information and ideas are added to the basic outline (level 1 plan), but transitions may still be lacking, linkages are elementary, and detail may be incomplete. Each person on a planning team may be assigned a section of the plan to research and elaborate in anticipation of a more collaborative effort in which gaps can be filled and detail added.

Level 3 Planning: This is a full-scale plan. Such a plan will contain a significant inventory and analysis section as well as substantial information and rationale for all I/E alternatives. It will provide an extensive description for each deliverable and detail costs for each. Depending on the size of the area and the desired scope, this level of planning may take several months, will involve more extensive collaboration, and be a more substantial guiding document.

So, in thinking about planning, remember:

- If you have never done any, do some.
- If you have already done some, do more.
- If you have already done a lot, do it better.

2.7 How to Think About Your I/E Plan

As implied above, usefulness should be uppermost in your mind when you plan. An I/E plan is not a static document. It should be viewed as a dynamic and useful tool for guiding the development and implementation of I/E initiatives for your area. As such, a plan can serve the following purposes:

- A *communications tool* to engage staff and stakeholders in discussion of priorities, how they are set, and about the disciplined decisionmaking necessary to realize the efforts of the planning process.
- A *marketing tool* to showcase rich visitor experiences and to stimulate interest in the Reclamation and managing partner areas.

- A *monitoring tool* to track progress over time with regard to education and interpretive initiatives and to provide benchmarks against which future initiatives might be compared and evaluated.
- A *funding tool* to demonstrate to potential donors or funders that an area is being clear and strategic about its I/E efforts and that there are numerous, well-conceived, and focused opportunities for enhancing visitor experiences in that area.
- A *decision tool* to organize and guide decisions about meaningful and sustainable visitor experiences in your area.

I/E plans are flexible and easily adaptable as circumstances change or new information becomes available. As such, an I/E plan may be carried from meeting to meeting or rolled up in the glove box of a agency vehicle for ready access in the field.

2.8 Collaboration and the Role of the Vision Keeper

The best plans are pursued as a team effort in which a small group of staff and stakeholders are responsible for researching and writing the plan. This requires both inter and intraorganization collaboration. Collaboration within an organization should include input from administration, human resources/ personnel, resource management, public affairs, marketing, visitor services, and even facilities and maintenance. Collaboration with stakeholders outside an organization should include input from other natural resource agencies in the area, such as city, county, State, or other Federal agencies, and other area organizations and stakeholders such as museums, outdoor recreation entities, and visitor and tourism organizations. This is to say that an I/E plan should not be insular. It should consider broad and diverse perspectives and should capture information and ideas from many people and sources.

That said, there is typically one person who is the vision keeper of the planning effort. It is this person who typically orchestrates the process of planning and coordinates the pieces. The vision keeper is often someone who is interested in and often passionate about visitors, area resources, and the many possibilities for informal learning in that area. This person can easily envision the ultimate outcomes of the plan and helps ensure the implementation of the plan. This person may also assume responsibilities for:

Chapter II – Planning Context and Concepts

- Providing a thorough and accurate administrative record of the planning effort.
- Facilitating a logical and efficient planning process.
- Involving the public at appropriate times and in reasonable ways, while also monitoring those efforts throughout the project.
- Delivering a high-quality, professional plan.
- Producing a plan that is useful to the planning team and its stakeholders.

CHAPTER 3

Developing an Interpretation and Education Plan

There are many ways to plan. This handbook presents one practical way to think about I/E planning – as a series of sequential questions, each one building on the evidence produced from answering the previous questions. A multistage diagram (figure 3) is provided as an organizer. Each section of this chapter describes specific questions and considerations and suggests ways to go about addressing them.

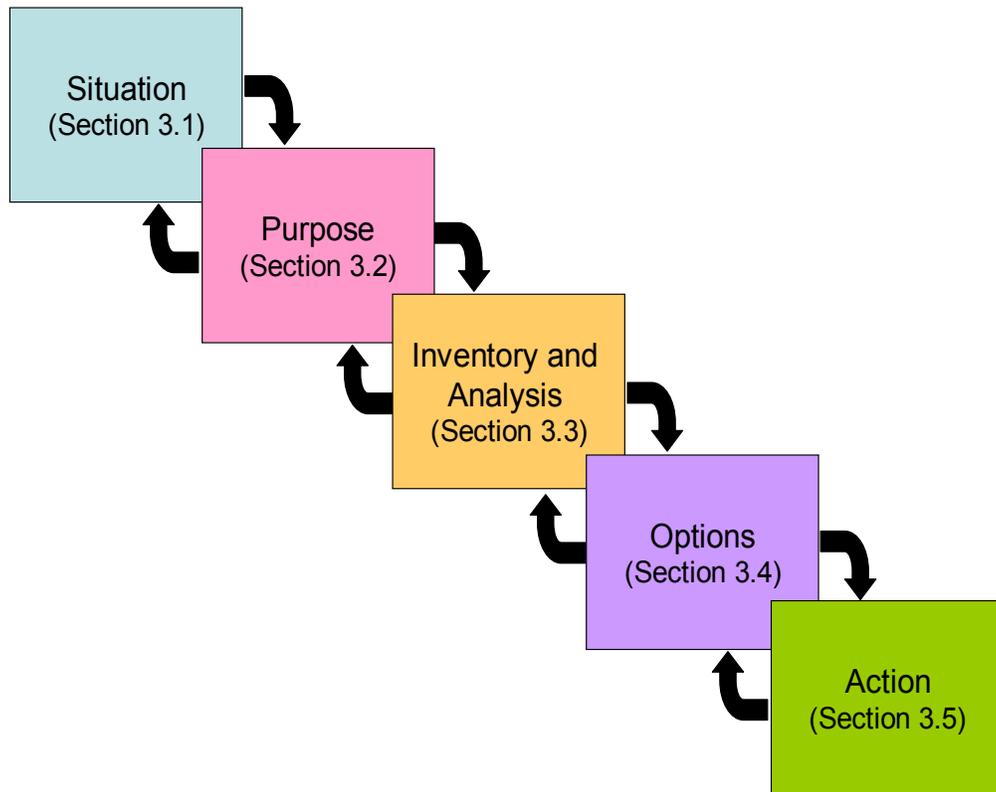


Figure 3.—Focus areas of interpretive planning.

3.1 Situation

This part of an I/E plan addresses overall questions such as “Who are we and what is our current situation? Why is I/E important at this area?” This part of the plan should provide the reader with sufficient background and context for the planning effort and indicate the scope and scale of the plan (figure 4). More specifically, in writing this section of the plan, you will want to:

- Describe the area, including its name, location, and managing agency.
- Provide some background and history of the area, including relevant authorizing legislation and the mission of the area, if one exists.
- Describe what is special or unique about this area. Is it a State Natural Area, National Landmark, State Historical Site, Archaeological District, or Important Bird Area? Beyond simply stating the unique or special features, articulate clearly why that is important (e.g., “this is the only place in the nation where. . .”).
- Defend the need for this plan and provide rationale that supports that need. For example, why is this planning process being initiated in this place, at this time?
- Provide other introductory information that may be useful for the reader such as terms and definitions, organization of the plan, or special reference materials.

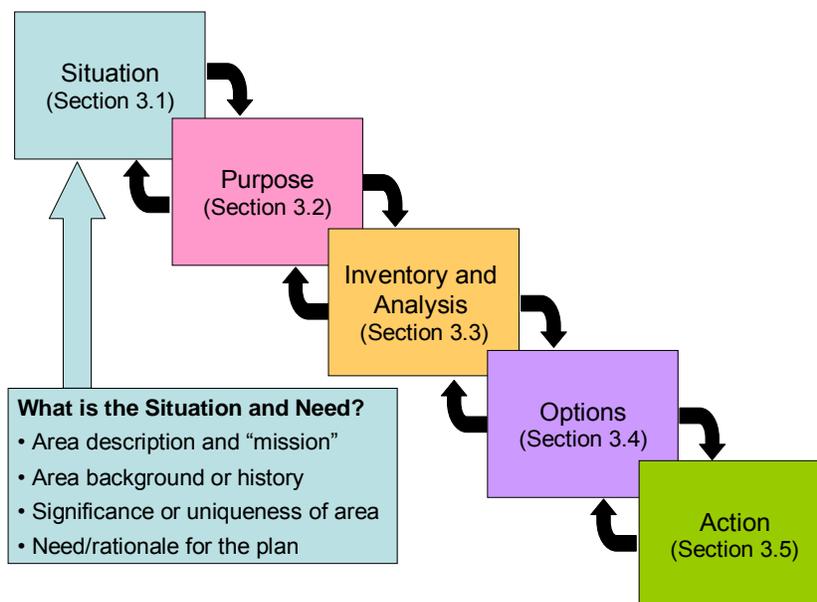


Figure 4.—Planning situation and need.

Some planners find it useful to label specific subsections:

- Section A: Site Description.
- Section B: History and Background of the Site.
- Section C: Significance of the Site.

Others prefer a more organic narrative that addresses the questions without specific categorization. Plan format should be discussed with the planning team at the outset of the planning process to honor preferences of staff and stakeholders who will be using the plan.

You may find useful information for this section in existing plans, such as resource management plans, area plans, strategic plans, previous I/E plans, or existing agency-specific marketing or promotion information. Also consider using staff discussions to develop this section of your I/E plan. Talking to people in the area will help illuminate how your area is perceived.

This section of your plan will vary in length depending a number of factors such as the size of the area, the desired level of planning (see section 2.6), whether or not there has been a previous I/E plan developed for this area, how complex the history of the area is, how expansive the need for I/E is for this area, and the availability of existing area information. The situation section need not be long; it just needs to set a reasonable context for the area and provide a solid foundation for the planning effort.

3.2 Purpose and Goals

This section addresses the explicit purpose of the plan and articulates relevant overall planning goals (figure 5). These goals should answer the question, “What do we hope to accomplish by planning for I/E at this place?” For a new plan, the overall planning goal may be “to establish a strategic and thoughtful program of I/E media and programs.” For an area with existing interpretation, overall goals might include updating, upgrading, or otherwise reframing I/E programs and media for that area.² This section also addresses other relevant planning considerations.

² Although some planners include specific visitor experience goals early in the plan, other planners argue that they fit better after you have inventoried existing and potential audiences and can draw from that inventory to set specific audience goals. Also, goals for specific media options are typically included later in the plan in which specific deliverables are described (see section 3.4.).

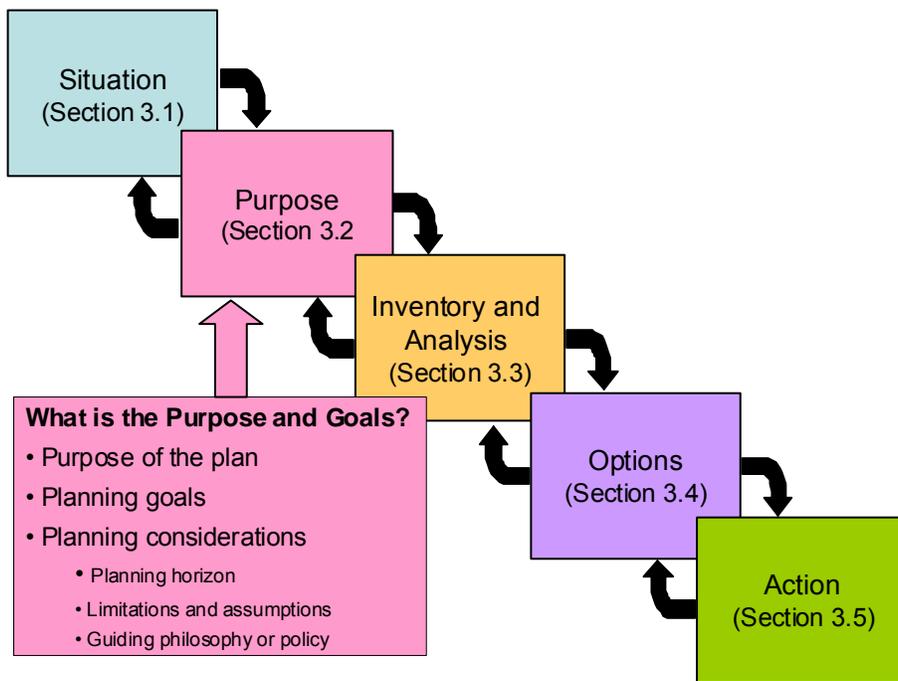


Figure 5.—Planning purpose and goals.

Because an I/E plan is a “strategic sieve” through which all decisions about interpretive and educational initiatives will be run, in writing this section of the plan you will want to:

- ❑ Explicitly state the overall purpose of the plan and articulate specific goals for the area’s I/E initiatives. This may include an overarching philosophy about visitors, the visitor experience, or I/E held by the managing agency of the area.
- ❑ Describe planning considerations that are relevant for the area and its management. For example:
 - Are there any limitations to the planning effort?
 - Are there any assumptions that need to be acknowledged?
 - What is the planning horizon? (See sidebar C.)
- ❑ Explain any policy, directives and standards, Executive orders, regulations, or guidelines that might be used to guide the planning process.

SIDEBAR C

A Note About Your Planning Horizon

Although I/E plans are typically written with 5- to 7-year planning horizons, there is no magic formula for setting a planning horizon. Your plan should be flexible and responsive to changing information, conditions, and funding opportunities. In addition, new and rapidly changing technologies and more and better research about informal learning may also influence your planning horizon. You want to set a horizon far enough out so the plan provides strategic guidance over the long run but short enough that the plan remains dynamic and useful in the short term.

Depending on your situation, you may also find it helpful to consider annual work plans that tier from your overall 5-year I/E plan. An annual work plan is simply a current to-do list based on the strategic guidance provided by the overall I/E plan. In this way, you can revisit the plan annually to determine what alternatives and actions are still relevant. An annual work plan allows you to be nimble and current in preparing more immediate I/E and yet provides a strategic touchstone for optimizing future I/E choices. Annual work plans simply become addenda to the overall 5-year I/E plan.

If an I/E plan already exists for your area, the purpose, goals, and planning considerations should be discussed and readjusted accordingly. If there has never been a plan completed for your area, this section of your plan should be developed by the planning team comprised of interested staff and stakeholders. It is wise to include diverse perspectives from marketing, public affairs, law enforcement, administration, and resource management personnel when developing the plan's purpose and setting overall planning goals.

The intent then of these early plan sections is to develop a reasonable and logical sequence of information that addresses:

- Who are we and what is our situation?
- Why do we need this plan?
- What is the purpose of this plan?
- What are our overall planning goals?
- Are there relevant limitations or considerations?

3.3 Inventory and Analysis

Inventory and analysis are perhaps the most important parts of any I/E plan and are essential for success. Because inventory and analysis are so interrelated, they are addressed together in this section (figure 6). In this part of your plan you will want to address both **inventory** and **analysis**.

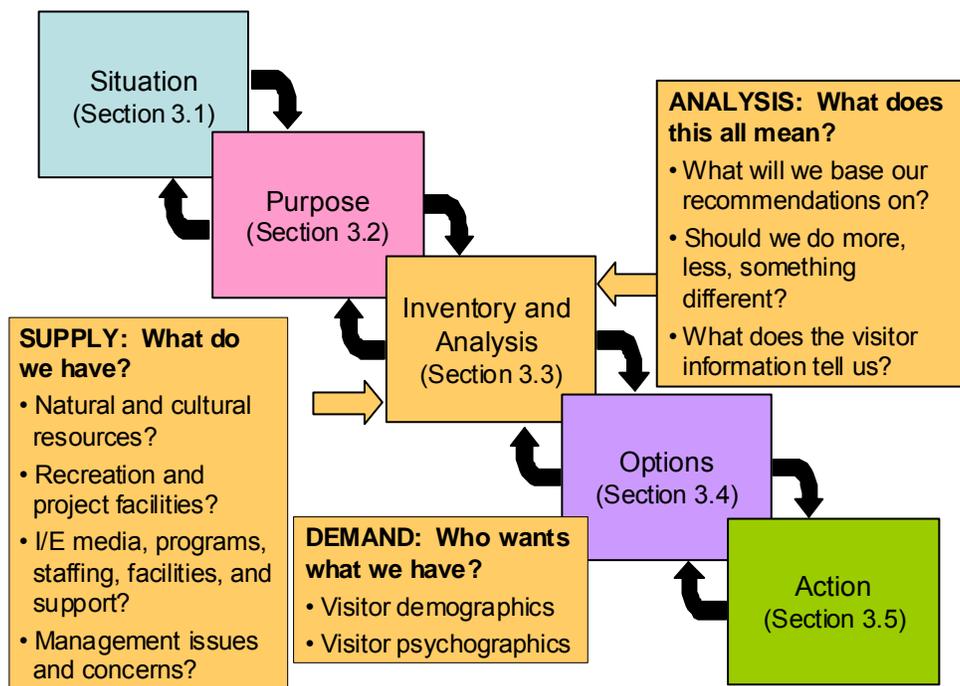


Figure 6.—Inventory and analysis.

To complete the inventory and analysis for your plan, you will want to consider both *supply* questions such as:

- What natural, cultural, and recreation resources exist onsite and in the surrounding area? What resources are important to visitors? What resources draw them to this place?
- What education or interpretation currently exist at this area (including exhibits, programs, publications, safety information, orientation, and way-finding information)? What I/E facilities, staffing, supplies, and equipment are available here?
- What management issues or concerns are relevant here?

And, *demand* questions such as:

- Who are the visitors that come to this area? Why do they come? What do they expect here? Has visitation changed over time? What trends or issues might influence future visitation?

As needed, a series of checksheets are provided in appendix B to help with the inventory and analysis process.

The sections below consider both inventory and analysis for each of categories suggested above. First, suggestions for completing each inventory section are provided, followed by a section that suggests a possible analysis question. The major analysis question asks, “So what does this information tell us about desired or needed I/E media and services”? This “so what” question should help you think about and record the deliberate thought processes that later will support decisions about I/E options.

3.3.1 Supply Inventory

3.3.1.1 Resource Inventory

This section describes the predominant unique and significant natural, cultural, and built resources of the area. People typically choose to visit an area based on any number of natural, scenic, aesthetic, and cultural values inherent in the area. A brief description of these features, and their associated values, is important in order to develop the compelling stories that might best be told at this location.

3.3.1.1.1 Natural Resources

- Describe the major natural resources of the area, including predominant flora or fauna and major ecosystems of the area; the geographic setting including geology, topography, watersheds, or major bodies of water; and any climate or weather factors that affect area resources and visitation.
- Explain any rare, unique, threatened, or endangered natural resources or species in the area (e.g., the lowest elevation aspen stand in the State, home of the endangered bird foot violet, or the only place to see 1.7 billion years of geologic history).

3.3.1.1.2 Cultural and Historic Resources

- ❑ Describe unique or significant historic (archeological and recent history) features that exist in or near the area. This might include historic buildings, structures, or features that are still in use but are important to the area. The description should include the size, age, and condition of these features.
- ❑ Describe unique or significant people (and their stories) who may have had a notable influence on this area, such as Reclamation commissioners, regional directors, dam workers, homesteaders, trappers, ranchers, and Americans Indians.

3.3.1.1.3 Built Resources and Facilities

- ❑ *Project Facilities* – Describe Reclamation project facilities such as dams, canals, pumping stations, or powerplants in the area. Include brief information about when they were built and by whom. This information will become important later in supporting research for specific I/E deliverables.
- ❑ *Recreation Facilities* – Use the Recreation Opportunity Spectrum or Water Recreation Opportunity Spectrum (WROS) (sidebar A) to describe recreation resources onsite, including:
 - **Social attributes** or activities, such as picnicking, hiking, swimming, boating, and fishing.
 - **Managerial attributes** or recreation facilities, such as marinas, campgrounds, trails, and picnic tables. In describing these, it may be useful to describe their location, size (as appropriate), and condition, as well as how they are currently used by visitors.
 - **Physical attributes** described above under natural and cultural resources.

The intent of inventorying these resources and features is to be sure to include all important and unique natural, historic, or social stories that justify the need for I/E media and may eventually be used to develop the content of that media.

You can find this information in (1) area-specific Reclamation or managing partner planning materials, such as resource management plans, facilities plans, stewardship plans; (2) research studies or environmental inventories such as environmental assessments, environmental impact statements, or other National

Environmental Policy Act documents; (3) bird, plant, and animal checklists; and (4) other area documents such as maps, volunteer manuals, area brochures, flyers, or Internet sites.

Including a site map in this section can be very useful for readers and users of the plan. Appropriate maps can often be found in resource management plans.

3.3.1.2 Resource Analysis (So What?)

The natural, cultural, and built features of the area provide the context for the visitor experience regardless of how much development is present. Analysis based on reflection and discussion of these inventory elements should:

- Explain how and why the natural, cultural, and built features of the area are unique or significant and how they might influence I/E options.
- Describe how particular values, such as scenic beauty, serenity, night skies, sounds, or special history are associated with these resources and why certain aspects of these resources should be featured in I/E media.
- Describe recent, proposed, or periodic changes in the natural, cultural, or built resources, such as reservoir levels, beetle kill trees, or prescribed burns. These may influence decisions about I/E deliverables or require new information to be shared with visitors.
- Describe stories or ideas related to these resources that you want to be sure to include in I/E media. This may include any caveats related to visitor engagement with or protection of certain resources.

The purpose of this analysis is to provide a logical, rationale, and deliberate link between what you have currently in the area and what I/E recommendations you will make. This step ensures that you are making traceable decisions that are reasoned and logical. Furthermore, analysis of cultural, natural, and built resources will lead you toward themes and messages you want to convey in I/E products (see section 3.4).

This section will vary depending on the size of the site, the number of resources included in the inventory, and the extent of analysis required. Tables, charts, and bullets can be used to organize the resource inventory for easy reading and reference since the intent is not to repeat what is contained in an existing documents or materials but rather to summarize that information as it relates to visitor experiences and visitor education. In some cases, data that support this inventory, such as bird or plant lists, resource lists from management plans, or historic property inventories, can be included in appendices of the plan.

3.3.1.3 Interpretation and Education Inventory

This section describes what interpretive and educational media, programs, staffing, facilities, and support currently exist. For example:

3.3.1.3.1 I/E Facilities

- Provide a brief description of visitor centers, contact stations, and amphitheaters; interpretive bulletin boards, kiosks, or trailheads; and interpretive trails or waysides in the area. Describe any major support facilities that exist. These might include entrance stations or fee areas; restrooms/changing facilities; cafés or food service facilities; gift shops, parking areas or garages; and other visitor facilities. In describing these, note the number, size, location, and condition. A site map here can be useful to show the context and relationship of these features.

3.3.1.3.2 I/E Media, Programs, and Staffing

- Describe existing personal and nonpersonal I/E media and programs provided by Reclamation staff or its managing partners (refer to appendix A as needed).
- Describe orientation and way-finding information as well as all safety, security, or regulation information available to visitors.
- Describe the I/E resources available at this area from Reclamation or its managing partners. These might include a brief description of important objects or images, such as artifact or photo collections, as well as library or reference materials, teaching supplies, books, and kits.
- Identify I/E staff that might include interns, interpreters, rangers, volunteers, docents,³ or visitor information specialists. Describe the relationship between I/E staff and marketing, public affairs, development, and administrative staff.

If an interpretive plan already exists, some information about existing I/E may be included in that plan and can be updated accordingly. In the case where no interpretive plan exists, you should speak to staff (front-desk, volunteers, marketing staff, and others) and look around in closets, storage areas, and visitor

³ A docent is person who serves in a teaching or instructor role and is often a volunteer.

use areas to determine the full extent of interpretive facilities, materials, and programs that exist. It is always a good idea to keep a list of current I/E programs, media, and available resources on hand.

3.3.1.4 Interpretation Analysis (So What?)

To analyze the existing I/E information, you should first reflect on whether or not there is sufficient and appropriate data for this area at the present time. You may find it useful to include an outside I/E professional in the discussions of your current situation. Consider the following in your interpretation analysis:

- Do visitors have enough information to make necessary orientation and way-finding decisions? Is there any evidence to suggest that visitors are confused or frustrated in finding their way to or around your area? What, if any, evidence exists to suggest that they understand area regulations? What common or obvious questions do visitors ask about your area? Have you collected frequently asked questions that might help inform orientation, way-finding, or safety information in the future? Will you eventually need to collect this type of information?
- Are there too many I/E facilities or not enough facilities for reasonable and satisfying visitor experiences? Are the existing facilities being used or not? Are they being used appropriately? How will you find this out?
- What is the overall effectiveness of existing programs, media, and staffing? Have you conducted any observations, evaluations, or research that might shed light on this question? If not, what anecdotal information might be available to suggest change?
- What I/E media or programs might be needed to enhance visitor experiences based on the area's natural/cultural resources? Have there been any changes in the resources, or in their management, that should be interpreted?

This section should be thorough, but not necessarily long. Including tables, charts, and bullet points can simplify the inventory and make it more useful.

3.3.1.5 Resource Issues Inventory

In this part of the inventory and analysis you should discuss resource issues, management practices, or area concerns that may be relevant to onsite interpretation.

3.3.1.5.1 Natural Resource Practices and Issues

- Describe natural resource practices and issues at or near the site. These might include wildlife management (population, migration, hunting, disease), timber management (fire, prescribed burning, timber cutting), water or watershed management (reservoir drawdowns, river flushes, threats to watershed), mining or resource extraction (gas, oil, minerals), or endangered species (transporting invasive species such as Zebra or Quagga mussels in/on boat equipment).

3.3.1.5.2 Historic or Cultural Resource Issues

- Describe historic or cultural resource issues such as aging sites or buildings, maintenance, stabilization, or preservation and protection concerns. This may already be included in cultural resource inventory above.

3.3.1.5.3 Social or Recreation Issues

- Describe social or recreation issues at the area, such as safety, security, crowding, user conflicts, vandalism, capacities, or need for stewardship. As appropriate, it may be useful to note the nature, frequency, and/or severity of occurrence, such as accidents, deaths, injuries, or vandalism, as well as whether or not there may be seasonal or temporal variations in the occurrences.

3.3.1.5.4 Threats

- Discuss threats to the health of natural ecosystems and species such as water pollution, air pollution, invasive species of flora or fauna, or noise levels. This may also include public safety concerns such as national security issues.

3.3.1.5.5 Land Use Issues

- Report current land use issues such as encroachment, private/exclusive uses, in-holdings, misuse, abuse, and over-use.

3.3.1.5.6 Other Issues

- Describe other issues at this area or in the immediate area about which visitors should be informed (i.e., hazardous land or water areas).

You can typically find material for the section in existing planning and management documents; from direct observations and photographs of vandalism, graffiti, and litter; from staff interviews and discussions, visitor feedback, citizen input, and congressional or government agency mandates; in research reports, inspection reports, and preservation documents or plans for historic or cultural resources.

3.3.1.6 Resource Issue Analysis (So What?)

Increasingly, resource managers are developing I/E programs and materials to address management issues as opposed to simply providing resource information about flora, fauna, water resources, and recreation opportunities. Because users of our Federal lands and waters are citizens and voters, and because visitor experiences in these areas hold tremendous potential for informal learning, analyzing the type and extent of resource management is important. Along with the inventory and analysis of natural and cultural resources, this resource management section will eventually contribute to the content of I/E media and programs. Consequently, your analysis should:

- Consider instances where I/E might help raise awareness, inform, or otherwise influence visitor attitudes or behaviors.
- Discuss critical instances in which security or regulation information is particularly important and needs priority attention.
- Discuss recurring issues or concerns that have not responded well to enforcement or simple information but where I/E programming might help.
- Describe different or new management practices in which increasing levels of visitor awareness may be necessary.
- Suggest stewardship or safety behaviors that might be enhanced through I/E.
- Review situations or circumstances in which there may be over-use or under-use and where I/E might serve to disperse use or explain the need for capacities.

The intent of this section is primarily to identify and discuss management issues or concerns that may be important to communicate to visitors. This should not be a lengthy treatment of issues that might be found in other documents. Rather, this analysis summarizes issues that may be important later during content research stages of interpretive development (see chapter 4).

3.3.2 Demand Inventory

3.3.2.1 Audience/Visitor Inventory

This part of the plan's inventory and analysis challenges you to think about how well you know your visitors. Do you know who they are and what they expect when they come to your area? Understanding your visitors, or the demand for area resources and experiences, is key to planning meaningful interpretive opportunities. Audience inventory summarizes past, present, and expected future visitation and the demand for goods/services at this area.⁴

As pointed out above, Reclamation reservoirs, many of which are managed by managing partners, offer a wide variety of recreation opportunities. Because these areas attract a variety of recreationists, such as boaters, campers, anglers, swimmers, and hikers, it is important to inventory who, how many, and what kinds of recreationists come to the area and why they come to these areas.

3.3.2.1.1 Descriptive Visitor Information

Descriptive data and information describe visitors by number, age, gender, ethnic origin, residence, length of stay, and so forth. A variety of descriptive data is useful in inventorying visitor use and demand.

- Describe the current level and proportion of *resident use* (i.e., locals) to the area from a 50-mile radius of the area. Is this use seasonally or temporally distributed? What group types comprise these visitors (e.g., families, adult-only groups, seniors, school groups, organized and civic groups, disabled and/or disadvantaged audiences)? What are the proportions of ethnicity, age, gender, and residence for resident visitors? Are there other demographics that help describe these users?

⁴ See also *Estimating Future Recreation Demand: A Decision Guide for the Practitioner* (cited in sidebar A) for additional information about how to conduct an indepth audience and demand analysis.

- Describe the current level or proportion of *tourist use* (local, regional, national, international) to the area from over 50 miles away. Is the use here daily, seasonally, or temporally distributed? What group types comprise these visitors (e.g., families, adult-only groups, seniors, organized groups)? What are the proportions of ethnicity, age, gender, and residence for tourist visitors?
- Describe any *other users* who come to this area, such as researchers, media, or government officials. How often and for what reasons do these people visit?
- Identify obvious *stakeholders* of this area, such as impassioned local citizens, friends groups, or local businesses. With what issues are they primarily concerned? These individuals may not actually visit the area, but nonetheless have something to gain or lose depending on how the area is managed. Describe what stake these individuals or groups have in the area. You may find it useful to talk with these groups early in the planning process to determine ideas or issues particularly relevant to them.
- Speculate about *nonvisitors*. Are there visitors you would like to invite to your area (e.g., school groups, educators, researchers, disadvantaged or underserved populations, or volunteers)?

3.3.2.1.2 Psychographic Visitor Information

Psychographic data and information describes what you can't see about visitors (e.g., reasons for visiting, expectations and motivations, values, beliefs, attitudes, interests, and opinions). This level of information is more difficult to capture and, thus, is not always readily available for describing visitors. However, considering the following can be very useful:

- What information is available about why people come to your site and what do they bring with them in terms of attitudes, opinions, interests, expectations, and knowledge? Are you seeing mostly generalists, or are your visitors seeking something specific? Has there been any information gathered in the area that might help describe visitors in this way?
- What concerns, questions, or fears do they have? As available, discuss the top 10 most frequently asked questions and the top 10 most frequently offered complaints.

Sources for psychographic information include recreation planning documents, survey data or research reports, frequently asked questions, tallies of phone calls or mail inquiries, census data and information, local community Chamber of Commerce records, Web sites or annual reports of comparable sites, focus group or community meeting notes, admissions information, sales data, rental or fee data, vandalism reports, user data from other resource management agencies, or research reports.⁵ You may find it useful to collect some front-end information or data during this stage of planning (see more in section 3.6).⁶

3.3.2.2 Visitor Analysis (So What?)

Analyzing audience information is a very important part of the planning process. The ultimate purpose of I/E is to facilitate an engaging and rewarding experience for visitors. It is essential that you explore visitor use and carefully deliberate about desired visitor experiences at your area. It may be useful to collaborate with social scientists or visitor specialists in discussing visitor information. In any case, it is helpful to consider the following:

- Has visitation increased, decreased, or stayed the same over time? What implications does that have for I/E products and services?
- Is visitation to this area changing in other ways (e.g., by season, type of experience, age or race, activity, or by behavior)? How might that influence your I/E planning?
- What common visitor questions or complaints do visitors have?
- Are there particular visitor groups or dynamics that should be segmented or perhaps targeted with specific programs or services?
- Are visitors expectations being met (or not)? What type and level of visitor knowledge do visitors have about topics related to your area? What does that imply for I/E at your area?

⁵ See also *Estimating Future Recreation Demand: A Decision Guide for the Practitioner* (cited in sidebar A) for additional information about how to conduct an indepth audience and demand analysis.

⁶ Conducting surveys or collecting data first-hand (primary) can render some of the best information from area visitors; however, collecting primary data from visitors can be costly and time consuming. When time, money, or expertise limit your ability to collect data first-hand, consider secondary data sources such as census data, recreation and tourism data, and business reports for completing your visitor use inventory.

- What new visitors (or audience segments) would you like to see at your area? Where do they live? What might they expect? How might you reach them?
- Other reasons people might have for not coming to your area. How might you best invite them to take advantage of the opportunities here?
- Are there are daily, weekly, or seasonal expectations (serenity, scenery, fall colors, winter wildlife, ice fishing, solstice/equinox, etc.) that provide unusual or exciting opportunities for visitor experiences?

This will be a substantial section of your plan (several pages). Charts, graphs, tables, and bullets can help consolidate this information into useful formats. The overall intent of this analysis is to provide logical links to recommendations for I/E products and services.

3.4 I/E Options

Now that you have established the foundation for your planning effort and have completed a thorough inventory and analysis of both supply and demand, this section of the plan transitions to themes, desired visitor experiences, and specific I/E options (figure 7). These elements, described more fully below, derive directly from the inventory and analysis. That is to say that they should be supported by sound rationale and be the result of careful deliberation and decisionmaking based on the analysis of the current condition. It is useful at this stage of planning to pause and make sure that there has been sufficient discussion and deliberation about the current situation before considering reasonable I/E options.

3.4.1 Overall Area Themes

Theme statements capture the unique characteristics and intrinsic qualities of an area. They answer questions such as: What is unique or special about this place? What makes this area distinctive on a local, State, or national scale? Why is it inspiring? Why should people care about it? **Themes are compelling stories that focus an area's I/E effort.** Following on the heels of reasonable inventory and analysis, area themes should be fairly self evident.

Most I/E plans include an overarching theme or statement of significance for the area. This overarching theme is like a mission statement for your I/E program. It is broad enough to embrace other compelling stories (subthemes)

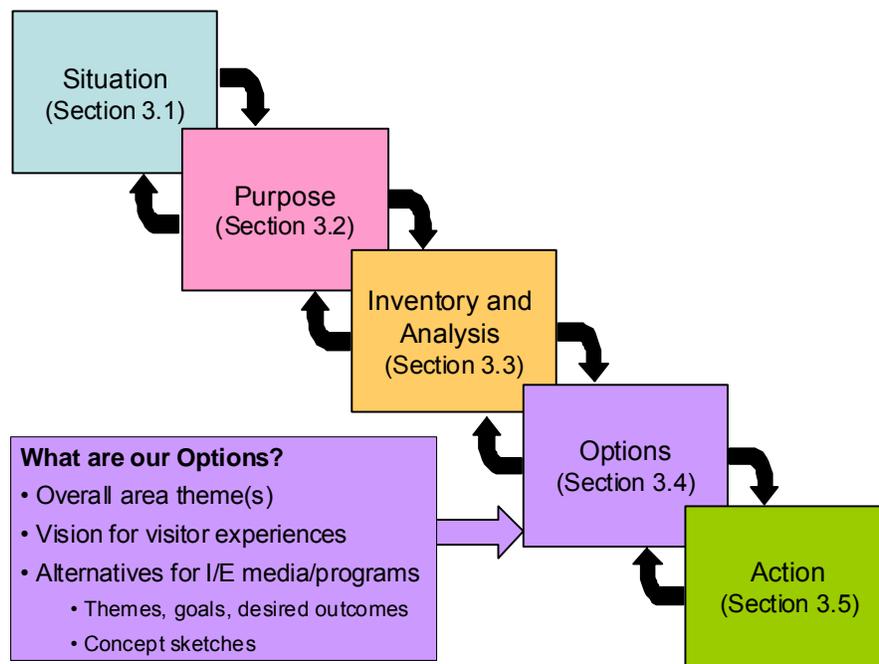


Figure 7.—Options.

but specific enough to help focus the area’s I/E efforts. It is a broad but succinct statement about the area from which other subthemes or site-specific themes tier. Developing themes and compelling stories is best done in a team process in which ideas can be discussed before dropping anchor too quickly. Sidebar D provides an example of an overarching theme and several related subthemes or compelling stories that tier off of a broader theme.

3.4.2 Vision for the Visitor Experience

Increasingly, informal learning settings including natural resource areas are adopting a visitor-centered philosophy. This means that there is a shared sense among the staff that the visitor experience is important and includes the range of experiences from an initial Web site inquiry to an actual onsite visit to post-visit reflections. Crafting and adopting a vision for the visitor experience is an important piece of I/E planning. Like themes, an overall vision for the visitor experience might be accompanied by a set of overall desired visitor outcomes that further elaborate that vision. Sidebar E provides an example.

SIDEBAR D

Example of an Overarching Theme and Related Subthemes

Overarching Theme:

Red Mountain Open Space (RMOS Interpretive Plan, 2008) is part of a much larger northern Colorado bioregion where the Rocky Mountain foothills meet the vast eastern plains. The spacious landscapes of this bioregion include the grassy hills and valleys of the adjoining Soapstone Prairie Natural Area as well as the craggy red rock outcroppings of Red Mountain Open Space. In turn, the unique set of geologic and biological landforms contained in RMOS provide an inspiring backdrop for learning about nature at all scales, history at all ages, and stewardship of all types.

Subthemes (Compelling Stories):

- *Geology* – The diverse geology of RMOS – from the tiniest grains of red sandstone to the thickest geologic layer of the spectacular anticline – exposes the history of this place in simple and spectacular ways.
- *Ecology* – The arid high plains climate of RMOS supports a variety of beautiful and intriguing plants and animals – most of which have evolved in this area over millennia with only minimal negative human impact.
- *Cultural History* – The sense of place at RMOS is the alchemy of a rich and unique ecology stewarded by humans for centuries and is evidenced by the vestiges of human-made structures left here as well as the many colorful stories told of this place.
- *Scenic Beauty* – The color and texture of the rock, the rush of the wind through the cottonwoods and shrubs, the glimpse of flitting insects or soaring birds, the rolling of the landforms, the vivid colors of vegetation, and the immensity of views all comprise the rich aesthetic of this place.
- *Stewardship* – First-hand engagements with nature teach us about interconnectedness, about ecology, and about ourselves. Ecologically responsible experiences here are an anticipated part of local (and planetary) stewardship.

SIDEBAR E

Example of a Visitor Experience Vision and Related Visitor Outcomes

Vision for the Visitor Experience

Visitors to Red Mountain Open Space have a special opportunity to discover and explore the natural resources, scenic beauty, and rich history of the north-central Colorado bioregion. First-hand engagement with the specific landforms as well as exploration of the broader landscapes should be relevant and stimulating. Visitors will leave with a sense of appreciation for the open space and feel inspired to continue its stewardship.

Desired Visitor Outcomes

Awareness and Decisionmaking (Pre-Visit)

- Visitors will easily locate information about RMOS on the Web and/or in printed materials.
- Visitors will understand their options for traveling to the site and feel excited and confident about the options available to them for experiencing the site.
- As appropriate, visitors will feel confident about accessibility to and around the site.

Welcoming, Orientation, Way-Finding and Comfort (Pre-visit and Onsite)

- Visitors will feel welcomed and have a clear and unambiguous sense of having arrived at the site.
- Visitors will feel confident that they can orient themselves to the site and comfortably find their way around the site.
- Visitors will feel comfortable throughout their visit but recognize the personal and physical challenges and responsibilities inherent in visiting a remote open space environment.

The Story and its Cohesiveness (Onsite)

- The site design and facilities (e.g., trails, parking areas, restrooms, educational materials) are all chances (“moments of truth”) for telling the Red Mountain Open Space story. As such, visitors will experience consistency and credibility across the site in terms of the story and how it is told here.
- Visitors will see and experience stories of both nature and culture here.

Relevance, Discovery, Learning, and Stewardship (Onsite and Post-Visit)

- Visitors will easily find a part of the story to which they can relate and will want to share the exciting and personally meaningful experiences with others.
- Visitors will experience a sense of immersion and discovery while onsite. Physically and intellectually engaging experiences are typical.
- Visitors will form a clearer, more meaningful relationship with site, the area, and the region and, as a consequence, will act as stewards of the place.

3.4.3 I/E Options Descriptions

Based on the previous inventory and analysis, this section describes the varying but specific I/E options most relevant for this area related to the area themes and consistent with the desired visitor experiences. Depending on the scope and scale of your plan, the number of I/E options will vary, although each one should be carefully described in the plan and should show how it is derived from the inventory and analysis. Each option should include at least the following information:

- ❑ A *brief description* of the desired program or media (i.e., sign, exhibit, publication, map, walk, talk, program, visitor center)⁷ with *specific stated goals* for that deliverable.
- ❑ The intended *theme* that will be the focus of that specific deliverable and any relevant *main messages* that elaborate the depth and breadth of that theme for the deliverable. The theme in this case⁸ relates back to the area’s overarching theme, but it should be limited to a complete sentence that elaborates and further focuses a topic or idea. Sidebar F provides some examples.
- ❑ *Target audience(s)* with specific *visitor engagements and outcomes* for each deliverable (see sidebar H in section 3.6).

⁷ A visitor center may very well be one of the desired recommendations in an I/E plan. When this is the case, a more extensive planning process should be followed. See Reclamation’s *Visitor Center Policy, Directive and Standard, and Guidelines* (2007).

⁸ Beverly Serrell’s “Big Idea” is a concept developed for museum exhibitions that is relevant here. A Big Idea is a statement that “*provides an unambiguous focus for the exhibit team throughout the exhibit development process by clearly stating in one non-compound sentence the scope and purpose of that exhibition*” (Serrell, 2006: p. 2). For example, NPS developed a Big Idea for a series of trail waysides and collateral interpretive media at the Grand Canyon. It reads:

The Trail of Time is an interpretive walking timeline trail that focuses on Grand Canyon vistas and rocks to guide visitors to ponder, explore, and understand the magnitude of geologic time and the stories encoded by Grand Canyon rock layers and landscapes.

This Big Idea focuses the content and the exhibit team efforts for one “exhibition” (related set of deliverables) at the Grand Canyon. This idea differs somewhat from the themes discussed in sidebar F in that those themes are deliverable-specific and not meant to focus a larger exhibition effort. Yet, many planners find the Big Idea useful in I/E planning.

SIDEBAR F

Example of the Distinction Between Topics and Themes

Topics are not themes. Themes provide focus and direction. From one topic, any number of themes might be developed; each one might tell a different story and thus provide a different focus for the interpretation.

Topic = Dams

Example Theme 1: Dams come in all sizes. The interpretation here might compare and contrast sizes of dams and reservoirs behind them.

Example Theme 2: Dams can fail, as in the Teton Dam break of 1976. The interpretation here would focus on dam construction issues that might lead to failure.

Example Theme 3: Dams of the West are a valuable source of hydroelectric energy. The interpretation here would talk about electric power transmission from dams throughout the West.

- As appropriate, *a schematic or concept sketch* shows generally what the deliverable might look like, along with a brief description of proposed materials or construction considerations that are desired or required, such as approximate dimensions, materials, colors, and finishes.
- A *general cost estimate* of the deliverable with associated assumptions.
- Related *Americans with Disabilities Act (ADA) specifications* and Reclamation's *Visual Identity (VI) program requirements* for the specific deliverable.

Appendix C provides an example of a complete deliverable description. Depending on the scope and scale of your plan, deliverable descriptions may provide more detail or be structured differently. The intent of this section in your plan is to record current thinking and decisionmaking regarding proposed deliverables. The section should be written so the reader can easily grasp why you have selected these ideas, their status, and the anticipated direction for development.

In some cases, it may be important to develop several alternatives for discussion and consideration. Sidebar G provides one such example in which several interpretive products were possible for educating the public about geology. This decision worksheet was used to facilitate discussion and decisionmaking about the most appropriate option.

Chapter III – Developing an Interpretation and Education Plan

SIDEBAR G
Example Decision Worksheet for Interpretive Trail Decision

Alternative	Description	Pros	Cons
Self-guided trail brochure with onsite markers	A recyclable brochure distributed and re-deposited at the trailhead that interprets the geological features of the site marked by numbered markers positions along the trail.	<ul style="list-style-type: none"> Minimal development along the trail; markers only. Visitors can self-pace their engagement and learning along the trail. Provides for education at very specific geologic locations. Less costly than onsite signs. 	<ul style="list-style-type: none"> Requires development of two pieces – brochure and markers. Expects visitor to carry something. Though minimal, does require some site development; markers installed in the ground.
Multiple interpretive signs along the trail (with some in the canyon)	A modest set of three to four interpretive signs positioned along the trail at strategic locations to maximize the education focus on geologic features.	<ul style="list-style-type: none"> Visitor doesn't have to carry anything and can still self-pace their experience. Provides relevant education at specific geologic locations. 	<ul style="list-style-type: none"> Requires more onsite development (mounted signs in ground or on/near geologic feature). More costly option (multiple sign design and fabrication).
Multiple interpretive signs along the trail (not inside the canyon)	One large or two to three smaller signs at the mouth of the canyon and around the south side of the trail loop interpret the various geologic features of the canyon.	<ul style="list-style-type: none"> Does not require site development in the canyon itself. Consolidates the geologic message in one area (efficient message delivery). 	<ul style="list-style-type: none"> Assumes that visitors will read information and then recall it as they experience the geologic features in the canyon. Semically option (multiple sign design and fabrication).
Interpretive necklace	Set of 8 to 10 laminated cards on a string or chain that visitors "borrow" from the trailhead area and carry with them as they hike the trail. One side of the card interprets a specific geology feature and the other side provides information about finding the next feature.	<ul style="list-style-type: none"> Stimulates higher level of visitor discovery and exploration. Provides for education at specific geologic locations. Easily revised and updated. 	<ul style="list-style-type: none"> Expects visitor to carry something. Assumes visitors will return necklaces to trailhead location (honesty policy). Modest initial cost, although replacement cost may be incurred annually due to wear and tear.

Decision criteria matrix (used by staff during planning process in making deliverable decisions)

Option	Site disruption	Cost	Complexity of development	Complexity of use	Visitor engagement potential	Visitor burden/responsibility	Other?
1							
2							
3							
4							

Rate each option where 1 = low and 5 = high.

Although there is nothing that legally mandates public involvement in I/E planning, many planners find it useful (and politically wise) to engage the public during this phase of planning. Public open houses or community discussion groups (focus groups) are common methods for engaging the public in discussions and decisions. Section 3.6 contains additional information about integrating public input into planning.

3.5 Action

The action section of the plan describes what resources and effort are needed to develop, fabricate, and install or implement the recommended I/E options (figure 8).

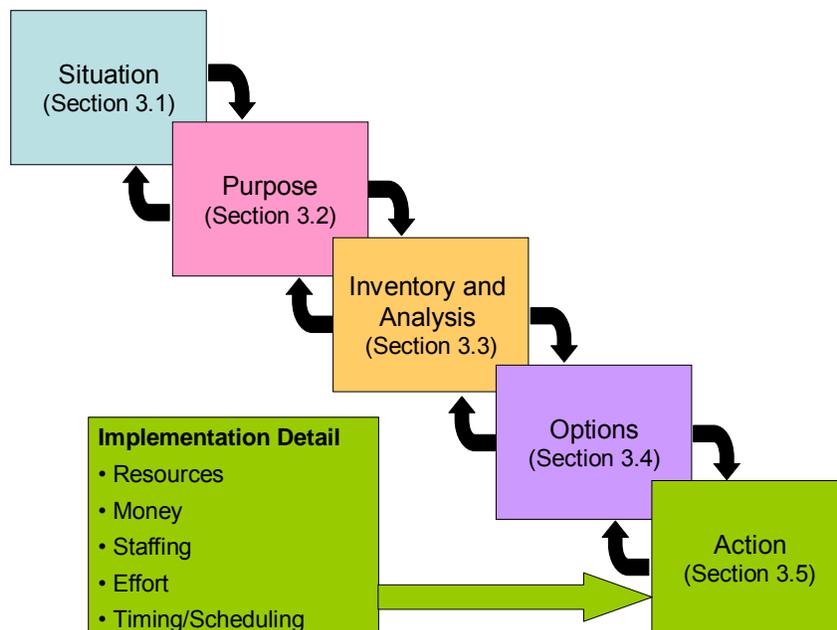


Figure 8.—Action.

In this section you will want to address:

- Resources* – Outline specific resources (supplies, materials) that will be required to develop the various interpretive options. When there are several deliverables recommended, it is often useful to provide a summary list of recommendations.
- Money* – Create a budget summary of proposed costs for each of the recommended deliverables. This budget should include both production costs and operation and/or maintenance costs as appropriate.

- ❑ *Staffing* – Detail all staffing implications.⁹ Staff requirements should include the number of full-time, part-time, volunteer/docent, consultant, or other staffing needed to complete the production of the various I/E recommendations.

- ❑ *Effort* – Describe the steps or sequences of effort necessary for completing the work of the plan. Articulating realistic estimates of the effort necessary for tasks such as research, writing, graphic design, program development, fabrication, and implementation is very important for successful design and development later.

- ❑ *Schedule* – Propose a timeline or schedule for sequencing the design and development of deliverables. Standard workload charts, sequencing tables, or calendar software is available for this purpose. It is essential that adequate time be allocated for post-planning stages of nonpersonal media (exhibits, signs, publications),¹⁰ including:
 - Content development – Research and writing.
 - Graphic design and layout – Including developing appropriate graphic standard for the project or the deliverables.
 - Exhibit or media design and development.
 - Fabrication.
 - Installation or implementation.

Chapter 4 provides more detail on each of these post-planning steps.

Much of the information for this section of your plan is easily researched over the phone or on the Web, and with interpretive professionals, design firms, and fabrication companies. Appendix D provides some basic cost suggestions related to signs and staffing. Other, more specific items may be individually investigated with commercial firms, consultants, or other agencies. Commercial firms have information about fabrication costs and are often willing to provide an estimate for interpretive products or services.

⁹ For new plans, it may be necessary to identify and describe new staff requirements. Appendix C provides an example of a staffing description.

¹⁰ Post-planning effort is also important for personal programs (walks, talks, demonstrations) and will include research, writing, marketing or promotion, peer coaching, etc.

This part of your plan will vary in length depending on the number of deliverables recommended and the level of detail desired. The more detail provided in the plan, the easier the research will be during subsequent stages of design and development.

3.6 Integrating Evaluation into Planning

Evaluation is typically defined as determining the worth, merit, or significance of a product or service. For the purposes of this handbook, evaluation refers to (1) the systematic collection and analysis of information or data to make informed decisions about I/E exhibits, programs, or media and (2) measuring or assessing the effects of I/E exhibits, programs, or media on learners.¹¹ As such, this type of evaluation is very specific to learning environments. Over the past several decades, an entire discipline and organization has developed around this notion of evaluation in learning environments, particularly informal learning environments, such as museums, parks, nature centers, zoos, parks, open lands, natural areas, recreation areas, and botanical gardens.

The term “visitor studies” is frequently used to describe this type of evaluation. In some cases, actual research studies are conducted to learn about visitors and the impacts of I/E media on learners. In other cases, less rigorous research or inquiry is designed to explore various dimensions of the visitor experience. The term “visitor studies” then is an omnibus term used to describe an entire constellation of effort that planners, exhibit developers, museum or informal learning specialists, educators, and evaluators employ to better understand visitors and their learning situations.

The most successful I/E plans integrate visitor studies to help make informed decisions throughout the planning process and throughout the design development process (figure 9). The visitor studies discipline further categorizes evaluation into three and sometimes four categories which include front-end, formative, remedial, and summative. As shown in figure 9, these four categories integrate into the overall planning, development, and use context described earlier in figure 1. These categories, their unique purposes, and their relevance to I/E planning are described more fully in this section.

¹¹ See <www.visitorstudies.org>.

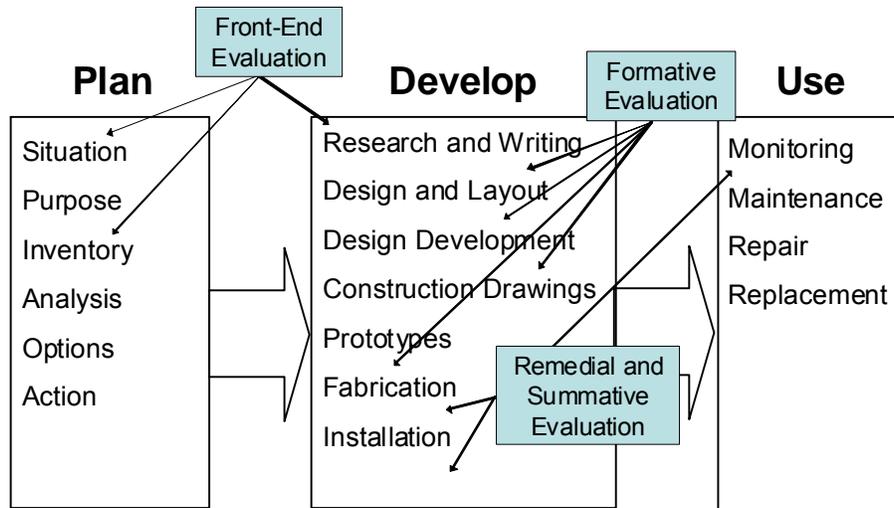


Figure 9.—Integrating evaluation or “visitor studies.”

3.6.1 Purpose and Phases of Evaluation

The overall purpose of evaluation (or visitor studies as defined above) is to collect information and data from or about visitors to make informed planning and design development decisions. As indicated above, visitor studies are typically categorized by stage. The four major phases include:

- Front-end
- Formative
- Remedial
- Summative

Each is described below.

3.6.1.1 Front-End Evaluation

Front-end evaluation is an inventory and analysis of audiences and their perceptions to make informed major conceptual decisions in the project planning phase and during initial design development (see figure 9). Front-end evaluation helps answer the overall question, “What information about visitors do we need in order to inform our planning decisions”? This is the same question you may ask yourself when you are writing an I/E plan and completing your inventory and

A Planning Handbook for Interpretation and Education

analysis sections (discussed fully in section 3.3). The questions below may help you think about your inventory and analysis in different ways and provide ideas for collecting or gathering information to use in your plan.

Example front-end evaluation questions	Possible methods/tools
<p><i>General – Demand analysis</i></p> <ul style="list-style-type: none"> • Who are we currently serving? • Are there potential new audiences? • Are there disenfranchised and/or displaced audiences? • What local, State, regional, and national publics do we serve? • What activities, settings, experiences, and benefits are sought by our publics and audiences? 	<ul style="list-style-type: none"> • Document research: in-house, local community, State, regional, and/or national data and trends. • Surveys. • Interviews. • Staff discussions.
<p><i>General – Opportunity analysis</i></p> <ul style="list-style-type: none"> • What new opportunities could we develop for various audiences, and what current opportunities should we continue? • What partnerships and/or collaborations could we develop to help with or support our efforts? 	<ul style="list-style-type: none"> • Results of previous evaluations, research, or planning. • Staff discussions. • Community focus groups.
<p><i>Specific – Visitor analysis</i></p> <ul style="list-style-type: none"> • What do visitors know, think, or feel about idea A or topic B? (e.g., knowledge, attitudes, opinions)? • Why do visitor segments x, y, and z come to this area (e.g., motivations)? • What do visitor segments x, y, or z expect when they come here (e.g., expectations)? 	<ul style="list-style-type: none"> • Visitor discussion groups or focus groups. • Community open houses. • Interviews. • Surveys. • Card sorts. • Concept mapping.

Front-end evaluation is perhaps the only form of evaluation you will use during your I/E planning process. The other stages of evaluation (described below) are typically integrated into post-planning efforts when recommended I/E exhibits, programs, or media are designed and developed. These post-planning stages of I/E design and development are discussed in chapter 4, but the remaining stages of evaluation are described here so that you might keep them in the context of other evaluation to pursue eventually.

3.6.1.2 Formative Evaluation

Formative evaluation is testing or exploring visitor reactions to I/E media or programs in an iterative process during design and development (figure 9). Formative evaluation poses the general question, “How are we doing, and what can we improve”? The table below provides example questions and methods for conducting formative evaluation. Formative evaluation questions may vary significantly depending on when in the process and why you are conducting an evaluation. You may find it helpful to hire or consult with a visitor studies or evaluation specialist before you begin a formative evaluation process.

Example formative evaluation questions	Possible methods/tools
<p><i>Prototype testing</i></p> <ul style="list-style-type: none"> • How is idea A, exhibit B, or program C going? • Do the parts of the exhibit work? • Do the goals of the program seem realistic? • Does the idea seem to be working? 	<ul style="list-style-type: none"> • Shop, lab, and/or field testing of mock-ups or prototype material. • Observations. • Interviews. • Surveys. • Focus groups.
<p><i>Visitor engagements</i></p> <ul style="list-style-type: none"> • Are visitors engaged in the way we expected? Are they coming away with attitudes or knowledge that we expected them to gain? • What do they do, think, or feel as they experience the program, exhibit, or publication? 	

3.6.1.3 Remedial Evaluation

Remedial evaluation is conducted during the final stages of production in order to “remediate” issues with content or delivery (see figure 9). Remedial evaluation poses the general question, “What needs to be changed or fixed now that visitors have tried the deliverable and we see what is working or not working”? Example questions and methods are suggested below.

Example remedial evaluation questions	Possible methods/tools
<ul style="list-style-type: none"> • What are the obvious flaws or problems we can repair or modify quickly and inexpensively? • What simple improvements can we make? 	<ul style="list-style-type: none"> • Observations. • Interviews.

3.6.1.4 Summative Evaluation

Summative evaluation takes place following implementation (see figure 9) and is done with finished programs or exhibits under real conditions. It is an attempt to determine the value of the project or to summarize the way it is working in terms of effectiveness. Summative evaluation poses the general question, “Have we met our goals and achieved our desired result”? Example questions and methods are suggested below. Again, it may helpful to discuss your evaluation questions with a visitor studies specialist as you begin to think about remedial or summative evaluation.

Example summative evaluation questions	Possible methods/tools
<p><i>Outputs:</i></p> <ul style="list-style-type: none"> • How many people did we reach? • How many products did we produce? • How many programs did we offer? <p><i>Outcomes:</i></p> <ul style="list-style-type: none"> • How effective was idea A, exhibit B, or program C in terms of our expected visitor outcomes? • What did visitors, do, think, or feel as a result of their experience? 	<ul style="list-style-type: none"> • Counts. • Program records. • Tallies. • Observations. • Interviews. • Testing (surveys).

In general, visitor studies are systematic in that the information is gathered using methods and sampling techniques appropriate to good science. Engaging a professional evaluator or visitor studies specialist may help you integrate the most appropriate evaluation into your planning and the design development process.

3.6.2 Visitor Outcomes

When integrating evaluation into the planning or development of I/E exhibits, programs, and media, it is important to consider how the impacts of those efforts will be described and determined. Increasingly, Federal funding agencies, such as the National Science Foundation <www.nsf.org> and the Institute of Museum and Library Services <www.imls.org> are requiring that specific and measurable outcomes be developed during the planning process. This is a rather significant change from simply describing program outputs, such as the number of participants in a program, the number of total programs developed, or the percentage increase in attendance.

Chapter III – Developing an Interpretation and Education Plan

Outcomes (not outputs) describe the desired impacts of a program (i.e., what visitors will do, think, or feel as the result their encounter with I/E programs, exhibits, or media). In order to measure outcomes, it is necessary to develop specific and measurable outcome statements (sometimes called objectives) that eventually guide a formative or summative evaluation strategy. Sidebar H provides some examples of visitor engagement and outcome statements. In this case, “engagements” are defined as those things that visitors do, think, or feel while they are engaged with the I/E media, and “outcomes” are defined as what visitors might do, think, or feel as a result of their experience with the I/E media. Engagement statements are highly appropriate for use in formative evaluation (see discussion above), and outcome statements are appropriate for formative, remedial, and/or summative evaluation. You may find these examples useful in your planning process to describe desired visitor outcomes for your recommended I/E options.

SIDEBAR H

Engagements and Outcomes for use with Evaluation

In an article entitled, "Beyond cognition and affect: The anatomy of a museum visit," In: *Visitor Studies: Theory, Research, and Practice. Collected papers from the 1993 Visitor Studies Conference*, 6, 43-47 (Perry, D.L. 1993), Perry describes various visitor ENGAGEMENTS for on-site experiences. These are typically organized into categories that represent what visitors might do, think, or feel alone or with each other, **during** an experience. For example:

Physical engagements describe how visitors engage physically with the exhibit content – actively and passively. Examples might include:

- Visitors will try the interactive device and read the related explanation for about 9-10 seconds.
- Visitors will stand and read exhibit content for approximately 20-40 seconds.

Social engagements describe how visitors engage with each other and when and how they interact with others in their social group. Examples might include:

- Visitors will discuss how exhibit material relates to their own lives.
- Visitors will call others in their group over to try the suggested activity that is described in the self-guided brochure.

Intellectual engagements describe how visitors engage intellectually with the exhibit content, how they reflect on topics, and how they make connections between ideas. Examples include:

- Visitors will compare and contrast the different types of dam construction.
- Visitors will consider similarities and differences of the security issues here today with those of World War II era.

Emotional engagements describe how visitors engage with or connect emotionally to the exhibit content (i.e., excitement, passion, awe, inspiration). Examples include:

- Visitors will feel overwhelmed by the size of the generators inside the dam.
- Visitors will be awed at the extraordinary craftsmanship of the dam.

Engagements should be differentiated from outcomes, which are described below:

Outcomes describe *what visitors might do, think, or feel as a result of their onsite experience*. These might be *short-term* outcomes (within a few weeks of the experience) or *long-term* (months or even years after the experience). Because educators typically don't have as much control over post-site experiences, they often don't distinguish them by category. However, they still include each of the dimensions described above (e.g., social, intellectual, emotional, and physical). Examples include:

- Visitors will extend their understanding of dam construction on the Web.
- Visitors will describe how reservoirs are created.
- Visitors will share their experiences with friends and family.

CHAPTER 4

Post-Planning Considerations

This chapter describes several post-planning considerations for I/E development. Overall, the more guidance that is provided in your I/E plan, the more efficient the media and program development process will be. For example, the more completely the I/E options are described (section 3.4), and the more schematics or concept sketches are included, the easier the transition will be to design and development. Design development is a partly a creative process, one in which graphic artists, exhibit designers, landscape architects, and creative/interpretive writers are involved in helping realize the recommendations of the I/E plan.

4.1 I/E Design and Development

Figure 10 highlights the I/E design development phases that move interpretive and education recommendations from concept to reality.¹² These phases are described briefly below.

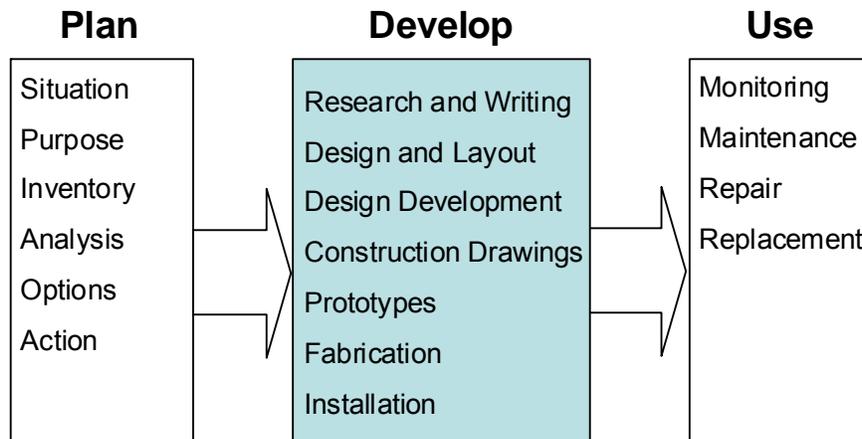


Figure 10.—I/E development.

¹² Keep in mind that the phases shown in figure 10 are most appropriate to nonpersonal media such as exhibits, interpretive panels, and publications. A slightly abbreviated process is appropriate for personal programs such as walks, talks, living history, educational programs, storytelling, or tours. For example, a tour or program will still require research and writing but not design/layout, design development or construction drawings, or fabrication. Instead, personal media might necessitate coordinating site logistics and props, teaching aids, or costumes prior to implementation. In any case, formative testing or “dress rehearsing” a program or tour is always a good idea in this implementation phase.

4.1.1 Research and Writing

The content of each sign, exhibit, publication, or program presentation needs to be researched carefully for content, accuracy, relevance to the audience, and even political correctness (as appropriate). You should consider a variety of resources, including subject matter experts, content publications, technical documents, Reclamation records and archives, Web sites, local community records and archives, State Historic Preservation Office resources, Western Area Power Authority resources, videos, and Web resources in conducting content research. Creating stimulating narrative that is provocative and relevant for visitors is a creative process that takes time. **Sufficient time should be allocated for researching concepts and also for constructing accurate, appropriate, and compelling interpretive text for each deliverable.**

It is highly appropriate to include front-end evaluation as part of the research and writing phase to probe visitor understanding of and perceptions (or misperceptions) about specific topics, themes, or ideas. Focus groups, visitor surveys, or interviews can help determine the level of visitor understanding of or interest in interpretive content (see section 3.6.1.1).

4.1.2 Design and Layout

Graphic artist skills are invaluable in the interpretive development process. The role of the graphic artist is to take interpretive narratives, photographs, illustrations, and/or graphics that have been gathered during the research and writing phase and put them into an artistic and professional layout appropriate for visitors and consistent with planning and management expectations. The design and layout process involves (1) creating a design “look” or “brand” that is professional and appropriate for the project, (2) developing a design standard for the project to ensure consistency among and between multiple pieces of the same project, and (3) preparing the design and layout of the deliverables that may include obtaining, scanning, and/or manipulating images or photographs and ensuring that final production files are in order for final fabrication.

Two of the overall goals for design and layout should be (1) consistency of design elements, such as font [style and size], color, specific design elements, and overall “look” and (2) appropriateness of the design to the existing character of the site or area. Reclamation’s VI program is a useful reference for this stage of the process to ensure that color, font, and layout comply with accessibility specifications for ADA. VI program approval may be needed for some Reclamation projects prior to fabrication.

Design and layout typically involves several iterative discussions between the graphic designer and interpretive writers, content experts, artists, and the project manager. The planning budget and timeline should take this into account. In

addition, the graphic artist typically acts as a liaison with the fabricator to ensure the desired output. **You will also want to keep an electronic copy of all final production files at your location so that revisions can be made as information change and so media can easily be refabricated in the case of vandalism or damage.**

4.1.3 Design Development or Exhibit Design

Smaller projects that involve only the development of an interpretive publication or a few interpretive panels may not require much design development. For larger projects (those that include multiple exhibits or products), design development is critical. The design development process begins where concept sketches in the I/E plan leave off. The purpose is to develop accurate design drawings for each of the interpretive elements and to show the relationships of those elements to each other, particularly with exhibit elements. It is essential that the exhibit design and development process be coordinated with research and writing team in terms of content research and project timing.

Exhibit designers also make recommendations about final finishes and materials for fabrication (e.g., paint, carpet, fixtures, wall coverings, lighting, artifact cases, etc.). Design drawings are provided to an engineer who then develops engineering drawings and construction specifications to be used in final fabrication.

To ensure accessibility of exhibits and other nonpersonal interpretive media, the USDA Forest Service Accessibility Checklist based on the Smithsonian Institution Exhibition Accessibility Checklist can be found on the Web at <www.access-board.gov> or www.fs.fed.us/recreation/programs/accessibility/smithsonian.htm>.

4.1.4 Construction Drawings

Construction drawings are developed by an engineer who understands exhibit fabrication and can produce shop drawings for production of exhibit elements. In some cases, a designer's exhibit intent may not be feasible from a construction standpoint and should be negotiated. Communication between the engineer, the exhibit designer, and even the planner is important to maintain the overall intent of interpretive elements.

4.1.5 Fabrication

Fabricating exhibits and interpretive panels takes place after all phases above are complete. Fabrication will typically be organized and coordinated by a project manager and can involve fabrication by any number of vendors who specialize in various materials and/or exhibit types.

4.1.6 Formative Evaluation

As described in section 3.6, a period of formative evaluation (i.e., prototype testing) is highly recommended. This phase is essential for ensuring that the interpretive media work as intended and that they attract and hold visitor attention. Testing prototype panels and exhibits is done at approximately 90-percent completion – just prior to final fabrication. Evaluation is typically completed onsite with a selection of visitor groups who will view or interact with prototype exhibits and panels and provide feedback (e.g., perceptions about presentation, interest in material, attracting and holding power) prior to final fabrication.

4.1.7 Installation

This phase is typically short and involves installing signs and exhibits into their final place. However, this phase can involve demolition of previous exhibit elements and/or preparation of exhibit area (patching, painting, electrical work, lighting work, construction, etc.). This phase also involves careful coordination between fabricators, project managers, and site staff.

4.2 I/E Use

Once I/E media is completely developed and installed, a period of use begins. Figure 11 puts this phase in context with planning and development.

4.2.1 Monitoring

When visitors use I/E exhibits, programs, or media, monitoring that use is important for improving (or remediating) the products and then evaluating the impact of those products. (Figure 9 and section 3.6 discuss this as remedial and summative evaluation.)

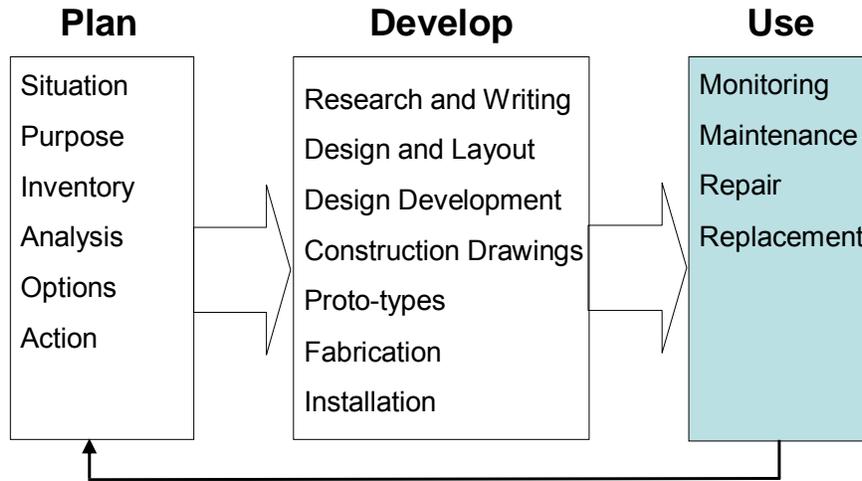


Figure 11.—I/E use.

4.2.2 Maintenance, Repair, Replacement

Over the life of a project, and based on monitoring efforts, I/E media will need to be maintained. This maintenance can range from repairing an interactive exhibit part, replacing a vandalized sign, replacing light bulbs behind a lighted interpretive panel, or republishing an interpretive brochure. In most cases, repair and maintenance are aimed at improving visitor experiences with the area's I/E products and services.

Eventually, as the sun sets on the previous I/E planning horizon, a new planning process will be necessary to revisit old goals, inventory a new environment, and recommend new or additional I/E options (figure 11).

APPENDICES

Appendix A Types of Interpretive Media and Programs

Appendix B Inventory Checklist

Appendix C Select I/E Planning Examples

Appendix D Cost Examples for Select I/E Media and Services (2007)

Appendix E Helpful References for I/E Planning

APPENDIX A

APPENDIX A

Types of Interpretive Media and Programs

Interpretative media is often categorized into (a) personal interpretation (requiring a person) and (b) nonpersonal (not requiring a person). This appendix contains more detail about each of these forms of interpretation. Definitions with advantages and disadvantages of each are provided along with some helpful tips.

Personal Interpretation

Guided Walks or Tours

This includes walks or tours that are guided by a trained staff or volunteer. The sequence of stops and topics is controlled by the guide and the walk or tour typically travels along a per-determined route which features stops relevant to a central theme. Tours can be by foot or by vehicle.

Advantages

- Very effective in areas where visitor safety is an issue (e.g., Hoover Dam).
- Visitors enjoy a person with whom they can discuss issues and ideas.

Disadvantages

- Requires trained staff.
- Can be difficult to keep focus on central theme.

Interpretive Talks and Demonstrations

These are stationary talks or demonstrations developed around a central theme. An interpretive talk or demonstration is prepared and presented by a trained staff or volunteer. Successful talks include (a) an introduction that creates interest for the visitor and which reveals the theme, (b) the body of the talk which develops or elaborates the theme and links information to the central theme, and (c) a conclusion that summarizes important information and reinforces the theme. Short talks or demonstrations are often done in visitor centers as part of the visitor orientation process.

Advantages

- Effective for orienting visitors to an area where they may have never visited.
- Effective for describing/showing complex process with a captive audience.

Disadvantages

- Often difficult with large groups.

Roving Interpretation

This is informal, site-based interpretation. But, unlike guided walks or tours, an interpreter wanders or “roves” around a site or facility to help visitors understand what they are seeing. There is no organized tour or story; rather, the interpreter facilitates an experience with a visitors driven by their concerns, questions, and observations.

Advantages

- Very effective in undeveloped areas where there is no other interpretation.
- Visitors really appreciate having staff available to respond to questions.

Disadvantages

- Can be boring for interpreters if there are only a few visitors.
- Interpreters may not be able to answer all visitor questions.

Storytelling

Stories are an umbilical to our past, present, and future. Stories create images and metaphors that are used to exemplify issues, concerns, morals. Stories are often borrowed from myths, legends, or folklore, or they can be constructed. They are told using colorful images; a full range of vocal inflections; expressions, and gestures; and often a variety of props and/or costumes. **Interpretive theater** and **puppet shows** are other examples of theatrical forms of interpretation.

Advantages

- Images and metaphors are easier for visitors to remember.
- Very powerful for conveying complex or contentious material.
- Particularly suited to family groups or groups with children.

Disadvantages

- Requires more specialized training for interpreters.
- Connections to concrete facts can easily be obscured by images of story for younger audiences.

Living History

This form of interpretation re-creates specific periods of the past (or future) using interpreters usually clothed and equipped with the correct costumes and props of the era. Reenactments are a popular form of living history. Living history can be performed in first person (acting as the character of the time) or third person (talking about a character from another time).

Advantages

- Helps visitors be “in the time” or “ in the era.”
- Created reality is very popular with many visitors.
- Very effective with historical themes.

Disadvantages

- Requires specialized training.
- Costumes and props can be hard to obtain, store, keep maintained.
- “Faked” authenticity is often detected by astute visitors.

Facilitated Educational Activities

These are activities where the visitors drive the scope, direction, and some times the sequence of the content, but the interpreter facilitates the goals of the activity. These are different than demonstrations or talks where the interpreter controls the scope and sequence of the material.

Advantages

- Allows visitors to guide their own experience to some degree.
- Hands-on activities keep visitors engaged and are often more effective.

Disadvantages

- Requires visitor time and attention to activities.
- Sometimes difficult for visitors to connect to larger context once activity is completed.

Nonpersonal Interpretive Media

Interpretive Publications

Brochures

Typically a folded, single-page interpretive publication that convey fundamental information about a topic or issue of interest to visitors.

Advantages

- Handy and common.
- Fairly easy to design and produce.
- Reasonable cost to produce.

Disadvantages

- Tend to be used once and thrown away.
- Lots of competition with other brochures.
- Requires time to read.

Pamphlets, Booklets

Multipage publications that cover an issue or phenomenon in more detail. Narrative, graphics, pictures, and detailed descriptions are often used.

Advantages

- Typically kept longer by visitors.
- Good for topics or situations where more information needs to be imparted.
- Easier to ask for donations or charge fees for pamphlets than brochures.

Disadvantages

- More difficult and expensive to produce.
- More waste if thrown away.
- Require extensive visitor reading for maximum effectiveness.

Newsletters

Typically multipage publication that serve as a form of communication for members of an organization; can contain both informative and interpretive material.

Advantages

- Handy, convenient size and shape.
- Well accepted; public is used to format.
- Good for multiple or complex messages.

Disadvantages

- Competition with other newsletters.
- Require work to produce professionally and consistently.
- Commonly read once and thrown out.
- Require developing and maintaining mailing list.

Posters

Typically large single sheets, visually/graphically focused; they provide information or interpretation about a single topic or issue.

Advantages

- High souvenir appeal.
- Great visual appeal; attracts visual learners.
- Effective for single message.

Disadvantages

- Format often limits text.
- Limited to one or two simple messages.

Maps

Simplified representations of the environment (built or natural); often used to convey directions, elevations, distances, and instructions that help visitors navigate and find their way around a site or facility.

Advantages

- Useful.
- Low language barrier.
- Easy to charge fee.

Disadvantages

- Difficult to produce (accuracy and information).
- Difficult to include everything without looking cluttered.
- Many visitors have difficulty reading maps.

Postcards, Flyers, Bookmarks

Single cards, typically graphic- or photo-based that interpret places or phenomena. Often contain a simple educational message.

Advantages

- Popular, visual.
- High souvenir appeal.
- Long shelf life after consumption.

Disadvantages

- Little space for interpretation.
- Lots of competition with other publications.
- Demand color or perfect graphics or photos for maximum effectiveness.

Interpretive Exhibits

Strategic arrangements of artifacts and information. Exhibits vary from the simplest two-dimensional bulletin boards to the most complex multi-media designs; they can be static or dynamic, large or small, and interactive or not.

Advantages

- Original objects (natural science, cultural history, engineering and construction history, etc.) can be displayed.
- Visitors can self-pace themselves through the interpretive experience.
- Can tell a story in the absence of a live interpreter.
- Can provide perspective not otherwise available.
- Can stimulate visitor involvement with objects and artifacts.

Disadvantages

- Do not always answer visitor's questions.
- Not the best medium for overly complex or detailed information on abstract ideas.
- Lack personal touch.

Types of Exhibits

- *Flat or Wall* – Bulletin boards, spray mount exhibits, etc.
- *Three-Dimensional* – Artifacts in cases, free-standing exhibits, relief models, maps.
- *Dioramas* – Scale representations of real situations or artifacts.
- *Interactive* – Touchable components, lift panels, wheels, quiz-boards, technological interactives (e.g., touch screen).

Common Characteristics of Exhibits

- Viewing and interactive times vary greatly by exhibit.
- For video and slides in exhibits where visitor must stand, the average holding time is 3 minutes.
- For video and slides in exhibits where visitors can sit, the average holding time is 7 minutes.
- For interactive exhibits, the average holding time is 1–5 minutes.
- The average visitor grasps the main concept of an exhibit in 15 seconds.
- The average time spent listening to a taped message is 4 minutes.
- Only 1 percent of all visitors are likely to read everything presented in an exhibit.
- Comprehension of maps and map information is typically minimal.
- Children with adults increase viewing time.
- Heat and cold (seasonal or room temperature) decrease viewing time.
- Detailed dioramas increase involvement.
- Touchables or interactive elements increase participation.
- Wildlife and other animals have high attracting and holding power.
- Some technology attracts visitors, but the higher the technology, the higher the maintenance.
- The presence of staff increases interaction with exhibits.

Common Mistakes

- Too much text.
- Static and unimaginative.
- Disjointed flow pattern through exhibit.
- Ideas, design, or text is too complicated.

APPENDIX B

APPENDIX B

Inventory Checklist

This appendix contains a fill-in format that you might find useful in completing the inventory and analysis portions of your I/E Plan. Completion of these questions does not replace or substitute for a written or narrative inventory and analysis, but provides a systematic way to capture, organize and store information to use in your planning process.

The pages that follow are designed to be consistent with the guidance provided in chapter 3. The various chapter sections are indicated throughout.

Area Location and Description (see section 3.1)

Region/area office: _____ Project: _____

State(s): _____ Area: _____

Primary manager (check both if cooperative management):

Reclamation

Managing partner(s): (Specify) _____

Closest town/community: _____ Estimated population _____

Is there an interpretive plan for this site/unit? No Yes Date: _____

SUPPLY Inventory: Natural Resources (See section 3.3.1.1.1)

List the **unique and/or significant** natural resources for this site/unit by category below.

Major flora	Major fauna	Geology/soils	Waterbodies

What is (are) the major watershed(s) of this area? _____

What are the major ecosystems of the area? _____

Any important climate or geographic considerations in this area? _____

SUPPLY Inventory - Cultural/Historic Resources (See section 3.3.1.1.2)

Indicate and describe any predominant (unique and significant) historic or cultural resources for this area.

Structure	X	Material(s)	Size	General condition
Historic building still in use				
Historic building no longer in use				
Historic or pre-historic structure or feature (nonbuilding)				
Other (describe)				
Legend		<ul style="list-style-type: none"> • Wood • Metal • Stone 	<ul style="list-style-type: none"> • Square feet • Height, width, depth 	<ul style="list-style-type: none"> • New – new or in good shape • Fair - not new but fully functional; may need minor repairs • Poor - needs major repair

SUPPLY Inventory – Built Resources and Facilities (See section 3.3.1.1.3)

Describe Reclamation project facilities (dams, canals, pumping stations, powerplants).

Facility	When built or age	General description

Describe available recreation opportunities (social attributes).

Type	X	Description
Flat water or lake recreation (boating, fishing, water skiing, swimming, diving, etc.)		
River recreation (fishing, hunting, rafting, tubing, canoeing, etc.)		
Land-based recreation (camping, hiking, picnicking, group outings, mountain biking, hunting, watchable wildlife, photography, etc.)		
Other		

Describe current recreation and support facilities (managerial attributes).

Recreation facilities			
Type	No.	Size/capacity	Condition/age
Marinas			
Boat ramps			
Beaches or swimming areas			
Fishing docks			
Campgrounds			
Trails			
Picnic areas/tables			
Other			

Support facilities			
Type	No.	Size/capacity	Condition/age
Entrance stations or fee areas			
Restrooms or changing areas			
Cafés or food services			
Gift Shops			
Parking lots or garages			
Other			

SUPPLY Inventory – I/E Facilities, Media, Programs, and Staffing (See section 3.3.1.3)

Interpretive facilities: Describe current interpretive facilities.

Interpretive facilities			
Type	No.	Size/capacity	Condition/age
Visitor center			
Interpretive kiosks			
Interpretive trails			
Interpretive signs			
Other			

Interpretive media and programs: Indicate the number of and topic or theme for each of the following media and programs *currently available* at this area.

Interpretive media	No.	Major topic or theme
Exhibit (indoor)		
Exhibits (outdoor; e.g., waysides)		
Publications – directions or information		
Publications – safety		
Publications – interpretive or educational		
Traveling kits or boxes		
Website – interpretive or educational content		
Other (describe)		

Interpretive programs	No.	Major topic or theme
Guided tour(s) – facility		
Guided walks/talks – outside		
Campfire programs		
Living history programs		
Roving interpretation		
A/V or multi-media program(s)		
Other (describe)		

School or curriculum-based programs	No.	Major topic or theme
Pre-K and Elementary school programs (PreK-4)		
Secondary school programs (5-8)		
High school programs (9-12)		
Higher education or university programs		
Technical or specialized programs		
Other (describe)		

Other programs offered on-site or off-site (outreach)	No.	Major topic or theme
Youth affinity groups (e.g., scouts, recreation, church, civic group)		
Adult affinity programs (e.g., Elderhostel, recreation, church, civic group)		
Other (describe)		

Describe if and how the impacts or outcomes of these efforts have been assessed:

Interpretive staff: Indicate all personnel who have any level of responsibility for interpretive/educational services.

Job title	No.	OPM job series	Type
Reclamation personnel			
Managing partner personnel			
Legend:			FTE = Full time PT = Part-time S = Seasonal V = Volunteer O = Other

SUPPLY Inventory: Resource Issues (See section 3.3.1.5)

Describe *current and/or persistent* management issues at this area.

Issue	Description
<i>Natural resource issues</i> – Fire, resource extraction, endangered species, resource damage from use, pest control (invasive weeds or species), etc.	
<i>Historic/cultural resource issues</i> – Vandalism, aging, maintenance, etc.	
<i>Social/recreation issues</i> – Crowding, conflict, safety, stewardship, etc.	
<i>Threats to the natural ecosystem</i> (pollution, invasive species, noise)	
<i>Land use issues</i> – Encroachment, in-holdings, trespass, unauthorized use, misuse, overuse, existing authorized uses or licenses, etc.	
<i>Other issues</i> – Proposed recreation uses/activities, public conduct, law enforcement, etc.	

DEMAND Inventory - Audiences/Visitors (See section 3.3.2.1)

Descriptive visitor information – Describe current use (numbers, percentages, rough estimates) using descriptive data categories such as those suggested below. Also consider gender, income levels, and level of education.

Home or residence	Locals or residents within 50 mile radius Tourists or visitors from over 50 miles away
Ethnicity	<ul style="list-style-type: none"> • Caucasian • Hispanic • Asian • Afro-American • Middle Eastern • Western European • Other
Group type	<ul style="list-style-type: none"> • Families (adults with children) • Adults only (ages 30-60) • Young adult groups (ages 18-29) • Seniors (ages 60+) • Affinity groups (scouts, church, youth, club, sport, etc)
Seasonal / Temporal Distribution	<ul style="list-style-type: none"> • Spring, summer, fall, winter • Weekend versus weekdays • Morning, afternoon, evening • Holidays

Who is currently not being served? _____

What are the major barriers for these audiences not being served? _____

What reports, data, or information is currently available to describe visitors to this unit?

Stakeholders and Other Users

Describe any individuals or groups who are major stakeholders in the management of this site/unit.

Indicate any local or regional stakeholders who are not currently engaged with this site/unit who should be?

Psychographic Visitor Information

Describe any reports or information that indicate attitudes, expectations, concerns, frequently asked questions of visitors (for example comment cards, visitor logs)?

Have there ever been any visitor studies, evaluation research, or audience analysis completed for this area? Explain.

APPENDIX C

APPENDIX C

Select I/E Planning Examples

This section contains select example sections from various I/E plans. Each example begins with a highlighted bar describing that example and what section in this document provides more information.

Example Site Description (See section 3.1)

[From Draft Ridgeway State Park I/E Plan]

Site Description:

The beautiful setting of the San Juan Mountains in Southwestern Colorado provides the backdrop to Ridgeway State Park. Originally called the Dallas Creek Project, Ridgeway State Park was designed and built by the U.S. Bureau of Reclamation (BOR) for the purposes of irrigation, flood control and recreation and in the future for possible power generation and water supply. Since its opening in 1989, its recreational management has been provided by Colorado State Parks in partnership with the BOR. Consistent with Colorado State Parks mission statement which is:

“To be leaders in providing outdoor recreation through
The stewardship of Colorado natural resources for the
enjoyment, education, and inspiration of present and
future generations.”

Ridgeway State Park has become a popular recreation destination, and its abundant natural and cultural resources make it ideal outdoor learning location.



Interpretation and Environmental Education has always been an important program at Ridgeway State Park. A previous Interpretive Master Plan was completed in 2001 by Colorado State Park staff and has been an important guiding document for the park management. In 2007, the Bureau of Reclamation embarked on Interpretive Master Planning for its projects as well. This will provide Ridgeway State Park staff with the opportunity to dove-tail with the previous plan to help guide the park into 2009 (its 20th year) and beyond with strong interpretive programs.

Example Option/Deliverable Description (See section 3.4)

[From a Botanical Garden I/E Plan – non-Reclamation property]

Garden History and Fact Sheet

Product Description and Goal: Develop a 1-page informative flyer to provide visitors with background, history, and information about the Gardens and how they were developed. This fact sheet would respond to some of the most frequently asked questions about the Garden's history and administration such as who started the Gardens and when, who funds the Gardens, and so forth (reference Table 6). This sheet would be more informative than interpretive but would be attractive, professional, and easily re-produced for dissemination to visitors at kiosks and the admissions desk.

Target Audience: Local businesses, funders, local residents, tourists.

Theme: Realizing a world class botanical garden for coastal Maine has been a long and winding road.

Key Messages:

- The Garden has an interesting 15+ year history (founders, history, vision, mission, size, etc.).
- Funding for the Gardens comes from numerous sources.
- The Gardens is administered as a 501(c)3 nonprofit organization with a staff of over a dozen full-time staff, several seasonals, and many volunteers.

Cost Estimate: ~\$200-\$300 (production cost only)

- Staff time for research, writing and design (assumes 8-10 hours).
- Production (copies – assumes 100 available copies for distribution as requested; professionally printed copies may increase cost slightly).

Example Staffing Description for I/E Plan (See section 3.5)

Education Assistant or I/E Program Specialist (PT 2008; then to 1 FTE in 2009) – This person has the primary responsibility for the personal program initiatives of the gardens, but also may have secondary responsibilities for some basic nonpersonal media (including simple publications or temporary exhibits). Job responsibilities of this position include:

- Designing, developing, and delivering public programs.
- Designing, developing, and delivering school programs.
- Collaborating with Marketing Department on special events.
- Aiding Director of Education with planning for personal programs as needed (i.e., providing research help, organizing materials, participating in discussion groups, administering evaluations, etc.).
- Aiding with development of nonpersonal media as needed.
- Assisting Director of Education as needed (e.g., in planning, fabricating, implementation, visitor studies initiatives, etc.).
- May involve some intern and/or volunteer supervision as needed.

Qualifications

- 4-year degree (highly desirable) in education, interpretation, communications, recreation or related discipline.
- 2 years experience (minimum) in designing and conducting public programs and/or school programs.
- Coursework or specialized training in botany, ecology, horticulture, natural history, or related topics.
- Excellent communication skills both oral (mandatory) and written (expected).
- Demonstrated professionalism in working with staff, visitors, and volunteers.

APPENDIX D

APPENDIX D

Cost Examples for Select I/E Media and Services (2007)

This appendix contains 2007 cost estimates for various types of signs and interpretive services. The reader is advised to recognize that these are estimates. Costs fluctuate from year to year, from product to product, and from fabricator to fabricator. Soliciting bids from various vendors, fabricators, or consultants is advised.

Signs – Signs can be fabricated out of any number of materials. Below is a comparison of a few of the more popular materials and comparable cost estimates.

Type of signs	Pros and cons	Costs ¹ (for 24"x36" panel)	Comments
<i>Routed wood</i> – Basic wooden sign created using router and sand-blasting techniques; typically painted or stained	<ul style="list-style-type: none"> • Easy with routing equipment • Inexpensive • Can be made colorful with paints • Easy and quick • No computer graphics required • Easily vandalized • Weathers quickly in heat/sun • Detailed graphics difficult • Cannot incorporate photos 	\$100 - \$800 depending on design and detail	<ul style="list-style-type: none"> • Can be framed or unframed • Still popular in Forest Service • Exterior use mostly
<i>High-pressure laminate</i> – Digital image impregnated with melamine resins and then pressed under intense pressure with UV resistant overlamine on layers of phenolic resin-impregnated kraft stock	<ul style="list-style-type: none"> • Good color resolution • Vandal resistant, cleaned easily if vandalized with most markers or paint • Reasonable replacement costs • Can be cut to creative shapes as needed • Can fade with hot sun or extended use outside • Surface can crack if not fabricated properly 	\$700-\$1,200 depending on design and source file condition	<ul style="list-style-type: none"> • Exterior and interior uses • Often framed, but can also be fabricated thick enough to not require a frame • Quickly becoming the most common sign material because of cost and flexibility

Type of signs	Pros and cons	Costs ¹ (for 24"x36" panel)	Comments
<i>Embedded fiberglass</i> – Graphic image embedded into fiberglass using heat and pressure	<ul style="list-style-type: none"> • Satisfactory for outdoor use • Can use color images, photographic images, drawings, etc. • Can crystallize and fade over time; not particularly appropriate for hot or high elevations. • Difficult to clean if vandalized with some markers or paint • 6-8 year life • backing and framing required 	\$700-\$2,000 depending on design, source file condition, color mix	<ul style="list-style-type: none"> • Quickly becoming extinct due to advances in high pressure laminate fabrication
<i>Stone</i> – Engraved images and or narrative into surface of natural stone	<ul style="list-style-type: none"> • Natural look • Some stone can break or chip easily • Heavy • Difficult to incorporate detailed or complex images • Can erode prematurely in moist or rainy climates 	About \$250 per square foot depending on stone and complexity of design	<ul style="list-style-type: none"> • Perfect solution in the right places • Can look very professional
<i>Porcelain enamel</i> – Colored glass, kiln fired to heavy gauge steel plate	<ul style="list-style-type: none"> • Excellent color and graphic resolution • Excellent for exterior use in hot sun, high elevation, extreme weather conditions • Can be more expensive than some alternatives • Can chip and rust if corners are not finished or if vandalized • Replacement costs are same as original fabrication costs 	Approximately \$2,000 depending on graphic image	<ul style="list-style-type: none"> • Top choice for well funded projects • Very attractive framing options available
<i>Novelloy</i> – Metal micro-imaging on aluminum sub-strait	<ul style="list-style-type: none"> • Classic, professional look – sometimes too industrial looking for natural resource areas • Very durable (10+ year life) • Does not need a frame • Fairly limiting in terms of graphics or complex designs – simple graphics possible • Can be scratched with other hard metal objects 	\$1,000-\$1,500	<ul style="list-style-type: none"> • Viable, but not a common choice by interpreters

¹ Cost is fabrication cost only! Shipping costs may be additional and these prices do not include research and writing or graphic design and layout costs. See below for estimations for these costs.

Interpretive services – Completing any interpretive project can involve a number of different skills and abilities. Below are some rough figures for some of the more necessary skills sets.

Service	Costs	Comments
Interpretive planners	\$50-\$120/hour Many planners price by job not hour; interpretive plans can range from \$10K - \$50K depending on scope and complexity	Interpretive plans are often done by teams (2 or more), especially if they are for large or complex areas.
Landscape architects (LA)	\$80-\$150/hour May also price by job rather than by hour	LAs are useful for planning sign sites, kiosk sites, visitor center sites, etc. They should be part of an interpretive planning team if site development is being considered.
Interpretive writer – Typically completes necessary research for writing; can also include photo research	\$40-\$100/hour	Depends on experience; you want to look for someone who has interpretive writing or creative writing experience and can provide examples of their work. It is not the same as technical writing.
Evaluator	\$70-\$150/hour although most evaluation is priced out at 7-10% of overall project budget for design, fabrication, and installation	Can include front-end, formative, and/or summative evaluation. Can also include any number of types of surveys, interviews, focus groups, observations, prototyping, etc. Make sure the evaluator works with the interpretive planner to incorporate the right amount and type of evaluation.
Exhibit designer	\$100-\$200/hour May price out by job rather than by hour	Depends on experience. Request samples of work and references.
Graphic artist – will complete design and layout of panels as well as color proofing for fabrication	\$45 - \$120/ hour Some price by job not by hour	Varies by region, by project, and by skill level/experience; costs may vary for meeting time, design time, illustration time, and production time.
Proofreader	\$20-\$50/hour	Highly recommended for all sign, exhibit, and publication projects.

Service	Costs	Comments
Artists – Original illustration	\$100-\$500+/hour Some price by illustration not by hour	Varies by skill level, experience, technique, final product expectations, etc.
Sculptor or model maker	\$60-\$150/hour Many will price by job or piece rather than by the hour	Highly varied by skill level, experience, and desired medium (clay, bronze, wood, metal, etc.).
Living historian	\$100-\$1,000/performance + expenses	Depends on period, experience, costuming.
Storyteller	\$75-\$1,000/performance + expenses	Depends on experience and type or genre of stories.

APPENDIX E

APPENDIX E

Helpful References for I/E Planning

Beck, L. and Cable, T. 1998. *Interpretation for the 21st Century: Fifteen Guiding Principles for Interpreting Nature and Culture*. Sagamore Publishing.

- A 21st century version of Tilden's book. Very useful for modern principles of interpretation.

Carter, J. (Ed.). 1997. *A Sense of Place: An Interpretive Planning Handbook*. Inverness, Scotland: Tourism and Environment Initiative.

- A very useful guide for Interpretive Planners.

Evans, B. and Evans, Carolyn Chipman. 2004. *The Nature Center Book: How to Create and Nurture a Nature Center in Your Community*. National Association for Interpretation.

- Includes some helpful case studies.

Hunter, C. 1994. *Everyone's Nature: Designing Interpretation to Include All*. Falcon Press.

- Very helpful guidance for Universal Design and accessibility (ADA requirements)

Gross, M. and Zimmerman, R. 2002. *Interpretive Centers: The history, design, and development of nature and visitor centers*. University of Wisconsin – Stevens Point.

- Very useful resource for developing or maintaining a visitor center.

Levy, B.A., Lloyd, S.M., and Schreiber, S.P. 2001. *Great Tours: Thematic Tours and Guide Training for Historic Sites*. National Trust for Historic Preservation.

- Helpful for tour research and writing as well as guide training,

Louv, R. 2005. *Last Child in the Woods: Saving our Children from Nature-Deficit Disorder*. Algonquin Books of Chapel Hill.

- Timely and articulate argument for outdoor recreation and education.

McLean, K. 1993. *Planning for People in Museum Exhibitions*. Association for Science-Technology Centers.

- Very helpful resource for definitions, processes, and guidance for planning exhibits and interpretive media.

Merritt, E.E. and Garvin, V. 2008. *Secrets of Institutional Planning*. Washington, DC: American Association of Museums.

- Useful for understanding the scope and scale of institutional planning; contains a very helpful chapter on the alignment of planning discussed in chapter 2 (section 2.5) of this handbook.

Serrell, B. 1996. *Exhibit Labels: An Interpretive Approach*. AltaMira Press.

- Particularly useful for interpretive writing.

Tilden, F. 1957. *Interpreting Our Heritage*. Chapel Hill: University of North Carolina Press.

- Long standing, landmark work describing the definition and principles of interpretation.

Trapp, S., Gross, M, and Zimmerman, R. No date. *Signs, Trails, and Wayside Exhibits: Connecting People and Places*. University of Wisconsin – Stevens Point.

- Very useful tips for developing interpretive signs.

Weil, S.E. 2002. *Making Museum Matter*. Washington, DC: Smithsonian.

- Especially Chapter 7: Transformed from a Century of Bric-a-Brac (p.81): Clearly defines and supports outcomes-based interpretation.

Wells, M. and Smith, L. 2002. *The Effectiveness of Non-personal Media used in Interpretation and Informal Education: An Annotated Bibliography*. National Association for Interpretation.

- Useful bibliography for understanding the effectiveness of various interpretive media. Summarizes over 300 studies. Includes executive summary and helpful chart for study variables.

Zehr, J., Gross, M, and Zimmerman, R. No date. *Creating Environmental Publications: A Guide to Writing and Designing for Interpreters and Environmental Educators*. University of Wisconsin – Stevens Point.

- Very useful tips for developing nonpersonal interpretive media.