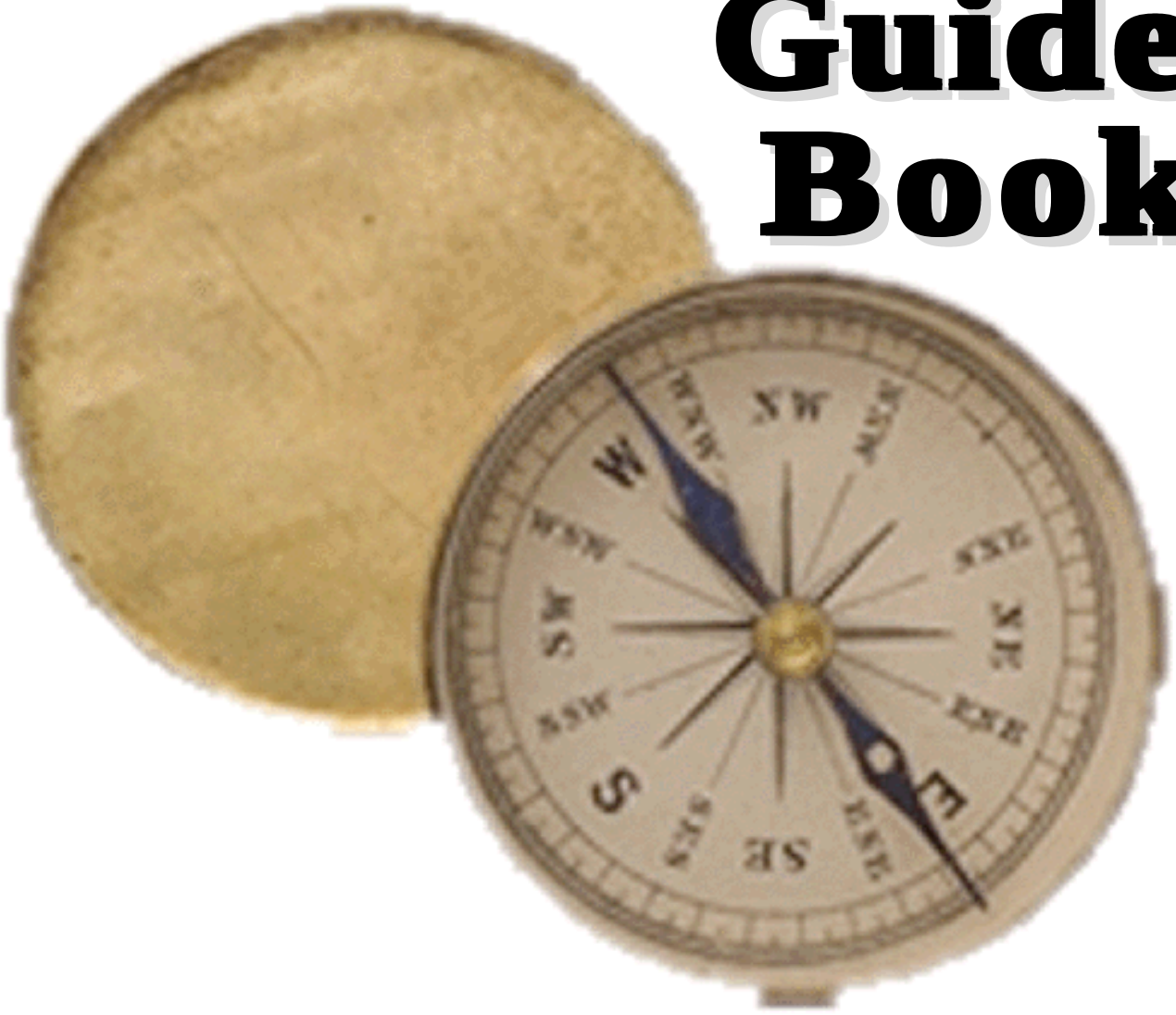
A Region 6 Interpretive Services Aid

July, 1994

Interpretive Project Guide Book



Written and Desktop Published by:
CURTIS EDWARDS
Okanogan National Forest
Methow Valley Ranger District

Support, Advice & Collective Knowledge:

Jim Pollock, R-6 Interpretive Services
John Osaki, R-6 Interpretive Services.
Roberta Hilbruner, Columbia Gorge NSA
Mike Abbate, Pacific Design Services
Cheri Ziebart, Mount Baker-Snoqualmie National Forest

Copies Available From:

U.S.D.A. Forest Service
Pacific Northwest Region
Recreation Section - Interpretive Services
P.O. Box 3623
Portland, OR 97208

Table of Contents

Interpretation is a form of communication that goes beyond facts to reveal what things mean, how they fit together and why they matter.

Interpretive projects are the physical ways we go about interpreting; the books, brochures, signs, models, tapes, pictures - whatever works.

This guidebook is about making those projects happen and happen well.

Why Interpret?

Is it worth it?

Did you really think we'd start off an interpretive project guidebook by saying interpretation *isn't* worth it? Nonetheless, it's always worth asking.

We interpret to:

- Enrich people's lives by giving them something to consider, remember or explore
- Bring things to light
- Pass on knowledge
- Try to change behavior

It doesn't always work, but for many it does make a difference. A hot spring is a curiosity until you realize it is physical proof of the tremendous heat stored in the earth we live on. A battlefield is empty space until you know that the course of history turned on that very point. Interpretation is an offering. It is a translation of what someone else has learned into a language that is entertaining and easy to understand. It is often the best souvenir.

Interpreters can tend to interpret for themselves or for their peers. It's understandable; most of the formal recognition for good interpretation comes from other interpreters rather than from the audience. Remember who's on the receiving end -- stay fresh and in touch by being the visitor from time to time. Go where they go. Do what they do. Always keep them in mind.

Interpretation *is* worth it. But it can easily be poorly done. The wrong message, the wrong place, drab writing, confusing artwork, technical problems, too simple, too complicated, repetitious themes . . . any of a number of glitches can turn a good idea into something visitors ignore or don't understand. The best way to avoid that is to really sit down and think your project through -- to honestly scrutinize it -- and to find and use all the skills you need to make it happen. Most of all, interpret for a reason and for a result.

Why a Guide

To encourage you to think before acting. To help get the limited money for interpretation spent more wisely. To create a handy, friendly source of answers to common questions about interpretive projects. To help get to better results.

This book is about *projects* and not *programs*. Walks and talks and living history are important - often the MOST effective interpretation - but they aren't covered here.

Use the guide as a source of ideas, a reference for considering your ideas, and an outline for making projects happen.

The guide is meant to be practical and meaty, but it also deals with our own, sometimes confusing rules and procedures. Like it or not, there is no way you can complete an interpretive project without knowing about those requirements.

Start to Finish

The hoops you might have to go through

Don't get depressed . . . this is a summary of ALL the things you MIGHT have to do to make a project happen. Chances are all of them won't be necessary, but you might as well know up front and be thinking about the possibilities. Most of these, including the specific items shown in the boxes to the right, are discussed somewhere in the guide.

Even if you end up having to go through all these hoops, it may not be that bad.

An Area Interpretive Plan — **Market Analysis**
To decide where and what to interpret

⇓

An Interpretive Site Plan — **Interpretive Inventory**
To decide on specific topics, themes and media

⇓

Project Proposals — **Prospectus**
Outlines, explanations, sketches and formal entries into the capital investment program and the Forest plan. Sometimes include in the site plan

⇓

Companion Proposals
If there's a facility, road, trail or other project that goes with the in project, it needs to be started at the same time

⇓

Design — **Design Narrative**
Finally the fun part, where the ideas turn into drawings and layouts

⇓

Reviews and Approvals — **Prospectus**
Often a mix of constructive comments, opinions, helpful hints, difficult matters of style or taste, and nitpicking

⇓

Contracting
When artists, designers, writers and fabricators get hired to turn the flashy drawings into reality

⇓

Monitoring
Our ten dollar word for checking up on things to see if they are working like they are supposed to

Planning & Deciding

Before digging into a project you need to figure out what there is to interpret, who the audience is, why you want to interpret, and how that fits with other plans or existing interpretation. Even when an idea comes to you before there's a plan, (hardly ever happens, right?), it's worth the time to back up and answer those questions.

IN THIS CHAPTER:

Planning

Keep the Bigger Picture in Mind
Put Yourself in the Visitor's Shoes

Everything we do -- getting ready for work, buying groceries, mowing the lawn, throwing a party -- follows some sort of process and usually some kind of plan.

The point of planning is to think your project through . . . to gather enough information and expertise to let you make a good decision about what to do and how. Size up the situation as best you can, think over all the options, choose the best ones, lay out a way to make them happen, and then write all this down so that others can see where you're coming from and where you're going.

A good interpretive plan will:

- Lead to a better experience for visitors
- Make approvals and funding much easier
- Keep the vision alive as the players change
- Make it much easier to decide about new ideas or opportunities
- Help you promote or defend your projects
- Help keep too many cooks from stirring the pot
- Produce better results on the ground

The plan should answer the basic questions - who?, what?, when?, where?, why?, how? - and will be clear enough that someone can easily follow in your footsteps. It may be one page or a hundred pages, depending on how complex the project is. Most of all, it needs to be clear and useful.

WHO: Which part of your audience do you want to interpret for? Who do you want to attract? Does the audience change with the season?

WHAT: What features and themes will you interpret? Not interpret? Do the themes and messages need to tie together or build on one another? What are the visitors looking for? How much interpretation?

WHEN: What's the season of use? Busy season? Is there a time you *don't* want to attract use? Is the site used at night?

WHERE: Is there more than one place that will work (meet your objectives)? Should you interpret in one place or more than one? Outside or inside? On a road or trail? Inside a car or train or bus or on a boat?

WHY: Exactly why do you want to interpret? Is it worth it? Will it make a difference for the visitor? Will it help solve a problem or influence use? Are the visitors interested? Has other interpretation in the area been popular?

HOW: What methods and media? How will you operate and maintain? How long will it last? How will you get it done (CIP, partners, volunteers)?

Do You Need a Planning Team?

You need a good plan, with intelligent, sensible, well-founded decisions and conclusions. That usually means you'll need help -- knowledge and experience you don't have -- and some different points of view to consider. A team is one way -- the most common way -- to do that. Even if it's only you producing an interpretive site plan, you'll still probably need resource experts to help you identify the stories to tell. That's your team.

Forming a planning team is really just getting commitments of time and energy from people. Who's involved depends on what it is you need to know. Maybe just a geologist and botanist will do. Maybe you need another planner with more experience than you have. Think of where it is you need to end up, what decisions and conclusions, then pick members accordingly.

Don't forget those with the responsibility and authority to review and approve your plan. They need to be in on things from the start.

The Interpretive Plan

The five parts of a complete plan

The first four of these are discussed in this chapter. The last step - media - is covered in the next chapter.

Goals & Objectives
Decide what it is you're trying to do and why

Inventory
Find out what you have to work with

Audience
Understand who you're trying to communicate with

Topics & Themes
Choose what to communicate

Media
Decide how to deliver your messages

Goals and Objectives

Why interpret? What are you trying to accomplish?

GOAL: The result toward which effort is directed

OBJECTIVE: Something that one's efforts are intended to attain

You're right . . . there are pretty much the same thing, which is simply what it is you're trying to accomplish. In our planning world, goals tend to be bigger and more general, objectives more specific and measurable. Both words get used a lot.

Goals and objectives are the first step in doing an interpretive plan (or most any plan, for that matter). They are the description of where you want to end up -- the result you're after, effect you want to have, difference you'd like to make. The interpretive projects that come of the plan are the "effort" part of the definitions above.

As with all the rest of your interpretive plan, be brief and clear. Don't say" . . . to enhance visitors' experiences by providing a means for learning about the various management practices being implemented on National Forest lands in the area and the long term effects of those practices", when you could say " . . . to teach visitors about forestry."

A good way to describe what you're trying to accomplish through your interpretive project is to complete this sentence: "After participating in this interpretive opportunity the visitor will (or will be able to) . . . " For example:

"After reading the interpretive panels along the McPherson Creek Scenic Byway, visitors . . .

will know that there are critical spawning grounds in this stream and that only 5% of the fish born here make it back to reproduce.

or

will be able to describe what it is that makes this stream a critical spawning ground for salmon.

Even if you're only dealing with one small site and one small proposal, have a reason for what you want to do . . . something you can measure against to see if your idea worked.

Goals and objectives remind you of what you were originally after, tell others where you're headed, and give a basis for deciding about new interpretive project proposals in the area.

The Interpretive Inventory

Finding out what you have to work with

The interpretive inventory should answer these questions:

Inventory items

1) What are the outstanding natural features?

2) What are the interesting human stories?

3) What is already being interpreted in the area?

Management "parameters"

4) Where are visitors going now?

5) What facilities exist? (trails? pullouts? parking? viewpoints?)

6) What limitations are there to work with - access, terrain, weather, politics, sensitive or fragile sites, money, laws, policy . . .

7) Who is or might be involved - partners?, other agencies? city or county?

Inventories are often done at two levels:

AREA INVENTORY: The inventory that covers the larger geographic area that is a logical visitor destination or travel route and includes your site(s). This is where you organize and piece together all the interpretive possibilities, identify the best sites based on the possibilities and logistics (access, maintenance, facility needs), and make sure visitors don't read or hear about the same thing several times in one trip, encounter conflicting messages, or get interpreted to death.

SITE INVENTORY: The nitty gritty exploration of your site (which may include more than one location) to find all the resources and features that are there. Take the time to poke around and study the site; there may be more to interpret than the feature or event that jumps out. Look at it from a distance as well as up close. Study the historical records. Check for research. Talk to experts like scientists or historians. Have others look over the site. Walk around a lot.

As part of either inventory, be sure to record all the interpretation that's already happening or might happen, including other agencies or organizations. If you can, talk to visitors using that interpretation to find out what they think and how it's working. That information can be part of both your inventory and the audience analysis and a good indication of what works and what doesn't.

Use the inventory to get the interpretive "lay of the land" and to find out what the interpretive opportunities are.

The Audience or Market Analysis

Finding out who your visitors are

For interpretation to work you need to know who you're interpreting for. The audience analysis (or market analysis) tells you that. It's most important to find out WHO is using the site and HOW they are using it and then figure out what that means for interpretation. If people came to ski or windsurf, interpretation won't be high on their list of interests. If the visitors are mostly elderly, accessibility and type size may be as important as the message. In the end you should know your **target audience** - who you want to communicate with.

The secret of a good market analysis is to find out only what you really need to know. It may be impressive to be able to give the average income of your typical visitor or know what kind of lodging they prefer, but it does you no good if you're trying to decide if a new viewpoint 1/4 mile off the highway will be worth the investment. If you're doing the audience analysis yourself, try these sources of information:

- **The people you work with.** Many have day to day contact with visitors and have a good feeling for what they do, want, or are interested in. This information won't be scientific or objective, but it is still useful, particularly if you survey several co-workers.

- **The Department of Transportation.** Check for road counter information, traffic projections, highway studies, or other reports

- **Other agencies.** Local parks, the Department of Wildlife, the State Parks, law enforcement, state or U.S. border crossing offices or other agencies who are active in your area or in the area your visitors come from or could come from.

- **Tourism or economic development offices.** These could be state, regional, county, city or town offices who have studied visitation or market potential in the area. Schools often do studies for these offices - they may be another source.

- **The transportation industry.** Railroads, bus lines, airlines, car rental agencies, tour bus companies, air charter services -- anyone who moves people to, from or within your area.

- **Local businesses.** Lodges, motels/hotels, museums, outfitters, golf courses, ski areas, . . . anyone who might keep a guest register or who has contacts with visitors long enough to get a feel for who they are and what they're interested in.

- **Chambers of Commerce or local marketing groups.** These organizations may have conducted studies of their own or have access to studies done by others.

- **State or regional plans or studies.** Check for sources like the State Comprehensive Outdoor Recreation Plan (SCORP), Interagency Committee for Outdoor Recreation reports, or other State studies.

- **Interest groups or organizations.** Hiking, biking, RV, boating, or motorcycle clubs, AAA, lobby groups, Good Sam, or any other organizations that might have a need for use figures, trends or visitor profiles. Be careful of data that may be skewed for a cause.

- **Magazines and newspapers.** Surveys and statistics are often part of articles or part of the background information. Publishers may either have the information you need or know where to get it.

- **Universities and Colleges.** You never know what someone may have done a thesis on.

- **The library.** Sometimes it's simply amazing what you find there.

The analysis tells you who's using your site or who **could** be using your site. It's your job to then decide who you want to mostly communicate with and how to best do it.

Your **target audience** could be everyone who's there, just one part of the group (such as children or students), or an entirely new audience that you want to attract or create. It's your choice. More times than not we try to interpret for everyone. That can work, but sometimes it forces the interpretation to become too generic and not as interesting. Consider that in your decision.

If you spend the time and money on an analysis just to find out that everyone is visiting your site -- young, old, white collar, blue collar, abled, disabled, singles, families, rural, urban, technical, artistic, -- don't worry, you're not alone. This is the case for most National Forest destinations and the kind of universal appeal that makes the Forests so special. If you need to, look for some common thread to use. Maybe most people are new to the area, all came for the same reason, or are all travelling the same route.

The analysis *can* lead you to a target audience, but it's up to you to actually choose who that target audience will be.

The audience analysis tells you who it is you're trying to communicate with -- who's using your site or who could be using it. It's **your** job as the interpreter to decide how to communicate with them or whether to even try.

Topics and Themes

Deciding what to interpret

Now that you've decided on your goals and objectives, done an interpretive inventory, analyzed your audience and figured out the management parameters you have to deal with, it's time to choose the right topic(s) and theme(s).

The **TOPIC** of a presentation or exhibit is simply its subject matter.

A **THEME** is the central message about a topic that you are trying to get across to your **target audience**. Themes are stated as complete sentences and can serve as the basis for organizing a presentation.

TOPIC	THEME
Birds	Hummingbirds are a lot like helicopters; their special wings allow them to hover or fly backwards
Volcanoes	Hot volcanic eruptions can cause cold weather
Weather	It would only take a 10 degree drop in average annual temperature to create another ice age
Rivers	Given enough time, a river will eventually stop flowing

Why themes?

Because with a theme in mind, you'll be able to quickly decide what information you will need for your interpretive project (as well as what information you won't need). And because it's well proven that most audiences find presentations with a theme much more interesting and understandable . . . that they remember themes and forget facts.

In three steps anybody can write a theme.

1) Select your general topic (for example, "our soil") and use it to complete this sentence:
"Generally, my presentation (talk, exhibit, etc.) is about our soil ."
(put your general topic here)

2) State your topic in more specific terms and complete this sentence:
"Specifically I want to tell my audience about the importance of conserving our soil."
(put your specific topic here)

3) Now, express your theme by completing this sentence:
"**After hearing my presentation (seeing my exhibit, etc.), I want my audience to understand that** it's necessary to conserve our soil in order to increase our crops and to protect the quality of our water ."
(put your theme here)

From *Environmental Interpretation – A Practical Guide for People with Big Ideas and Small Budgets*; 1992, North American Press, Golden Colorado. Used with permission.

Wrestling with the Decision

There's no magic formula for deciding what theme(s) to work with. Usually you have to rely on experience and intuition mixed with what your planning and audience analysis have told you.

If your site is a single destination where people stay a while, a variety of topics and themes might work best because it gives visitors something new everywhere they go. On the other hand, sticking to just one topic with a few themes might be the most interesting to your audience.

If your "site" is a travelway and there's no telling where visitors might stop, interpretation in several locations that centers on just one theme (the one you want to get across) might be the way to go.

Don't make the decision harder than it needs to be, but don't take it too lightly either. Keep in mind that what matters in the end is what people *remember* after they're gone from the place.

Rule #1: Don't Interpret Everything

If you try to tell it all, you'll probably just make the interpretation too wordy and confusing and end up losing your audience. Tell less but tell it well. Leave something for the visitors to discover for themselves.

Rule #2: Be the Visitor

You may have a nice, well-organized system of themes and sub-themes and primary and secondary messages, but it does you no good if the audience doesn't get it. Put yourself in their shoes. As a visitor, what are your expectations? How much time and interest do you have? How much effort will you make to learn and understand? What do you know already? How much do you care?

Strike a balance between what the visitors want to know and what you want them to know. Flora and fauna may seem like tired topics, but if most of your visitors are asking about plants and animals you need to think about including them.

Rule #3: Stick to What's Right There

Remember, you're trying to help people understand and appreciate this place, right here. Be careful before you try to point out a rock in the distance and then launch into an explanation of the subduction zone that's 100 miles away and underwater. Not that that sort of tie won't ever work. You just need to take the time to first connect the visitor to what's right at hand. They're not here because they're interested in somewhere else.

Rule #4: Get to the Details

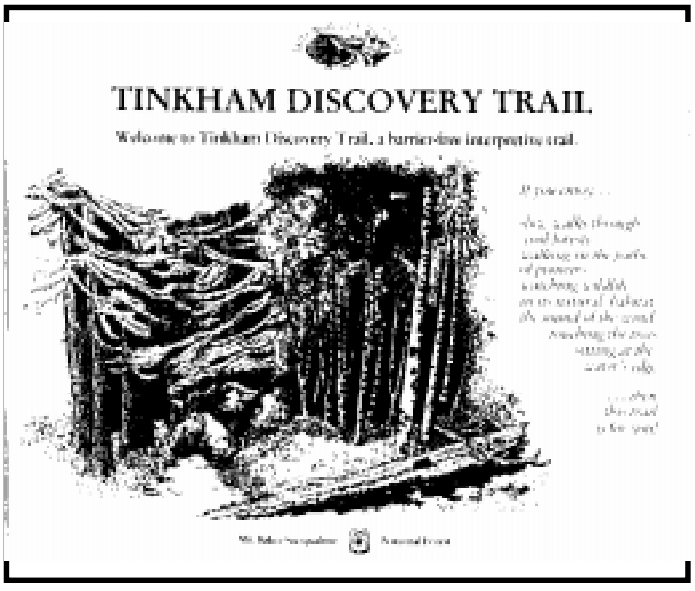
As you sort through your inventory and potential topics and themes, be sure to keep going until you're at the level of detail that will make the interpretation meaningful to the audience. Then relate those details back to whatever it is you're trying to get across. In other words, use specifics to tell the story, but also be sure that those specifics DO tell the story.

Media

The physical way you communicate your theme

Once you've decided what topics and themes to try to communicate to the audience you picked out, you then need to decide just HOW to deliver that interpretation. As you'll see in the next chapter, there are many choices to consider, and that's what you should do . . . consider them. It might be that a tape or brochure or radio message will be the most effective way to get through to your audience when you were just sure an interpretive sign would work best.

Use the next chapter to help you decide. Once you do–once you have settled on which media and methods to use–you have finished the thinking and studying part of the planning and are ready to write it down.



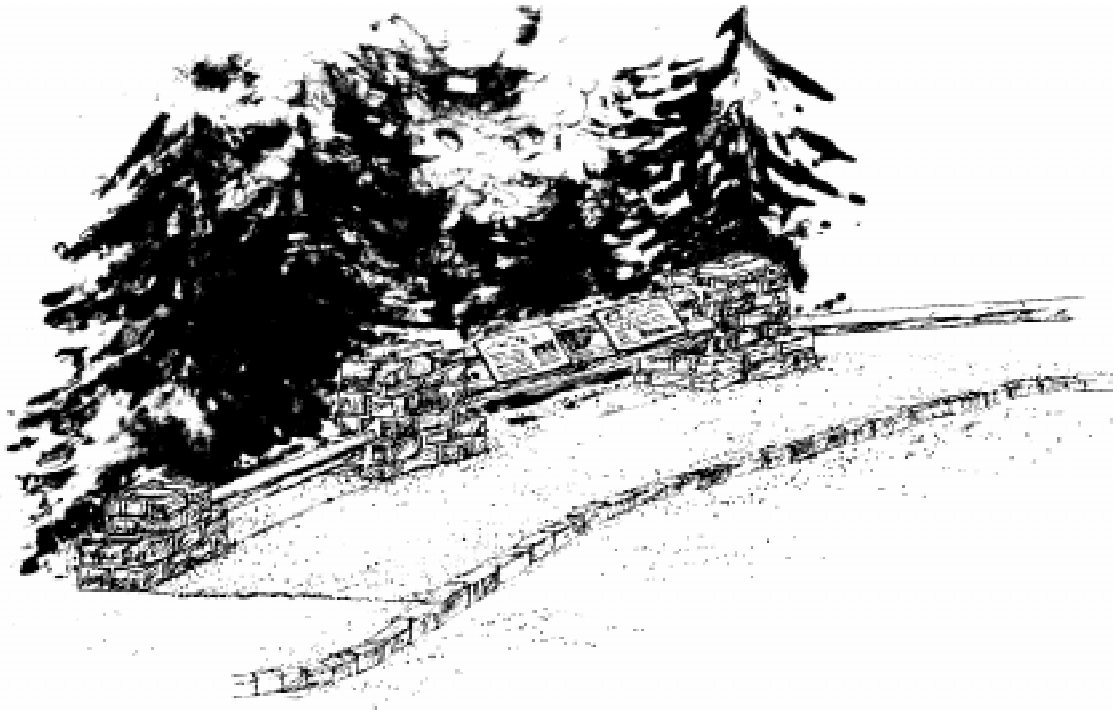
Writing the Plan

Bigger is not necessarily better

Once you've gathered the information and made your decisions, you need to organize and record it all so both you and others have something to refer back to. Take the same care writing the plan as you would writing an interpretive message.

Avoid the temptation to thicken the document to make it seem more formal or credible. Edit heavily. Show it to someone who's unconnected with the project and see if it makes sense. Write specifically for the reader - for those who have to sign off on it or those who have to turn it into results, now or later. Many times the plan can be just a few clearly written pages and still do the job quite well. All you're doing is communicating your decisions and conclusions, along with the reasons or rationale behind them.

Who knows . . . some plans may be this short.



Communicating Your Proposal

Two formal ways to explain your ideas to others

The Prospectus

For **visitor center proposals**, a prospectus is required by the Washington Office. It is the formal review and approve process for visitor centers and must include:

DESCRIPTION: What do you propose to do and where

PURPOSE: Why, exactly, do you want to do this? What are you trying to accomplish or fix or change?

MARKET: Who is this for? Who will use it? How do you know?

OBJECTIVES: Just an extension of the purpose. Specifically, what are the results you hope or expect to get from doing this project?

FUNCTIONAL USES: Detail the different functions of the project. Is it just an interpretive viewpoint? A viewpoint, rest area, and picnic area? A visitor center and administrative office?

SCALE: How big is this thing? Acres? Square feet? One site/several sites? In phases?

COST: Make your best estimate, because you may have to live with it.

FUNDING PLAN: How do you expect to pay for the project? All government funds? Partners? Other agencies? Bake sales?

DESIGN NARRATIVE (OR CRITERIA): List the criteria you'll be requiring the designers to live by. The look, size, layout, capacity, access, season, restrictions, priorities, location . . .

INTERPRETIVE THEMES AND MEDIA: What will the interpretation be about and how will it be done? Will it be permanent or changing? Just one theme?

OPERATION AND MAINTENANCE COST: Granted this is hard to pin down until at least the design is done, but at least show you've thought about it and give your best estimate of the time, people, and money it will take to staff

Even if you're not working on a visitor center proposal, a prospectus may still be a good idea, particularly if you're planning on looking for help from partners or other agencies. A good prospectus will answer all the tough, direct questions that those potential partners will ask and will show that you've really thought the project through.

The Design Narrative

The design narrative, (sometimes called design criteria), is the list of specific instructions for the designer to follow in creating your piece of interpretation. It explains what you have in mind clearly and completely enough that a designer can get to a result you'll accept.

Take care with this step. It will become your contract with the designer and the basis for deciding any differences between what the designer comes up with and what you thought you were going to get. Be specific and really think about what you're asking for to make sure it's reasonable. **But also beware . . .** if the narrative is so detailed there is no room to be creative, then you're wasting your money on the designer -- you just need someone to draw it up.

What's in a Narrative?

Whatever it takes to explain your project and ideas to the designer. Typically it includes:

- What's acceptable\unacceptable
- Description of site
- Weather, exposure, setting
- Target audience
- Access
- Operating season & hours
- Capacity & expected use
- Design details to consider
- Preferred materials
- Expected life
- Limits on size/location
- Desired colors, textures, look
- Maintenance requirements
- Installation requirements

Is it Important?

Yes. The narrative is how you communicate formally with whoever is turning your vision into blueprints and specifications. It's also part of the review and approval process for most projects - a signed design narrative is needed before you can move on. Usually a forest engineer, recreation staff, landscape architect or pulic affairs officer signs. The document is important but, once again, it doesn't have to be long and tedious. Picture the result you're after, then pick out the individual elements that create that result - that look or feel or function or affect on the visitor.

How About for Simple Little Projects?

Do a simple little narrative. The idea is to communicate your thoughts, ideas and concept well enough that someone can turn them into reality, or at least blueprints. Even if your requirements are scratched down on a napkin, it's better than not having them down at all.

Media Choices

How you get your message across is usually as important as the message itself. Not all methods work for all sites and situations and that there is often more than one way to meet your goals. Consider the alternatives before making your choice.

IN THIS CHAPTER:

Publications

Where the ink meets the paper

It seems like almost every office eventually wants to turn out its own bird checklist or poster or trail guide or self-guided auto tour or special map or brochure or district newsletter or interpretive booklet. The publications are often a good idea and popular with visitors. How well done they are is usually a matter of time, talent and money, but a lot of good publications have been produced on small budgets.

If a publication is what you have in mind, be prepared. Unless rumors of big changes in the rules come true, printing is closely watched and controlled in the Forest Service. These days, even the smallest print job can end up in Washington D.C. for approval. It's not impossible to get something done through channels, but it will take time and patience. There used to be an exception for print jobs under $1000. Not any more.

The Big Hoops

1) One color publications distributed locally need to be approved by the regional office

2) More than one color needs Washington office approval through public affairs

3) The GOVERNMENT PRINTING OFFICE gives the final go-ahead for printing and either does it themselves or lets you go to a printer

4) For some publications there is a strict, standard design format and limited choice of colors, type styles, and papers

5) The design of your piece may have to be done or approved by the regional graphic designer

The Procedure

1) Call your public affairs officer and let her/him know what you have in mind

2) Find out if what you're doing has already been done somewhere

3) Decide on the size, shape, number of colors, paper, kinds of graphics and distribution you need. See if there are standards or guidelines to follow

4) Write up, or sketch out, or mock-up your proposal and give it to public affairs

5) Wait - publications and printing are closely controlled and scrutinized in the Forest Service

6) If you pass this first cut, find out who will be printing the publication and talk to them about exactly what they need from you or your designer

7) Do the writing and get it reviewed and approved

8) Collect all the other pieces (artwork, photos, maps, logos, etc.) and do (or have it done) an exact paste-up or computer layout of the publication

9) Send it back through public affairs for final approval

10) Print - public affairs will usually take care of this but may just tell you how and let you do the leg work

If you conclude that some type of publication is what will work best, start by thinking about exactly who it's for, what you want it to do, and whether it will be for sale or not. Make those decisions before starting on design.

For all publications there will be choices of size, color, paper, type style, type of graphics, and number to print. The biggest decision, however, will be what format to use.

Formats

BROCHURE

PROS: Handy, common, a lot of people have racks for them (if they are a standard size), fairly easy to design and produce, reasonable price

CONS: Tend to be used once and thrown away, limited space for information without making it too crowded, lots of competition - gets lost in a rack full of brochures

DECISIONS: What size? How will it be displayed? What kind of fold? Need space for a mailing label? Designed to be durable or for a short life? Artwork or photos? Designed to look good alone or to stand out from other brochures in a rack?

BOOKLETS

PROS: Tends to be kept and used longer, more attractive at first, can pack a lot of info in a pocket sized package, easier to charge or get donations for, can have a snazzy, durable cover over simple, plain pages inside

CONS: Costs more. More difficult and expensive to design and lay out. More chance of error. Display racks less common. Still some tendency to use once and toss. Often needs a heavy cover with color to catch someone's eye

DECISIONS: What size? How many pages? What kind of binding? What kind of cover?

POSTERS

PROS: Stands out. Good keepsake -- often stays around longer if it's designed well. Easier to charge or get donations for. Can get a single message across very effectively. Good identification for a place or feature.

CONS: Expensive. Tricky to design. Hard to handle and store. Often needs a frame - adds a lot to cost. Only room for one quick message or theme. Hard to display. Can be hard to sell - lots of competition.

DECISIONS: Photo or artwork? With or without words? Size? Royalties for photos or artwork? Informative or souvenir? Matted? Framed? Rolled or flat?

Who To Involve

Public Affairs Officer: They have the approval authority and often the writing skills and knowledge you'll need, including contracting and G.P.O.

Writers: Tap into your local talent, try a reporter or free-lance author, or ask a published professional

Graphic Designer: In your office, on your forest, in the regional office, or a hired professional

Geometronics/GIS: Good sources for the quality maps you are looking for or the base maps a graphic artist may need to work from

Printers: They can help you make a realistic proposal and keep you from wasting time or money

Specialists & Experts: They have the facts, figures and accuracy you need

NEWSPAPER

PROS: Reasonable price for something that holds a lot of information. Popular format. Easy to add a lot of variety and topics. Cheap paper that can be easily recycled.

CONS: Tough to fill up with interesting, useful and well-written articles. Tedious to lay out and make attractive. Takes a lot of graphics. Almost sure to be used once and thrown away. Needs to be assembled once it's printed. Hard to display.

DECISIONS: Enough to say to warrant a newspaper? Enough photos and graphics available? Enough places to display and distribute from?

MAPS

PROS: Everybody likes them. Everybody wants them. Get used and kept. Can include a lot of information. Less language barrier (mostly graphics). Easy to display and distribute.

CONS: Very hard to make. Prone to errors. Expensive in the end. Audience is more demanding - expect accuracy. Often hard to include all information without cluttering it up. Big job to do.

DECISIONS: What area will be covered? Exact to scale or lighter approach? Waterproof? Text and graphics included? Size/scale? What features to be shown?

NEWSLETTER

PROS: Handy. Well-accepted. Convenient size and shape. Public is used to them.

CONS: Lots of competition (thousands of newsletters out). Read once and thrown out. Takes work to produce a good one. Needs good paper to look good and attract readers.

DECISIONS: How often will it be published? Is there enough news? What balance of graphics & photos to writing? Are there enough good writers? Photographers?

POSTCARDS

PROS: Popular, well-liked, well-used, easy to display and handle, easy to sell, often stuck on the wall or refrigerator for a while so others see it as well as the buyer and recipient

CONS: Not good for interpretation - very little space, the written message is usually on the back and small, lots of competition, needs just the right photo or graphic to work well, often thrown out before too long, almost has to be in color to work

DECISIONS: Do you have photos or graphics good enough? Does it really interpret or just represent a place? Worth the cost of full color?

Printing through Partnerships or Cooperators

If you have access to an interpretive or natural history association and can convince them to do your publication as their own project, separate from the government, it can be a great way to go. But keep in mind that you also give up some control of the project.

Talk to your interpretive association coordinator about having the association produce the publication you have in mind. Associations have turned out many good products and have a good idea of what works and what doesn't.

Printing Tips

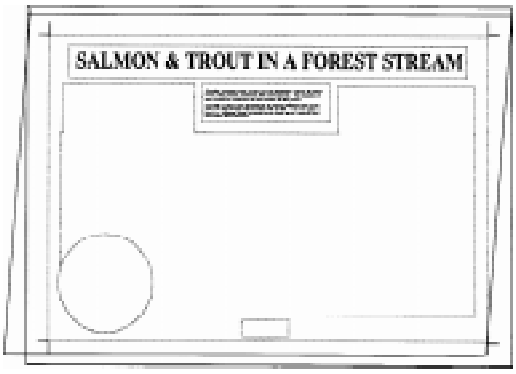
1. Use good, sharp photos with lots of contrast. In order to print photos, they have to be "screened" (reproduced as rows of tiny dots), which makes them look less sharp.

2. Allow a little space around items to be printed in a separate color if you can. It makes it easier to mask them out.

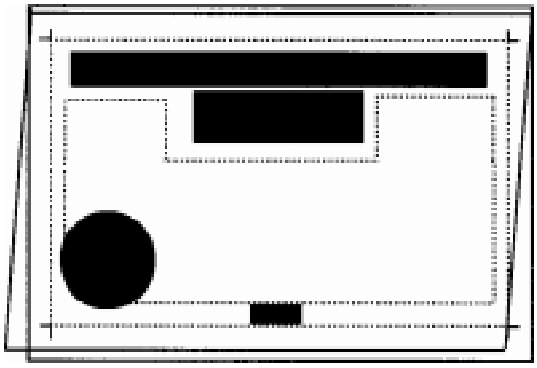
3. Avoid tiny graphics or type, thin lines, or other delicate elements that might get lost in the photographic process.

4. Try not to use a design that requires things to line up perfectly, particularly things that have to line up on two separate pages or panels. It's tough to do.

5. Give the printer plenty of time to do the job, especially if it's two or more colors.



Final, full-size paper "paste-ups" or "mechanicals" are made of the panel or page to be printed, including all the typeset text and artwork or photos.



For printing in more than one color, separate mechanicals and negatives are made for each color. This is often done by blocking out everything that's not in that color, but can also be done automatically by computer.

Making the Printed Page

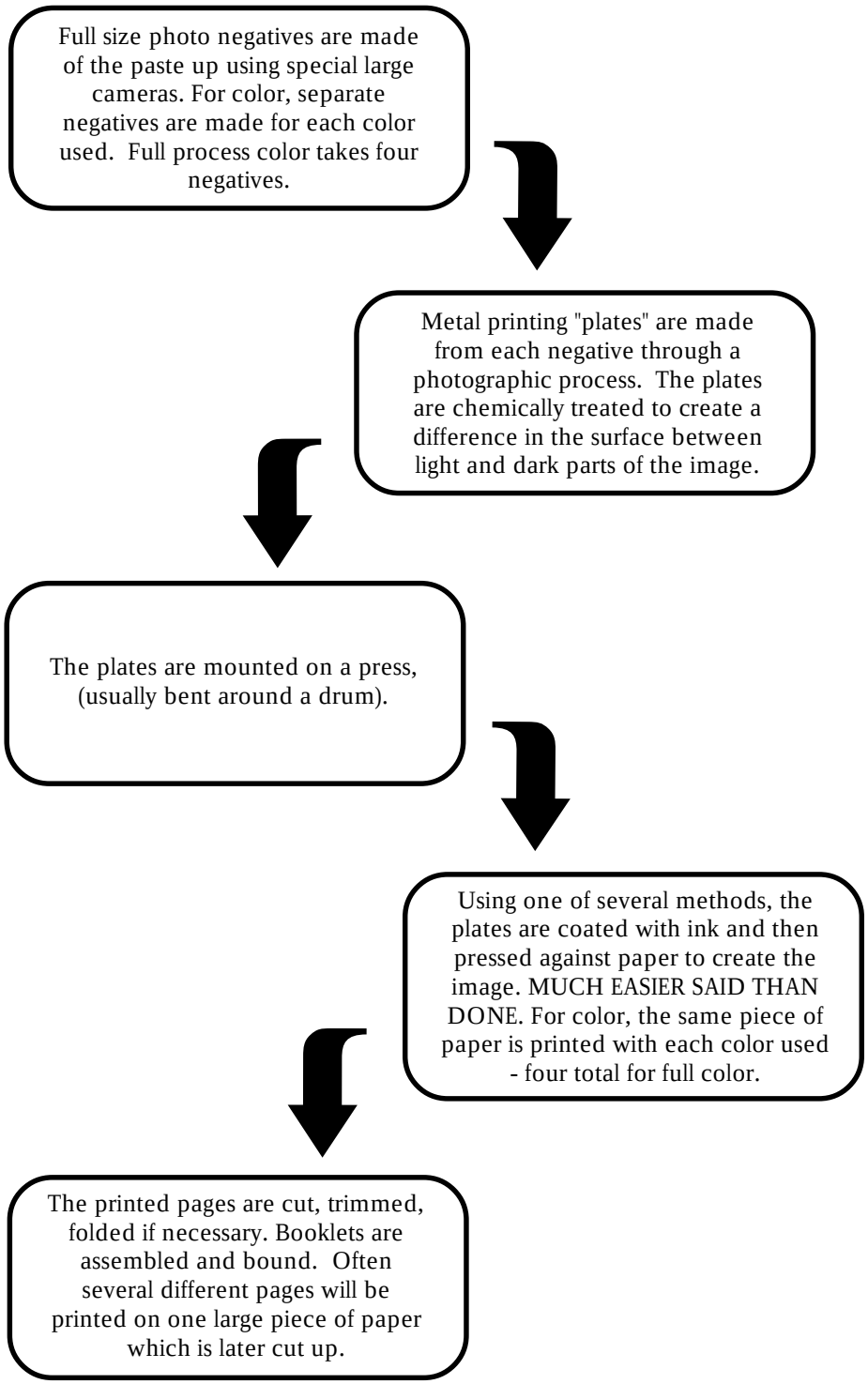
There are A LOT of different techniques, but basically printing is done in:

ONE COLOR: Often black or dark ink on a light paper

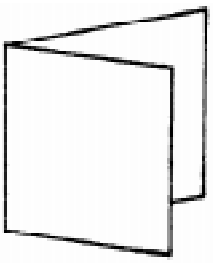
SPOT COLOR OR DUOTONE: Where pieces are in distinctly separate colors (like red titles or blue streams and green trails on a map) or printed in two, mixed colors for effect (usually a black and white photograph with another color mixed in or printed right over the black ink).

FULL PROCESS COLOR: Where the primary colors - cyan/magenta/yellow - and black are mixed (like they are in photographic film) to create a full range of colors

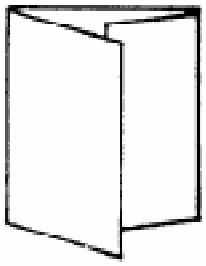
The ink is actually applied in tiny dots that the eye blends together. The smaller the dots, the better the result (but the price goes up too).



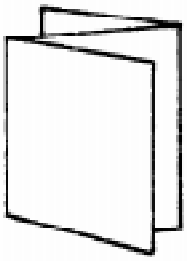
Folding Styles



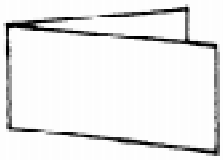
Standard 4 Page



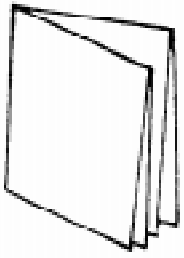
Roll 6 Page



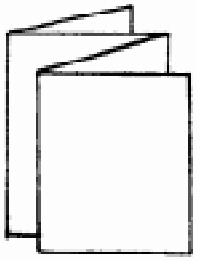
6 page Accordion



4 Page Oblong

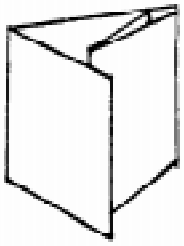


8 Page French Fold

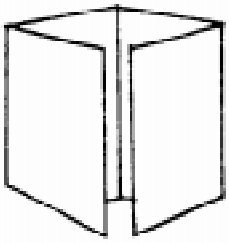


8 Page Accordion

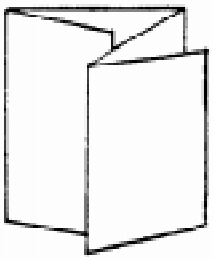
Standard 8 Page



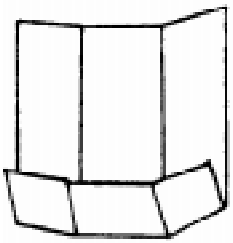
8 Page Parallel



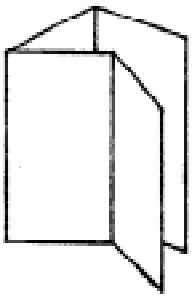
8 Page Gate Fold



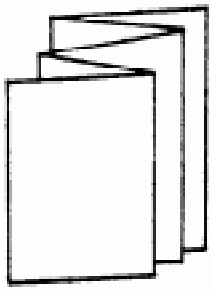
8 Page Map Fold



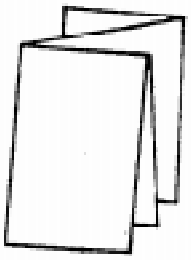
6 Page with Stuffer



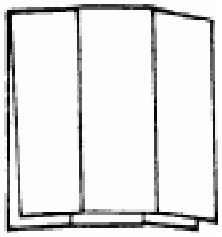
2 parallel Half Folds



10 Page Accordion



12 Page Letter Fold



12 Page Broadside

Doodle Page

(Take a Creative Break)

Interpretive Signs

What most people think of when someone says "interpretive project"

Signs, outdoors usually, could be the single, most popular method for interpretation. At least with us. That may not be true for visitors, who still rarely spend the time to completely read and absorb the message in a sign. (That's partly because so many signs aren't well done). The two important steps to a successful interpretive sign are to be *sure* a sign is the best method and to never lose sight of what and to whom you want to communicate.

Signs are just publications in another form, and the principles for good writing and graphic design all apply. Make them simple and clear and understandable at a glance. Make them easy to notice and access without being an intrusion on the site. Build them to last with little maintenance. Pay as much attention to the where and how the sign is mounted as you do to the sign itself -- consider the mount as part of the design for both the sign and the site.

As of September, 1993, the USDA's Public Affairs Office policy is that the "printing", including silk-screening, of 10 or fewer interpretive signs does NOT have to be procured through the Government Printing Office. This is good.

The Big Hoops

1) Any new interpretive sign will usually need at least forest level approval by the interpretive specialist, graphic artist, landscape architect, sign coordinator, or someone else.

2) Over $2500 for the sign panel and you'll need competitive bids. This is not that much for a complete design and fabricate job.

3) Putting a sign in might require a plan for the site - landscape architect's job

4) Signs along highways might have to meet state or county standards

5) You might need an environmental analysis

The Procedure

1) Check to see what reviews, approvals and controls your forest or unit requires for interpretive signs - might as well know before you get started.

2) Make sure your sign fits your plan. No plan? Good time to do one. At least be sure you're not duplicating interpretation.

3) Figure out if the sign needs site work to go with it (bench, parking, trail, toilet?). Do a site plan first if it does.

4) Zero in on your theme/message. Decide how to present it. Sketch your idea. Write a draft of the text.

5) Decide on the material and mounting. Call the signmaker and find out what they need.

6) Find and hire an artist. Show him/her the words, the site, and your sketch.

7) Lay the sign out on paper, full size and exact. Make sure it meets the signmaker's needs.

8) Send the camera-ready work to the signmaker with specific instructions. Ask for an approval copy if they are laying things out.

9) When you have the sign, make the base or mounting post/frame.

10) Install. Not as easy as you might think for a durable installation. Allow enough time and money.

Sign Materials

As with most things, you get what you pay for. The most durable outdoor materials are not cheap, but have a long enough life to make them worth the investment. Prices for the longest lasting materials tend to be close to one another.

ETCHED ALUMINUM

DESCRIPTION: A piece of aluminum, thin and flexible or thick and strong, is imprinted with text and graphics (or photos) by an electrochemical process that makes the image part of the surface of the metal.

PROS: Very weather resistant. Pleasant, earth-tone colors. Thicker signs are easy to mount. Don't rust. Never fade. Easy to clean. Good reproductions of photos.

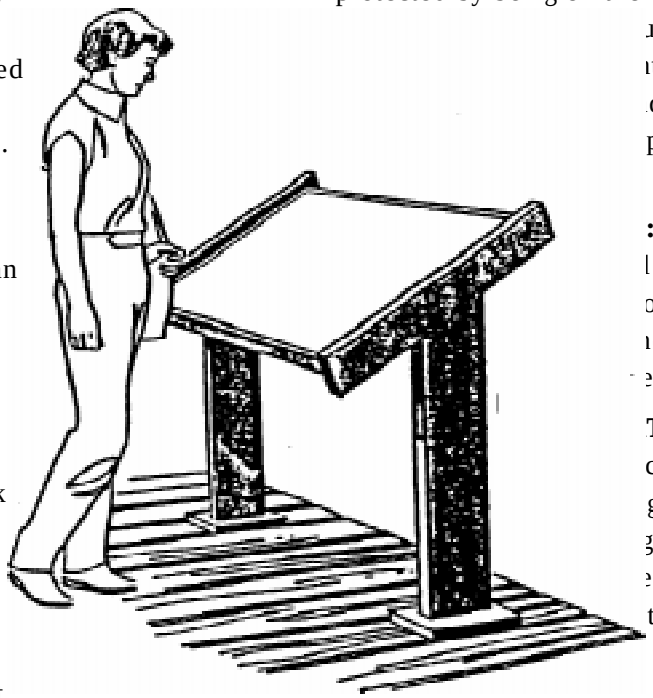
CONS: Can be scratched. Hard to repair. Not many sources. Limited colors. Sign can only be two colors including background. Expensive.

PORCELAIN ENAMEL

DESCRIPTION: A thin, stiff piece of steel (usually about 1/8") is painted or silkscreened with special ink and then baked to harden the ink like the porcelain on a sink or bathtub.

PROS: Very weather resistant. Easy to clean. Chips and scratches can be repaired. Can be any number of colors or even use full color photos. Look new for a long time. Letters can be built up high enough to be felt (for those with poor vision). Photos look good.

CONS: Will chip if hit hard. Expensive, particularly for multi-color. More difficult to mount. Steel backing can rust.



EMBEDDED FIBERGLASS

DESCRIPTION: A paper version of the sign with all text and graphics printed on it is embedded in a thin (1/8 to 1/4 inch) layer of clear fiberglass. The paper actually becomes part of the fiberglass, leaving the ink suspended in the middle of the layer.

PROS: Very weather resistant. Unlimited colors and graphics. Damaged surface can be repaired. Scratches don't affect text/graphics (they're not on the surface). Cheap to make multiple paper copies.

CONS: Text and graphics aren't as sharp. Can cloud or fade with age. Photos can fade, crack or peel. Usually needs some sort of backing/support to mount (panel flexes easily). Expensive.

REVERSE SCREENED PLASTIC

DESCRIPTION: A piece of plexiglas or clear poly-carbonate (Lexan, Tuffak) is silkscreened on the back side with a reverse of the sign so that it is correct when viewed through the panel from the front.

PROS: Relatively inexpensive. Printed material is protected by being on the back of the clear panel.

uires separate screen for
ıted against a variety of
d can be changed. Small
polished out. Multiple
cheaper.

: Not good for outdoors.
l color graphics. Clouds
ows with age. Can be
ıed. Not strong. Breaks
easily when cold.

TION: There is a version
cludes an aluminum
g plate laminated to the
glas. This stiffens and
engthens the sign, protects
the graphics, and makes it
usable outdoors.

CAST METAL

DESCRIPTION: A mold is made of the text and graphics and filled with molten metal to create a thick plate with raised letters and pictures. Commonly used on outdoor statues or buildings as commemorative plaques.

PROS: Very durable, weatherproof and vandal resistant. Can be damaged and still be readable. Easy to feel letters (for those with poor vision). Easy to mount. Can be textured.

CONS: Not good for small lettering. Only simple, line graphics work. Very limited color choices. Expensive, particularly if only 1 or 2 are made.

VARIATIONS: Castings can be in a variety of metals (aluminum, bronze, iron) and done with textured backgrounds, fancy borders, or other flourishes.

PLASTIC LAMINATED PAPER

DESCRIPTION: A printed piece of paper is heat laminated between two sheets of plastic that melt together around the edges to seal the paper inside. Often done with clear plastic on the front and colored plastic on the back and nailed, stapled, screwed or glued in place.

PROS: Inexpensive. Weather resistant. Looks good outdoors or indoors. Makes a simple paper poster look much nicer. Easy to replace. Choice of finishes.

CONS: Limited life (1-3 years outdoors). Can be scratched or cut. Will fade and warp outdoors. Needs support when mounting (flexible). Limited size.

VARIATIONS: Thicknesses range from very thin and flexible to just over 1/32 inch (thick enough to stand up on it's own). Finishes include glossy, semimatte, matte, satin or linen, slightly pebbled.

CARVED WOOD

DESCRIPTION: Text and simple graphics are carved into wood, usually a smooth board, and sometimes painted as well to help them stand out. Can be routed, carved by hand, or laser etched.

PROS: Can look very nice and blend well with particular settings. Can often be done locally. Hand carving gives room for artistic touches or unique lettering.

CONS: Takes regular maintenance. Can dry and crack. Easily damaged. Harder to read. Not good for small lettering. Very limited graphics.

VARIATIONS: Routed (sunken letters and graphics) gives a neater, cleaner look and more control (using a guide). Hand-carving gives a more unique and personable look. **Sandblasting** creates more detailed raised letters and graphics with a highly textured (raised grain) background. **Laser etching** (often used for award plaques) is very precise and detailed but may require more expensive hardwoods to work.

STONE

DESCRIPTION: Marble, granite or other stone is carved, etched or sandblasted much the same way as wood.

PROS: Very long life. Very durable and weather resistant. Classy look - can be perfect for some sites. Hard to vandalize. Easy to clean.

CONS: Very expensive. Heavy and harder to mount. Sometimes hard to read because of little contrast between letters and background.

VARIATIONS: Similar to wood. Can be hand carved (like a gravestone), sandblasted, or chemical etched (usually softer stone like marble).

CERAMIC

DESCRIPTION: Same as ceramic tile. The text and graphics are painted or screened on the clay using glaze and the whole thing is fired to harden it all.

PROS: Weather resistant, durable, hard to scratch. Can be very colorful and unique looking. Several colors possible. Can be unusual shape or thickness. Text and graphics can be detailed.

CONS: Easy to break. Harder to mount. Realistically limited to a few colors. Limited to smaller sizes (small signs and labels). Risk of it not firing correctly and having to be redone. Each one is more-or-less hand done.

Who To Involve

Visual Information Specialist: They can help a lot with design, sources, and contract specs

Landscape Architect: They can also help with design and will be needed if site work or a site plan is part of the job

Sign Coordinator: Many forests or units have one and their approval may be necessary before anything can be ordered

Engineering: They often have designs for sign bases or may be able to design one for you

Signmaker: Once you decide on a material, call a fabricator and find out exactly what they need to work with and in what form

Maintenance Crew: They keep the sign up and working - get their ideas, opinions and reactions

Common Mistakes with Interpretive Signs

1) **Too much text; text too small; text too continuous.** Nothing looks more uninviting than big blocks of small letters. Keep it brief, right to the point, in big clear letters, and broken up into separate blocks, captions, subtitles.

2) **Poor balance of text and graphics.** If one overpowers the other, then the smaller part gets lost and the larger part gets more emphasis than intended.

3) **Too busy.** Trying to fill up all the space or using all the space trying to tell too much leads to a sign that turns people off before they even get close enough to read it.

4) **Typographical errors and inaccuracies.** It's so easy to let a typo go by or get a wrong number or fact. Let someone brand new to the sign read it. Check with the experts one last time.

5) **Wrong typeface.** Stick to the simple, plain typefaces for your text. DON'T USE ALL UPPERCASE or *too many italics*.

6) **Wrong size or orientation.** Don't use a huge sign in a small spot or a tiny sign where it needs to be noticed from the highway. Don't use a vertical sign when you're interpreting the view behind it.

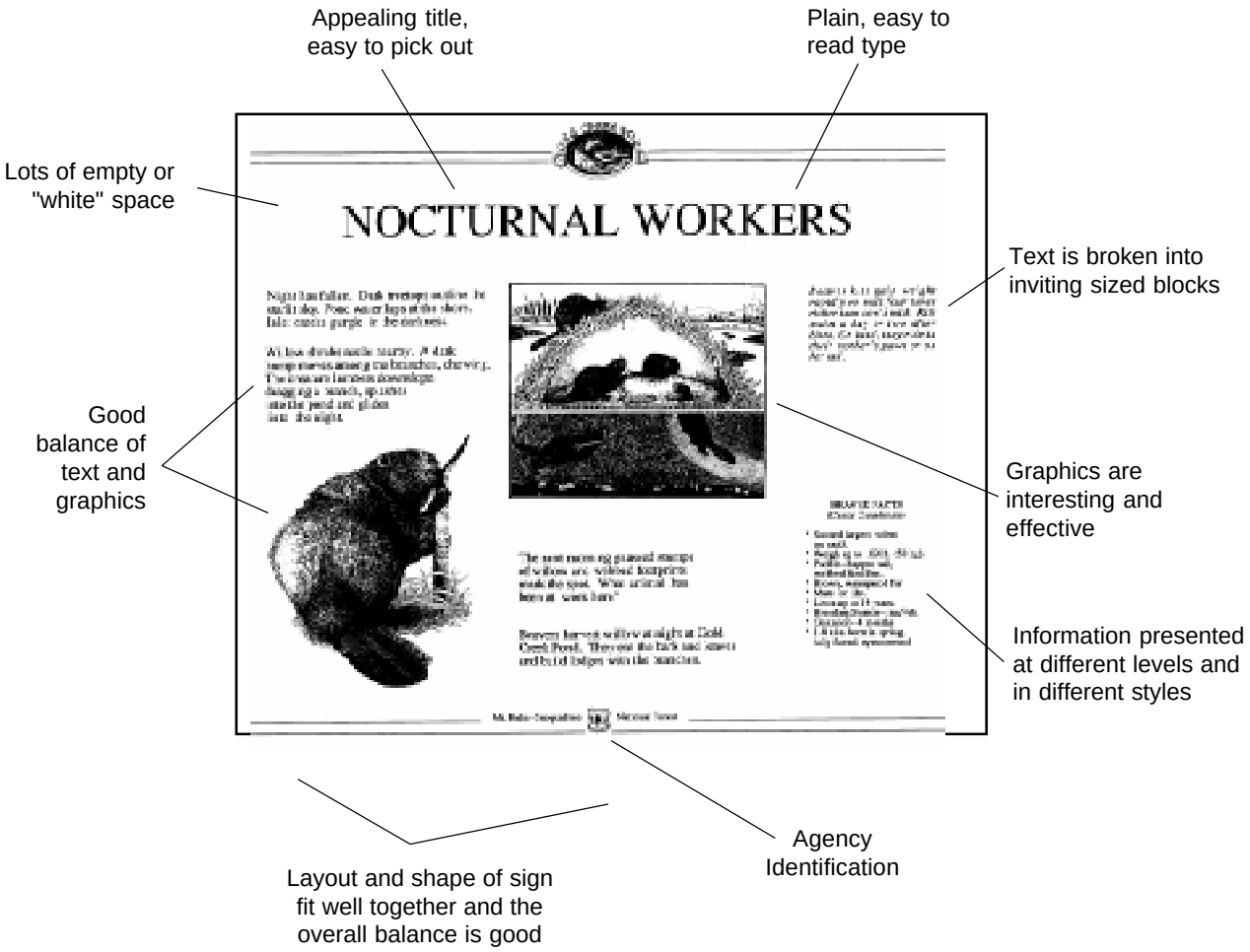
7) **Poor graphics or graphics that just decorate rather than interpret**.

8) **Wrong mount.** Galvanized steel in a forest setting? Logs along a paved, urban trail?

9) **Not enough border.** Don't forget to leave room for the frame or mount.

10) **No agency identification.** It's a great sign - take the credit.

A Good Interpretive Sign



Graphic by C. Ziebart

A Formula:

1. **The title states the theme of the sign.**
2. **The subtitle (if there is one) further elaborates on the title.**
3. **The text explains things, a few short sentences at a time.**
4. **The graphics add to the story and don't just decorate the sign**

Video

Much more than meets the eye

There's no doubt that a good video can have a lot of impact and a long-lasting impression. Videos are also one of the most portable and readily accepted forms of communication these days. Their advantage is animation - movement and sound that catches and holds the viewers attention. Their disadvantage is that they are not easy to make -- good ones, that is -- and they are now so common that it may be hard to get a viewer interested to begin with. Multimillion dollar Hollywood productions fit on the same size cassette.

Even though quality equipment is getting smaller, cheaper and more affordable, it's still best to use a professional production company to create your program. The biggest thing they will do for you is get rid of any technical flaws or glitches, something that viewers are very sensitive to these days (often subconsciously). They'll also save you time and money by knowing just how to shoot the video, including extra shots to have on hand in the editing room. And their experience usually gives them lots of good ideas for how to make your program work. BUT, it's expensive.

Even with a full production contract, you'll still be involved. You're the one who understands the theme and your audience and what it is you want to communicate in the video, the one that has to approve the script and storyboard and final product, and usually the one who knows where to go for the shots required.

The Procedure

1) Contact your regional AV specialist for advice, rules and suggestions.

2) Decide who the audience is

3) Decide exactly what you want to say, show or get across. Make an outline.

4) Decide how you will structure the video. On-screen narrator or voice over? Actors? Staged shots? Graphics or special effects?

5) Write a script (for narrator/actors)

6) Make a storyboard.

7) Organize the shots you need by location, setting, season, etc.

8) Get those shots along with a limited amount of extra footage as backup

9) Get the narration recorded, edited, and transferred to video tape, if necessary (talk to the editor to see what he/she needs)

10) Make a rough edit. Get it approved.

11) Edit together a final master copy.

12) Get a duplication master or safety copy made. Make duplicates.

13) Make labels for both the cassettes and covers or boxes.

14) Distribute the program.

The Big Hoops

1) Contracted video production companies need to be on the "Qualified Video Producer's" list. Contact regional public affairs for the list.

2) If the video is "national in scope", USDA has to be contacted before you start.

3) If the cost is over $25,000 (not that big a price in the video production world), the contract has to be advertised nationally.

4) There are limits on purchases of new video equipment (in case you're thinking of doing the work in-house).

Video Production

Like filmmaking, video involves taking the pictures, gathering any other pieces like separately recorded sound, and splicing the pieces together. The biggest differences are the look of the video - much colder and more contrasty - and the fact that with video the splicing is done electronically. In film you can go back and easily insert more material in the middle of a program. In video, since the tape can't be cut and glued, you cannot . . . at least not very easily. But video, in the end, is much cheaper, easier and faster.

SCRIPTS

A script is needed if there will be narration or actors with lines. Turning out a script requires a certain kind of writing skill because of the difference between reading and hearing the same words. People retain about 30% of what they read but only 10% of what they hear. If you're going to write your own script, read it out loud as you write, then read the drafts out loud to others to see if they follow and understand.

A good script for a narrator will stand on its own, without the pictures attached. At the same time, it won't duplicate the pictures by describing what's on the screen. The script supplies succinct, separate, easily digested blocks of information that add clarity and emotion to the program and help hold it all together.

Script for actors is even harder to write because it involves dialogue and interaction. Best find a playwright or screenwriter for that job.

If you turn out your own narrator's script, be sure it's typewritten in plain type, double-spaced, and arranged in narrow columns that are easy to read. Also be sure to put page breaks at natural breaks in the narration so there isn't page turning noise on the recording.

Allow lots of time for this step, either for yourself or your contractor. Start with an outline. Edit heavily.

STORYBOARDS

This is probably the single most useful and beneficial item in video production and, if you're doing the video yourself, the one you're *least* likely to do. That's because it's so tedious. Putting together a storyboard more or less means creating and playing back the entire video in your head before you've even started making it, and then writing and drawing all those details.

The storyboard is the comic book like representation of all the scenes in the video, including sound, script, titles, and transitions from one scene to the next. It's what a producer uses to gather the necessary shots and what an editor uses to put the program together. It's also what's best to use for approvals and drumming up support or financing for the project.

Who To Involve

Public Affairs Officer: Media is their job and responsibility

Audio-Visual Specialist: Most these days know about video production

Production Company: Even if you're not going to contract the production, they're a valuable source of information

Writers: The script is very important and a production company may not be the best source

Editor: Talk to the person who will actually do the editing. Find out what they need to work with and what they can and can't do.

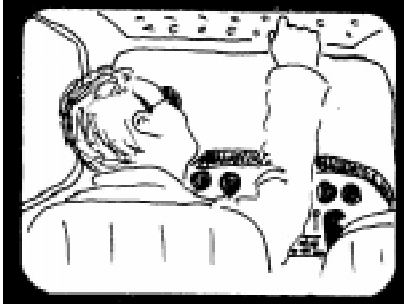
Sample Video Storyboard Page

SCENE: 22 IN: Fast Dissolve OUT: Cut

DESCRIPTION: Pilot briefs passengers before boarding. Pilot's face visible. Include close-ups of passengers listening & paying attention

VOICE OVER: "Before boarding the aircraft, the pilot should give you a full briefing of safety precautions and requirements while in flight. It should include loading/unloading, emergency procedures, location of fire extinguisher, seat belts, and use of the intercom."

SPECIAL: Graphic. Superimposed list of briefing items, one at a time.

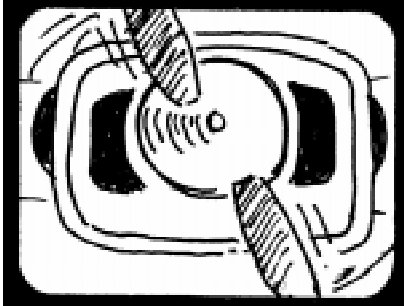


SCENE: 23 IN: Cut OUT: Cut

DESCRIPTION: Passenger's view of pilot going through preflight checklist. Include closeups of checklist in pilot's lap and each action.

VOICE OVER: "Once you are seated and belted in, the pilot will begin the preflight check, following a standard checklist, then will . . ."

SPECIAL: None

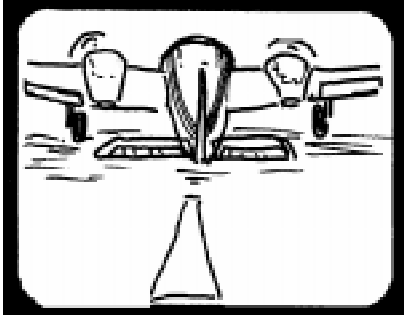


SCENE: 24 IN: Cut OUT: Cut

DESCRIPTION: Close-up of prop turning as engine starts. Make sure it is same airplane and that it is clear engine is starting.

VOICE OVER: ". . . check outside to see that the props are clear and start the engines one at a time. Many pilots will yell "clear prop" out the window before starting."

SPECIAL: None



SCENE: 25 IN: Cut OUT: Fade to Black

DESCRIPTION: Plane taxies away from camera toward runway. Start with close-up of passenger through window. Include takeoff shot.

VOICE OVER: "After warming up the engines, the pilot will roll slowly or "taxi" to the end of the runway, check the engines again, wait for clearance from ground control, and then enter the runway and take off."

SPECIAL: Bring in music during fade to black.

EDITING

If you thought doing the script and shooting was hard, wait until you start editing. Even with a good storyboard (which *everybody* does, right?), the physical process of organizing all the segments, fitting them together, adding other pieces like sound, titles, graphics, etc., and fixing the technical glitches is very tedious and surprisingly time consuming. Advances in equipment, particularly computer based editing, have made things much easier, but it's still takes time, concentration and patience to assemble the final video.

In film editing, the developed reels of film are actually cut and spliced together to create the final print, composed of all *original* pieces of film. In video, segments of the original tapes are *copied* onto a second tape in the order you want them, creating a master that is made of duplicate recordings of the original footage.

The biggest difference is that with film you can go back later and insert new segments by simply cutting and splicing. In video, however, the only way to add new material is to reconstruct or rerecord the whole master, inserting the new material when you get to the place for it. Aside from taking more time, there is another problem called:

Generation Loss

Each time you copy a video, it loses quality. That's why the copy of a copy of a copy of the wedding video that uncle Frank gave you looks fuzzy. Each copy is called a "generation" -- original footage is first generation. When you edit video, you lose a generation since there is no way to physically cut and splice the original tape. If you copy the master again to insert new material, you lose another generation. When you go to make duplicates of the master, you lose yet another. That's why it's important to start with original tape and to keep the number of duplications to the minimum of two; one during editing, the other during duplication.

With the latest computer or digital editing, the problem of generation loss is reduced or eliminated by converting the original material into complicated number codes that can be manipulated without losing quality. But those systems are expensive and not widespread yet and still can't help if you're starting with video footage that's not original to begin with. The other problem that can come up is . . .

Format

These days video cameras record on several different kinds of tape and in several different ways: VHS, Compact VHS, S-VHS, Beta, 3/4 inch, 8 millimeter, Hi-8, digital. They all vary in quality and most are not compatible with each other, meaning they need different equipment for playback and editing. The quality of the recording is also affected by the quality of the camera the tape is shot on, *particularly* the lens and microphone.

If you shoot footage on four different cameras in four different formats and then take them to the editor to make into a program, it makes the job much harder and more expensive and the results lower quality. In a lot of cases the editor will just copy all the material onto a tape format they can use, meaning you lose a generation before you even start editing. Use a production company for the whole job or **talk to the editor first and use a format (and only one if you can) that they can work with.** Remember too that some tape formats duplicate better than others.

Audio

Sound is as important as the image in video and it needs to be given equal attention. Good quality really comes down to a good microphone (separate from the camera) that is well-placed. If you are doing the shooting, be sure to wear good headphones and listen as you tape. If it doesn't sound good then, it never will.

Video Problems to Watch Out For

1) Program too long

Even with lots of action and movement, attention spans are typically short. Ten minutes is a long program for many audiences. Thirty seconds is the length of a typical TV commercial. If you're selling or loaning a program to be viewed at leisure, it's a different story -- audiences will probably expect a longer show.

2) Too much narration

Remember, you'll probably have the "ambient" audio that was recorded along with the pictures, maybe some background music, and possibly sound effects. A narrator on top of that who is babbling away won't work - the audience will tune them out. Just say what you need to, as simply and succinctly as possible.

3) Mix of too many formats

Making a program out of pieces of home camcorder footage, professional footage, slides, still photos, and old film footage will probably work, but it won't work well and it won't be easy or cheap to do. The changes will be noticeable and can be annoying to the viewer.

4) Bad sound

The most common causes are using the built-in microphone on a camcorder, using a mismatched microphone, or problems with wiring or connections. Good sound is a BIG part of a good video. Thin, hollow audio or sound marred by clicks or buzzes or hums or general noise is the first giveaway of a low budget program and is quickly noticed by most viewers.

5) Program tries to tell too much

It's the same as any other form of interpretation . . . making just 3 or 4 points and making them well is much more effective than trying to tell everything. Don't worry about missing details unless they are critical.

6) Pace is wrong

Usually this means the program moves too slowly and your audience soon gets bored. (Remember the typically fast pace of television that most viewers are used to). But it can go the other way and be *too* fast, particularly if you're trying to explain something technical.

7) Wrong music

If the viewer is noticing the music more than the message, it's the wrong music. Remember your target audience. Use music that sets the right pace. Avoid lyrics - they compete with whatever else is being said. Don't used dated music unless you need it for effect.

Automated Slide Programs

An "old-fashioned" method that still works well

A slide program may sound like a boring proposition, but there really isn't anything else quite like a good, sharp colorful transparency projected on a large screen. It has the impact and clarity of film with the added advantage of giving the viewer time to really study and absorb the image. Combine that with a good soundtrack and a pleasing transition from slide to slide and you have a method of interpretation that's still quite good.

The bad reputation for automated slide or "slide-tape" programs usually comes from equipment problems -- slides out of sync, misaligned projectors, worn out audio tapes, dirty screens. Modern equipment goes a long way toward remedying those glitches, but it doesn't solve the problem. The programs still need attention and maintenance, including replacing slides as they start to fade. They also work best in a permanent installation.

Think of a slide-tape program as a slow video and apply most of the same principles of storyline, pace, content, script, and quality of both the sound and images. But **pay even more attention to the images**, because they won't just flash by on the screen - they'll be up there long enough for the viewer to look closely. There also will be fewer pictures overall, making each one that much more important. Or at least there should be -- again, don't be tempted to use slides just because you have them. Choose carefully. At the same, however, be sure you have enough to avoid leaving slides up **too** long.

The Big Hoops

1) Believe it or not, there aren't any, provided your program isn't "national in scope". Like any message or program with the agency name on it, however, you will need to at least run it by your supervisor or public affairs officer.

The automatic part of the program works by including short "sync" tones on the soundtrack which trigger a controller that in turn advances the slide projectors. The tone isn't heard during the program (you knew that didn't you). Since there are several different kinds of controllers and many use different tones, it's best to have your equipment in hand before starting so you know what it can do and so you can record the sync tones on the same machine that will play them back. Recording those tones the first time is just a matter of planning, timing and trial and error until the program runs right. It takes some time.

The Procedure

1) Decide who the audience will be.

2) Decide exactly what it is you want to say or show or get across.

3) Write a script. Include notes on special sounds or music you might need.

4) Outline the program. Make a list of pictures you need with alternates.

5) Get the pictures - all original transparencies, all in the same format (preferably all horizontal)

6) Adjust the script if necessary to accommodate the pictures you actually end up with.

9) Record the soundtrack and transfer to whatever format you need for adding automatic projector cues.

10) Load the slides in order and record the sync tones on the soundtrack.

11) Test run the program.

12) Duplicate the program as needed. Include notes about what equipment it needs to run correctly.

Lapse Dissolve

This is the effect where one picture slowly fades out while the next one fades in right on top of it. It's done with two projectors lined up to show pictures exactly the same size in exactly the same place. A controller -- the same one that follows the sync tones and changes pictures at the right time - alternately turns the projectors on and off at rates adjustable from an instant cut to a dissolve that takes a minute or more. Many controllers are programmable, letting you set a dissolve rate for each picture change. The hard part of lapse dissolve is getting it set up right and then making sure the projectors start on the right slide. Once out of sync, it's hard to correct.

Multi-Projector

Multi-projector (more than two) can be used for lapse dissolve, separate images that share the same screen, three or more images that together make one bigger picture, or a combination of these techniques. Controlling the projectors takes a computer and once they are all set up and aligned, you won't want to take them down, (even though it's often done). The effect can be pretty impressive, but creating a good multi-projector program takes a lot of planning and extra work to get the right images. It also takes a good technician to keep it running correctly.

Plain and Simple

One projector, one reel of slides, one tape player. Mechanically this is the most reliable setup, but visually it's the roughest because of the clunky slide changes. Not a good choice, but if the soundtrack and images are good enough, the program can work. It's also the cheapest.

Rear-Screen

For a permanent setup or a television size portable program, rear-screen works well. Usually the screen (glass with a special frosted coating on the back) is in the wall with the equipment hidden behind it. The slides are projected from the back (they have to be reversed to come out right when viewed from the front). The disadvantages are that the screens are expensive, you need the space behind the wall for the gear, often you can't show as large an image, and the pictures may not be as bright.

Getting the Most from Slide-Tape Programs

➠ Start with a good place to show the program and good equipment. Use a quiet, dark, theater setting, quality projectors and a high fidelity sound system.

➠ Spend extra time on the soundtrack. Consider it as an interpretive program in itself. Use a professional narrator - good voice AND a good reader - and a professional recording studio. (See the Audio Tapes section).

➠ Resist the temptation to include marginal photos to help fill out the program. One great picture is better than three poor ones.

➠ Vary the pace of the program with music changes, visual cues like blackouts or flashed pictures, or different dissolve rates.

➠ Don't try to make use of all the little tricks the equipment can do. Create the program first, then make the equipment work for you.

➠ Choose your music carefully. Most retirees aren't heavy metal fans. Most teenagers aren't classical fans.

➠ Use duplicate slides or copies of still photos **only** if there is no other way.

➠ Use the same orientation (horizontal or vertical) for all the pictures. Horizontal works best. Mixing the two disrupts the program and takes out some of its punch.

➠ Use special effects like masks and builds if you can afford them. These require specially made slides (portions blocked out, several pictures in one, short sequence, etc.)

Who To Involve

Public Affairs Officer: They may have experience or better yet a good slide library to borrow from.

Audio-Visual Specialist: They can help you through the technical side of this method.

Local Photographers: Don't forget the closet photographers who take great shots and never show them because they don't think they're good enough.

Whoever Controls the Place: If you need to use someone else's space to show the program, involve them early

Interactive Video

Letting the viewer find their own way

Interactive video is bits and pieces of sound, images (moving and still), and graphics stored in a single place and set up so the user can choose what they want to see and hear. It's usually associated with computer screens that have those magic "touch here" buttons displayed on them. You work your way through a series of choices ("menus") to get to the information or message you're interested in. The method is typically used for information and orientation, but it has it's place in interpretation. It's advantage is that it actively involves the viewer in a normally a passive medium, letting them pick their own route and pace through the program. It can also keep track of what visitors like. The disadvantage is that only one person at a time can operate the system, although others can stand around and watch.

This technology changes almost monthly, but what the visitor interacts with is still a computer screen and some sort of push-buttons or keyboard for navigating through the information. Not long ago, everything was stored on 12 inch laserdiscs, (the same kind that movies come on). Now it's more likely to be stored on CD-ROM or directly on a computer hard disk. The storage is better and the computers faster, but the result for the visitor is the same.

What are now called "multimedia" computers are a form of interactive video. You pop in a CD-ROM encyclopedia and then use a menu on the screen to get to the subject you need to know about. The difference for interpretive programs is that they are custom made, one-of-a kind and a lot more expensive than a mass-produced off-the-shelf CD-ROM. The hardware is cheaper, but creating a quality program to run on it is still tedious and costly.

The good news is that it's more realistic now to actually create the whole thing in-house, (except for manufacturing the disc), if there's a computer whiz available in your office.

The Big Hoops

1) Contracted video production companies need to be on the "Qualified Video Producer's" list. Contact the Regional Office for the list.

2) The system involves purchasing computer equipment, which falls under different rules and restrictions.

3) If the cost is over $25,000, (probably will be), the contract has to be advertised nationally.

4) Initial cost is high and upkeep can be expensive. The benefit has to be high to make the idea sell.

The Procedure

1) Decide who the audience is.

2) Find an expert - preferably someone who actually makes the programs - and involve them in design.

3) Outline how you want the program\system to work, step by step, from the customer's point of view. Check with the expert again.

4) Get a commitment for a place for the equipment and for maintenance.

5) List and organize all the pieces you need - video, sound, graphics, programming - then get them all.

6) Buy the hardware. Write or get the software. Test run the system.

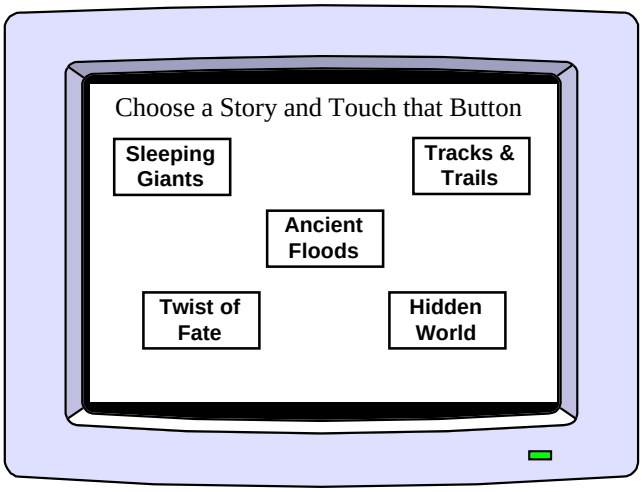
7) Create your program. Edit the sounds and images and store them on CD-ROM or hard disk.

8) Have backup copies of the disc and software made.

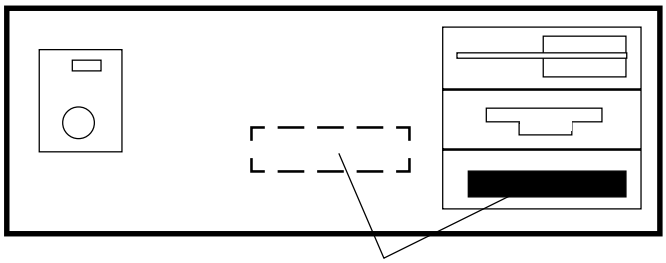
9) Install, test, debug, open to public.

A typical interactive video setup includes a special touch screen monitor, a standard desktop computer, and an information storage device, (CD-ROM or big hard disk). A simpler version would just be an off-the-shelf multimedia computer with a mouse and normal monitor.

Touch-screen monitors use a mesh of tiny, almost invisible wires imbedded in the screen to sense where you touch and then activate a command, (like pointing and clicking with a mouse). They're more expensive, but very easy to use.



A computer runs the specially written softwear and controls the device that stores the information.



All the information -- the text, graphics, still pictures, video, and sound - are stored either on a specially made CD-ROM disc or on the computer's hard disk.

CD-ROM stands for compact disc, read-only memory. It's like a music CD, but contains all kinds of information - text, pictures and sound - stored as "digital" number codes. The disc can only be played back, not recorded on.

Who To Involve

Computer Expert: Preferably the programmer or someone who's done it before

Audio-Visual Specialist: To help you get the video footage and other images or sounds you need

Equipment Supplier: It's best to start with a good understanding of what the equipment can & can't do

Information Systems Staff (RO): Computer purchases need their approval

Audio Tapes

Sound is a very powerful tool

Audio only programs, usually on cassette tape, are portable, universal and readily accepted. Well done, they're also very effective because they involve the imagination of the listener in the same way that radio drama does. Most often, interpretive tapes are designed to be listened to as you walk or drive through an interpretive area or site, and they usually rely heavily on a narrator and a well-written script.

If you're thinking of an audio walking tour, you'll probably have to figure in the cost and logistics of loanable players to go with the tapes. If it's for a driving tour, tape players in a vehicles are so common these days that you can probably get by with just the tape, (much simpler and easier to do).

These days we're spoiled with very high quality audio almost everywhere we go, through commercial and public radio, books or stories on tape, the audio that comes with films and videos, and many prerecorded messages. That means listeners are less tolerant of lower quality recordings. Plan on using a professional recording studio and plan on paying for it -- sometimes hundreds of dollars an hour. When all you're asking people to do is listen, and you're giving them a personal environment, (headphones or a vehicle), to do it, they're going to listen closely.

The Big Hoops

1) You'll need review and/or approval of your supervisor, ranger or public affairs officer.

2) If the tape is to be sold or rented, you'll have to work out ahead of time (with budget and finance people) how that will be done.

3) Some material you want to use (music, quotes, excerpts) may be copyrighted. You'll need permission from the owner.

The Procedure

1) Decide on the length of the program and whether or not it will be tied to points along the way. If it is, then travel the route several times to get a good average of how long it takes to get from point to point.

2) Outline the program; list the parts and pieces you'll need. Interviews? Narrator? Sound effects? Music? Background sounds?

3) Write the script. Read it out loud. Rewrite.

4) Find a narrator you like (if you're using one). Work through the script with them and edit until they're comfortable with it.

5) Choose a recording studio and record the narration.

6) Find the music, sound effects, and other pieces of the program you need. Involve the studio to make sure you get things on a tape format they can use.

7) Take all the pieces and the program outline to the studio and assemble it. Make a copy of the master.

8) Try the tape out to be sure it is timed correctly and that it makes sense to a sample audience. LET EXPERTS LISTEN FOR ERRORS IN FACTS OR FIGURES.

9) Edit and correct the master

10) Get duplicates made, along with cards and labels

11) Distribute and advertise.

Recording

Decisions You May be Asked to Make:

WHAT FORMAT AND SPEED? The bigger the tape and the higher the speed the better the quality and the higher the cost. Go with what you can afford but **most important** use what will work best for editing.

WHAT EFFECTS? Studios often have magic boxes that can add echo, smooth out a fluctuating voice, change the tone, reduce background noise or otherwise color the sound. What to use depends on what sound of feeling you want and where the tape will be listened to (noisy car? good headphones?). Listen to samples before you decide and try to have a "dry" (no effects) track recorded at the same time to use as a backup.

WHAT MUSIC? Think about the tempo, kinds of instruments, and style you want. Bring samples if you have some. Commercial popular recordings are hard to use because of copyrights. Most studios have a library of instrumental music that they're licensed to use and that you can use for a fee, if it's not included in the studio price.

Working with a Narrator:

Most narrators will rely on you to direct them on pace, inflection and emphasis, but will also want freedom to put their own expression in the reading. That's why it's important to choose the narrator carefully to begin with; their natural style should be what you want. Be careful not to waste their time. Make sure the studio is ready to go and that the script is final, and listen carefully as they read to catch any errors. It's best to fix the tape as you go if you can, but if it means making the narrator stop and wait a lot, plan on fixing things in the edit instead.

Being the Producer

Once you're in the studio acting as producer, be prepared to pay attention and make decisions on the spot. The engineer can recommend, but they will wait for your nod before going on. "Was that good enough?" Can you live with the little bit of paper turning noise? There's a small click here; do want to try to fix it? Is that background music too loud for you? What comes next? Do you want any sound effects here?"

Also be ready to speak up if there's something you don't like. Studios make their money by doing good work AND doing it quickly, so they'll be working fast. If you want something different, make that change right away, not after the tape is done.

Formats

ANALOG: Regular old magnetic recording tape. Professional tape has a higher quality coating than home brands and sounds better.

DIGITAL: Actually the same tape as analog (nearly) but the signal is converted to number codes before it is recorded. No hiss or background noise and easier to edit.

DAT: A cassette form of digital recording tape. Masters are often on DAT (digital audio tape).

HARD DISK: Digital recording in which the number codes are stored on a computer hard disk rather than on moving tape. Easiest for editing.

Writing the Script

Remember that something that reads well may not sound nearly as good when it's read out loud. Writing a good script means constantly doing that - reading or having your work read out loud. You might even want to *record* it as you go (a simple home tape deck will do) and see how it sounds played back.

It also helps to choose your narrator early and write with their voice and style in mind. Also write in a format they like or are used to.

Make it Easy to Read

Use large plain type, narrow columns, and wide line spacing like this. Avoid USING ALL CAPITAL LETTER LIKE THIS *or a fancy typeface that's harder to read.* Include the pronunciation for unusual words like Chewuch ("CHEE-wuck") either in the script or as a margin note.

Watch the Page Breaks:

The noise of turning pages will get onto the tape, so they need to happen where it's easy to edit them out - natural pauses between paragraphs, ends of stories or story parts, transitions from one voice or emphasis to another.

Leave Room for Notes

Both the narrator and the producer will inevitably need to make all kinds of notes on the script as the program is made. Leave lots of space in the margins as well as room between lines to cross out words and write in substitutes.

Who To Involve

Recording Studio: Save yourself a lot of time and work by talking to the studio before you start, particularly the editor.

Writer: If there's someone who's written scripts or screenplays before, use them.

Experts: Your script will probably have a lot of facts and figures and dates. Check them all with people who really know for sure.

AV Specialist: If you need to record interviews or field sounds, they can probably be a big help.

The North Cascades Scenic Highway Tape: A Case Study

Don't take this as a shining example. It's just how one particular tape was made.

1) It was decided that the tape would be an hour long and would not be tied to points along the way. Visitors would be asked to listen at their leisure as they drove a particular part of the highway.

2) The target audience was all the highway travellers, which meant all makes and models of people. The emphasis was on adults rather than children.

3) A large portion of the tape was to be human history stories. Someone was hired to interview old-timers in the area and record their stories. There was no guarantee they would be usable and the recording had to be done in the field.

4) While the historical interviews were going on, research was done on all the other possible stories that could be told about that part of the Scenic Highway. Any topic was fair game.

5) From the research, the most interesting topics were chosen and a script written that consisted of 2-3 minute pieces about each.

6) A local radio personality was asked to narrate and a script was sent to him. A flat rate price for narration was agreed on and a few changes to the script made. The price was lower than normal because the narrator liked the script.

7) The narration was recorded in one sitting, with all the errors left in. At each error, the narrator would start again at a logical break in the script. The producer kept close notes on a copy of the script about where the errors were and which takes were the good ones. The unedited narration was transferred to DAT.

8) A different studio was hired for editing using a traditional reel-to-reel analog tape deck with four tracks. First the narration alone was edited to get rid of all the errors. The rest of the editing was done both by laying the right parts down as the master was built and by going back and actually cutting and splicing the tape to remove problem spots (this can only be done with reel-to-reel analog tape).

9) All four tracks were used; one for narration, one for music, one for sound effects, and one for "cross-fading" or blending portions together by fading one out as the other was faded in (the two pieces have to be on separate tracks). The master was all recorded as loudly as the tape would allow to keep background hiss to a minimum.

10) The master was mixed down -- rerecorded onto digital audio tape (DAT) with all the proper levels set as it was running. That meant adjusting volumes on the fly as the master tape was running which, in turn, required knowing the program well and having good notes about when there was music or sound effects.

11) The mixed down DAT master was given to a duplicator who made cassette copies. Labels were made by desktop publishing using pre-made label blanks.

Low Power Transmitters

Tune to 530 on your AM dial

If you're considering installing a low power transmitter as a way of communicating with motorists, you might want to start by reading the audio tape section. There's sometimes a tendency to forget that the equipment doesn't create it's own messages - it only transmits them - and that the real work and expense of this method of interpretation is producing the recorded information. That's particularly true if the message will change.

The setup is pretty simple: a small transmitter, an antenna, a digital "no-moving-parts" recorder, and a phone hookup if the only reasonable way to change messages is by phone (keep in mind that it will sound like somebody on the phone). If the transmitter needs to go outdoors, add to that a weatherproof enclosure of some sort and possibly the cost of bringing in power and phone to the remote location.

Transmitters are typically limited to a 2.5 mile range and assigned one of 2 frequencies. (Transmitters in the same area may interfere with one another). They can be powered by solar panels and batteries if necessary, but that adds to the cost and maintenance.

The recorders these days are digital and use memory chips like a computer instead of tape. That eliminates tape problems like the famous warbling underwater sound associated with many older recorded messages. But it's also more expensive and limits the practical message length to just 3 or 4 minutes -- less if you want higher quality.

Simple messages can be recorded right into the digital recorder. Nicer messages are built just like an audio tape and then transferred to the digital recorder.

If you want to run different messages every day or week, allow plenty of time to create them. It becomes a real chore after a while.

The Big Hoops

1) An FCC license may be required depending on the size of transmitter. It can take 6 months or more.

2) The site and equipment purchase may need to be approved by your radio technician or communications specialist.

3) The Department of Transportation may need to approve roadside transmitters.

The Procedure

1) Decide the area/range to cover.

2) Apply for the FCC license if necessary and prepare to wait.

3) Start with the messages, not the equipment. Write and record them or get solid commitments for having them done.

4) If you need simple recording equipment for making new messages, get that first and learn to use it.

5) Figure out the transmitter location and power that will cover the area.

6) Build any needed structures to house the transmitter. Don't forget power and phone lines to the site.

7) Buy the transmitter/recorder when you get the FCC license.

8) Test the equipment before you install it, including the recorder and a phone hookup to it.

9) Install and test.

10) Change messages as needed.

Relief Map Models

No better way to get the lay of the land

The centerpiece of a lot of visitor centers is an accurate, 3-dimensional scale map of the area, usually carved out of high density plastic foam or molded in fiberglass and hand painted to show features and points of interest. These maps are probably the best way available to orient visitors to the area and to show larger geologic features, particularly since they have little or no language barrier. They're also so common and accepted that it's easy to overlook how much work really goes into making one. The tricky and tedious part is making them accurate and true to scale.

Most relief map models are made by architectural model firms and a small map can easily cost several thousand dollars. The most common method is to use an accurate topographic map - sometimes one made specially for the map model - as a guide for carving out a stair-stepped version of the terrain (each step is a contour line). Carving is often done in a high density plastic foam. Some start with a single thick block and carve it down, others cut a thin sheet of each contour line (like a plateau of that one elevation) and then stack the sheets up and glue them together. Either way, it's slow.

The rough carved model is sanded and painted using aerial photos as a guide, and then map features like roads and trails and labels are applied by hand using paint or carefully cut vinyl tape.

Often if a map is made true to scale, the vertical relief is too low to make features really stand out. For example, if a 5 foot wide map shows an area that is actually 50 miles wide, a mountain that is a mile high in real life would only be just over an inch high on the map. For that reason many maps are made with "exaggerated vertical relief". This costs more but can make the map more interesting and better as an interpretive tool.

The Big Hoops

1) Justifying the cost - these things aren't cheap.

2) Getting agreement on what will and won't be shown on the map - might involve geometronics and engineering.

The Procedure

1) Decide what area you'd like to show, how big the map should be, and whether or not you want the vertical relief exaggerated.

2) Decide exactly what features you want to show -- boundaries, recreation sites, trails, roads, etc. Decide if you want an original foam or a fiberglass cast model.

3) Make a flat paper draft of the map with the area outlined and features to be shown highlighted.

4) Contact map makers and send those interested a copy of the paper draft for price quotes.

5) Choose a mapmaker and find out what information they need.

6) Work with geometronics/engineering to get that information together - usually a good contour map with an overlay of features to be shown.

7) Double and triple check the reference map before giving it to the mapmaker.

8) Review the rough carved map for accuracy before molds are made or finishing work is done.

9) Review the final map at the mapmaker's shop before accepting.

MATERIALS

HIGH DENSITY FOAM: This is usually what the map is carved out of to begin with. It's like rigid foam insulation -- dense and strong but still susceptible to dents and damage. You can save money by using the original foam model since only one has to be made. It will be painted to show the general vegetation patterns and then have labels and features painted or glued on. Not good for outdoors. Usually has to be protected from touching.

FIBERGLASS: For more money you can have a mold made from the original foam map model and then castings made from fiberglass or other materials. You lose some of the detail of the original model in this process but the end result is a map that's much more durable and weather proof. It's also much cheaper to make additional map models once the mold is made, although each one still has to be hand painted and labeled. If the map will be exposed to the weather or somewhere where it will be touched or possibly bumped or leaned on, this is the best way to go.

No matter what material you use for the map itself, the paint covering an labels will eventually fade or wear off and need retouching. A protective clear coat sprayed on the finished map helps prolong the life, but doesn't protect it completely.

OPTIONS

FIBER-OPTICS: You can add push-buttons and small lights to a map to help people locate things. One way it's done is to have all the lights in one place (easier to service) and then running fiber-optic cables to the location on the map and up through a small hole drilled through the foam or fiberglass. This means building a special base, needing power, and more maintenance.

DETAILED PAINTING: Typically the artists at the modelmaker paint a generic color scheme on the map that generally shows where there is rock, ice and snow, vegetation and water. If you have good aerial photos available and enough money, you can also have a more detailed and accurate paint job done that shows the vegetation much more like it really is.

MODEL PIECES: If your map covers a small area and is detailed enough, you may want to add small structures like bridges or buildings or lookout towers to make it even more realistic. If you think you want this, be sure to talk to the modelmaker early because if may put limits on the map scales that can be used.

ACCOMPANYING PHOTOS: Photographs of specific places on the map make it even more informative and fun. They can be tied into a fiber-optic locator system so that both the photo and location light up together.

Who To Involve

Geometronics/Engineering: Probably the best source of base maps, data layers and other information

Model Maker: IF they're going to need a special contour map or photos, you'll need to arrange for them early on

Visitor Center Staff: They along with other front line people know best what it is visitors want to know and what kind of map layout works. They also may be the ones living with the map day to day

Someone Who Knows the Country: You'll need someone who knows the terrain like the back of their hand to review the model for errors

Indoor Exhibits

The possibilities are endless

Photographs, models, life-size dioramas, interactive exhibits, whizz-bang gizmos, artifacts, replicas, re-creations -- this category covers almost anything that will fit under a roof. The most common are wall mounted panels with graphics and text or display cases with objects and labels.

Indoor exhibits provide a chance to really be creative because usually you're working with just a piece of empty space. If it's an existing building there will be constraints: the size and shape of the rooms, where the doors and windows are, electrical outlets, plumbing, emergency access, and the traffic pattern. If it's a new building then, in theory, the structure is designed around the exhibits. In theory.

Trying to explain how to create a great exhibit would be like trying to explain how to write a bestselling novel. It can be flat, curved, freestanding, wall-mounted, 3-sided, 9-sided, hanging from the ceiling, made of only photos or full of buttons and computer screens, touchable, protected, static, moving . . . there's always a new approach.

There are also businesses dedicated to designing and fabricating exhibits and, although their work isn't cheap, it could be the most cost effective in the long run because of the quality of materials and construction. To find them, check the yellow pages of bigger cities or ask at museums or science centers. An exhibit can involve many skills, from graphic arts to carpentry to wiring to audiovisual, and a design and fabrication house will offer the convenience of "one-stop" shopping and one person running the show.

Watch out for high tech - it takes constant, expensive maintenance.

The Procedure

Since indoor exhibits can vary from a single photograph to large, room-filling structures, there isn't any set procedure other than the basic steps:

1) Do a conceptual design for the exhibit(s) and use it for getting advice and doing a preliminary cost estimate.

2) Draft a final design including all the details and specifications and then do a final cost estimate.

3) Fabricate, usually by contract.

4) Stay involved until it's installed and operating properly.

How detailed the final design is depends on how it will be built and by whom. If it's an open bid contract, you need everything spelled out and decided. If the same person who dreamed it up is building it, a sketch on a piece of notebook paper might be enough.

Never lose sight of the original theme and plan and sweat all the details. Avoid design by committee if you can, but seek out and use advice from old hands and experts.

The Big Hoops

1) Chief's approval if the exhibits will be in a visitor center that costs more than $250,000

2) Washington Office approval (public affairs) if the exhibits will cost over $25,000

3) The U.S.D.A. Design Center is part of the approval of exhibits over $25,000 and may be the one to design the exhibits.

4) You must do an interpretive plan before starting design of exhibits.

But, even if you turn the job over to professionals, they will still need some decisions and answers from you, starting with the budget. Spend time thinking about what is and isn't acceptable, what you can afford to maintain, what your audience would like or dislike, and what those approving the exhibit can live with. If you're paying someone to be creative, give them lots of room to do just that, but also be careful not to waste their time (and your money) by letting them work on ideas that will never do. Good exhibits are enjoyable, relevant, organized and have a strong theme.

Exhibits Checklist:

1) How long does it have to last? How long before it's dated and will have to be replaced?

2) How many people have to fit in the room and around the exhibit at one time? Wheelchairs? Children?

3) What's the traffic pattern? What would you like it to be? Do you need to keep people moving or want them to slow down?

4) Special lighting? Separate electrical circuits? Conditioned power for sensitive electronics?

5) Will it be in the sun? Do photos and graphics have to be fade resistant?

6) How will it be mounted? Will it fit through the door? Will the walls or ceiling have to be reinforced or changed to accommodate the exhibit?

7) Does it have to be self-explanatory? In more than one language or without words?

8) Will the room be quiet enough for sound or dark enough for slides/video

9) Are there temperature or humidity changes that will affect adhesives, papers, or finishes?

10) Will the exhibit be touchable? Touched even though visitors are asked not to?

A Few Ideas to Get You Going

One big photo instead of a lot of little ones

Something you pass under or through

No written words at all

Touch or smell boxes

A separate level for children

Viewing holes to make a display more intriguing

Models or sculpture

Something up by the ceiling or mounted down in the floor

Parts of the exhibit you don't notice right away

Wall murals to set a common theme for a room

Mannequins

Sensors to turn on an exhibit as you pass by

An unusual way of writing a message like a code.

Pictures mounted together to form a pattern or graphic element like an arc or waterfall

Things you don't expect indoors like big rocks or soil or vegetation or water

A different room temperature or humidity

Things that move or change.

Who To Involve

Those Who Staff the Building: They know how people use or will use the space and what they will/won't do

Creative Talent: From a professional design firm to the firefighter with the artistic flair. Use fresh eyes and new approaches

Facilities Engineer: Might be a big help with electrical and lighting needs or installation problems.

Visual Information Specialist: If there's one available, they can get you started or maybe do the whole job.

Writing & Design

Much of the creative energy in an interpretive project goes into one or both of these difficult steps. Along with the artwork, it's usually the design and writing that makes the difference between a great project and a mediocre one.

IN THIS CHAPTER:

Writing and Editing

Tilden's Principles

Graphic Design

Interpretive Writing

There is no right or wrong, but there is good and bad

This is a tough, personal topic and discussing it is almost as dangerous as predicting the weather. Any kind of writing is difficult. Interpretive writing, because it has to convey so much information, evoke images or create so much feeling in just a few words, is some of the most difficult.

There are as many ways of writing as there are writers, but for many the process is 90% thinking and 10% scratching. When you set out to produce interpretive text, you might be as well off to take a walk, go for a drive, sit by the water, lay in the bathtub or go out for coffee as you would be to grab a pencil or sit down in front of the computer screen. It depends on you.

One thing that rarely works is writing by committee. Unfortunately, however, that's exactly what a bureaucracy wants to do. Avoid it at all costs if you can. If a committee is involved with the project, get them to agree to let one person do the writing and to let one person have the say on the final product. Editing is fine -- necessary, in fact -- but having several people all trying to steer the creative process will make the job much harder and the end result mediocre.

One Way to Go About It

(Some of these steps might already be done as part of the interpretive plan)

1) **Research your topic**. Know as much about your subject as you can. Read, talk to people, study what's already been done.

2) **Decide who your audience is**. This is very important -- it will save a lot of time and effort later on in the process.

3) **Decide on the length.** Usually it's the design of the piece (the sign or brochure) the writing is part of, the topic, and the attention span of the reader that sets the limit. Get to a number of words that will work then stick to that number.

4) **Organize and prioritize** your messages. Decide ahead of time what you really want your audience to know.

5) **Find out who has power over this project** -- who will be reviewing and approving your work. Talk to them. Find out what they expect, like or don't like and how much control they want.

THEN . . .

WRITE
Just spit it out, you have to start somewhere

EDIT
Cut out extra words

REVIEW
Pass it around to friends and coworkers and to whoever has the final say

REWRITE
Use the good suggestions you get back

REVIEW AGAIN
This time give it to people from your typical audience

REWRITE
If necessary. You never know, they may love it

READ IT OUT LOUD
This can sometimes be very revealing

EDIT AGAIN
There's got to be a few more words you can get rid of or replace

REVIEW ONCE MORE
Give it back to your audience members and back to
the approver(s) if they're edgy about it

LET IT SIT
An hour, a day, a week

REWRITE ONE LAST TIME
Okay, okay . . . maybe this is overdoing it. Or maybe not

GET IT APPROVED
Be sure whoever has the final say knows about all the audience reviews

Strive For:

The fewest possible words to carry the meaning. Make every word count.

The heart of the matter. Go straight to the point.

The active voice. "Blowing sand carved out this window" rather than "This window was carved out by blowing sand."

Simplicity. Einstein dazzled the academic world with complicated mathematical proofs of his theories. But his true genius shone when he explained relativity by asking us to imagine that we could ride on a piece of light.....

Respect. When you write, write to a person you respect, who is intelligent, and speaks your language, but who knows nothing about your site or your topic. Don't write down to your audience. Arrogance shows.

Avoid:

Propaganda. If you're writing for the general public, remember that people really aren't much interested in the "mission" or "objectives" of the Forest Service, but they are very interested in the forests and what's happening to them. Write something like this and you'll lose half the readers for sure:

> "The Forest Service is responsible for the sound management of a wide array of forest resources and the stewardship of a diversity of pulic lands."

Specialist's Panic. A scientist's job is to be specific and accurate. Unfortunately, this noble enterprise often goes head-to-head with an interpreter's job, which is to communicate a select few things about a subject in a very few simple, expressive words. Accuracy you **must** have, and that's what a specialist can give you. Specificity you can and will often do without, (in the interest of keeping the message short and clean).

For instance, you've written a sentence for a pamphlet: "Blue bottlefish spawn in the fall." Your district fish biologist accuses you of inaccuracy because you didn't explain that spawning times vary according to water temperatures and levels, and amounts of chemicals in the fish, which consequently affect their hormonal state. You're not inaccurate: blue bottlefish do spawn in the fall. You're just not as specific as that scientific mind would like. Stick to your guns. Write for your audience (assuming it's not the fish biologist).

Pressures from above: If you're writing a pamphlet to explain an agency message near and dear to the Forest Supervisor, then acknowledge in your heart that you must please the Forest Supervisor: your audience is the Forest Supervisor, not the public. Write accordingly. But if your audience is truly the public, write for the public. (Many times you can please both, but not always. Don't beat yourself to death about it if you can't.)

Complicated messages. People are struggling with an information glut. Each day we read, watch, and listen to millions of pieces of information. There's little patience for wading through extra information to get to the point or to what we're interested in. Take out the extra, keep it short, accurate, and direct.

Obfuscation: Don't use abbreviations, jargon, or obscure terms like obfuscation. Your writing may be very fine and fancy, but if your reader doesn't get it, it's not good writing. Someone probably worked very hard to come up with this:

> "This report advocates the use of transactive planning and constituency based management and design as necessary tools for the incorporation and preservation of attachment-oriented visitor's interests and preferences in public land management. It is believed that such processes will also be of benefit to use-oriented visitors by ensuring that managers are aware of the diverse setting preferences desired by subgroups within broader activity groups."

Judgements and excessive adjectives. The writer's goal is to present a picture, situation, or concept in a clear, uncluttered way so that the reader can react and draw judgements. Don't *tell* the reader how to react or what judgements to make. They can figure out if a view is spectacular or a tree is majestic or a river is mighty. Go for the nouns and verbs first. Then use adjectives carefully and sparingly.

Get a copy of Strunk and White's
The Elements of Style

Read it and believe.

Getting Your Writing Reviewed

Reviews of your work can be a wonderful learning experience or the biggest pain you've ever had to deal with. But they are necessary, usually because you need help or approval from those above you in the hierarchy, from peers, from experts on the subject, or from partners in the project.

You may also be dealing with opinions and advice from frustrated creative writers in your office or on your Forest. There's nothing more irritating than somebody pointing a casual finger at something you've labored over for hours and saying "I don't like this part." But you are in a government agency, and that often means committees, consensus, reviews, and bureaucratic meddling. Brace up and try to turn it all to your advantage.

Listen carefully to experts on your topic

Make sure your writing is accurate.

Be careful during the reviews not to forget your real audience

IF YOUR REAL AUDIENCE IS THE GENERAL PUBLIC, THAN GET PEOPLE FROM THE GENERAL PUBLIC TO REVIEW YOUR WRITING. Give their opinions more weight than people who are reviewing your writing because of their position in the bureaucracy. This may not be very easy or pleasant, but you owe it to your audience to at least try.

Push people to make concrete suggestions

When someone says "I don't like this part," try to pin down why not. Get them to write down their own version if possible.

Be humble

Every person who reviews your writing will have an opinion. Fight your own ego, not theirs, and listen carefully to their criticisms and suggestions. Work with each suggestion as if you were writing for just that person. If it truly doesn't improve your writing, throw it out. If it does help, celebrate. You've just become a better writer.

Seek out advice from experienced writers

They've been through it all and will probably have some good ideas.

Know when to let go

If someone has the power to edit your work, formalize the moment when you have done your best writing and then turn it loose . Say, "Helen, I've worked through all the reviews and comments and rewritten this several times. It's ready for your final edit and then it should go to Ed.'

Tilden's Interpretive Principles

Tried and True and Still Worth Following

Provoke . . .

the attention or curiosity of your audience. Grab their interest quickly and keep it.

Relate . . .

your message to the everyday life of your audience. Why does it matter to them, personally?

Reveal . . .

the essence of your subject through a unique viewpoint. Try a completely different way of looking at things.

Address the Whole . . .

Fit your subject into a bigger picture. Show the logical significance of a particular object or feature to a higher level concept or story.

Keep Your Message Unified . . .

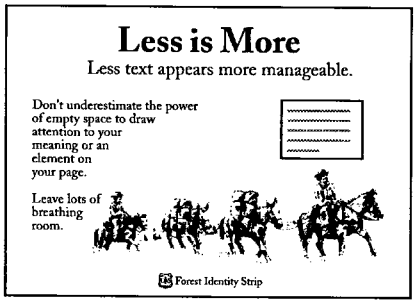
Use sufficient but varied repetition of cues and hints to either create or build on a particular mood, theme, feeling or atmosphere

Graphic Design

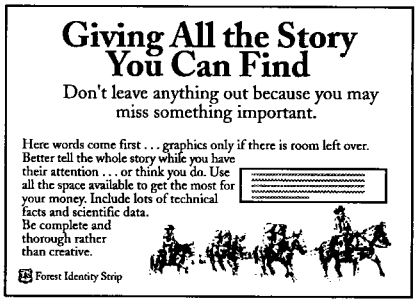
Enough to get you started

People spend entire careers or lifetimes developing and perfecting this skill, so don't expect to get it down in one short course and don't get frustrated when nothing seems to work. There are lots of approaches and possibilities . . . new ones every day . . ., but there are also these few principles to keep in mind if you are doing the designing yourself or reviewing someone else's work.

1) Less is more

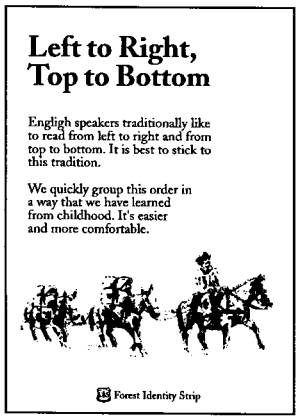


Don't underestimate the power of empty space to draw attention to your message or a particular element on the page. Leave lots of breathing room.

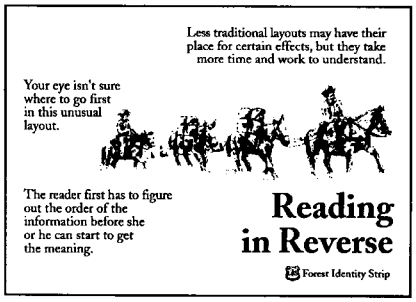


Which one would you rather read?

2) Left to right, top to bottom



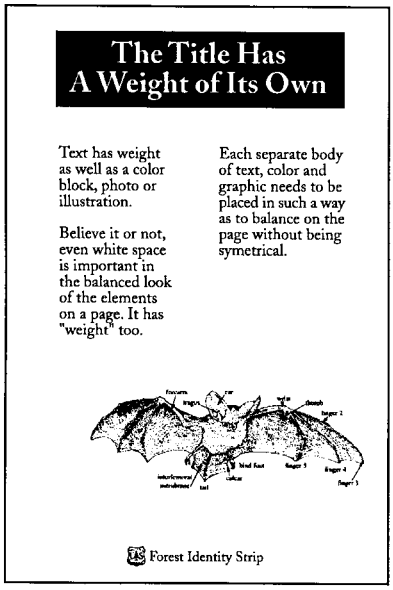
It's how English speaking people like to have things arranged - in fact, they expect it. You're usually better off to stick to this tradition.



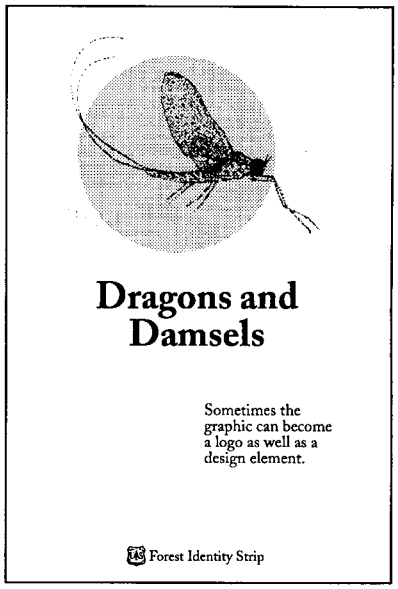
Notice how much more quickly the message comes through with the layout on the left. The layout on the right takes effort to first figure out the order of things.

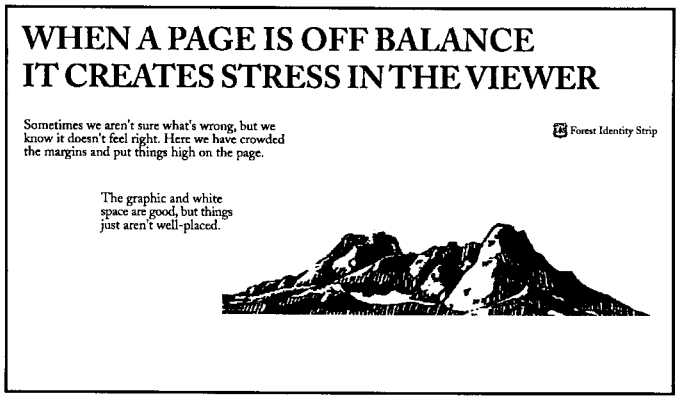
Graphics by C. Ziebart

3) Balance



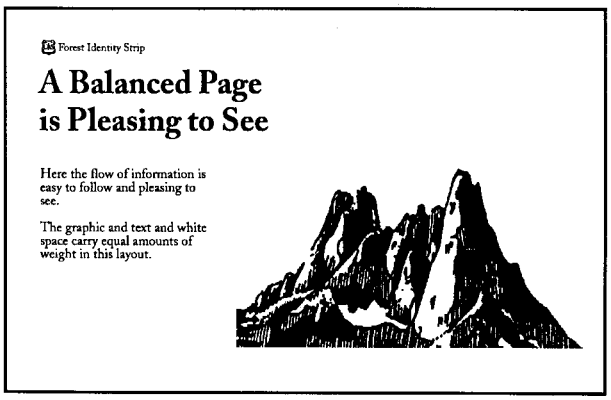
Elements on a page all have a "weight" that's created by their size, lightness or darkness, color or closeness to each other.





When a page is off balance, it feels wrong and that distracts from the message or overall effect

A balanced page, on the other hand, is more comfortable and easier to understand and absorb. It's a very subtle thing, but it matters.



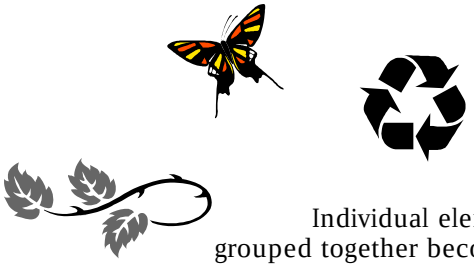
Graphics by C. Ziebart

4) Color

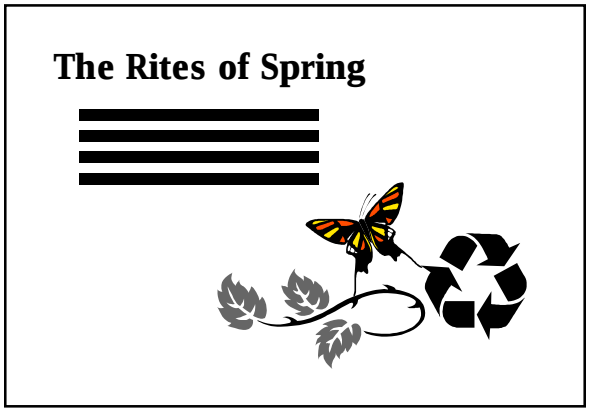
Color adds or subtracts from the weight of an element and can be used to draw attention. Make sure the colors on the page or panel work well with each other AND go with the background they will be put against. Remember too that **color and contrast** is important for readability, particularly for those who don't see well.

5) Artwork or Photos

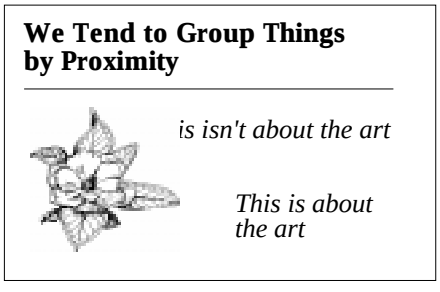
Artwork should reveal things important to the story that aren't obvious or that the visitors can't sense themselves. Don't use art just for decoration.



Individual elements grouped together become a single element when viewed at a glance or from a distance.

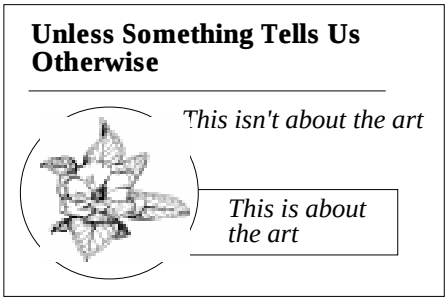


A good picture is worth a thousand words. A bad picture may be less effective than a few carefully chosen words. Don't be tempted to use art or photos just because you have them. Use what works.



Artwork or photos tend to be associated with the closest text . . .

. . . unless you caption or isolate the art by boxing or surrounding it with empty space.



Facilities

Facilities are the buildings, kiosks, shelters, parking areas, platforms, roads, trails and other structures that house or support your interpretation. They have their own process and their own rules, but are often an inseparable part of an interpretive project.

IN THIS CHAPTER:

Buildings & Other Structures

The rules according to FSM 7310

Facilities Master Plan

Each forest should have a master plan for buildings and other structures that includes proposed new structures. Your project should be included. Check with engineering (the facilities engineer if you have one) to find out how.

The master plan will separate projects by site, (such as a ranger station or campground complex), and each site will then have it's own, more detailed development plan. Individual projects, in turn, have their own multi-year budget plans that include the CIP process (the costs for each step of the GATE process explained on the next page) AND the expected operation and maintenance costs (it's best to start asking for that money as soon as you can).

Minimum Requirements for Projects

1) A project level value analysis to show the cost-benefit and any alternatives that should be considered.

2) A minimum 30 year expected life for the structure(s) -- 50 years for major structures.

3) A site plan including a full survey.

4) Specific designs for both the site and the individual structures.

5) Consideration to using previous designs that could work at your site.

6) A design for interpretive services and recreation sites to "identify, interpret and enhance public opportunity for enjoyment".

Construction

The structure can be built by any method or arrangement, PROVIDED:

1) There is an assigned, certified inspector.

2) The designer approves any changes (along with the contracting officer).

3) There is a final inspection to verify the drawings and specifications were properly followed.

4) As-built drawings are done following completion and final inspection.

The Gate Process

An exercise in patience . . . a fact of life

If you are starting into an interpretive project that involves a trail, building, road or other facility and you don't know about the "gate" process, you soon will. Also known as the Resource Project Development Process, it is the accepted, formal way of making those kinds of projects happen in Region 6, particularly when they're funded through the capital investment program.

Going through the Resource Project Development Process can take several years, although it is not linked to a specific timetable. Some projects will be able to go through more quickly than others. Remember that the process is a standardized way of planning that can be applied to projects *regardless* of how they are funded. However, if your project will be paid for primarily through the capital investment program (CIP), you will need to be mindful of the deadlines for getting the project into the CIP and keeping it there as you proceed through the gate process.

Full charts and explanations of the process are available in a Regional guidebook. Here's a summary:

PROJECT IDENTIFICATION

You clearly define your project, taking it from concept to a written proposal, and decide if you should continue to pursue it. You evaluate alternatives through the NEPA process.

GATE 1

PROJECT PLANNING

You review and refine your project proposal and more specifically describe the objectives and requirements of the preferred alternative. You develop detailed guidelines for design, construction and operation.

GATE 2

PROJECT DESIGN

A big step that leads to blueprints, specifications, a final (detailed) cost estimate and a contract that's ready to be bid on. Architects, landscape architects, engineers of several flavors, graphic designers, and others could be involved. If the cost estimate is up in the quarter of a million dollar range, you'll also be doing another value analysis to see if there are ways to save some money

GATE 3

PROJECT IMPLEMENTATION

This is when the construction begins. Contracting and engineering take over to prepare and administer the contract and inspect the work. Unless you're qualified to be a C.O.R. or inspector, it's up to them how involved you will be.

GATE 4

OPERATION AND MAINTENANCE

Your project is accepted for use and is considered operational. Maintenance begins and a plan to "monitor" – to check and evaluate the finished project against the original objectives – is developed and put into effect.

Combining Facility & Interpretive Projects

If you're planning an interpretive project that will need a structure to house it or a road or trail to get to it, you'll probably be involved in two separate processes that have to happen in coordination with one another. The facility will follow the GATE process. The interpretive project will likely follow different steps. How the two fit together depends on what the projects are, but here's a general idea:

Gate Process	Interpretive Project Process
Project Proposal	Do the interpretive inventory and audience analysis for the site
Project Planning	Decide on themes and messages and choose the media to be used; Do a conceptual design and layout
Project Design	Complete the final design for the interpretation, adjusting for the facility design
Project Implementation	Build the interpretation (signs, exhibits, AV programs, etc.) Install the interpretation (have it available for reference during construction if possible)
Operation and Maintenance	Check to see if the interpretation is working like you intended

Visitor Centers

The classic combination of facilities and interpretation

From tiny, remodeled CCC buildings to multimillion dollar structures that are an attraction in themselves, visitor centers are the interpretive facility that the public knows best and the one that we all seem to want to build. There has been a backlog of proposals for years in the Forest Service and many more in other government agencies.

Although there are about as many different designs as there are visitor centers, they all tend to have the same basic components: reception/orientation area, staff area, sales area, exhibits area, restrooms, storage, and possibly a theater or auditorium. Many also include an outdoor feature like a trail or viewing platform. Visitors expect to find information as well as interpretation at a visitor center -- routine things like trail and campground information, directions, weather reports, what to do -- particularly if the center is staffed. They also expect basic amenities like bathrooms, water and easy parking.

Because past experience has shown it's expensive to both build and operate a visitor center, proposals are given more scrutiny than other projects and funding is harder to come by. They are also compli

The Big Hoops

1) The Chief has to approve the proposal, after you submit a formal prospectus

2) If the exhibits will cost over $25,000, the Washington Office Public Affairs Office and U.S.D.A. Design has to approve them

3) For Forest Service funding, the building and associated roads and trails have to make it through the capital investment process, with funding from 2 or 3 places.

4) It is likely to involve several different contracts.

The Procedure

1) Decide where you want a visitor center and explain why. Look for partners.

2) Put the project in the Forest Plan.

3) Analyze the market and estimate the use - be able to defend your numbers.

4) Complete the NEPA analysis.

5) Submit the project for W.O. approval. Get it in the capital investment program.

6) Do a project value analysis if it's warranted.

7) Complete a conceptual design for the building, the site, and the exhibits, including cost estimates and interpretive themes.

8) Submit exhibits for W.O. & USDA Design approval. Use USDA Design expertise.

9) Do an operation and maintenance plan that shows the cost to staff and keep up the facility. Keep looking for partners.

10) Do a design value analysis if the cost is high enough to require it.

11) Complete the final designs/specifications and cost estimates for the facilities and exhibit. Get it all reviewed and approved once more.

12) Adjust CIP if necessary.

13) Advertise and award the construction and exhibits fabrication contracts.

14) Deal with endless details during construction. Open for business. Check how things are working. Learn.

cated to build because of the skills and number of reviews and approvals required. A typical project could include experts in roads, trails, parking and drainage, concrete, masonry, rough and finish carpentry, electrical, plumbing, graphic arts, writing, photography, model-making, specialized woodworking, custom hardware and materials fabrication, lighting design, retail sales, and contracting as well as the interpretive skills.

Sizing a Visitor Center

First estimate:

Total annual visitation to site = **TV**

Percentage of total that will use the visitor center (often about 80%) = **VI**

Percentage of total that will occur during the busiest part of the year (peak season) = **PV**

Percentage of the peak season use that will occur on weekends and holidays = **WV**

The turnover rate - how long people will stay when they visit the center = **TR**

Calculate the Design Load:

$$DL = \frac{TV \times VI \times PV \times WV}{NW}$$

NW = Number of weekend or holiday days in peak season

Calculate the People at One Time (PAOT) expected during an average peak season weekend:

$$PAOT = \frac{\text{Design Load}}{HO \times TR}$$

HO = Hours of Operation (number of hours per day)

Size for the PAOT number. Figure on providing 16 square feet of exhibit space for each visitor.

In many cases, about 80% of the *annual* visitation happens May through September and 80% of the *daily* visitation happens between 10 AM and 2 PM.

Who To Involve

Regional & Washington Office: For the required approvals, help with the funding, and advice based on other, similar projects in the country

Engineering: Not only do they know how to get the thing built, but they have to approve things.

Management Team: You'll be selling your idea to a lot of people, but this group will be the first.

Contracting: The project could involve both traditional contracts AND partnership or cost share agreements - find out early how it all works and get some advice

Someone Who's Been Through It: Not that many of these get built and every one is a learning experience

Architects: In-house or contract, stay in close touch and support them well - they can only work with what you provide and can only know what you clearly tell them

Others Who May Benefit from the New Visitor Center: Town? Another agency? Businesses? Those who have an interest can be a big help.

Those Who Will Staff It: Not only do they know what works and what people are looking for, but they also have to live with your big idea

Interpretive Association: Assuming they will be handling sales, use their knowledge of how to lay out and light a good sales area

Planning a Visitor Center?

Answer These Questions

1) Are you trying to accommodate visitors already there or attract them? Who will stop? What will they be looking for or expecting?

2) Is the location the best place to contact visitors? Too early? Too late? Just right? Too far off the beaten path? The best compromise? All that's available?

3) Are there other visitor centers your audience will be using in the same trip? Does it matter? Can you build on the interpretation offered there?

4) Will orientation and information about the area be as important as interpretation?

5) Is there adequate power, water, sewage, access and room for parking?

6) Should other agencies or groups be part of building or staffing the center?

7) Will you be able to afford to operate and maintain the center? Will sales be an important source of income? Will volunteers be available?

8) Will you need office space, housing or other support for the staff?

9) Are there things the visitors will expect -- a certain view, access to something, or interpretation about a specific thing?

10) Do you need a theater or meeting room? Can one room serve both purposes? Will there be programs for the theater?

11) Should the building be an attraction in itself or subordinate to its surroundings?

12) Will snow or temperature extremes be a problem?

13) Are there enough return visitors that exhibits and interpretation should change regularly? Do you need a place for live interpretation?

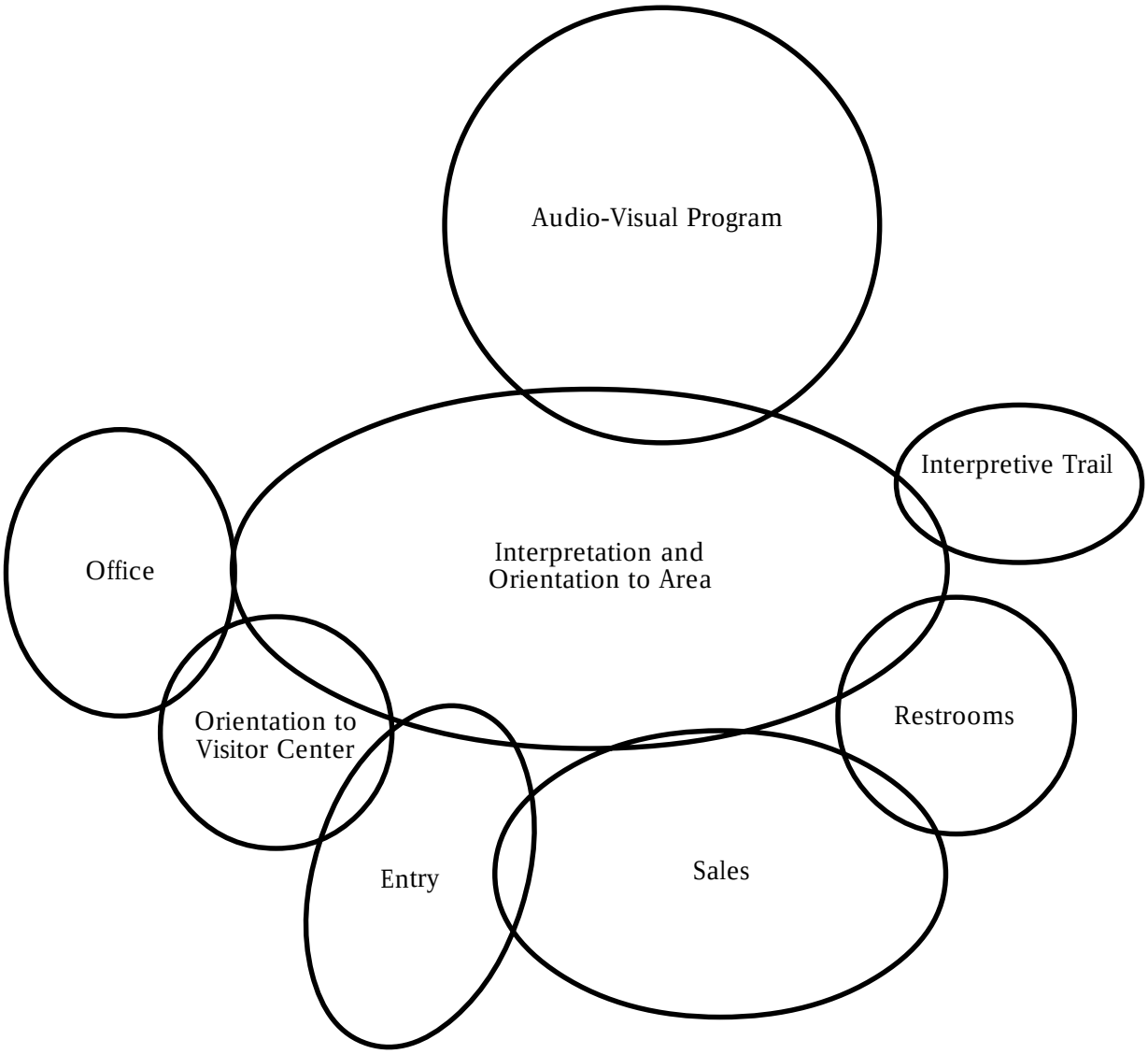
14) How many will staff and maintain the center? What will they need to know to keep it running properly?

15) Will it make a difference for visitors? Will they have a better experience or a more memorable trip?

16) Is it worth the cost?

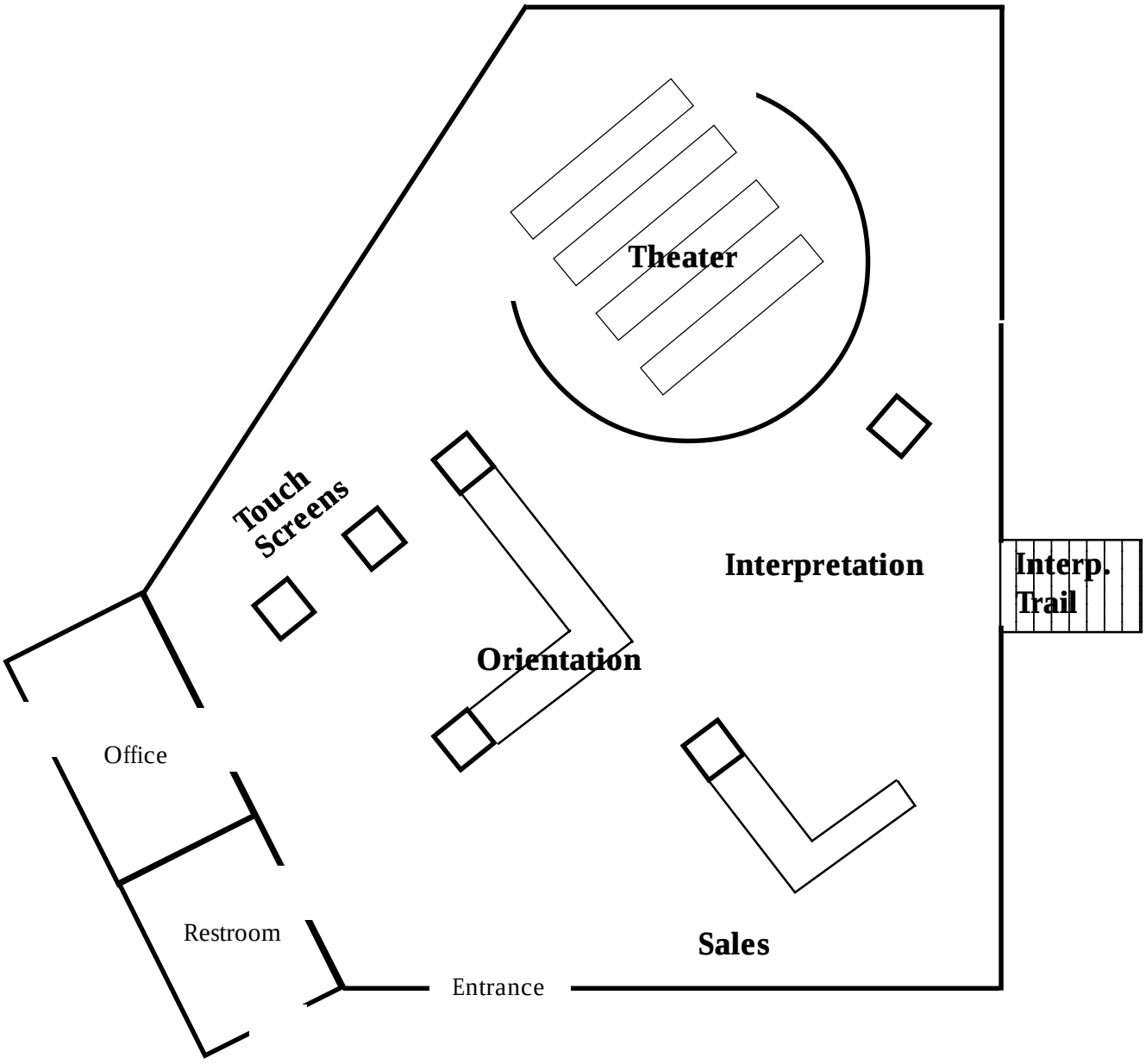
Bubble Diagrams

A good way to organize and show how the visitor center you have in mind will function is a bubble diagram. It shows the relation of the different functional areas of the center in size, access and position relative to each other.



Schematic Floor Plans

A step further than bubble diagrams in planning your visitor center is a rough or "schematic" floor plan. It is drawn to scale and attaches actual floor area to each functional space.



Amphitheaters

Tonight's evening program will be . . .

Amphitheaters are kind of like outdoor versions of the theaters you often find inside a visitor center, except that they have to survive the elements and need to work with natural light and background noise. Amphitheaters are also typically used for live programs as much as audiovisual shows and need to be set up to easily accommodate both.

The first step in design of an amphitheater is location. Not only does it have to be easy to find and access from within a site, but it also may need to be centrally located to attract users from other, nearby sites. Then you need to consider the setting and access. The setting includes exposure to the sun for daytime programs, natural sound or visual barriers, shelter from the wind or cold pockets of air, slope for theater type seating, vegetation (will falling cones or leaves be a problem?). Access is for construction, maintenance, visitors, utilities, fire and other emergencies, and needs to be barrier-free for both visitors and interpreters.

Since you can't create exactly the right space for programs like you can with an indoor theater, the odds of finding a perfect site for an amphitheater aren't that high. Most important is access and comfort

The Big Hoops

1) Some special approval for the audio visual equipment may be required.

2) Engineering and design, particularly for barrier free access which may be more difficult in an outdoor setting.

3) Funding. Although amphitheaters are perennially popular with visitors, the cost is often hard to justify.

4) Creating and presenting enough programs to keep the facility active and interesting.

The Procedure

1) The usual steps for a CIP project apply, including getting it in the funding system, NEPA, site surveys, preliminary and final designs, and construction.

2) Before you go too far, ask your audience and see if they'll use the amphitheater. Do they have the time and interest? Will they travel to a program from other sites?

3) Consider typical weather and temperatures or the direction of the sun for daytime programs.

4) Figure out WHO will do the programs and how new ones will be created. Keeping the programs going is a bigger job than building the amphitheater.

5) Figure out all the equipment that might be used and design to accommodate it, particularly the electrical system. Clean power for computers or VCR's? Extra lighting for live theater? Cables for microphones or projector remote controls? Walkway lighting? Projection TV?

6) Consider vandal proof storage for equipment on site (including the projection screen).

7) Decide on small touches like a place for a real or gas campfire, separate lighting for an interpreter standing to the side of a projection screen, wireless microphones.

8) Allow barrier free access for both audience and interpreters.

9) Contract for conceptual and final designs that include all equipment and its installation. Review, approve, build.

for the visitor and the quality of the programs. Audiences will live without bells and whistles but won't use an amphitheater if it's hard to get to or uncomfortable to use.

Like most facilities that house interpretation, it's the quality of the interpretation that makes or breaks the project. A lot of great evening programs have been given with only a few log round seats around a campfire or no more technology than an extension cord and a portable slide projector and screen. Keep that in mind. Focus on the programming and then build the facility to support it and the interpreters.

Audio-Visual Equipment for Amphitheaters

Projection Screen: It will have to do well in moisture and temperature extremes and be as reflective as possible for programs in less than complete darkness. Consider a folding design to protect it when not in use.

Projectors: They have to be extra bright for shows before full darkness and resistant to moisture and temperature change. Rear-screen projection may be best.

Sound: It needs to be optimized for the most common program - voice or ready-made soundtracks with music and voice. It should be easy to hear throughout without loud spots or too much sound carrying outside the amphitheater. The interpreter should be able to move around without causing microphone feedback. Speakers may need to be weatherproof and/or concealed. It should be easily adjustable for different voices and capable of handling several microphones at once.

Lighting: Walkway and seating lighting should be ample and adjustable. Full lighting for emergencies may be necessary. You may want pinpoint lighting for interpreters or live theater as well as general lighting that gives an interpreter room to move. Don't forget a lighted signboard by the amphitheater entrance.

Video Projector: The smallest and simplest projectors use liquid crystal technology with a single lens and are portable. The brightest and sharpest are

Who To Involve

Campground Staff: If the amphitheater is being added to an existing site, talk to those who operate and maintain that site to find out visitor preferences and patterns and their idea of what might work best.

Engineering/Architects: (including landscape architects) Not only do they know how to get the thing built, but they also have a lot of the approval responsibility.

Interpreters: Those who will be responsible for programs at the facility have to want it and be committed to doing those programs. Include other agencies, schools and the community if they are potential interpreters too.

Contracting: The project could involve both traditional contracts AND partnership or cost share agreements - find out early how it all works and get some advice

Others with Amphitheaters: Call around to find similar facilities and situations. Visit them and get advice.

Audience: Talk to them and find out what's important, how far they'll travel for a program, what time programs should be, what media they like best, and favorite subjects.

larger, more expensive devices that need to be permanently mounted to work best. If you have the projector, you'll need a video player (VCR) to go with it and they are the most sensitive to moisture, temperature, and fluctuations in power.

Computer Display: Computer graphics are here to stay and can be useful tools in interpretive programs. Including a computer in the amphitheater equipment probably won't be realistic, but you can be sure to get a video projector that accepts computer input. The graphics can then be loaded on a laptop computer that the presenter brings along and plugs into the projection system.

Power: The best way to get electricity (most cost-effective) may be a generator. If so, be sure to design in a place for it that will cut the sound to where it doesn't distract or interfere with the programs going on. Think about access for fueling and maintenance too. If the generator runs on propane, you'll need a place and maybe screening for the propane tank . . . somewhere that the tank can be easily filled.

Since the amount of time an amphitheater is actually in use is quite small, it's often difficult to justify the expense of building one. To help with this problem, consider designing something that can be used for several different purposes.

Contracting & Partnerships

Just when you thought the work was mostly over, the nuts and bolts of it begins. Preparing and administering contracts and agreements takes just as much care and attention as planning and design . . . maybe more.

IN THIS CHAPTER:

- Contract Specifications
- Common Mistakes
- Agreements
- Working with Partners
- Contracting Process

Contracting & Procurement Basics

From artwork to carpentry, the procedure is much the same

How It's Done

REQUEST FOR QUOTATIONS (RFQ): For projects costing under $25,000, this is the simplest and quickest method, often used for small purchase orders. If the specifications are simple enough, quotes can be given verbally and the whole procedure can be done in as little as a day.

INVITATION FOR BIDS (IFB): Projects over $25,000 follow this much more formal process that takes a minimum of 45 days to complete. It starts with a minimum 15 day (often 30) advertisement of the upcoming contract in the Commerce Business Daily, a newspaper published in Chicago by the U.S. Department of Commerce. That's followed by at least a 30 day advertisement of the contract "on the street" during which bid packages (copies of the contract with bidding instructions) are mailed to interested parties and they submit final, sealed bids. There is a formal opening of the bids and the low bidder is awarded the job provided they meet the qualifications specified.

There are variations on this theme including prequalifying bidders, giving preference to small or minority-owned businesses, and splitting a job into separate bid items that different contractors might end up getting.

NEGOTIATED CONTRACTS: This process kind of reverses things by requiring potential contractors submit a plan of how they would do the project and a summary of their qualifications. It starts with a formal request for proposals (RFP), again advertised in the Commerce Business Daily. Descriptions of the work to be done or the results desired are sent to interested parties and they turn in an explanation of how they would accomplish it along with a price and a listing of their experience and skills with similar projects. A screening board chooses the top three candidates and then may ask for more information from them before choosing a winner. There also may be some negotiation of the final price before the contract is awarded.

Getting What You Want

Your contracting officer will make the decisions on which procurement method to use, how and where to advertise, who to award to, and who will administer the contract. In other words, after you've submitted the request, you may not have much to say in the matter. To be sure you end up with what you were after:

1) Take great care in preparing the design, specifications and description of work. Start with plain, simple English and let the contracting shop add the legal-ese.

2) Think through all the details and then check that they're covered in the contract before it goes out for bid.

3) Find examples, if you can, of the product or results you're after and share them with both the contracting officer and bidders (through the contracting officer).

Contract Administration

Contracting Officer (CO): The big cheese - the decision maker and final word in all contract matters. There is only one per contract.

Contracting Officer Representative (COR): The day to day administrator of the contract who reports directly to the CO. The COR has some authority to decide and approve, but mostly keeps track of the work, stays in constant touch with the contractor and foresees problems.

When the job involves a lot of engineering expertise, there may also be an **Engineering Representative (ER)** involved at this same level.

Inspector: The one who is constantly on the job checking the contractors work against the requirements of the contract. The inspector has the least authority and the most contact with the contractor and subcontractors.

The Meat of a Contract

The contract sent out for bids is called the "solicitation package" and includes the full contract along with instructions and rules for making and accepting bids. The format used for nearly all these packages is basically the same and includes everything from general conditions to background information to details on packaging and marking. The core of all those sections that make up the contract package will usually be:

Description/Specifications/Work Statement: This is where you explain exactly what you want done and how. It answers all the questions -- the services and results that are expected, who's providing what, schedules and deadlines, restrictions/limitations, who's involved and who's coordinating, what the contractor will and won't be paid for, specific exhibits or facilities that are required, decisions that are already made. If it's not in here, the contractor doesn't have to do it.

Inspection and Acceptance: Important. In this section is the detailed explanation of how the work will be reviewed, approved and accepted for payment. If you want drafts or samples, say so. If you need extra time for committee or board reviews, make it clear in this section.

Special Contract Requirements: Every contract is unique and won't exactly fit the standard contract format. This section exists to allow you to add requirements specific to your situation.

Contract Clauses: Many of these are canned or "boilerplate" clauses that turn up in almost any contract and some are incorporated only by reference. They are important because they provide the rules of the game and are the legal grounds for settling disputes or claims.

Supplies/Services and Prices/Costs: Although it looks like a simple page with blank spaces for entering bids, this section takes some thought. It is your decision on how you want the price broken down and is often the starting point for negotiating additions or deletions.

The best reference for preparing a contract is a similar contract that was successful. Start by looking for one and use it as a model.

Contract Language

A typical government contract will include clauses written and honed by attorneys and designed to stand up in legal challenges. They're usually not what you'd call light reading and are often the reason a contract seems complex.

The core of a contract -- the portion you provide that spells out your particular project -- doesn't have to be as tight and unfriendly. In fact, you're better off to keep it plain and simple. For example, the scope of work description for what could be a fairly expensive job might simply say:

> *"This contract is for all office and field services required for conceptual design, preliminary design, fabrication cost estimates, drawings and specifications, and operation and maintenance manuals for interpretive exhibitry and visitor information and orientation installations at the John Doe Visitor Center, as specified herein."*

Specifications for indoor displays might read like this:

> *"Media used in the design of interpretive displays should consist of flat presentations of case work, panels, photographs, illustrations, and simple audience participation devices. Use of computers in exhibitry is not desired. Exhibits which can be removed or easily changed (not built in) are preferred. Displays of objects or artifacts can be included if they are important to effectively conveying the selected interpretive stories. The goal is to create an inviting and comfortable visual, emotional and educational environment that attracts and holds visitors' interest and stimulates learning."*

Partnerships

An unusual marriage of bureaucracy and real world

Partnerships are now a way of life in the Forest Service and commonly used for interpretive projects. They are a great way to make things happen, but take an extra measure of interest and energy because most partners want results and no hassles.

All partnerships should include:

1) A mutual interest in some goal or value

2) Some sort of sharing or voluntary participation

3) A specified relationship between the two parties in written form

4) A mutual benefit that involves no profit motive now or in the future

5) Nothing that is or could be interpreted as a conflict of interest.

Most partnerships are done through one of these legal documents or "instruments":

1) Collection Agreement

Used when money and/or property is contributed directly to the Forest Service. These are donations of cash, real property or personal property and are considered charitable for tax purposes.

2) Volunteer Agreement

One of the most common -- you probably know about these. Used to accept the services of individuals without compensation, although incidental expenses may be provided for.

3) Challenge Cost-Share Agreement

Used when both the partner and Forest Service will perform the work in furtherance of Forest Service functions or activities and the Forest Service reimburses the partner for part of the cost of materials and labor. If the partner supplies more than 50% of the cost of the project, competitive bids are not required.

4) Participating Agreement

These are appropriate where the Forest Service and partner(s) wish to perform work from which they will accrue mutual benefit (non-monetary). The types of projects for which this authority may be used are specifically mentioned in the law giving the authority.

5) Memorandum of Understanding

A simpler agreement with the purpose of coordinating efforts to eliminate duplication and waste. Each party carries out its separate activities in a coordinated and mutually beneficial manner. No funds may be exchanged or obligations created.

Contracting with an Artist

How to make life easier and results better

1) Get it clear at the very beginning what you both expect.

Outline exactly what you will provide to the artist and what the artist will be doing for you. Who gathers information? Who supplies maps, photos, the writing, materials, etc.

2) Don't expect an artist to copy someone else's style.

If you prefer someone else's style, hire them if you can. Otherwise, choose your artist because of their style rather than expecting them to change it for your job.

3) Look at examples of their work.

Look through their portfolio or ask for samples of work as close to your job as they have done. Or, if you can afford it, ask for a sample of what they would do for your job.

4) Get concept drawings early.

Have the artist rough out their idea enough to give a good impression of how it will look. Do this early, before they waste time and money going in the wrong direction.

5) Be clear about exactly what the artist is supplying.

Paper copies? Film positives? Full mechanicals? How many copies? All originals? Reverse images?

6) Include how and when payments are made.

The government only pays for completed, approved work. Most artists would like all the money yesterday. Spend time agreeing on exactly how and how often payments will be made.

7) Agree on who owns the artwork.

Who keeps it and is the legal owner? Reproduction rights? Rights only for this one job or the first printing? If it transfers to the government does it become public domain? Credit for the artwork?

8) Set up a reasonable, firm timeframe.

Creating art is an unpredictable process. You never know when inspiration or just the right idea will surface. At the same time, the government can be painfully slow. Give your artist leeway to do a good job, but also agree to deadlines for concepts, sketches, reviews, approvals and finals.

Contracting for Design & Fabrication

One-stop shopping for turning your idea into reality

There are a lot of firms that specialize in the whole shebang -- taking your idea for an interpretive project and making it happen, from conceptual drawings to installation. They either have all the skills in-house, take on the job of finding all the right talent and specialities, or use some combination of the two. The work isn't cheap, but it does put just one person or group in charge of all the work. That means much less chance of communication or coordination problems (like a sign that doesn't fit the mount) and just one contract and supplier for you to deal with. If you can afford to go with a full service design and fabrication service, consider these tips:

1) Assume they know nothing about your site or audience.

Get the designers to the site early in the process and allow time for lots of communication about details that will seem obvious to you.

2) Be clear about who has the final say about things.

Make sure the contractor knows up front who they will have to deal with and how long reviews and approvals might take. This should be explained in the contract, but is still worth confirming before the work starts.

3) Use realistic minimum qualifications for bidders.

If you're involved with this, take care to come up with experience and skills requirements that are enough to avoid a contractor who simply can't produce what you're after, but not so strict to eliminate someone who could do a good job. Check references - on time? within budget?

4) Explain what isn't acceptable.

The idea is to give designers room to create, but you also want to make sure they don't waste time or money chasing after unacceptable ideas. Be clear about the boundaries -- about unacceptable arrangements, materials, media, or appearances.

5) Put yourself in the contractor's shoes.

Think about what you would need to do the job and be ready to provide that to the contractor. Get right down to details. Remember, you're hiring someone with the skills, talent and time to do the work -- they're not magicians.

6) Stay involved.

If you really care about your project, you'll do this anyway. Don't be a nuisance, but stay in the circle and close to the progress. The best contract specifications in the world can't be as effective as constant communication.

7) Be honest and direct and open minded.

Speak your mind. Share your ideas. Explain your concerns. Help.

Building Construction Contracts

Getting the concrete poured and the nails driven

In almost every case, this part of the process will be out of your hands and in the control of engineers and architects qualified to oversee the construction of buildings, roads and other structures. But it's still your project, and you may be asked to stay involved as an advisor or coordinator. You may also be the local area expert. While you probably won't have to worry about knowing the details of the design or contract, you should be thinking about things like:

1) Acceptable camp, storage and equipment sites.

Contractors may need a place to camp if the site is remote, to store materials or tools and machinery, or to set up equipment like concrete or asphalt plants. Think ahead about suitable places.

2) Sites for waste disposal.

There's likely to be organic waste (rock, dirt, vegetation), demolition waste if the project is reconstruction, and possibly toxic waste. You may be asked for ideas on where to put it.

3) Public access during construction.

Will the site be closed? Open with restrictions? Will it be your responsibility to notify and deal with the public? Will visitors be upset?

4) Salvage materials.

If the project is a reconstruction job, are there existing structures or materials you'll want to keep to use elsewhere or use as spare parts? Will you be getting those things out or will the contractor have to? Where will they be stored?

5) Supplies of water, fill, topsoil, plants, rock . . .

The contract may call for materials like this and the cheapest place to get them may be on the forest. Think about where contractors may be able get or gather these materials as well as transplants for revegetating the site after construction.

6) Temporary signing.

You may be asked about wording or location for temporary signing for the public during construction or about removing existing signs for the duration.

Finding Out More

Don't rely on this guidebook alone. There's a wealth of information on the art and details of interpretation, some of which is listed here.

REFERENCES

Interpretation

Interpretation in Natural Resources, Agriculture and the Environment, by Sam H. Ham. Fulcrum Press. 1992

Interpreting the Environment, by Grant W. Sharpe. Second Edition. John Wiley and Sons, Inc. 1982.

Interpreting Our Heritage, by Freeman Tilden

Environmental Interpretation - A Practical Guide for People with Big Ideas and Small Budgets, by Sam H. Ham, North American Press. 1992

Planning, Proposals, and Procedure

Interpretive Planning Guide, USDA Forest Service, Pacific Northwest Region, Interpretive Services; 1991.

Forest Development Process: Recreation, Resources, Facilities & Trails; Deschutes National Forest

Crate's Point Interpretive Complex: Project Prospectus; USDA Forest Service, Columbia River Gorge National Scenic Area; 1992

Methods and Media

Naturewatch: A Resource for Enhancing Wildlife Viewing Area; a Defenders of Wildlife Publication, Falcon Press; 1992

Signs, Trails and Wayside Exhibits: Connecting People and Places; UW-SP Foundation Press, Inc.; University of Wisconsin, Stevens Point: 1992

Pocket Pal - A Guide to Print Media and the Printing Process

Writing, Design, and Publications

Making the Right Connections: A Guide for Nature Writers, UW-SP Foundation Press, Inc.; University of Wisconsin, Stevens Point: 1991

Creating Environmental Publications: A Guide to Writing and Designing for Interpreters and Environmental Educators; UW-SP Foundation Press, Inc.; University of Wisconsin, Stevens Point: 1990

The Elements of Style, by William Strunk, Jr. and E.B. White; MacMillan Publishing Co., Inc; New York

Associated Press Stylebook and Libel Manual; Addison-Wesley Publishing Co. Inc.; Reading, PA

Glossary

Somewhere in the course of an interpretive project you'll run into jargon that's new to you. Speaking a little of the language helps when it comes time for review or when you're dealing with a consultant or contractor.

G L O S S A R Y

bleed - printed area extending beyond the publication edge that is trimmed off (1/8 inch trim area must be allowed) leaving a photo or graphic that extends to very edge of page or panel

blowup - enlargement, usually of a photograph or piece of artwork

blueprints/blue lines/silver prints - the printer's proof of a publication showing all elements on the plates in position, bound, and trimmed to size. (Generally blue)

body copy - the text, rather than the headlines or title

boldface - a thicker, heavier version of a regular type face

bubble diagram - a basic representation of a floor or site plan using circles or similar shapes to represent different functions or activities and showing how they are arranged or positioned relative to one another

bullet - a small symbol like a dot, triangle, arrow or star used to highlight the beginning of a piece of text; a bulleted list is a column of sentences or paragraphs with a bullet placed before the first word of each

camera-ready art - material ready for the printer to photograph and make printing plates from; it is in final, finished form and exactly laid out

character count - the total number of characters (letter, punctuation, and spaces) in a given piece of copy

conceptual design - the overall idea for the look and layout of a project with no engineering, specifications or detail drawings done; usually shown by simple drawings and models

copy - printed text in a publication or sign

crop - to determine the area of an image to be produced; to cut off part of an image

crop marks - the lines drawn in margins that indicate area selected for reproduction

collage - a work of art made by pasting various materials on a single surface

diorama - a type of exhibit in which an indoor or outdoor scene is replicated either in a full-seized of scale-reduced size. Natural and artificial materials are used to create the scene and the senses of touch and small may be used to reinforce the viewing. Visitor usually view the scene from outside, but in some cases are encourage to walk thorough the exhibit.

dummy - a mock-up of a publication, often hand drawn, to show arrangement or order of pages and placement of type and illustrations on each page

conceptual design - an illustration of an idea for a project, without engineering, details or specifications. Usually just 1 or 2 drawings and possibly a model

feasibility study - a first, critical look at a project proposal to determine if it can reasonably be done considering things like funding, location, site requirements, audience, maintenance, environmental effects, etc.

flat color - printing done with one color at a time. The printer makes a place for each color and runs the pages through the press several times, one for each color

flush left/right - type lines up on the left or right margin

font - one specific form of a kind of type (style *and* size); Helvetica bold, 12 point is a font

format - the size and arrangement of a page or publication

four-color process - full-color reproduction. The color image is separated into dot patterns of the three primary colors--magenta, yellow, blue, plus black. When these four separate plates are printed on the page together, the eye mixes the colors to achieve the look of the original.

galley proof - a rough proof that shows the type as set. Given to the editor or designer to check for accuracy

grid - a planned page; an invisible arrangement of lines that guides the placement of headlines, text and illustrations

halftone - the reproduction of a photograph through a fine cross-line screen which converts the image into a dot pattern that can be used for printing. Sometimes called screening or screened prints.

headline ("heads') - the title of a body of copy

justify - make all lines the same length (flush left/right margin) by adding space between words and letters. Newspapers usually have justified columns of text.

layout - the plan for arranging visual elements on a page or the actual arrangement

hors d'oeuvre - an appetizer, often served on crackers or small pieces of toast, typically found at grand openings or ribbon cutting ceremonies

kiosk - a small outdoor structure with orientation, information, or interpretive signs or panels, often arranged in a triangle, circle or square, with a roof for weather protection

leading (pronounced "ledding") - the space between lines of type

line space - a blank space that is the depth of a line of type plus its leading

margins - outside borders around visual elements on a page

markup - copy marking: marginal notes made on a manuscript giving specific typesetting instructions

mechanical art - boards containing all visual elements of a page or panel at full size and glued in exact position, usually with instructions for printing. Also called a "paste-up"

montage - a photographic image produced by combining different photographs partly superimposed on each other

paste-up - same as mechanical art. The full size, finished mock-up of a publication or sign, ready to be photographed by the printer

peer review - a close review of a design, blueprints, specifications or similar work by someone working in the same field, with the same or similar qualifications as the designer

pica - typographic unit of measure. There are approximately 6 picas to an inch. Also refers to a style/size of typewriter type

PMT - photo-mechanical transfer; a high contrast, black and white reproduction of line art, typeset text, or photographs. Can be done as positive or negative images, on paper or on clear plastic.

point - typographic unit of measure; approximately 72 points per inch, 12 points per pica

preliminary design - a design step between the conceptual design and the final design; documents are not finished, but contain more information and detail than the conceptual design and solutions to the bigger design requirements

proofreaders' marks - symbols used to communicate manuscript changes or corrections to typesetters

prospectus - document describing a proposed or forthcoming project

registration marks - identical marks (usually a cross inside a circle) on separate pieces of art that must be matched exactly (one on top of the other) for correct positioning of visual elements or plates in printing.

relief model - a three-dimensional topographic scaled model showing land forms, facilities and features on the land. Some have push button lighting and text to emphasize and explain the areas attractions. Adjacent photos can be used to show visitors on-the-ground views.

reprints - a reprint is a second or subsequent printing of the current edition of a publication. Corrections are often made at reprint time.

repro/reproduction proof - the paper or film final version or "proof" of the camera ready page or panel

reverse type ("dropped out") - printing the background around the type instead of printing the type. The type is the color of the paper.

rule - a line, usually black

running head/foot - the same title or number appearing at the top or bottom of each page

sans serif - without serifs

scaling - the process of determining the percentage of enlargement or reduction of an image

screen - a finely ruled screen used for converting continuous tone (photographs) into a dot pattern or line.

serifs - cross strokes or delicate projections on type characters; Times and Schoolbook are serif typefaces

site plan - the intended layout and arrangement of facilities at a site, represented on drawings and in specifications or design criteria. A site plan communicates how all the pieces fit and work together to create the whole site development

stripping - the assembling, in position, of all visual elements that the printer has photographed, in preparation of making printing plates. Art mechanicals are sometimes photographed in pieces rather than as one complete negative

text - body copy rather than heads of titles

transparency - color photograph on transparent film. (a color slide is transparency.)

typeface - a specific type design. For example, Helvetica and Times Roman are two popular typefaces. A typeface can have many variations called fonts, such as Times Roman italic, 10 point size.

upper and lower case - capital and small letters of a typeface

value analysis - an organized method for evaluating a project to find ways to achieve the required functions or objectives at an optimum cost

widow - a single short line of type (usually the beginning or end of a paragraph) left by itself at the top or bottom of a page. Words left by themselves are sometimes called orphans.