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Ian Kindle; Sarah Bellois

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NPS Northeast Region
Julie Bell
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Delaware Water Gap National Rec. Area
DeNise Cooke-Bauer

Pocono Mountain Vacation Bureau
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Delaware & Lehigh NHC Commission

Prepared by:
Phase 1
Project Initiation

1.1 Meeting 1 – Initial scoping w/ Committee and stakeholders.

This meeting was conducted at the Delaware & Lehigh Heritage Corridor (D&L) offices in Easton, PA on January 13, 2010.

The Steering Committee was introduced to the consultant team and a wide ranging discussion followed, including: initial ideas for how the work should be approached; a discussion of stakeholders and previous contacts; and signage inventory/access points as prepared by the D&L. An extensive photo-inventory of signage was part of the D&L database.

The group discussed the various basic types and functions of signs at public access points and at the river locations. A general list of the types of signs that should be considered was developed by SC.

SC was provided with mapping prepared by the Delaware River Basin Commission (DRBC) with most river access locations identified according to “river mile.”

1.2 Meeting 2 – w/ Committee and stakeholders

This meeting was conducted at the D&L offices in Easton, PA on January 13th, 2010. The committee and consultant discussed the project staring with an overview, then continued with more specifics of sign types.

Refer to the meeting minutes in the appendix.

1.2 Current Signage

The majority of the existing signage related to the Delaware River Water Trail is located at or near the existing public river access locations.

Signage standards, even within a single management jurisdiction, appear to vary for different reasons. The greatest variances appear to occur when signage is replaced or updated and the previous specifications were not followed.
1.3 Existing Signage Standards

The most highly developed signage specifications of all the project stakeholders are those of the D&L and the National Park Service (NPS).

D&L has the highly detailed signage design manual “Visually Speaking” that has set the standards for signage in its heritage region. D&L provides financial incentives for partners to adopt its signage standards

NPS at the Delaware Water Gap National Recreation Area (DEWA) have multiple managers involved in a park-wide signage design and maintenance program.

During the term of this study, DEWA was considering various changes to its signage system, including replacement of the signature “entry” signs near the northern and southern park gatehouses. This DRGP study may be useful to inform DEWA and other NPS units, but ultimately NPS units will make design and management decisions for all signage on those federal lands.

Smaller access managers such as municipalities or counties that have only one or two river access locations, generally do not have established signage standards and rely on parks, public works or roadway departments to provide the minimum safety or information signage for their sites.

There do not appear to be standard requirements for sign placement at roadway locations within various jurisdictions. Each highway access location is governed by the right of way rules of the state or local jurisdiction. For this study, there are at least three state highway jurisdictions; Pennsylvania, New York and New Jersey.

The Delaware River Joint Toll Bridge Commission (DRJTBC) follows the signage regulations enforced by the partner states for bridges located between Milford (Route 206) and Morrisville (Route 1).

Bridges over the Delaware River from Port Jervis to Hancock are governed by NY DOT regulations for signage.

Inside the individual river access sites there appear to be greater opportunities for standardizing signage systems than at the roadside locations.

General existing signage types within the project area include:

- **Identity** – e.g., ownership, place
- **Safety / regulatory** – river and riverbank hazards such as dams, rules for use of landing / takeout sites.
- **Directional** - to access points from road, river & land based trails.
- **Orientation / wayfinding** - mileage markers (DRBC has established a river mileage system), maps and the presence of available amenities (e.g, parking, restrooms) and nearby attractions, including land-based trails; orientation signs on bridges.
- **Interpretive** - for educational purposes.
- **Kiosks** with multiple purposes.

1.4 Access Owner / Manager Contacts and Responses

SC attempted to contact agencies that were identified as part of the RFP 10 key person interviews required. SC followed up contacts with the access manager agencies where specific personnel were not identified in the D&L inventory list.
1.4.1 Standards and issues of current signage,

In general, the existing signage systems are diverse in structure and graphic standards, as well as varying ages. The existing facilities should be considered to be effective for what they are. Piggybacking the DR Water Trail logo medallion on these signs probably offers the greatest likelihood for modifying and the most practical opportunity to unify these diverse existing systems.

1.4.2 Future Facilities

New signage facilities offer the greatest opportunities for creating a cohesive and unifying signage system for the DR Water Trail. The main incentive for river access managers to participate in a coordinated river-wide signage system would likely be the availability of centralized funding subsidy and the convenience to create and install new water trail signs under an organized program.

A new signage incentive program is possible if a partnership was established that could attract funding from the three states, federal and other sources. Such a program could be administered by the DRGP. The process would likely have similarities to the D&L signage program that rewards partners who voluntarily comply with its standards.

The structure and process of a signage incentive program would need to be clearly defined in advance of applications to agencies that could fund such a program.

1.4.3 Needs and concerns with potential signage

The chances should be considered unlikely that a new, river trail signage system will meet with unanimous acceptance and deployment by all river access managers. Even with financial incentive programs for new signage, administrative requirements if different jurisdictions may preclude the use of certain signage types.

River signs on bridges

The increasing population that navigates the river as a transportation and recreation corridor appears to warrant the proposed additional of information /
directional signage to the river bridges as a minimum safety improvement.

A partnership development process will need to be conducted with the agencies that own and maintain the river bridges to introduce and develop a strategy for adding signs that can be mounted to the various types of bridges that span the Delaware in the project area. The possibility of implementing a completely unified system of signs on all river bridges is unlikely due to multiple structural types and multiple owners.

**Bridge owner agencies include:**

Delaware River Joint Toll Bridge Commission (Milford to Trenton) Dingmans Ferry Bridge (privately owned) NYDOT (I-84 to Hancock)

Each owner will need to agree to the idea of adding and maintaining signage for river users, in principal, and then be satisfied with the engineering, installation, construction, and maintenance requirements developed for new signage.

**NPS**

The NPS is the river access manager with the most river access locations within its jurisdiction, with a total of nine (9) NPS river access sites in the Upper Delaware and in DEWA. Each NPS unit will need to determine if, where, and how DR water trail signs might be piggybacked on its existing signage system.

**1.4.4 Opportunities for interpretive signage / possible themes.**

The opportunities for interpretive exhibits transcend the limited venues of traditional signage. Opportunities exist for permitted murals or banners on infrastructure such as abutments, and other impermanent “river art” installations that can serve as educational / interpretive opportunities. These ideas will likely spring from various artistic communities in the river valley and need to be individually sanctioned with the appropriate authorities.

Within a DR Water Trail signage system, there are opportunities to provide cultural, environmental and other interpretation at appropriate sites. Kiosks are usually the all-purpose “signage” venues that can provide interpretive as well as directional, orientation and safety information.

The NPS regularly uses its own system of free-standing interpretive signage panels to interpret cultural, historic, environmental and scientific information about specific places and subjects within each national park.
NPS graphic standards are widely regarded as the model for interpretive exhibit development. Since much of the project area is managed or in partnership with the NPS, it makes sense to strongly consider adopting the NPS standards for interpretive signage throughout the DR River Trail corridor.

Phase 2 Design Alternatives

2.1 Assessment of Signage Needs

Role of technology & electronics

The needs for signage to serve public river access sites and in-river travelers within the project area are relatively simple in concept.

2.1.1 Minimum needs and opportunities for potential signs.

Technology is ever changing. Trends with latest and greatest gadgets are never ending. To keep up with technological trends can be costly. Ideally, if technology is to be employed, it would be best to find a middle ground level of sophistication that will stay around longer than a couple years.

Smart phones

The direction of technology that seems to be growing now is the use of the smart phone mobile device. Blackberries, iPhones, and Droid-based phones are dominating the technology market. These top brands will undoubtedly change in the future, but one common element is the use of a mobile phone website. This is a specially designed website that makes for quick browsing on a mobile device. Creating a webpage that would integrate a water trail map on Google Maps would be the best opportunity to access and maintain trail information.

The way this works is the water trail map utilizes Google Maps as a “base” and integrates the trail information. It is capable of precisely locating any identifiable feature such as landing, bridge, and water hazards. It is inexpensive way to put up to date information on the website or list information such as water levels. This way a river traveler can stay updated with latest river information.

Much of the northeastern United States has cell coverage, but some remote parts in the upper reaches of the Delaware River do not. In some remote areas, trail users may have access to a mobile phone website. For this reason it is recommended to create a PDF water trail document that a user can download in advance and in conjunction to the mobile phone webpage. This is a cost effective way to get as much data as possible to trail users.
It is important to design the map with the optimum balance of data and file size. The PDF document could be as simple as primary locations of features the trail user should know about. As technology advances and the reach of cell towers is longer, the need to download this information in advance will not be needed.

Cell phone tours have been increasingly popular in urban areas, because they have the ability to pack a large amount of information into a small area. Often they can take the place of an interpretive sign. Certain locations warrant investigating the use of this technology, but as a regional tool its not recommend for this large project area.

**GPS handheld units**

Many serious paddlers and river users were early adapters in the use of the handheld GPS units. The cost of this technology has come down drastically in the past decade, and this might encourage more paddlers and river users to look into this technology before going into some remote areas.

GPS technology relies on satellite transmissions, not cell towers, to triangulate positions and transmit data. GPS may have greater appeal for accessing water trail maps because the satellite coverage may be greater in the remote parts of the river valley. Also GPS units already have the map data embedded in the unit memory and only rely on the satellite transmission to relay position.

Technology might have a larger place for users on the river if it were waterproof. GPS-guided navigation is used by boaters, but the technology is far more vulnerable for canoeists, kayakers, and tubers.

**Electronic signs**

Electronic signage is wonderful tool that can be updated regularly, but has many downsides. Most this signage is susceptible to vandalism, which means a hefty investment is lost. Electricity is needed to run them which means an operational cost. This type of sign is often needed to be protected from the elements, and its high tech character is not a good fit for remote settings.

**DRBC Water Trail Guide**

It is unlikely that technology will ever completely replace the water trail guide. These waterproof maps (printed by DRBC) are the most complete source for DR Water Trail information. Unfortunately they are a significant cost and the entire set for the river must be purchased. This “cost” for “paper” is not exactly where the market appears to be headed. Other maps can be downloaded from the internet on home printers. The DRBC Water Trail Maps are not available online. This issue needs to be resolved as the stockpile of existing maps is depleted.

**2.1.2 Use and placement of various sign types**

The general signage system needs to:

- direct travelers to the river access locations
- inform users on the river of access locations / safety information
- educate visitors about the place, river use and safety

Typical characteristics of the location for each sign type is based on previously identified types as provided by DRGP.
2.1.3 Comparison of standards for various jurisdictions.

Currently there are several design standards within the project area. They range from very complete and exact design guidelines such as NPS “Graphic Identity” developed at Harpers Ferry or “Visually Speaking” prepared for the Delaware and Lehigh Heritage Corridor.

Another design guideline needed to be taken into consideration is American Disabilities Act that has standards for text size for the visually impaired. Signage standards are updated regularly. For further information about signage and river trail signage standards please visit these websites:

- [http://www.ada.gov/](http://www.ada.gov/)
- [http://www.segd.org](http://www.segd.org)

Various governing bodies must review plans for signage before installation, based on jurisdiction.

Most standards have some details that conflict with one another, making a single accepted design standard difficult at best. The recommended approach is to find the common ground with the various guidelines and focus on those within an aesthetic format that does not conflict or clash with these standards. This was the basis for the signs designed in the Group “A” alternative developed for this study.

2.2 “Piggyback” opportunities for signage

Potential to utilize water trail logo/signage with existing signage.

The existing logo design of the DR Water Trail can be utilized with other signage as a potential piggyback “medallion”. The standard 18” high sign can be attached to existing metal or wooden poles or directly to existing signs. Vinyl decals of this logo can be manufactured so that they can be applied to signs that have available space.

2.2.1 Possible logo modifications

Redesign of the DR Water Trail logo is not recommended, so that one version is always reinforced in all public presentations. The modifications that have been considered in this study are options for positioning and placement of the existing logo within other signage.

2.2.2 Multiple logos per sign

There are definitely opportunities within the physical areas of various existing signs to add the DR Water Trail logo in with other logos on the same sign. In most cases, the issues will be jurisdictional decisions, not design issues.

2.3 Committee Responses to assessment report.

None.

2.4 Alternative Signage Schemes

Two alternative design schemes were developed for each water trail sign type. (Refer to graphic displays.)

**Alternative A:** Integration of water trail signage with current signage of various jurisdictions.

The differences in sign styles between the jurisdictions was large. The three states and
scores of municipalities all had different styles and aesthetics. A common design theme did not exist.

Design principles were adapted from many of the signs and brought together in Alternative A.

**Alternative B:** Examples of [new] signs that are unique to the water trail system, where there is no existing signage.

Alternative B incorporated unique colors to set it apart from existing signage within the corridor.

The sign designs are illustrated on following pages.

### 2.4.1 Approximate cost estimates for sign production

See costs section in the this report.

### 2.4.2 Recommended styles, materials, typical locations.

Included with graphic signage information.

### 2.4.3 Recommended details—overall look, graphic elements, colors, fonts, size for each sign type (not detailed specifications.)

Included with graphic sign information.

### 2.4.4 Recommended content, use, and mounting options.

Included with graphic sign information.

### 2.5 Provide logo recommendations

Use of the water trail logo is described in section 2.2.1.

### 2.6 Evaluate water trail system—recommendations

The average speed for a paddler is 2 to 3 miles per hour on the water. A novice will not be able to paddle for more than 8 miles a day. Moderate to experienced paddler can be expected to go from 13 to 20 miles a day. Designs should plan for the least experienced trail user. Ideally keeping landings 8 miles part would a goal for the water trail but because of some of the more remote locations, this may not be achieved. During the committee meeting it was discussed how many people do not understand how a water trails operates, illustrations that education at every level is needed.

#### 2.6.1 Hierarchy of physical sign types where needed to supplement that on the ground.

The sign hierarchy was developed with the use of a sign matrix on page four.

### 2.7 Installation guidelines—recommendations for signage in existing parks.

Installation guidelines vary state to state, and vary from different municipalities. Building and zoning codes can dictate the construction of each sign. Access managers must ensure that all codes are meet during installation. Every sign manufacture has its own preferred guidelines on sign installation. Once a final design has been agreed upon, it would be best to try and have one manufacturer fabricate
the sign. This will allow for uniform sign color and help with the final installation guidelines.

2.7.1 Existing standards and details

Provided by the owners/ managers and make recommendations for a common installation system, if feasible. Negotiation and acceptance by the partners is not a condition of completion. This task does not include construction documentation.

Information included in Section 1.4

2.7.2 Cost and durability as factors

Provide estimates for fabrication and installation of any signage that is not standard for existing jurisdictions.

Signage for water trails faces the common problem of environmental damage. The Delaware River is prone to flooding. The majority of the signage for this project needs to be visible from the paddlers perspective while on the river. This means placing the signs in the floodway. Signs will receive damage during flood events, and often destroyed.

Replacement costs are an important factor. Manufacturing cost should be kept low because the average life of a sign must be considered short. Removable signs are possible where staff are available to remove them during off seasons or before floods. Unfortunately, flooding is usually an emergency situation that demands staffing focus on other issues. Because of this fact, the costs of temporary versus semi-permanent signage must be weighed.

For semi-permanent signs, adhesive vinyl on aluminum is recommended. High pressure laminates would be best suited for kiosks and interpretive signs.

Refer to costs section of this report.

Even with its decreased popularity, canoeing is still well-liked on the Delaware River.
Water Trail Signs (1)
A sign matrix was developed to help categorize message hierarchy. It is designed as a guideline but can evolve as the signage program progresses.
2.8 Phasing / prioritization of signs – Recommendations

Visibility should be a high priority for the signage project. The easiest and cheapest way to start is to incorporate the piggyback/branding logo by creating blades and decals to start affixing to existing signage where allowed.

The second phase to achieve highest visibility would be to install landing signs—as a means to create continuity along the entire trail and begin to tie the system together in people’s minds. This is also a good way to establish the concept of the trail as a whole and not segmented sections of the river between different jurisdictions. One sign type implemented along the entire length of the trail is the ideal.

Another important phase should be the “on-bridge” signs. These signs are important for paddlers and boaters to know their location and river mile. Bridges are one of the easiest landmarks to locate on the river trail guide maps for people on the river.

Phasing for sign plans and projects in general, happens where and when funding is available. As funding opportunities open for any aspect of the project, its important to be ready to capitalize on them.

Because this project crosses three state boundaries, it will be very difficult to implement one sign type along the entire corridor. It may be that as one landing is being redeveloped, the installation of all the signs could be included in the project—with the greatest degree of graphic similarity to the DRGP system as allowed by the access manager.

Minimum signage to be placed on the ground at each access point.

2.8.1 Management of a GIS-based sign database.

Geographic Information Systems (GIS) software is a versatile tool that can be used for both the design and management of the Delaware River Water Trail signage system. In its simplest form, GIS provides both location mapping and informational database...
Currently there is a substantial GIS database started that can be integrated to a new system for the DR water trail.
GIS software uses the basic graphic elements of points, lines, and polygons that can be drawn or placed over existing base information, typically either USGS quadrangles or aerial photography obtained from internet sources. The base quadrangles or photography are scaled at 1:1 within the software so that actual distances and/or areas may be calculated.

Each point, line, and/or polygon element that is entered over the mapping base has the capability to add specific information relative to each element within the database portion of the files created. For example, a point file may be created for project signage where the signs (points) can be located on the map. Each point can represent a sign for that location, and basic information such as the sign type, when it was installed, location name, and any other information specific to that sign may be added into the database component of the point file. Geographic coordinates and/or length and area calculations for each element can be performed as automatic functions of the software and be included in the database. Additionally, a ‘hot link’ could be added to the database so that one can recall a picture of the sign installed.

Once the information is input into the GIS software, this geographic database may be used as a management tool with ongoing revisions and updates to the base information over time. Cost estimates can be quickly and easily generated by selecting the elements associated with a specific area and multiplying them by established unit costs.

As an example of a river trail signage, Simone Collins (SC) prepared a GIS database for the Schuylkill River National and State Heritage Area as part of their Signage Master / Management Plan for the existing land and water trails along the Schuylkill River.

SC prepared the base mapping from USGS 7.5 minute quadrangles and associated quarter quadrangle aerial photography. Significant elements that would affect sign placement along the land and
water trails were then added to the GIS database, including:

- the heritage area boundary,
- water trail landing sites,
- bridge crossings,
- dams,
- trailheads (land trail),
- at-grade road and railroad crossings,
- existing parks, and interpretive sites.

With these elements in the database, a comprehensive quantitative inventory was then developed to identify the type, number, and placement of all signs as well as prepare detailed costs estimates to implement the signage system.

**Help Number**

Another important element of the Schuylkill signage system was the creation of a ‘Help Number’ system. Each sign associated with both the land and water trails was assigned a unique ‘Help Number’ and recorded in the GIS database. By coordinating with, and providing this information to the local emergency management agencies for inclusion into their GIS-based 911 response system, trail users in need of emergency assistance can provide this unique Help Number with a 911 call and the emergency personnel will know exact response locations. This is especially helpful along remote areas of trail where there are no significant unique features available to provide a specific location in a time sensitive situation.

For the DR Water Trail, the “Help Number” for any location would probably be the river mile number.

GIS may be used for other trail-related project planning, mapping, and estimation purposes. Trail alignments may be entered as line elements over the base map that could be used to provide graphic mapping and generate actual distances of the alignments that could be used for cost estimation purposes. While the GIS database developed for the Schuylkill River Heritage Area was created to both identify the initial sign locations and manage the overall signage implementation, the same database may also be used for many other purposes. These include:

- recording maintenance of trailhead, bridge, trail segments, and other related facilities;
- planning and analysis of potential connector or spur trails; and
- mapping for any location within the project area at any scale.

GIS software is primarily used for planning and/or management purposes and is not a tool that should be used for generating construction related plans or drawings.

The following is an example of how GIS was used on a Simone Collins trail planning project along the Susquehanna River for both graphic mapping and cost estimation purposes.

Trail alignments are shown on the mapping as a system of points and segments and correlate to an estimate of probable development costs that was generated by utilizing the calculation functions of the software. A trail alignment can be cross-referenced between two points found on the map to the estimate of probable development costs with additional information on that particular segment, (including estimated costs) may be found.

**2.8.2 General sign management and maintenance guidelines.**

This signage program is in its infancy, but maintenance issues need be addressed early in the evolution of the program. Maintenance of a damage-
prone signage system will be a cost factor that affects capital decisions. Signs ideally have a long lifespan, but vandals, flooding or exposure to weather can reduce this life. This means that access managers need to account for annual maintenance costs in the budget to keep the system functioning. Weathered and vandalized signs reduce the effectiveness of the signage system. Upkeep is necessary. When a sign is missing, or in disrepair, it creates a liability for the property owner that can be avoided.

Vandalism includes signs that are stolen and taken as a souvenir. It is particularly important to make sure that all signs are theft resistant during installation and during general maintenance. Design of mounting, fasteners, and materials must all be part of the purchasing decisions at the time of ordering. Manufacturers will provide their latest technologies at that time.

Graffiti should be removed as soon as it has been observed, because lingering graffiti is often an enticement for more to occur. Signs are also used as sport, and are sometimes targets. Bullet holes are very difficult to repair, so it’s suggested that once a sign has been vandalized / shot that it be replaced. In general, if the vandalism is to a degree where it permanently degrades the sign, it should be replaced. Clean appearance of the total sign system should be a goal.

If possible signs should be inspected monthly or seasonally, but at minimum annually before the recreation season begins, and after each flood event.

Each sign should be evaluated for:

**Condition:** Make sure that the sign has not weathered to point where it looks old or has become difficult to read. Although many signs claim to be UV resistant, they are not UV proof. The sun is very damaging to all surfaces. Vandalism falls into this deterioration criteria.

**Mounting:** Check each sign to see that they are secure to their surface. Replacing bolts and or attachments can be less expensive than replacing an entire sign.

**Prevalence:** Existing conditions may change with time. It might be that the sign may not longer appear up to date and will need to be revised to reflect this. Water hazards such as weir may be particularly susceptible to this.

**Clearing:** Clearing vegetation is needed to make sure that the maximum possible site distance is give to trail users. Ideally this should be done at least three times a year during the normal vegetative growth season.

**Cleaning:** Signs should be cleaned of stains and dirt annually. This will help keep the colors vivid and the text appearing crisp. Signs that have permanent staining should be replaced. Mild detergents should be used when cleaning. Harsh soaps and chemical solvents will pull the pigments from the signs and will degrade them.

2.9 Meeting 2 – review assessment report

Meetings with Committee & site access managers. Refer to meeting minutes in appendix
Phase 3   Public Input / Final Plan

3.1 Follow-up contacts

Follow-up contacts with river access managers

Feed back was light. Some input was given at the meetings, and specifics were noted. This may be due to the fact that neither one of the two sign options were clearly favored.

DRGP can use this final Water Trail Signage Plan to approach potential partners for assistance, including PennDOT, NJDOT, NYDOT DRJTBC, NPS, PA DCNR, NJ DEP, NY DEC, counties, municipalities, and other agencies and foundations.

3.2 Incorporate input of site managers’ and steering committee’s input into draft sign package.

Access manager’s input, none received in writing.

DCNR Review

3.3 Public Presentations

Three (3) public meetings were held to provide opportunities for public input on draft sign plan.

7/19/10 Upper Delaware held in Narrowsburg, NY,
7/20/10 Middle Delaware held in Bushkill, PA,
7/21/10 Lower Delaware held in Frenchtown, NJ,

The meetings were organized by DRGP with assistance of river access managers to help advertise by identifying the interested organizations and agencies, and providing logistical support.

SC assisted DRGP to plan the meeting / advertisement program – including press management. DRGP executed the advertising strategy.

3.4 Incorporate [public] input into final sign plan.

A synopsis of the public input:

Opinions were split on the sign design preferences. People of the committee, access managers and the public were divided almost evenly on sign shapes, colors, graphics, and font styles.
One strong preference that was noted by NPS rangers at DEWA, who preferred the Alternative ‘B’ sign design from a safety standpoint. They felt the color (not green or blue) and the strong geometric shape sign stood out and was the most noticeable against a natural wooded background.

Other people chose Alternative A because it seemed to them that the shapes and colors fit better into the natural surroundings.

**DRGP selection of a sign design alternative.**

With no clear winner, the two alternate designs give DRGP all its options as the negotiation of partnerships moves forward.

Either alternative in itself is workable graphically. This study was developed as planning tool with the understanding that final design decisions did not need to be made until the time implementation will start.

It may be that the ultimate system might be a mixed graphic system of shapes, colors, and fonts, according to the needs / requirements of whatever partner is willing to move its piece of the system along.

Practically, most versions of any new Water Trail signs would be better than no new signs at all.

### 3.5 Prepare Final Plan

The final plan was delivered to DRGP for review, revisions and by DRGP.

### 3.6 Present final sign plan

A final presentation to the DRGP Steering Committee was made by SC on 9/28/10 at the Prallsville Mill office of DRGP.
Color studies were looked at early on. Contrasting the message with light on dark, or dark on light schemes was the main intention. Graphically it is important for the text to have contrasting values so that it can be read at a distance.

Color schemes were influenced by existing signage programs. Earth tone and high chroma styles were explored.

New colors not found in corridor signage were explored in Alternative B.

Final color schemes can be modified as needed.
**Sign Design Alternative**  
**Color Study / Typeface**

**Delaware River Water Trail Signage Plan**

**Scheme A** incorporates an analogous color palette that is of more “natural” tones. This allows the sign to be less obtrusive in the corridor.

The font used is part of the Serifa family, a serif font that has been popular with many existing signs.

**Scheme B** uses a bolder color palette intended to stand out where placed along the water trail. The complimentary color scheme isn’t used along the corridor and is unique to help create an individual identity. The font family is Frutiger. This is a time tested font that reads well over long distances.

The signs will allow for easy modifications for final manufacturing as opinions may change.

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**Serifa family**

The quick brown fox jumps over the lazy dog. 1234567890

- 90, 45, 30, 10
- 40, 0, 40, 0

**Frutiger family**

The quick brown fox jumps over the lazy dog. 1234567890

- 80, 100, 25, 15
- 5, 5, 65, 0
**Sign Design Alternative**

**Piggyback / Branding / Logo**

**Delaware River Water Trail Signage Plan**

### Description:

A blade is single sided, fabricated from aluminum sheet mounted with adhesive vinyl or embedded fiberglass. Decal are adhesive vinyl "stickers".

Because of constant changes in technology, materials and finishes, the final selection of sign options will need to be reexamined at the time of ordering.

### Content:

- Water trail logo

### Placement:

This sign or decal can be affixed to existing signage, or structure. Decals are subject to vandalism and should be checked regularly.

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This is the most cost effective sign to incorporate into the system. The sign or decal / logo can be affixed to existing signage to let the user know that they are on the water trail system without the cost of manufacturing a new sign. This symbol will be the identifying feature throughout the length of the trail and will also bring exposure to the water trail to those who travel into the area.
**Description:**
The sign is single sided, fabricated from aluminum sheet mounted with adhesive vinyl. Installation will vary due to the difference in bridge owners, construction, and materials.

Because of constant changes in technology, materials and finishes, the final selection of sign options will need to be reexamined at the time of ordering.

Partnerships will be required with bridge owners.

**Content:**
This sign is designed to let the person on the river know the location by the name of the bridge/road.

Each sign should contain:
- Name of the bridge
- Town / location
- Corresponding states
- River mile

**Placement:**
These signs should be mounted facing upstream and downstream on the most visible point from an on-river perspective.

**Scale:** 1" = 1'-0"
**Description:**

The sign is single sided, fabricated from aluminum sheet mounted with adhesive vinyl. Installation will vary due to the difference in bridge owners, construction, and materials.

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**Content:**

This sign is designed to let the person on the river know the location by the name of the bridge/road.

Each sign should contain:
- Name of the bridge
- Town / location
- Corresponding states
- River mile

**Placement:**

These signs should be mounted facing upstream and downstream on the most visible point from an on-river perspective.
Description:
The sign is single sided fabricated from aluminum sheet mounted with adhesive vinyl. Each sign should be mounted to an aluminum pole that is removable from a buried sleeve where allowable.

Because of constant changes in technology, materials and finishes, the final selection of sign options will need to be reexamined at the time of ordering.

Content:
This sign is designed to let the paddler know where and what hazard they are approaching.

Each sign should contain:
- Emblem of hazard
- River mile

Placement:
This sign should be mounted facing upstream on the most visible point of the hazard from a paddler’s perspective. Clear obstructing vegetation to achieve maximum site distance.

The eel weir is an old way of fishing for eels by constructing a ’V’ shape trap that channels the river’s water. This formation often is hard to navigate and needs a formal symbol developed. These were two examples of a symbol developed during this project.
Description:
The sign is single sided fabricated from aluminum sheet mounted with adhesive vinyl. Each sign should be mounted to an aluminum pole that is removable from a buried sleeve where allowable.

Because of constant changes in technology, materials and finishes, the final selection of sign options will need to be reexamined at the time of ordering.

Content:
This sign is designed to let the paddler know where and what hazard they are approaching.

Each sign should contain:
• Emblem of hazard
• River mile

Placement:
This sign should be mounted facing upstream on the most visible point of the hazard from a paddler’s perspective. Clear obstructing vegetation to achieve maximum site distance.

General:
This might be one of the most important signs in the system and may also be the one most often replaced or repaired because of being directly in the floodway. They will need to be regularly checked to make sure they are in good order. Costs will be a factor because should be replaced immediately after they are damaged. Hazard signs are not a replacement for the water guide which maps and details each location.
Description:
Painted numbers and graduations. Adhere water trail sign to top.

Because of constant changes in technology, materials and finishes, the final selection of sign options will need to be reexamined at the time of ordering.

Aluminum and fiberglass with decals are material options.

Content:
This sign is designed to inform boaters of the current water level so they can determine if it is safe to continue.

Each sign should contain:
• Water Trail logo

Placement:
This sign should be mounted directly onto a bridge pier visible from embarking locations where permitted. The sign should not face directly into the river’s flow.

The traditional depth gauge has been painted directly onto a bridge pier. This has been cost effective and easy to incorporate. This solution technically requires approval of the bridge owner. The paint should be inspected after each flood event.
Description:
The sign is single sided fabricated from aluminum sheet mounted with adhesive vinyl. The sign should be fabricated to allow for it to be bolted directly to the bridge pier.

Because of constant changes in technology, materials and finishes, the final selection of sign options will need to be reexamined at the time of ordering.

Content:
This sign is designed to inform boaters of the current water level so they can determine if it's safe to continue.

Each sign should contain:
• Water Trail logo

Placement:
This sign should be mounted directly onto a bridge pier visible from embarking locations where permitted. The sign should not face directly into the river's flow.

Because of scour, floating debris, and flood events these signs may be lost. Signs should be evaluated after each flood event and checked for vandalism periodically. Flood stages change based upon one's location on the river. The green, orange, and red zones will have to be adjusted to accommodate this. The stage of the color should be explained on a kiosk adjacent to the sign.

Scale: 1” = 1’-0”
Description:
The sign is double sided fabricated from aluminum sheet mounted with adhesive vinyl. Each sign should be mounted to aluminum poles that are removable from a buried sleeve.

Because of constant changes in technology, materials and finishes, the final selection of sign options will need to be reexamined at the time of ordering.

Content:
This sign is designed to let the paddler know the location with the river mile number.

Each sign should contain:
- Name of the landing
- Town / location
- State
- Water Trail logo
- River mile

Placement:
This sign should be mounted on the upstream side adjacent to the landing from a paddler’s perspective. Clear obstructing vegetation to achieve maximum site distance for both upstream and downstream views.

Each site should be evaluated to determine what the ideal height should be, but a minimum 7’ clearance will act as a general guideline.
**Description:**

The sign is double sided fabricated from aluminum sheet mounted with adhesive vinyl. Each sign should be mounted to aluminum poles that are removable from a buried sleeve. Because of constant changes in technology, materials and finishes, the final selection of sign options will need to be reexamined at the time of ordering.

**Content:**

This sign is designed to let the paddler know the location with the river mile number.

Each sign should contain:
- Name of the landing
- Town / location
- State
- Water Trail logo
- River mile

**Placement:**

This sign should be mounted on the upstream side adjacent to the landing from a paddler’s perspective. Clear obstructing vegetation to achieve maximum site distance for both upstream and downstream views.

Each site should be evaluated to determine what the ideal height should be, but a minimum 7’ clearance will act as a general guideline.
Sign Design Alternative
On River - Campsite

Description:
The sign is single sided, fabricated from aluminum sheet mounted with adhesive vinyl. Each sign should be mounted to aluminum poles that are removable from a buried sleeve.

Because of constant changes in technology, materials and finishes, the final selection of sign options will need to be reexamined at the time of ordering.

Content:
This sign is designed to let the paddler know the location with the river mile number.

Each sign should contain:
- Name of the campsite
- State
- Water Trail logo
- River mile
- Campsite emblem

Placement:
This sign should be mounted facing upstream on most visible point of the campsite from a paddler’s perspective. Clear obstructing vegetation to achieve maximum site distance.

Scale: 1” = 1'-0”
Campsites are often clustered together. Because of this, signs can be placed once at the most upstream campsite to notify paddlers of the location. It will not be cost effective to sign each site within one cluster, or desirable because of the negative visual impact.

**Description:**
The sign is single sided, fabricated from aluminum sheet mounted with adhesive vinyl. Each sign should be mounted to aluminum poles that are removable from a buried sleeve.

Because of constant changes in technology, materials and finishes, the final selection of sign options will need to be reexamined at the time of ordering.

**Content:**
This sign is designed to let the paddler know the location with the river mile number.

Each sign should contain:
- Name of the campsite
- State
- Water Trail logo
- River mile
- Campsite emblem

**Placement:**
This sign should be mounted facing upstream on most visible point of the campsite from a paddler’s perspective. Clear obstructing vegetation to achieve maximum site distance.
**Description:**

The sign is single sided fabricated from aluminum sheet mounted with adhesive vinyl. Each sign should be mounted to aluminum poles that are removable from a buried sleeve.

Because of constant changes in technology, materials and finishes, the final selection of sign options will need to be reexamined at the time of ordering.

**Content:**

This sign is designed to let the paddler know the location with the river mile number.

Each sign should contain:
- Name of the island
- Private or publicly held land
- Water Trail logo
- River mile

**Placement:**

This sign should be mounted facing upstream on most visible point of the island from a paddler's perspective. Clear obstructing vegetation to achieve maximum site distance.

The NPS unit at DEWA has signed islands under its jurisdiction by mounting the signs on trees at the island head. DEWA is developing adjustable fastening systems so that girdling trees can be prevented.
**Description:**

The sign is single sided fabricated from aluminum sheet mounted with adhesive vinyl. Each sign should be mounted to aluminum poles that are removable from a buried sleeve.

Because of constant changes in technology, materials and finishes, the final selection of sign options will need to be reexamined at the time of ordering.

**Content:**

This sign is designed to let the paddler know the location with the river mile number.

Each sign should contain:

- Name of the island
- Private or publicly held land
- Water Trail logo
- River mile

**Placement:**

This sign should be mounted facing upstream on most visible point of the island from a paddler’s perspective. Clear obstructing vegetation to achieve maximum site distance.

Islands are subject to flooding, and are more remote and inaccessible for maintenance crews. It is recommended that island signs be used sparingly and placed where they will be out of the direct impact of flood events. Signs should be evaluated after major flood events and checked for vandalism periodically.
Description:
The sign is double sided, fabricated from aluminum sheet mounted with adhesive vinyl. Aluminum should be at least 3/8” thick.

Because of constant changes in technology, materials and finishes, the final selection of sign options will need to be reexamined at the time of ordering.

Content:
This sign is designed at a pedestrian scale to give directional advice at junctions between the river trail and land trails.

Each sign should contain:
- Water Trail logo
- River mile
- Directions
- Facilities
- Partner logos

Placement:
This sign should be set adjacent to the adjoining trails but out of the way of oncoming traffic. The sign should be bolted to a concrete footer that meets local building codes.

Directions and distances to destinations and facilities allow the user to know their proximity.

Partners logos may need to be double stacked to accommodate more if needed. Full color logos (4 color process) should be applied as a separate application to reduce production costs.

All graphics should be kept clear of the grass trimming area (1’ in height).
Description:
The sign is double sided, fabricated from aluminum sheet mounted with adhesive vinyl. Aluminum should be at least 3/8” thick.

Because of constant changes in technology, materials and finishes, the final selection of sign options will need to be reexamined at the time of ordering.

Content:
This sign is designed at a pedestrian scale to give directional advice at junctions between the river trail and land trails.

Each sign should contain:
- Water Trail logo
- River mile
- Directions
- Facilities
- Partner logos

Placement:
This sign should be set adjacent to the adjoining trails but out of the way of oncoming traffic. The sign should be bolted to a concrete footer that meets local building codes.
**Description:**
The sign is single sided fabricated from aluminum sheet mounted with adhesive vinyl.

Because of constant changes in technology, materials and finishes, the final selection of sign options will need to be reexamined at the time of ordering.

**Content:**
This sign is designed to give advance notice for automotive traffic traveling to the water trail.

Each sign should contain:
- Water Trail logo
- Landing Name
- Direction
- Facilities
- Partner logo and name

**Placement:**
This road sign will be located in public right-of-way and will need to meet local or State regulations.
**Description:**
The sign is single sided fabricated from aluminum sheet mounted with adhesive vinyl.

Because of constant changes in technology, materials, and finishes, the final selection of sign options will need to be reexamined at the time of ordering.

**Content:**
This sign is designed to give advance notice for automotive traffic traveling to the water trail.

Each sign should contain:
- Water Trail logo
- Landing Name
- Direction
- Facilities
- Partner logo and name

**Placement:**
This road sign will be located in public right-of-way and will need to meet local or State regulations.
Description:
The sign is single sided, fabricated from aluminum sheet mounted with adhesive vinyl.

Because of constant changes in technology, materials and finishes, the final selection of sign options will need to be reexamined at the time of ordering.

Content:
This sign is designed to give directions to automotive traffic entering the access site.

Each sign should contain:
• Water Trail logo
• Landing Name
• Directions to facilities

Placement:
As per access manager discretion and subject to local codes.
Description:
The sign is single sided, fabricated from aluminum sheet mounted with adhesive vinyl.

Because of constant changes in technology, materials and finishes, the final selection of sign options will need to be reexamined at the time of ordering.

Content:
This sign is designed to give directions to automotive traffic entering the access site.

Each sign should contain:
- Water Trail logo
- Landing Name
- Directions to facilities

Placement:
As per access manager discretion and subject to local codes.
Wear your life jacket. Some 80% of all recreational boating fatalities happen to people who are not wearing a life jacket.

Expect to get wet and dress properly. Even the best paddlers sometimes capsize or swamp their boats.

Be prepared to swim. If the water looks too hazardous to swim in, don’t go paddling.

If you capsize, stay upstream from your boat.

Scout ahead whenever possible. Know the river. Avoid surprises.

Be prepared for the weather. Get a forecast before you go.

Wear wading shoes or tennis shoes with wool, polypropylene, pile, or neoprene socks.

Never take your boat over a low-head dam.

Portage (carry) your boat around any section of water about which you feel uncertain.

Never boat alone. Boating safety increases with numbers.

Keep painter lines (ropes tied to the bow) and any other ropes coiled and secured.

Never tie a rope to yourself or to another paddler, especially a child.

If you collide with an obstruction, lean toward it.

File a float plan with a reliable person, indicating where you are going and when you will return. Recommendation to carry this item when you are on the water.

Much of the property along the Delaware River is private property, please respect private property.

One wearable, Coast Guard-approved personal flotation device (PFD or life jacket) in serviceable condition and of the appropriate size is required for each person in your boat. If your boat is 16 feet or longer, one throwable device (seat cushion or ring buoy) is also required.

PFDs must be worn by all children 12 years and younger on all boats 20 feet and less in length, while under way, and on all canoes and kayaks. Others are strongly encouraged to wear a PFD. If a larger person needs to be rescued by a smaller person, flotation is a huge safety factor for both parties.

All boats must display an anchor light (a white light visible 360 degrees all-around) when at anchor between sunset and sunrise. Boats can use a lantern or clip-on battery-powered unit to meet this requirement.

All powered boats must show running lights between sunset and sunrise.

Between sunset and sunrise, unpowered boats must carry a white light (visible 360 degrees all-around) — installed or portable — ready to be displayed in time to avoid a collision.

All boats are required to carry a sound-producing device, some mechanical means of making a sound signal audible for a half-mile. Athletic whistles meet this requirement.

Operating watercraft, including canoes, kayaks and rafts, under the influence of alcohol or drugs is illegal. The law is strongly enforced for user safety.

Description:
The sign is made of a double sided graphic panel, fabricated from high pressure laminate. Mounted on prefabricated aluminum poles and mounts offered by most manufacturers.

Because of constant changes in technology, materials and finishes, the final selection of sign options will need to be reexamined at the time of ordering.

Content:
This sign is designed to be an information station. One panel should be a context map and local map, the other panel will be safety and regulations.

Each sign side should contain:
• Water Trail logo
• Landing Name
• Maps
• Partner logos
• River mile
• Safety regulations

Placement:
This sign should be placed adjacent to the landing, but out of the floodway where possible, and constructed so that staff will be able to efficiently remove it.
Wear your life jacket. Some 80% of all recreational boating fatalities happen to people who are not wearing a life jacket.
Be prepared for the weather. Get a forecast before you go. Scout ahead whenever possible. If you feel uncertain, don’t go paddling.
Be prepared to swift. If the water looks too hazardous to swim in, don’t go paddling.
If you capsize, stay upstream from your boat.
Expect to get wet and dress properly. Even the best paddlers sometimes capsize or swamp their boats.
Kneel to increase your stability before entering rougher water, like a rapid.
If you collide with an obstruction, lean toward it.
If a larger person needs to be rescued by a smaller person, flotation is a huge safety factor for both parties.
Portage (carry) your boat around any section of water about which you feel uncertain.
File a float plan with a reliable person, indicating where you are going and when you will return. Remember to contact the person when you have returned safely.
Much of the property along the Delaware River is privately held, please respect the property owners.

Boating Regulations
- All boats must display an anchor light (a white light visible 360 degrees all around) when at anchor between sunset and sunrise. Boats can use a lantern or clip-on battery-powered unit to meet this requirement.
- All powered boats must show running lights between sunset and sunrise. Between sunset and sunrise, unpowered boats must carry a white light (visible 360 degrees all around) - installed or portable - ready to be displayed in time to avoid a collision.
- All boats are required to carry a sound-producing device, some mechanical means of making a sound signal audible for a half-mile. Athletic whistles meet this requirement.
- Operating watercraft, including canoes, kayaks and rafts, under the influence of alcohol or drugs is illegal. The law is strongly enforced for user safety.

Safety
- Never tie a rope to yourself or to another paddler, especially a child.

Because of constant changes in technology, materials and finishes, the final selection of sign options will need to be reexamined at the time of ordering.

Description:
The sign is made of three, single-sided graphic panels, fabricated from high pressure laminate. Mounted on prefabricated aluminum poles and mounts offered by most manufacturers.

Content:
This sign is designed to an informational station. One panel should be a context map, the other panel will be a local map, the last panel will be safety and regulations.

Each sign side should contain:
- Water Trail logo
- Landing Name
- Maps
- Partner logos
- River mile
- Safety Regulations

Placement:
This sign should be placed adjacent to the landing, but out of the floodway where possible, and constructed so that staff will be able to efficiently remove it.
**Description:**
The sign is a single or double sided graphic panel fabricated from high pressure laminate. Mounted on prefabricated aluminum poles and mounts offered by most manufacturers.

Because of constant changes in technology, materials and finishes, the final selection of sign options will need to be reexamined at the time of ordering.

**Content:**
This sign is designed to be an informational station. The sign content would have to be designed as needed. It is recommended that the NPS UniGuide system is used for the interpretive layout.

Each sign side should contain:
- Water Trail logo
- Landing Name
- Direction
- Facilities
- Partner logos

**Placement:**
This sign should be placed adjacent to the landing, but out of the floodway where possible, and constructed so that staff will be able to efficiently remove it.

Scale: 1" = 1'-0"
Description:
The sign a is single or double sided graphic panel fabricated from high pressure laminate. Mounted on prefabricated aluminum poles and mounts offered by most manufacturers.

Because of constant changes in technology, materials and finishes, the final selection of sign options will need to be reexamined at the time of ordering.

Content:
This sign is designed to be an informational station. The sign content would have to be designed as needed. It is recommended that the NPS UniGuide system be used for the interpretive layout.

Each sign side should contain:
- Water Trail logo
- Landing Name
- Direction
- Facilities
- Partner logos

Placement:
This sign should be placed adjacent to the landing, but out of the floodway where possible, and constructed so that staff will be able to efficiently remove it.
**Description:**
The sign is single sided, fabricated from aluminum sheet mounted with adhesive vinyl.

Because of constant changes in technology, materials and finishes, the final selection of sign options will need to be reexamined at the time of ordering.

**Content:**
This sign is designed to give advance notice for automotive traffic traveling to the water trail access location.

Each sign should contain:
- Water Trail logo
- Landing Name
- Direction
- Facilities
- Partner logo and name
**Description:**
The sign is single sided, fabricated from aluminum sheet mounted with adhesive vinyl.

Because of constant changes in technology, materials and finishes, the final selection of sign options will need to be reexamined at the time of ordering.

**Content:**
This sign is designed to give advance notice for automotive traffic traveling to the water trail access location.

Each sign should contain:
- Water Trail logo
- Landing Name
- Direction
- Facilities
- Partner logo and name