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NATIONAL CAPITAL REGION WEB GUIDE TO NATURAL COMMUNITIES ONLINE INTERACTIVE MAP VIEWER

A cooperative effort of NatureServe and the National Park Service

October 26, 2009

1 REQUEST FOR PROPOSAL

NatureServe is requesting technical and cost proposals on behalf of the National Park Service (NPS), National Capital Region (NCR) for development of interactive mapping capabilities to coordinate and integrate with the online component of the NCR Field Guide to Natural Communities. Funding for this project may be incremental and based on receipt of funding from NPS. Successful respondents should anticipate that all products created, developed, and produced under this agreement will be provided to NPS through a Government Purpose License, which will grant NPS with a royalty-free right to use, disclose, reproduce, prepare derivative works, distribute copies to the public, and perform and display these materials publicly, in any manner, and for any purpose.

Respondents should submit PDF versions of their proposals by November 20, 2009, at 4:00 PM, Eastern Standard Time, to Kyle Copas at kyle_copas@natureserve.org, who will serve as the point of contact for any questions related to this solicitation. We will endeavor to respond to requests for additional information expeditiously, but any delay in providing such information will not be considered a reason for extending the submission deadline for proposals. All questions must be received via email by 5:00pm EST, November 11, 2009. Responses to all questions will be emailed to all respondents by November 16, 2009.

2 BACKGROUND

NatureServe, a non-profit conservation organization, is working with NPS to develop field guides to the natural communities of eleven [NCR national park units](#) (listed below). Collectively, these parks receive more than 20 million visitors each year. The field guides will include both printed and online components presenting written material, photographs, illustrations, and maps. The purpose of the field guides is to help NPS effectively manage the natural resources of NCR parks, improve the public's understanding of the importance of these resources, and enrich the experience of park visitors.

An important step in understanding natural resources and their management is to classify and map the natural communities – habitat types such as different kinds of forests or wetlands – found in the parks. For several years, NatureServe has [worked in partnership](#) with NPS to accomplish this. About 120 distinct natural communities have been classified in the context of the [U.S. National Vegetation Classification](#), a federally accepted standard. Detailed vegetation maps for each of the eleven parks will be completed in 2010.

The online content will rely heavily on content being prepared for the printed field guides: text, photos, illustrations and maps that describe the natural history of the park, detail the natural communities, and highlight the characteristic plants and animals, land use patterns, and natural resource management issues. This content is being developed in phases and will soon be available for Rock Creek Park. The online field guide will integrate these components into an interactive experience that enables users to access and view much of this information in the context of its geographic location. The goal is for users to access spatial and non-spatial information simultaneously and seamlessly through a variety of tools.

NatureServe is soliciting proposals from qualified parties to develop the Online Interactive Map Viewer that will be a major component of the National Capital Region Web Guide to the Natural Communities (“web guide”). The interactive map will initially serve detailed information for only one of the 11 parks; however, its design must accommodate the expansion of the site to include information from the remaining 10 parks as it is developed over the next several years. These parks range in size from approximately 54 ha to 8,094 ha and span an area of approximately 10,692 km² of the DC, MD, VA and WV region.

The following is a list of the parks that will ultimately be included in this web guide and their approximate sizes:

- Antietam National Battlefield (ANTI) – 1,214 hectares (3,000 acres)
- Catoctin Mountain Park (CATO) – 2,226 hectares (5,500 acres)
- Chesapeake and Ohio Canal National Historical Park (CHOH) – 8,094 hectares (20,000 acres)
- George Washington Memorial Parkway (GWMP) – 2,833 hectares (7,000 acres)
- Harpers Ferry National Historical Park (HAFE) – 1,821 hectares (4,500 acres)
- Manassas National Battlefield Park (MANA) – 2,023 hectares (5,000 acres)
- Monocacy National Battlefield (MONO) – 607 hectares (1,500 acres)
- National Capital Parks – East (NACE) – 4,249 hectares (10,500 acres)
- Prince William Forest Park (PRWI) – 5,059 hectares (12,500 acres)
- Rock Creek Park (ROCR) – 1,214 hectares (3,000 acres)
- Wolf Trap National Park for the Performing Arts (WOTR) – 54 hectares (134 acres)

2.1 Selection Criteria

NatureServe will select a contractor based on demonstrated experience, technical approach, and cost competitiveness. The respondent’s proposal must include the following components:

- 2.1.1. A list of past projects showing relevant experience for the required services and including detailed descriptions with interactive mapping examples and client reference information for two projects completed in the past three years.
- 2.1.2. Proposed technical approach addressing each significant element described below in *Section 3, Project Specifications*.
- 2.1.3. List of all products and interim milestones with a proposed delivery schedule for each.
- 2.1.4. Cost proposals that outline the respondent’s proposed process, phasing, or sequence of tasks and provide sufficient detail to facilitate the comparison of competing proposals.

- 2.1.5. Qualifications, relevant experience, and resumes of the interactive map viewer team and other key project staff.
- 2.1.6. Company history, size, overview, services, capabilities, contact information, references, and awards

2.2 Materials to be Supplied to the Contractor

NatureServe will provide the selected contractor with the following input data:

- 2.2.1. Website requirements
- 2.2.2. GIS data and attributes
- 2.2.3. Pre-publication version of the printed NPS NCR Field Guide to Natural Communities
- 2.2.4. Information architecture guidelines, including wireframes and UI specifications for the non-map viewer components of the web guide
- 2.2.5. API documentation describing functionality calls required by the map viewer to access those portions of the web guide developed by NatureServe developers

2.3 Offshore Labor

The proposal response must include a statement by the firm if any part of this project will be performed using offshore labor.

2.4 Assignment/Subcontract

The proposal response must include a statement by the firm if any part of this project will be subcontracted, assigned or transferred to another party. Resumes must be provided for all subcontracted personnel.

3 PROJECT SPECIFICATIONS

The successful contractor will deliver an interactive map viewer that integrates with other content on the NCR web guide to natural communities, enabling users to navigate and move easily between spatial and non-spatial content. The map viewer must meet the requirements described in Appendix A below, particularly those detailed in *Section 5, Dynamic Map and Data*.

The successful contractor will help guide NatureServe and the National Park Service in selecting the most appropriate mapping platform for the NCR web guide. This will include assisting us to finalize the list of vegetation, soils, geology, terrain, and other data layers available through the map viewer. The native formats for all existing map data are ESRI shapefiles, geodatabases, and coverages.

The map viewer, while initially focused on Rock Creek Park, must enable users to pan and zoom easily from one National Capital Region park to another and, eventually, to accommodate data for each of the parks that can be jointly queried and identified. To the extent possible, the design of the map viewer should be scalable to support the potential expansion and inclusion of data from other NPS regions and parks.

The successful contractor should anticipate working closely with NatureServe's staff developers to integrate the map viewer with other components of the site's back-end architecture, including a content management system (CMS). Respondents should be prepared to propose recommendations for map server hardware and software specifications and procedures for preparing, managing, and publishing map data to the map viewer. The integration between the site's map viewer and the CMS (to be determined) will be crucial in ensuring a seamless user experience. Notable points of intersection include:

- “User-friendly” metadata descriptions that allow users to understand what the available map layers represent. We envision that these descriptions will reside in the CMS even as they are accessible through the map viewer.
- Point data for selected content like photos and text descriptions, in addition to the map layers represented in the map viewer.
- The non-spatial content elements identified in the “content attribute table” referenced in Appendix A. This content may be delivered to the CMS from NatureServe’s existing data sources. The project team is currently testing – and hopes to validate – a conceptual structure for accessing and managing this externally derived content.

NatureServe will provide ongoing maintenance of the web guide, which will exist as an independent site rather than as part of the National Park Services’ .gov domain. NatureServe and NPS will soon commence work to develop a brand and visual identity for the web guide, which, upon its culmination, will inform and guide the final cartographic and user-interface design. The contractor should expect to participate in cross-platform testing and to transfer map viewer code, documentation, and knowledge to NatureServe necessary to maintain the site, so a constructive and pragmatic approach to collaborating with other developers is required.

4 SCHEDULE AND PROCESS

While (as mentioned above) funding for the NCR web guide may be incremental and contingent upon funding from NPS, we aspire to complete and launch a prototype focused on Rock Creek Park by June 2010. The contractor should provide a proposed delivery schedule that incorporates this assumption as part of the proposal response. In addition to regular monthly progress reports, the schedule should include key products and interim milestones.

5 PROPOSED DELIVERABLES

The following list illustrates current expectations about deliverables important to shaping the web guide’s ongoing maintenance and expansion. This draft inventory is open to evaluation and revision, and we encourage refinements and enhancements based on respondents’ past experience.

- Project plan describing process, methodology, and tasks
- Report assessing and recommending mapping technology platforms
- Preliminary wireframes, prototype interface and tool design samples
- Report describing risk assessment and quality assurance, which should outline target response times for common map-related operations (based on mutually agreed-upon scenarios for measuring what constitutes acceptable performance)
- Prototype map viewer application
- Final map viewer application
- Interactive map viewer code and documentation
- Technical integration plan detailing how the map viewer will be embedded within the web guide and its public API

NatureServe and NCR will review the products for quality and sufficiency to determine acceptance.

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NPS NCR Web Guide to Natural Communities – Technical Requirements, Version 2.52

ID	Requirement	Priority	LOE	Status	Details and Notes
1	General				<i>This section lists the site's general characteristics, content, and functionality.</i>
1.1	The site shall provide users with in-depth information for interpreting the vegetation and natural history of Rock Creek Park (ROCR).	Essential	n/a	Confirmed	
1.2	The site shall act as a prototype for expansion to include 10 other parks in the National Capital Region (NCR) and will be designed to be easily re-skinned for other NPS parks.	Essential	n/a	Confirmed	
1.3	The site shall rely heavily on content developed through the printed field guide prototype project for ROCR.	Essential	n/a	Confirmed	
1.4	The site shall provide introductory materials that define what a natural community is, who the site is for, and how to use the site.	Essential	n/a	Confirmed	<i>Include information about the individual maps layers, descriptive links to more technical information, brief overview information about specific trails, glossary, and information about methods used to classify and map vegetation.</i>
1.5	The site shall have its own unique URL domain (neither natureserve.org nor nps.gov), will be co-branded by NPS and NatureServe, and will provide links to NPS and NatureServe websites as appropriate.	Essential	n/a	Confirmed	<i>Include information about the NatureServe-NPS partnership, the project and its funding, and a short description of the NCR Web Guide to Natural Communities that can be used on other NPS websites to provide a link to the website.</i>
1.6	All content on the site shall be publicly available without registration or log-in restrictions.	Essential	Low	Confirmed	
1.7	Where practicable, the site shall not repeat information that is readily available at another NPS or NatureServe site and is not specific to vegetation in the particular park; references to such information will be linked, where feasible, to that other site.	Essential	n/a	Confirmed	<i>E.g., detailed information about historic landmarks in the park will not be presented here, but any references to such landmarks may include a link to the appropriate page on the park's individual website; or national distribution of a plant species will not be included here, but the plant may be linked to such information on NatureServe Explorer.</i>
1.8	The site shall address the needs of target audiences including NPS personnel (scientists, natural resource managers, executives, VIP coordinators, rangers and interpreters), researchers, students, and nature-focused park visitors.	Essential	n/a	Confirmed	

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1.9	To the extent possible, the site shall offer printer-friendly options for all content on the site.	High	Medium	Confirmed	<i>PDF of the printed guide may be made available as printed version, both in whole and (where relevant) in parts. Formatting requirements for custom map views, dynamic lists and descriptions of communities, species, et al., TBD.</i>
1.10	The site shall provide information about volunteer opportunities in the park, both through NPS' VIP (Volunteer In Parks) Coordinators and non-profit partners.	Medium	Low	Confirmed	<i>Channel users' good intentions toward groups that can fulfill and make use of them.</i>
2	User Experience				<i>This section identifies high-level characteristics of the user experience that will be further detailed and proved out in subsequent IA and Design deliverables.</i>
2.1	The user experience shall be visually compelling, versatile, and information rich.	Essential	n/a	Confirmed	<i>Usability testing to be conducted at TBD stages in the development process</i>
2.2	The site shall emphasize content that is reader-friendly and readily comprehended, providing top-level, basic information and progressively more detailed scientific material as available and as necessary.	Essential	n/a	Confirmed	
2.3	The user experience shall be cohesive and unified regardless of the site's back-end architecture.	Essential	Medium	Confirmed	<i>Usability testing to be conducted at TBD stages in the development process</i>
3	User Support				<i>This section identifies the aspects of the site intended to orient new users and provide support to all users.</i>
3.1	The site shall include FAQ (Frequently Asked Questions) to facilitate quick information retrieval for visitors and park staff.	Essential	Low	Confirmed	<i>Emphasize questions about this site (i.e., park vegetation), as contrasted with general information available at a given park's nps.gov site. Aspire to update and build out more extensively over time using actual user feedback.</i>
3.2	The site shall include a Contact Us mechanism.	Essential	Low	Confirmed	<i>Users need to be able to contact the administrators with feedback, errors, etc. No direct email addresses should be displayed on the site to avoid them being harvested for spam.</i>
3.3	The site shall provide a telephone contact number.	Low	Low	Confirmed	<i>Link to main NPS call number "for other questions about the park" as well as sensitive data.</i>
3.4	The site shall identify park-specific contacts for inquiries about access to sensitive data.	Low	Low	Confirmed	<i>Sensitive data includes specific locations or references to locations of plant and animal species of concern. Provide general park info email at nps.gov, which consistently routes current inquiries.</i>
3.5	The site shall provide online help, context-sensitive tips, and other instructional content.	Medium	Low-Medium	Confirmed	<i>Non-essential, but may be deemed required based on feedback from user testing. LOE can vary based on approach.</i>

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3.6	The site shall provide tutorials instructing users on the use of the site.	Medium	Medium	Confirmed	<i>Tutorials along the lines of "what can I do here?" -- customize your walk, print out a list of plant communities present in the park, find out what's blooming etc.</i>
4	Navigation				<i>This section identifies high-level characteristics of the user experience that will be further detailed and proved out in subsequent IA and Design deliverables.</i>
4.1	Navigation shall be intuitive and easy to use.	Essential	Low	Confirmed	
4.2	To the extent possible, the navigation shall indicate a user's current location within the site.	High	Low	Confirmed	
5	Dynamic Map and Data				<i>This section lists the functionality and dynamic content that shall be available via the interactive map component.</i>
5.1	Users shall be able to use the map viewer as a tool for navigating the parks.	Essential	Medium	Confirmed	<i>Site will support virtual navigation. Requirement is not intended to suggest anything approaching real-time GPS-enabled navigation.</i>
5.2	The map viewer shall provide standard navigation elements.	Essential	Medium	Confirmed	<i>pan, zoom in/out, identify feature, decimal lat-long coordinates, zoom to feature, zoom to selected (click-and-drag) extent, zoom to full extent, map</i>
5.3	The map viewer shall use a GIS platform capable of providing the desired interactive functionality.	Essential	Medium	Confirmed	<i>Platform TBD in partnership with online mapping consultant.</i>
5.4	The map viewer shall provide the ability to select from different base maps.	High	TBD	Confirmed	<i>Range of options to be considered include: street map, aerial/satellite, aerial/satellite with labels, relief, topographic.</i>
5.5	Changes to the map view will cause an automatic refresh.	High	Medium	Confirmed	
5.6	The map viewer shall be capable of displaying data layers in a scale-dependent manner.	Essential	Medium	Confirmed	<i>Enable the map viewer to "turn on" the display of coarser information at smaller scales (1:250,000) and finer information at larger scales (no larger than 1:6,000).</i>
5.7	Users shall be able to identify individual spatial features represented on the map viewer.	Essential	Medium	Confirmed	<i>Identify tool will provide high-level summary information (name, description, source, etc.) of individual points, lines, and polygons TBD during Phase II.</i>
5.8	The map viewer shall display a vegetation data layer to show the distribution of the park's plant communities individually or in groups.	Essential	Medium	Confirmed	<i>Alternate uses of this functionality and individual data fields may permit "customized" views (for users and/or administrators) to display subsets of data, i.e. semi-natural and successional plant communities.</i>
5.9	The map viewer shall link to comprehensive feature details for plant communities that occur in the parks.	Essential	Low	Confirmed	<i>These characteristics are being defined separately using the content attribute table. Users will be able to navigate from the map to retrieve associated text, photos, species lists, and other information dynamically.</i>
5.10	The map viewer shall provide locations of physical features and points of interest through individual layers.	Essential	Low	Confirmed	<i>Trails, roads, parking lots, restrooms, buildings, "other points of interest", non-natural open spaces, park boundary, etc.</i>

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5.11	The map viewer shall allow users to customize map views to show or hide spatial data layers.	Essential	Medium	Confirmed	<i>Final list of data layers – soils, geology, terrain, etc. – TBD shortly.</i>
5.12	The map viewer shall show NPS park locations and regional boundaries for the National Capitol Region.	High	Low	Confirmed	<i>Fix maximum extent of map viewer to NCR, even if additional parks only have a paragraph description.</i>
5.13	The map viewer shall enable users to select a trail, boundary, or road and display a selectable list of the plant communities that intersect it.	Essential	Medium	Confirmed	<i>May also include "trail segments" for individual parks, to the extent they are clearly identified and defined.</i>
5.14	Users shall be able to query and filter the map viewer for species and community information using searchable criteria in the content attribute table or map layer attributes.	High	Medium	Confirmed	<i>Content attributes – and those that are searchable – are currently being finalized. Should support filtering queries based on other variables outside the content attribute table, such as those defined in individual layers' metadata, like park or trail names.</i>
5.15	Users shall be able to query the map viewer to find an item of inquiry by name (plant community, plant species, habitat type).	High	Medium-High	Confirmed	<i>Enable text-search from pick list. Sort by habitat type. Making use of autofill text from options in the db is one technical option here.</i>
5.16	The map viewer shall provide geoprocessing tools that can measure and calculate spatial information.	High	Medium-High	Confirmed	<i>Measuring tools should be able to trace a trail to determine its length, snap a line to determine distance, and create a polygon and calculate the area. Expect NPS staff and non-GIS specialists to see this as a means toward a "GIS light", a user-friendly GIS.</i>
5.17	Users shall be able to draw a polygon on the map viewer and return a selectable list of items of inquiry (plant communities, specific species highlights).	High	Medium-High	Confirmed	<i>Draw a polygon and return a report of all inquiry items intersected by the polygon and the area occupied by each community.</i>
5.18	The map viewer shall display spatial data identifying threats to natural communities.	Medium	Medium	Confirmed	<i>Threats data already developed as part of printed guide and present as attributes of descriptions. However, it needs to be reorganized. Data layers might also be developed/acquired for individual threats like housing density projections or climate change.</i>
5.19	The map viewer shall display the location of the highest quality example of each plant community occurring along park trails.	Essential	Medium	Confirmed	
5.20	The map viewer shall show where and when natural or manmade disruptions have occurred when this information is available.	Medium	Medium	Confirmed	<i>Fire, hurricane, flood, vandalism, blowdowns, etc. Locations and dates of park intervention such as prescribed burns, pest treatment, thinning, etc. Data coverage is random because of its connection to natural and manmade disasters, but it remains potentially revealing or important as it relates to disaster response and internal processes for the park. May be left to the park to generate as and when the managers need the information.</i>

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5.21	Users shall be able to download images of their current map views.	High	Medium	Confirmed	<i>Licensing terms of any third-party data could have an impact on the LOE or cost involved with fulfilling this requirement. Datasets TBD during Task 3.</i>
6	Written Content				<i>This section identifies narratives/text contained on the site.</i>
6.1	The site shall include detailed information about each of the plant communities found in the parks.	Essential	Low	Confirmed	<i>Information should include characteristics including names, vegetation structure (forest, shrubland, etc.), species composition, environmental setting, dominant species, and acreage (where available). The content will be structured using the content attribute inventory. Pages for each natural community selected would display photos, drawings, text descriptions, links to "points of interest" such as the best places to see the community, and a map showing everywhere the community can be found.</i>
6.2	Users shall be able to search for specific plant communities by various fields (community name, species, habitat type, and keywords in the content attribute table).	Essential	Medium	Confirmed	
6.3	Users shall be able to select multiple plant communities and produce printable comparative reports based on their content attributes.	High	Medium	Confirmed	
6.4	The site shall provide a listing of all plant communities along each of the parks' trails or trail segments; where available, trail descriptions shall be provided as individual web pages.	High	Medium-High	Confirmed	<i>Trail segments need to be defined. May be extremely useful for mobile. More as search result. The printed guides do not have specific separate descriptions of each trail, so trail descriptions will need to be created on the fly (e.g., listing plant communities along a trail) or prepared in static format.</i>
6.5	The site shall highlight key information about selected plant communities and species, and the natural history of the park.	Medium	Low	Confirmed	<i>Draw from the information developed for the printed guide, noting that it's selective and not available for all plants. Highlights should include, where available: seasonal patterns and points of interest, interactions and co-dependencies between different species in a community, ecological processes affecting the parks' natural communities, and relationships between plant communities and animals that typically inhabit the community.</i>
6.6	The site shall indicate the status and rarity of each of the parks' plant communities.	High	Low	Confirmed	<i>Use global/state rank for each community as well as its status in the park, too, if possible.</i>
6.7	The site shall locate and describe high-quality examples of the parks' natural communities.	High	Low	Confirmed	<i>Draw from information developed for the printed guide.</i>

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6.8	The website shall allow a user to choose a species and see the communities with which it is associated.	High	Medium	Confirmed	<i>Information should be displayed as part of dynamic user-driven display of db-driven content attributes.</i>
6.9	The site shall provide descriptive information for selected plants in the parks; information shall be presented as individual web pages where feasible (without sacrificing usability).	Low	Low	Confirmed	<i>Draw from information developed for the printed guide and embedded in the community descriptions. Precise content TBD through content attribute table; should include common and interesting species visible from each of the park's trails, champion specimens, select hazardous plants, normal stages of succession, etc.</i>
6.10	The site shall highlight times of a park's non-plant community natural events.	Low	Low	Confirmed	<i>Draw from the printed guide's coverage of seasonal highlights, e.g., "look for migrating birds in spring and fall," butterfly hatching. Link to other sites (e.g., Audubon or Friends group) where possible.</i>
6.11	The site shall describe threats to each of the parks' plant communities.	Medium	Medium	Confirmed	<i>Build from content in the printed guide that describes the relative vulnerability of different communities to invasive exotic invasion, and information on the relative threat posed by various disease and pest organisms (e.g., a community dominated by ash would be threatened by the emerald ash borer). Add outside influences also. Topics might expand (over time) to include recreational development, drought, and climate change.</i>
6.12	The site shall list common invasive species found adjacent to trails and other areas frequented by park visitors, including descriptions of the common invasive plant species found in the parks.	Low	Medium	Confirmed	<i>Developed for field guide.</i>
6.13	The site shall describe each parks' semi-natural or successional plant communities.	Medium	Low	Confirmed	<i>Narrative from field guide. Descriptions should offer details on areas that appear to have been more recently disturbed, where the regrown forest is dominated by early successional species, etc. Add field to content attribute table?</i>
6.14	The site shall describe NPS's definition of the National Capital Region.	Essential	Low	Confirmed	<i>Rely on intro from the parallel park guides project.</i>
6.15	The site shall provide a generalized statement on NPS rules and regulations regarding interactions with plants and animals within the park.	Essential	Low	Confirmed	<i>A generalized statement has already been written for the printed guide.</i>
6.16	The site shall link to NPS pages that provide auxiliary information about the park, its rules, and related events.	Low	Low-Medium	Confirmed	<i>Include rules and regulations regarding interacting with plants and animals within the park, information on ongoing projects, current events, trail closings, and/or other "breaking news".</i>

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6.17	The site shall include a bibliography and list of sources for more in depth information	High	Low	Confirmed	
7	Visual and Multimedia Content				<i>This section identifies visual material contained on the site, including photos, static maps, charts, and multimedia.</i>
7.1	The site shall provide, whenever possible, images that are high quality in terms of their aesthetics and degree of detail.	High	Medium	Confirmed	<i>Images may include photos and drawings of plant communities and specific plant species. Note: plot photos are taken with documentation, not aesthetics, in mind; NatureServe staff have photographed communities at ROCR, but quality is variable. NCR has a photographer that could provide help. Local ethnobotanist has also photographed many species in ROCR (Flickr feed).</i>
7.2	The site shall provide, whenever possible, images in both high and low resolution.	High	High	Confirmed	<i>High resolution images may require different licensing--specifics as to access to and use of high-res images TBD.</i>
7.3	The site shall provide images of each community's dominant plant species.	High	Medium	Confirmed	<i>Some plant photos are publicly available, and some will need to be acquired.</i>
7.4	Users shall be able to search for photos of a specific plant community, species, habitat type, by name or any searchable criteria in the content attribute table.	High	High	Confirmed	
7.5	Users shall be able to search for photos of all plant communities occurring along a specific trail, trail segment, or road.	High	High	Confirmed	
7.6	The site shall provide photos of the most common invasives and hazardous plants found in the park.	Low	Medium	Confirmed	
7.7	The site shall provide pre-recorded podcasts for various trails or sections of trails.	Low	High	Confirmed	<i>Existing resources like "cell phone tours" (http://tinyurl.com/rocrCELL) focus on cultural resources.</i>
7.8	The site shall include static images, where available, that display the relationships between plant communities and the animals that typically inhabit them.	High	Medium	Confirmed	<i>Examples may derive from mapped data that is either not easily provided in the map viewer or not requiring interactive display.</i>

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8	Usability				<i>This section identifies any additional, specific usability-related requirements or guidelines for the site. They may represent mandatory requirements or recommended guidelines in cases where the project has less control over compliance.</i>
8.1	To the extent possible, the site shall incorporate accommodations for users requiring assistive technologies (accessibility).	Essential	Medium	Confirmed	<i>Regardless of whether the requirement is mandatory, the site should aspire to adhere to formal accessibility guidelines (e.g. Section 508 of the Federal Rehabilitation Act, W3C's WCAG, PAS 72, etc.), wherever feasible.</i>
9	Content Input and Maintenance				<i>This section details specific functionality related to the input and maintenance of content.</i>
9.1	The site shall maintain editorial content through the use of a content management system (CMS).	Essential	Medium	Confirmed	
9.2	The CMS shall be capable of drawing in new and updated community, species, and other data from existing data sources.	High	TBD	Confirmed	<i>Currently researching and testing the interoperability of CMS option(s) with existing data sources, with goal of maximizing the efficiency of updating community classification names and content attributes already maintained by NatureServe. Complete list of attributes maintained in CMS are TBD.</i>
9.3	The site shall enable an administrator to upload and update the map viewer's data layers.	Essential	Medium	Confirmed	<i>Admin is NatureServe staff under terms of site management requirement – <u>not</u> park administrators. Development process will need to document additional substantive detail about the timing and frequency of maintaining spatial data.</i>
9.4	The site content shall be reviewed and updated through a regular maintenance schedule.	Essential	Medium	Confirmed	<i>Frequency of content updates and additions tbd. Some sections (i.e., seasonal highlights) may require more frequent updates than others. Per terms of original agreement, outbound links shall be tested every four months.</i>
10	Web Analytics				<i>This section offers recommendations on tracking user data and site usage to support site refinement decisions and inform future design, development, and expansion phases.</i>
10.1	To the extent possible, a web analytics tool/platform shall be used to gather site usage data about all of the site's components.	Essential	Low	Confirmed	<i>The purpose of gathering usage data is to inform decisions about refinements to the site and to set priorities for the projected site additions and expansions.</i>