APPENDIX B

TECHNICAL INFORMATION ON TOURIST KIOSK SOFTWARE
Tourist Kiosk Software

Logically, the proposed system will consist of five functional modules that collaborate to provide the desired system functions: Data Acquisition, Data Storage, Data Distribution Service, Resource Reservation Service, and System Administration Service.

**Data Acquisition** - this function would be responsible for collecting information valuable to tourists, which includes:

- **General Resource Information.** Information about tourism-recreational resources (e.g., campgrounds) will be maintained and made available by tourism resource operators through various channels, including web sites. The system will maintain a synopsis of information provided concerning these various resources. It will be operationally difficult to maintain up-to-date information without a systematic and structured approach. Detailed analysis of the required information needs, the availability of data, and its expected utilization is necessary, resulting in a set of data structures or templates for capturing information of various resource types. It should also determine the methods for the initial data collection and scheduled data updates. It is expected that web interfaces would be provided for tourism resource operators to upload and manage resource information from various locations. The resource information shall be stored in the system’s centralized database.

- **Resource Availability.** Certain tourism/recreational resources, organized events, or services have limited service capacity - e.g., camp sites in a campground, parking spaces along a trail, positions in a guided tour, guest rooms in a hotel, and tables in a restaurant. It is essential that resource availability be captured and made available to the tourists. The system will employ primarily two methods to collect resource availability information.
  
  o At the point of entry to a capacity-limited resource, such as at the trailhead, tourists will be required to sign in at a Tier-3 kiosk. The tourists’ resource utilization data captured at the kiosk will be automatically transferred to the central database.
  
  o In many situations, resource utilization level cannot be captured automatically. Therefore, a web interface will be provided to allow manual entry and management of resource utilization information by system operators or authorized resource operators from various locations. This interface will also allow resource closure information to be entered.
  
  o When dealing with utilization levels, available capacity, etc. for private businesses, issues of confidentiality, proprietary marketing information, etc. comes into play. The pros and cons of full participation by certain businesses in this type of program, and limitations on the dissemination of information about those businesses, would have to be addressed.

- **Traffic Information** includes overall volumes and congestion levels (where relevant), traffic incidents and construction activities, and major special events that can affect local traffic conditions. The system would identify the sources of this information, and attempt to establish automated interfaces to these sources where possible. Additionally, the system would provide a web-based interface for operators to enter and manage traffic information, which would be geo-coded in the database.

- **Weather Information.** Weather in the Adirondacks can significantly impact tourists’ activities. The system will establish an automated interface (through the IEN or vender)
to the National Weather Service for area-wide weather information. Additionally, a web-based interface would be provided for system operators to enter and manage weather information.

**Data Storage.** A relational database management system such as Oracle, Sybase, SQLServer, or MySQL would be used to ensure data persistence, transaction integrity, data integrity, rollback capability and continual operations. The database will store both static and dynamic data about the tourism and recreational resources and events, configuration data for kiosks, and user accounts for resource operators and system operators. The database would also support needed GIS operations, and support web server operations. Data archiving service would be developed to ensure smooth system recovery in case of major system failures.

**Data Distribution Service** would involve the distribution of tourism/recreational information to tourists in a user-friendly and efficient manner. It will be primarily web-based so that information and services can be easily accessed. Additionally, it will also reduce the cost of maintaining software on the kiosks installed remotely in a large geographic area.

The user interface design should allow users easy and efficient navigation to find their needed information. Two primary site navigation methods are expected to be provided:

- **Menu based,** which should allow user to plan their schedule using various criteria, such as type of recreational activity, general location, type of events, and type of service.
- **Map based,** which could provide the user an integrated and real-time view of the tourism/recreational related information for the area selected by users. The map would be designed with multiple layers such as basic layer, hiking trail layer, skiing resort layer, and traffic layer. A user interested in finding a hiking trail can have only the basic and hiking trail layers turned on; this map will show not only spatial information of the trails in the selected region, but also show the real-time trailhead availability. Clicking on the trailhead will bring up a detailed map of the trailhead and a hyperlink to trailhead reservation.

While initially the points of data distribution will be the kiosks, the system can be readily expanded to allow access to users from their own computers over the Internet. With additional effort, it is also possible to support hand-held devices. In connection with establishing a kiosk-based information system, the issue of ADA compliance also needs to be considered.

**Resource Reservation Service** allows user to make a reservation for certain resources. Links to reservation will be made available in various Data Distribution Service screens where applicable. Clicking on these links will bring up reservation pages.

Further analysis of payment operation is needed in order to further discuss. Factors that need to be determined include:

- Payment methods allowed,
- How to handle cancellation,
- How to handle refund, and
- Accounting requirements.

**System Administration Service** will be basically a collection of commercial-off-the-shelf (COTS) and already-developed tools for supporting system-wide monitoring, configuration, and trouble shooting, allowing, for example:

- kiosks to automatically report usage,
• administrators to remotely access the kiosks to perform log checking, software upgrade, and system configuration,
• overall network management, and
• system user account management.

Figure 1 is a high-level illustration of the system.

If access to the system were provided through a non-secured web interface, a secured protocol and firewall would be needed.
# Kiosk Configuration Considerations

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<th>Factor</th>
<th>Consideration</th>
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| **Overall**             | 1. Where installation is outdoors or in an uncontrolled climate, all kiosk components need to be weatherproof. Materials used for the kiosk construction shall be durable for intended rugged and harsh environments. All connections, openings, doors, panels shall be built with watertight gaskets, latches, and fittings. All electronic components need to be shock-mounted.  
2. All kiosk surface and components accessible to users shall be durable and suitable for heavy use.  
3. Mean-time-between-failure (MTBF) shall be considered in selecting any kiosk component in order to minimize maintenance cost. |
| **Enclosure**           | 1. Where the installation will be outdoors or in an uncontrolled climate, the enclosure needs to be weatherproof.  
2. The enclosure shall allow the kiosk to be securely mounted in a freestanding manner.  
3. Aesthetically, the enclosure shall be compatible with its surroundings. |
| **Display Monitor**     | 1. Touch screen should be required.  
2. Both CRT and LCD touch screens are available. Because of its small footprint and low energy consumption and heat generation; LCD screen is preferred.  
3. Three technologies for touch screens are available: capacitive, resistive, and surface acoustic wave (SAW). Both capacitive and resistive screens rely on overlays, tiny sensors on the screen for touch detection, and require periodic recalibration. There are reports that the SAW based screens provide better image quality, and are drift-free.  
4. The monitor shall be compatible with ambient light conditions, such as direct sunlight. It is desirable to have an auto-dimming feature. |
| **Keyboard**            | 1. Keyboard and pointing device may not be essential in the intended operations, but do provide additional convenience. Whether to include keyboard and pointing device should be primarily a cost consideration.  
2. If no keyboard and pointing device will be included in the kiosk configuration, a software popup keyboard should be provided, and the user interface software should be designed to minimize user typing. |
| **Pointing device**     | 1. Keyboard and pointing device may not be essential in the intended operations, but do provide additional convenience. Whether to include keyboard and pointing device should be primarily a cost consideration.  
2. If no keyboard and pointing device will be included in the kiosk configuration, a software popup keyboard should be provided, and the user interface software should be designed to minimize user typing. |
| **Printer**             | 1. There are a few situations where printing can enhance the quality of service to the users. The first is the printing of |
## Kiosk Configuration Considerations

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<tr>
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<td>reservation confirmation or tickets. The second is the printing of some informational material, such as driving directions or a detailed map. Whether to include printing capability should be primarily a cost consideration.</td>
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<td>2. If a printer is to be included, a thermal printer is recommended due primarily to its low maintenance.</td>
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<td>3. Other printer parameters such as printout size and speed should all be determined based on further cost and need analysis.</td>
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<tr>
<td>Payment Module</td>
<td>1. If payment is involved in the kiosk utilization, proper payment module should be included.</td>
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<td>2. Payment module should be selected based on allowed pay methods, such as E-ZPass, credit card, coins, and paper bills.</td>
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<td>Camera</td>
<td>1. A camera included in the kiosk can allow remote monitoring of the kiosk site.</td>
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<td>2. Whether to include a camera should be primarily a cost consideration, the decision can be site specific. Additionally, the bandwidth availability for transmitting video streams or periodic snapshots should also be considered.</td>
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Figure 1 - Conceptual System Block Diagram
Tourist Kiosk System

Data Collection
- External Interface Processes
- Web Interfaces for Resource Operators
- Tier-3 Kiosks

Data Storage
- Relational Database Management System

Data Distribution Service
- Kiosks
- User’s Own Computing Devices

Resource Reservation Service
- Kiosks
- User’s Own Computing Devices

System Administration Service