PA-SHARE

PA's State Historic & Archaeological Resource Exchange

Description

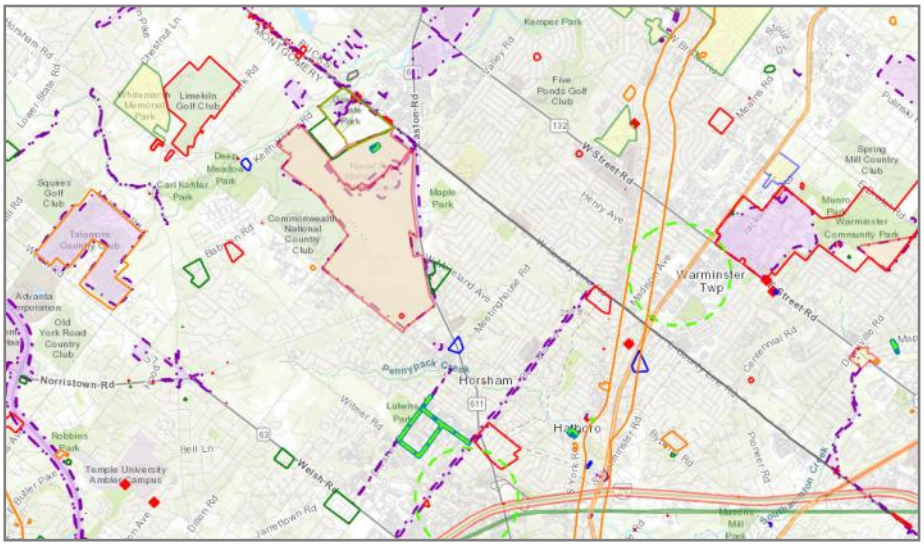
An integrated on-line database management system and spatially enabled application with GIS technology that is the primary interface for all program areas within the SHPO. PA-SHARE replaces antiquated data reporting and tracking systems like CRGIS, the legacy Cultural Resources GIS system developed in the early 2000s, several independent Access databases, and various Excel spreadsheets.

PA-SHARE's online submission and workflow functionality allow SHPO customers to submit projects online, check a project's status, receive updates, and communicate with SHPO staff members. These features increase efficiency, provide customers with better communication, and reduce the amount of time needed to make submissions and to receive approvals.

GIS Technology

PA-SHARE is based on the Esri ArcGIS platform: Esri client-side JavaScript API (JS API) is used for all map display and client-side geospatial functionality and ArcGIS Enterprise (including Portal for ArcGIS) provides the spatial server tier.

ArcGIS Enterprise provides all geospatial processing and geographic data services to retrieve spatial data stored in an Esri enterprise Geodatabase within the centralized relational database. Additional geographic data and services such as Esri basemaps, Bing Maps, Google Street View, PASDA, and others are consumed from external servers via REST endpoints directly to the client application.



https://share.phmc.pa.gov/pashare/landing

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Design Architecture

A client-side web application based on HTML5 and JavaScript leverages a middle tier of web services to retrieve data from an SQL server database which provides data back to the client as JSON. In addition to providing all interaction with the central database, the web services tier also provides required server-side application logic, processing and security via the HTTPS protocol.

External Services & Components

PA-SHARE utilizes these external services and components:

- Keystone Identity Portal
- ArcGIS Online Services
- Bing Maps and Google Street View
- Pennsylvania Data Access (PASDA) GIS Layers
- SHPO ArcGIS Online
- Payeezy Subscription Server
- Active Directory Server
- PennDOT/ProjectPath

Hosting Environment

Customers can access PA-SHARE with a web browser using data which originates from a single end user facing production web/application server. The server leverages a centralized spatial server based on ArcGIS Enterprise and consumes data from a Windows SQL database server. There is also a companion staging environment used for pre-production development and testing purposes.

Web/Application Server

The web/application server is a Windows based server which uses Microsoft IIS as the web server software and ArcGIS Web Adaptor. This server serves as both as the front-end web server handling all incoming HTTPS requests from end users and as a middle tier application server to provide web services to the client application. When end users access the application, the web server handles all incoming HTTPS requests and serves the required HTML and JavaScript files required for the application.

Spatial Server

The spatial server is a Windows Server using Microsoft IIS as the web server, and is configured with both ArcGIS Enterprise and Portal for ArcGIS. This machine hosts a series of spatial services (map, geocoding and geoprocessing) for consumption by the PA-SHARE application running in the client browser. For all spatial services, the client requests the service by calling a REST endpoint on the web/application server, which is forwarded to the spatial server by the ArcGIS Web Adaptor. A high-speed gigabit network provides connectivity to all other servers.

Centralized Data Server

The data server is a Windows SQL Server with a centralized database that uses a relational database management system (RDBMS) and serves up both spatial and tabular (non-spatial) data. The components of this system include the core database, an ArcGIS relational data store, ArcGIS Enterprise Basic and an Esri enterprise geodatabase containing a series of required geographic data sets.