Introduction
Public gardens manage a massive amount of internal infrastructure making them functionally similar to small cities. These gardens manage massive amounts of information, such as the locations of valves and pipes, water consumption records, and maintenance logs. All of this information can easily get lost and disconnected. GIS is a powerful tool to centralize all the data for oversight and management of irrigation.

The Huntington Library is a public garden located in San Marino, California. Due to the drought in The Library has been working hard to reduce the water consumption of its gardens. One of the struggles The Huntington Library runs into is managing the information of a growing and changing irrigation system, and at times the locations of valves can become lost.

Management App
The management application was configured in Esri Developer Web App Builder. This application focuses on bringing all the user’s features together into a single map for easy viewing. Editing tools are also present in this application. This application displays all the data on the valves and pipes on a base map. This allows the garden management to easily see where valves are, to get details on those valves, and to view maintenance logs for those valves.

Water Consumption App
Water consumption is an important element when dealing with an irrigation system. An application was developed using JavaScript to visualize water consumption data and maintenance logs using lines and bar charts. A user is able to select a garden on the map, or select the garden name from a drop-down menu, to display a line graph showing the water consumption of the garden per year. Selecting a year will display a bar chart showing the consumption per month for that year. This application also allows addition of new records to the related tables or modification of existing records.

Damage Report App
A third component was a mobile reporting application that allows gardeners and the public to make notes of leaks and damage to the system they see while out in the gardens. This application uses a geolocation tool to help users find where they are, so that even if they struggle to place landmarks with their locations, they can easily use their GPS to position themselves. When a point is recorded the application uses domains to assist the user when collecting attributes of the damage such as the severity of the damage. This allows easy filtering to find higher priority reports. The application also collects the date and time of the report. A user also has the option to place their name on the report, so that the management can identify which gardener reported the issue for follow-up.

Managing Irrigation at The Huntington Library Using GIS
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