Sunnyvale's GIS Investment, Building Asset Inventory, and Field Verification

The City of Sunnyvale continues to expand its geographic information system (GIS) capabilities and in doing so, it continues to improve the health of its community. Case in point is the City's recent investment in its governance structure, infrastructure, and maps.

In late 2016, the City established a formal information technology (IT) governance structure with leadership and steering committees comprised of representatives from each of Sunnyvale's individual departments. Once formed, the committees identified, consolidated, and prioritized a variety of GIS projects and through a collaborative process, they determined that the City's GIS infrastructure needed to be updated first and foremost.

Within months of forming its governance structure, Sunnyvale chose to update its core GIS system, ArcGIS, from version 10.4 to 10.5. This was a significant project affecting all GIS users within the City. It also required physical updates to servers supporting the 23 primary GIS applications in use throughout the City and 22 non-GIS backup applications. These updates provided for a more robust system with great integration and improved support for mobile devices.

Once its infrastructure was updated, the City began updating its GIS maps. The first of these was the Sunnyvale Building Layer Map and this was chosen because of the City's need to inventory all building assets within its jurisdiction. While the Building Layer Map contained building footprints and heights, it lacked a meaningful system for identifying structures and tracking assets. To resolve this, Sunnyvale used existing aerial photos to validate and update the map's accuracy. It then incorporated assessor parcel number (APN) information and multiple APNs for multifamily dwellings such as apartment complexes and townhomes. Next, the City classified structures by use and size (e.g. main dwelling, accessory unit, etc.) and it also identifying areas devoted to parking. Finally, field personnel were tasked with verifying and updating the information on the Building Layer Map via their mobile devices and the Mobile ESRI Collector application. This includes fire prevention data that is uploaded to the map by field personnel such as the City's fire marshals and building inspectors. This has resulted in an extremely accurate and detailed Building Layer Map for all to use (*please reference the adjoining document for further details about this process*).

Sunnyvale now capitalizes on its expanded GIS capabilities and nowhere is this more evident than in the area of emergency preparedness. For instance, members of its Department of Public Safety and Department of Public Works can now access critical data from the field and make viewable updates in real-time. This includes spatial and resource maps that are essential for mitigating, managing, and recovering from major events such as natural disasters and industrial accidents. In addition to improved access and improved resources, enabling staff to do more in the field improves their overall efficiency and lowers overall costs for the City.

While the City has been successful with improving its GIS capabilities and the overall health of its community, this is only the beginning. Sunnyvale is now poised to realize the full potential of its new GIS capabilities and to fully support future systems as they come online.