

Los Altos Hills County Fire District: Pre Fire Planning and GIS Feasibility Study

Project Goals:

- a) Inventory existing GIS, paper based, and other spatial data related to fire risk, evacuations, assets at risk, temporary refuge areas, and pre-fire suppression planning
- b) Organize all information gathered in “a” above into a single, online, ERSI based GIS system
- c) From this dataset, identify outstanding needs for pre-fire planning, fire risk assessment, and potential mitigations, including fuel treatments
- d) Develop a feasibility study, including describing software (i.e. Arc GIS) needed for the LAHCFD to manage and update this data in the future.

Proposed Project Tasks:

Task 1: Inventory existing GIS, paper based, and other spatial data related to fire risk, evacuations, assets at risk, temporary refuge areas, and pre-fire suppression planning

Existing spatial data relevant to pre-fire planning, infrastructure, evacuations, and fuel treatments will be inventoried and aggregated into single Geographic Information System (GIS) geodatabase. Spatial data will be obtained from sources such as existing CWPPs, CALFIRE Hazard Severity Maps and other state level data, known or planned fuel reduction projects, available infrastructure (roads, utilities, water storage tanks, and hydrants), and structure locations.

Prefire planning data could include, but are not limited to,

- Primary and secondary routes of egress
- Fuel treatments (mechanical) that are recommended along these routes
- Location of current and potential temporary refuge areas (TRAs) and ownership
- Use of the LAH trail network as possible evacuation routes for foot travel

Hard copy data and maps will be reviewed in collaboration with staff from LAHFPD. Information deemed useful will be scanned, digitized, and added to the geo-database.

Task 2: Organize all information gathered in Task 1 above into a single, online, ERSI based GIS system

Spatial information gathered would be placed into a GIS. The GIS may either be an in-house system managed by District staff or through a Portal for ArcGIS account managed by SIG but accessible by District Staff.

SIG would use Portal for ArcGIS to provide a web map interface for District Staff to interact, display, and print their data. The Portal could display data from either an in-house GIS or a SIG managed GIS. Web maps are customized to display data tailored to a specific plan or task. Web maps can be made visible for select staff, visible to responsible fire agencies or the public.

Task 3: Identify and collect data to resolve outstanding needs for pre-fire planning, fire risk assessment, and potential mitigations, including fuel treatments

The outstanding information needed to build out complete pre-fire plans shall be assessed and described. In general, Pre-Fire Plans will include the information below

Each Wildland Fire Pre-Plan can include the following elements (see example map on last page):

Pre-Fire Management Planning: Identifies the purpose of the map and plan, which is primarily focused on public safety and swift response to wildland fire.

Roads and Trails: Identifies the roads and trails that can be accessed by firefighters and the type of fire engine that can best access the designated road or trail

Other Resources for Firefighters

- **Water Sources:** Identifies other resources available, including water sources such as tanks, ponds, and pipelines and their capacities.
- **Potential Staging Areas:** Identifies areas where staging can occur
- **Potential firelines:** Areas where dozer line or handline may be constructed
- **Landing Zones:** "Identifies potential helicopter landing zones and the type of helicopter that the zone can accommodate
- **Ponds:** Identifies ponds that may have special status species that should be avoided, if possible, and surrounding areas for avoidance.

- **Streams:** identifies streams that support listed species, such as amphibians or fish and should be avoided
- **Protected Habitat:** Identifies if any areas have sensitive habitat or habitat that supports a special status species that should be avoided, if possible.
- **Maintenance of Fire Plan:** Describes the plan review process, who will be responsible for maintaining the plan, and where a copy of the plan will be kept.

LAHFPD and SIG Staff could use Collector for ArcGIS to efficiently map additional features in the field using a tablet or smartphone. This can include updates to the District road system, emergency access points, fire-fighting emergency fuel breaks and facilities as well as fire hazards, fire and fuel management practices, and potential Temporary Refuge Areas. Collector allows seamless integration of mapped data into a GIS. This minimizes costs and eliminates transcription errors. As data from Collector is synced and validated in the GIS it becomes instantly visible on Portal web maps. A dynamic web map allows District staff to make the best management decisions. It also enables efficient emergency response procedure planning and fire management planning.

Task 4: Develop a feasibility study, including describing software (i.e. ArcGIS) needed for the LAHFPD to manage and update their data in the future.

A feasibility study which outlines how the geospatial data needed to support pre-fire planning, fuels reduction, and other activities will be prepared. The feasibility study will include the following information

- Analysis of LAHCFD GIS requirements
- The specific software (installed and or online) needed for the system
- The specific trainings (ESRI Certifications or experience) needed to operate the system
- An estimate of training time needed to train a new manager and users of the system

Deliverables:

- Relevant geospatial data organized into a single Geodatabase and made available to LAHFPD Staff via an Arc-Portal Site
- An evaluation of outstanding needs for pre-fire planning, fire risk assessment, and potential mitigations, including fuel treatments
- Collect data to support pre-fire and emergency planning
- A feasibility study, including describing software (i.e. ArcGIS) needed for the LAHFPD to manage and update their data in the future.

Example Pre Fire Planning Map:

Rancho San Antonio

Legend


Target Hazards

-  Assisted Living Facility
-  Hospital
-  Community Center
-  School
-  Mobile Home Park

Critical Infrastructure

-  Communication
-  Evacuation Center
-  Fire Station
-  ICP
-  Medivac Site
-  Shelter-in-Place
-  Water Collection Point
-  Water Tank

Fire Management Logistics

-  Helicopter LZ
-  Lookout
-  Safety Zone
-  Staging Area
-  Primary Evacuation Route
-  Secondary Evacuation Route
-  Structure Type 1 (Tender)
-  Road or Trail
-  Non-LAHFPD Treatments
-  CWPP Priority Areas
-  MROSD Preserve Boundary

