

Geographic Information Systems

Geographical Information Systems (GIS) are used to display and analyze any type of spatially referenced information. GIS has applications in practically every walk of life including health care, law enforcement and crime prevention, disaster mitigation planning and management, financial analysis, wildlife management and conservation, and many other disciplines.

GIS Applications: Government Agencies

The following are typical applications of GIS performed by Willdan to support the activities of government agencies:

Planning/Community Development

Zoning maps

General Plan Land Use maps

Development Opportunities maps

- Floodplains
- Blue line streams
- Faulting zones
- Multiple Species Habitat Criteria Cells
- Protected Species Habitat
- Wildfire Hazard Areas

Housing Inventory/Blight Analysis

Inventory of vacant parcels

Permit Tracking

Code Compliance

Environmental Impact Reporting

Environmental Remediation

- Contaminated soils
- Aquifer contamination plumes

Homeowners Associations maps

Transportation Oriented Development (TOD) planning

Public Works

Sanitary sewer system

- Sewer system inventory and modeling
- Sanitary Sewer Master Plans
- Sanitary Sewer Management Plans

- Sanitary Sewer Overflow (SSO) mitigation and mapping
- Manhole survey & condition assessment
- New sewer system and sewer system extension feasibility studies
- Sewer district connection reporting
- CIP program management
- CCTV inspection program management
 - Link CCTV inspection reports and videos to pipe features in sewer GIS map
 - Track inspection program progress

Onsite Wastewater Treatment System (septic system) inventory

- Calculation of height above groundwater table
- Calculation of distance to nearest watercourse

Storm Drain Systems

- Storm drain inventory
- Basin delineations and hydrology calculations
- Storm drain main lines hydraulic modeling
- Local flooding/street ponding locations
- Storm Drain Master Plans
- Percent impervious calculations
- Catch basin retrofit program maps
- CCTV inspection program management
- Link CCTV inspection reports and videos to pipe features in storm drain GIS map
- CIP program management
- Flood plain analysis and management

Potable Water

- Water distribution system inventory and hydraulic modeling
- Water line locating

Recycled/Reclaimed water distribution system inventory and hydraulic modeling

Street lighting inventory and LED fixture conversion

Parks and Landscaping

- Irrigation system inventory
- Landscaping inventory and maintenance zones
- Trail maps
- Park and trail lighting
- Park facilities inventory
 - Benches
 - Picnic tables
 - Lighting
 - Rest rooms



- Playground and sports equipment
- Trash cans
- Dog waste bag dispensers

Pavement Management

- Pavement Condition Index maps
- Structural Index maps
- Major Maintenance Strategy maps
- Slurry Seal and Crackfill maps
- Construction History maps
- Annual CIP Project Locations and Costs analysis

Sidewalks

- Trip hazard survey
- ADA ramp inventory

Traffic Engineering

- Traffic Control Devices Inventory
- Street sign inventory
- Curb & Striping Inventory
- Parking inventory and parking restriction maps
- Crash analysis

Transportation Planning

- Bus Route Studies
- Traffic Impact Analysis (TIA)

Roadway Construction

- Right-of-way encroachment analysis
- Right-of-way acquisition
- Parcel base maps
 - Export to CAD
- Property owner notification
- Demolition Plans

Vehicle routing

- Street sweeping
- Trash collection
- Snowplows & sanding trucks
- Meter reading

Public Safety

- Local Hazard Mitigation Plans
- Fire hydrant maps
- Evacuation route maps



- Tsunami inundation zone maps
- Earthquake fault maps
- Liquefaction and landslide hazard maps
- Wildfire hazard areas
- Wildfire containment progress maps
- Emergency Response Planning
 - Points of Dispensing (POD): Vaccines
 - Points of Dispensing: Commodities (e.g. bottled water, ice, food, sandbags)

Land Subdivision

NPDES Illicit Connection/Illicit Discharge Reporting

GASB 34 Asset Inventory

Assessment District Formation

- Proposed Improvements map
- Assessment District Boundary map
- Assessment District Diagram
- Benefit calculations

Maintenance District Mapping

School District Attendance Zones maps

Street Address Assignment Systems

Parking meter inventory

Utility cabinet inventory and permitting

Electrical Utility Undergrounding

GIS Services offered by Willdan

- Data analysis and mapping
- Field data collection using mobile GIS and GPS
- GIS/CAD Interoperability
- On-call GIS Consulting and Technical Support
- GIS Staffing
- GIS Needs Analysis
- GIS Software purchasing assistance
- GIS software, installation, configuration and maintenance
- GIS Training

