COUNTY OF SAN MATEO
INFORMATION SERVICES DEPARTMENT

ISD
Information Services Department

DATE: July 24, 2001
HEARING DATE: August 7, 2001

TO: Honorable Board of Supervisors

FROM: Luther Perry, Director Information Services

SUBJECT: Draft Status Report on Geographic Information System (GIS)

RECOMMENDATION
Approve status report from the Information Services Department (ISD) regarding the County's Geographic Information System (GIS).

Your Board at your 2001 Budget Hearings directed Information Services to provide a status report on the County's Geographic Information System (GIS), including a summary of those aspects of the system that are completed and the plan for additional departments to be included.

The GIS implementation is generally on schedule and within budget. Census 2000 maps and data were added to Phase I in May 2001. Although some task sequencing for Phase I had to be adjusted, the Phase I completion date is unchanged.

Background

Your Board approved a plan for a Countywide GIS at your 1998 June Budget Hearings. The 1998 report and plan included the results of meetings with each County department and the major divisions of the large departments. The plan was separated into two major phases, the base system and expansion to departments. The base system is expected to be completed in the 3rd quarter of 2001-02; this memo summarizes the current status and provides examples of initial uses. Limited expansion to the Planning Department can begin in the 2nd quarter, with wider use by other departments late in the 3rd quarter.

Discussion

The base system included the following items:

♦ the parcel base (consisting of several "layers")
♦ GIS software for maintaining and using data
♦ a GIS server, together with interconnections to certain other servers
♦ a Web accessibility feature

- ◆ election precincts
- ◆ census counting areas and Census 2000 data
- ◆ supervisorial districts
- ◆ jurisdictions (e.g. cities, schools, fire)
- ◆ aerial photos with parcels and streets
- ◆ street center lines, rail lines, easements
- ◆ landmarks and principal buildings
- ◆ streams and lakes
- ◆ various land survey foundation data

The most important distinguishing characteristic of the County's GIS is inclusion of the entire property parcel base of the County, some 225,000 separate parcels. This is by far the most expensive and difficult part of a local government GIS and took some three years to complete.

The parcels and other base elements include the entire County, not just the unincorporated area. The data are contained in separate "layers" (or groups of related layers) which are "registered" with each other County wide so they can be "overlayed" accurately. This means, for example, that data of multiple types and be accurately obtained for an individual parcel or study area.

The base system was approved for implementation in 1998 and has been funded from multiple sources including the Assessor (funds), Planning (funds), Public Works (funds and project management) and ISD (technical support). The GIS would not have been possible without the impressive dedication and ongoing support of these departments.

A current use is calculating the Census 2000 population of election precincts by overlaying precincts on census blocks. Partial overlaying of the Census street file provides major streets for user orientation. A better understanding of specific areas of interest is provided by a property parcel "background" similar to a word processing "watermark".

The attached report gives the current status of each data layer of the base system.
It also includes the future functionality for each department as included in the initial Report.

Expansion to Departments

Departments will be able to begin some use of the system later this fiscal quarter. Initial use will be restricted to the base system data layers. Examples may include:

- ◆ calculating the population and other demographics of a jurisdiction or study area
- ◆ producing a list of parcels in a study area.
- ◆ a "mail merge" address list for sending notices to property owners with a certain distance of a property parcel
- ◆ "pin maps" of occurrences such as regulatory violations, diseases or crimes

Most departments will need to add data layers of their own to make the best use of GIS. The system will be ready to accept Planning Department data in the 2nd quarter. Data from other departments can be introduced starting late in the 3rd quarter.

Use of the system requires adding GIS software to PC's in any office using the system. Each

department is responsible for entering and maintaining their own data. Failure to maintain the data may result in having it removed from the system. Specific staff members must be designated to perform the maintenance functions and they will require high-end PC's.

Many routine GIS uses can be done from most County PC's with low-end GIS software. The expansion plan will include ....r... :..:.. ... .

Governance

The GIS system has been developed by and will be governed by the GIS Steering Committee. The Steering Committee is responsible for strategic and policy issues. A major current issue, for example, concerns the terms and conditions of making GIS access and products widely available; for example issues of fees, copyright, liability and work load.

The present participating members are the Assessor, County Counsel (as needed), County Manager, ISD, Planning, and Public Works. Any other department may join the Steering Committee simply by attending on a regular basis. Meetings are quarterly.

Operation of the GIS system is in the hands of the GIS Management Committee which meets weekly. They address technical an operational issues, including coordination between departments and sequencing of new developments. The members include Assessor, ISD, Planning, and Public Works.

Fiscal Impact

Each department will have responsibility for funding the initial entry and ongoing maintenance of their own data. Departments must agree to allow others to use the data as part of the system (except where confidential data is involved). The system does have the capability for protecting confidential data.

Each department will have to fund any new PC's or PC upgrades that may be needed, as well as specialized GIS software. The number of such items is expected to be small. Most staff will use the basic intranet access facility with basic PC's and intranet software.

The GIS system itself will be supported by ISD \. ' - ...-.. . .... -.. .... ISD work authorizations. The cost sharing model is still in review by the GIS Steering Committee, but costs for basic use are expected to be low. Sophisticated applications and very heavy GIS usage will probably bear most of the costs.

STATUS OF GIS PROJECT
as of July 2001

Items Accomplished:

- Software and hardware selected and installed.

- Map Layers installed:
  The following map layers have been installed and aligned with each other. Data
  related to the layers have been loaded into the database.
  - Parcels – Contains the location / shape of each parcel with the APN number.
  - Orothophotos – Contains Pictures of the county obtained via fly overs by planes.
  - Census blocks and tracks – Contains location / shape of each block and track
    with 300 attributes of population.
  - Supervisorial Districts - Contains the location / shape of each district along with
    its number.
  - Precincts – Contains the location / shape of each precincts with its number.

- Functionality
  - Ability to view all of the above layers,
  - Ability to format and print maps showing the above layers and the associated data
    and combinations of data from the all of the layers.
  - Ability to update the above layers

- User Departments Trained:
  - Assessor
  - Public Works
  - ISD

Items in Process and Funded:

- Map Layers (To be completed at interim times between now and the end of the end of the year)

  - Jurisdictions –Will contain 20 to 30 various jurisdictions such as fire, sewer, and cities.
  - Street Center lines - Will contain the location / shape and street names with other attributes.
  - Contours and spot elevations
  - Lakes and Streams
  - Railroad right of way
  - Easements
  - Principal Buildings
  - Landmarks
  - Sub Division Track and Plots
  - Corner Record
  - LLS (Record of Survey)

- Functionality
  - Ability to send out notifications to all property owners with in a provided area of a specific parcel. (To be completed with in the next month)
  - Linkage between planning departments Permit*Plan system and the GIS system.

- User Departments planned to be Trained
  - Planning

<u>Items Included in the Original Plan But not Funded or Scheduled by Department</u>
Only Functionality is listed. Refer to the June 10 1998 ∴ ⋅ : ⁚ plan for other attributes such as layers and associated data to support the functionality

- Planning Department:
  - Functionality
    - Address assignment
    - Airport planning
    - Maintenance of zoning maps
    - Maintenance of general plan
    - Environmental impact reports

- EPS Dispatch Services
  - Functionality
    - GIS map based dispatch
    - Pin maps
    - Maintain consistent fire run book maps
    - Evacuation routing and notification
    - Cost recovery analysis

- Agricultural commission
  - Functionality
    - Habitats for endangered species
    - Bio control agents
    - Host sites for traps
    - Pesticide permits
    - Med fly (and other insects) location pin map

- Environmental Health
  - Functionality
    - Response to citizen complaints
    - Septic tank inventory
    - Underground tank Inventory
    - Groundwater well permits
    - Hazardous materials location
    - Notification for evacuation
    - Illicit discharge monitoring
    - Lead poisoning response
    - Mosquito tracking for abatement
    - Collect HazMat license data

- Health Services
  - Functionality
    - Emergency medical incidents pin maps
    - Heath services locator
    - Outbreak of communicable disease tracking
    - Analysis ambulance response time
    - Planning location of new service centers
    - Locate available care housing facilities
    - Identify transportation and access services

- Human Services
  - Functionality
    - Communication information project (location of Services)
    - Fraud prevention
    - Client information
    - Resource, job training, housing referral
    - Child abuse instance tracking
    - Alcohol and Drug arrest locator

- Sheriff
  - Functionality
    - Pin mapping application
    - Swat response
    - Notification for evacuation

- Parks & Recreation
  - Functionality
    - Maintain parks facilities
    - Link park inventory to maps
    - Track property ownership
    - User maps of parks facilities
    - Park habitats and & natural resources

- Public Works
  - Functionality
    - Road / pavement inventory
    - Sewer / water utility management
    - Traffic information and planning
    - Airport noise abatement
    - Capital improvement plan and engineering