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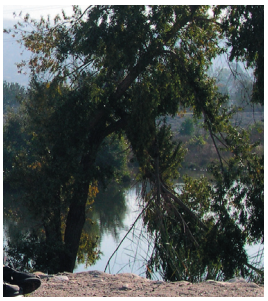
THE GREEN VISIONS PLAN

for 21st century southern california



3. Data Availability for Habitat, Watershed, and Recreation Planning in Southern California

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THE GREEN VISIONS PLAN

for 21st century southern california

The mission of the Green Visions Plan for 21st Century Southern California is to offer a guide to habitat conservation, watershed health and recreational open space for the Los Angeles metropolitan region. The Plan will also provide decision support tools to nurture a living green matrix for southern California. Our goals are to protect and restore natural areas, restore natural hydrological function, promote equitable access to open space, and maximize support via multiple-use facilities. The Plan is a joint venture between the University of Southern California and the San Gabriel and lower Los Angeles Rivers and Mountains Conservancy, Santa Monica Mountains Conservancy, Coastal Conservancy, and Baldwin Hills Conservancy.

www.greenvisionsplan.net

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INTRODUCTION

The Green Visions Plan for 21st Century Southern California is a joint venture by the San Gabriel and Lower Los Angeles Rivers and Mountains Conservancy (RMC), Santa Monica Mountains Conservancy (SMMC), Baldwin Hills Conservancy (BHC), and California Coastal Conservancy (CC) to develop a comprehensive habitat conservation, watershed protection, and recreational opportunities plan for southern California. This effort, involving academic experts, political leaders, and stakeholders from the business, government, nonprofit and community sectors, will provide a set of values and principles as well as technical planning tools, capable of guiding the development of a living green matrix for southern California. The Plan's area includes the RMC, SMMC, and BHC territories, as well as CC's dual mandated territories (the coastal zone itself, and watersheds draining into the Pacific Ocean). Figure 1 illustrates the entire Plan area.

The long-term goals of the Green Visions Plan are to:

- Protect and restore natural areas to ensure the persistence of native biodiversity and reintroduction of historically present natural communities;
- Restore natural function to the hydrological cycle to maximize groundwater recharge, improve storm water quality, and minimize flood hazards;
- Increase and ensure equitable access for residents to a range of open space types and recreational opportunities, and thereby reduce socioeconomic and geographic disparities in present-day patterns of access to these types of resources; and
- Maximize political and financial support for the Plan by proposing multiple-use facilities wherever possible to meet the goals of habitat restoration and conservation, restoration of hydroecological function, and provision of recreational open space.

Clearly, these are ambitious goals. Although they are widely shared by the many public agencies and private organizations and residents concerned with making southern California more livable, equitable, and ecologically sustainable, the Green Visions Plan is not a regulatory plan. It will thus have no power to direct local land use. The primary value of the Green Visions Plan will be to set forth a needs-based, long-range plan designed to help the multitude of actors involved in shaping the region's future.

The Plan will highlight the opportunities and constraints that may arise as habitat conservation and restoration projects, open space acquisitions and recreation improvements, and efforts to protect watersheds are proposed and implemented. The tools and data developed as part of the Plan will also expand the analytic and planning capabilities of local agencies and organizations that seek to attract public funding or allocate their own resources, reduce the fragmented, piecemeal approach to regional resource planning, and promote projects whose collective impacts – because they are part of a larger scientifically grounded vision – are greater than the sum of their parts.

The USC Center for Sustainable Cities and GIS Research Laboratory (hereafter referred to as the Center and GIS Lab respectively) have been tasked to take the lead in development of the Green Visions Plan and the accompanying GIS planning tools and datasets. The work, itself, will be completed in two phases. Phase I, which occurred in 2004, involved the specification of analytic frameworks to guide the work conducted for each of the three focus areas, the hosting of a workshop to solicit additional ideas and feedback about these frameworks, the creation of an inventory of existing plans in the Plan Area, and the development of a data catalogue to identify gaps in geospatial data and other information that must be filled before more detailed plans and the GIS-based planning tools can be developed. This particular report describes the public domain GIS data that are freely available for the Plan Area. The major tasks identified in the framework – the identification and assessment of opportunities for habitat conservation and restoration, open space acquisition and recreational facilities development, watershed protection efforts, and the development of the GIS planning tools and geospatial datasets will be completed during Phase II.

The remainder of this report discusses the plan data requirements that were specified in the habitat conservation, watershed health, and recreational open space analytical frameworks prepared for the Phase I workshop (Wolch et al. 2004) and the availability of these geospatial data sets in the Plan Area. While it provides as detailed guidance as possible, the final geospatial data sets used for the preparation of the plan and GIS planning tools in Phase II will need to incorporate the goals and needs of those who will use the final outputs. Feasibility on paper does not always translate well to the field and/or the board room.

PLAN DATA REQUIREMENTS

The documents describing the habitat conservation, watershed health, and recreational open space analytical frameworks that were prepared for distribution at the Phase I workshop included sample lists of geospatial data requirements (see Tables 1 to 3 for details). The three tables highlight the existence of several common needs across the three focus areas and taken as a whole, they point to the need to acquire and use a large number of geospatial datasets containing a large number and variety of geographic features or shapes (i.e. points, lines, pixels, polygons) and their attributes to support the forms of analysis and interpretation that have been proposed to date (see Wolch et al., 2004 for additional details).

Using the various data themes listed in Tables 1 through 3 as a guide, we first checked the geospatial data housed at the GIS Lab and the RMC, and then conducted an internet search to identify additional geospatial data sources. Numerous leads identified from the internet search were followed up via e-mail and telephone calls. This search targeted those agencies and organizations that are likely to collect and distribute publicly available data sets. The entities searched and/or contacted included a variety of federal agencies (e.g. Bureau of Census, Park Service, USGS), state agencies (e.g. California Spatial Information Library), other conservancies (e.g. SMMC, BHC, and CC), county departments (e.g. County of Ventura Water Resources Department), GIS clearinghouses (e.g. GIS Data Depot), and private companies (e.g. Thomas Bros. Maps).

1. Vegetation
   - ❑ Wetland
   - ❑ Upland
   - ❑ Rare species
   - ❑ Invasive species
2. Soils
3. Topography
   - ❑ Current
   - ❑ Historical
4. Wildlife
   - ❑ Threatened, rare, and endangered (point data)
   - ❑ Point and range data for target species
   - ❑ Identified recovery areas for endangered species
5. Fire History
6. Land Use
7. Hydrology
   - ❑ Stream flow
   - ❑ Water quality
   - ❑ Precipitation
   - ❑ Channel characteristics (e.g., soft or hard bottom)
   - ❑ Flood control system
8. Climate
9. Other Disturbances
   - ❑ Noise (modeled from road network)
   - ❑ Artificial night lighting (from satellite observation)

Table 1. Habitat Conservation Data Requirements (as specified by Wolch et al. 2004).

1. Topography
   - ❑ Current
   - ❑ Historical
2. Flood control system
   - ❑ Channel and basin size and characteristics
   - ❑ Infiltration capacity
   - ❑ Storm drain system
3. Hydrology
   - ❑ Stream flow
   - ❑ Water quality
   - ❑ Precipitation
   - ❑ Hydrograph records
   - ❑ Channel characteristics
4. Soil type
5. Depth to groundwater
   - ❑ Groundwater pollution
6. Land use
7. Vegetation

Table 2. Watershed Health Data Requirements (as specified by Wolch et al. 2004).

1. Census 2000 data (at census tract level)
2. Parcel data
3. Park, open space, and recreation facility information, by acreage and type
4. Road data (for network analysis)
5. Plan inventory projects for recreation/park, habitat restoration or conservation, and watershed protection, by acreage and type
6. Digital Elevation Models (DEMs)
7. Topohydrological features
8. Presence/absence of sensitive species
9. Current land use

Table 3. Recreation and Open Space Data Requirements (as specified by Wolch et al. 2004).

GEOSPATIAL DATA INVENTORY

Nearly 65 geospatial datasets that matched one or more of the data requirements listed in Tables 1 through 3 were identified during the data inventory and search (Table 4). These data themes were organized into nine categories – base data, climate, topography, soils, hydrology, vegetation, wildlife, transportation, and land use – and key information describing the geographic coverage, format, map scale and/or resolution, year of coverage, data source, and distribution details for each dataset is summarized in Table 4. The highlights and some of the subtleties involved in using these datasets are discussed in the paragraphs about each category below.

There are many forms of imagery that could serve as base data for this type of project. The DOQQs (Digital Orthophoto Quarter Quadrangles) listed in Table 4 offer at least three advantages – they provide moderately high resolution snapshots of conditions in the Plan Area, they provide relatively recent coverage (≤ 5 years old), and the coverage spans the entire Plan Area. However, these datasets could be supplemented with various forms of aerial photography (many local cities and counties purchase high resolution aerial photography from private vendors on a regular basis) and other remotely sensed data sets (e.g. LANDSAT 7, LIDAR SPOT 5, Synthetic Aperture Radar). The latter can be used to compute a series of hydrologic and vegetation indices that may be of interest in this project (see Hill et al. (2000) and Wilson and Belonis (2004) for examples).

Three of the four climate datasets listed in Table 4 provide precipitation and/or temperature estimates at specific (point) locations. These types of data are increasingly used to construct surfaces that provide area-wide estimates (see Hutchinson (1995) and Šúri and Hofierka (2004) for examples of these types of methods) but care must be taken to minimize the spatial bias introduced by varying the number and locations of stations over time when generating these surfaces (Custer et al. 1996).

The 10 meter DEM listed in Table 4 provides continuous coverage of the entire Plan Area. These elevation data are critical because they can be used to: (1) divide the Plan Area into a hierarchical network of watersheds and sub-watersheds, and (2) compute a series of topographic attributes that can be used to help describe the variations in hydrologic, geomorphic, and ecological characteristics and opportunities across the Plan Area (see Wilson and Gallant (2000) for details). There are several additional products that could be used here as well – the USGS also produces 30 meter and 3 arc second DEMs and numerous private firms provide high resolution LIDAR and SAR DEMs under contract – Los Angeles County, for example, has purchased a 5 meter DEM in recent years (see Corbley (2002) for additional details). All of the aforementioned products are “bare earth” DEMs that will suit some applications in some areas (e.g. the Angeles National Forest) and not others (e.g. urban areas where the land surface was recently modified to construct a new housing subdivision). The quality of these products is also likely to vary across different parts of the Plan Area.

The STATSGO database listed under the soils category in Table 4 provides generalized information for the entire Plan Area and can be supplemented with more detailed information from the other products listed in Table 4 in the national forests and significant agricultural areas that are scattered across the study area. All three of the soils databases listed in Table 4 must be used with care because they incorporate one-to-many relationships whereby single soil map units are linked to one to three soil series in the case of the SSURGO database and up to 21 soil series in the case of the STATSGO database. These products are frequently used to support regional scale planning activities (e.g. Bliss and Reybold 1989) but they will often need to be supplemented with field measurements in site-specific assessments.

A large number and variety of hydrology products are listed in Table 4. Some of these products describe geographic features – the hydrography, wetland, and floodplain themes describe the stream channels,

Theme	Geographic coverage	Data Format	Scale or Resolution	Temporal Coverage	Data Source	Distributor and Location
1. Base Data (Imagery)						
Digital Orthophoto Quarter Quadrangles (DOQQs)	Plan Area	Raster	1 meter	Varies	U.S. Geological Survey	GIS Data Depot (or Geo Community) at http://data.geocomm.com/catalog/US/61069/sublist.html
2. Climate						
Precipitation and Temperature	Plan Area	Vector (point)	N/A	1895-1997	National Climatic Data Center	National Climatic Data Center at ftp://ftp.ncdc.noaa.gov/pub/data/prism100
Precipitation	Los Angeles County	Vector (point)	N/A	Near real-time	County of Los Angeles Department of Public Works	County of Los Angeles Department of Public Works at http://ladpw.org/wrd/precip
Precipitation	Ventura County	Vector (point)	N/A	Real-time	Ventura County Watershed Protection District	Ventura County Watershed Protection District at http://publicworks.countyofventura.org/fc/fws
Precipitation	Plan Area	Vector (polygon)	1000 acre MMU	1900-1960	Teale GIS Solutions Group	California Spatial Information Library at http://gis.ca.gov/BrowseCatalog.epl
3. Topography						
Digital Elevation Models (DEMs)	Plan Area	Raster	10 meter	Varies	U.S. Geological Survey	GIS Data Depot (or Geo Community) at http://data.geocomm.com/catalog/US/61069/sublist.html
4. Soils						
STATSGO	Plan Area	Vector (polygon)	1:250K	Unknown	Natural Resource Conservation Service	Natural Resource Conservation Service at http://www.ncgc.nrcs.usda.gov/branch/ssb/products/statsgo/data/ca.html
SSURGO	Parts of Ventura, Los Angeles, and Orange Counties	Vector (polygon)	1:12K to 1:63,360	Unknown	Natural Resource Conservation Service	Natural Resource Conservation Service at http://www.ncgc.nrcs.usda.gov/branch/ssb/products/ssurgo/data/ca.html

Table 4. GIS Data Themes

Theme	Geographic coverage	Data Format	Scale or Resolution	Temporal Coverage	Data Source	Distributor and Location
Los Angeles County Soils Data	Angeles National Forest Area	Vector (polygon)	Unknown	2001	Los Angeles County Public Works	Rivers and Mountains Conservancy (Identifier: soilsa.shp)
5. Hydrology						
Hydrography	Plan Area	Vector (line)	1:100K	1998	Teale GIS Solutions Group	California Spatial Information Library at http://gis.ca.gov/BrowseCatalog.epl
Discharge	Plan Area	Vector (point)	Unknown	1901-2002 and real-time	U.S. Geological Survey	U.S. Geological Survey at http://waterdata.usgs.gov/ca/nwis/nwis
Discharge	Los Angeles County	Vector (point)	Unknown	1930–2004	County of Los Angeles Department of Public Works	County of Los Angeles Department of Public Works at http://ladpw.org/wrd/Runoff/index.cfm
Discharge	Ventura County	Vector (point)	Unknown	Real-time	Ventura County Watershed Protection District	Ventura County Watershed Protection District at http://publicworks.countyofventura.org/fc/fws
Water Quality	Los Angeles and Ventura Counties	Vector (point)	Unknown	1997-2004	California Department of Water Resources	California Department of Water Resources at http://wdl.water.ca.gov/wq/gst/water_quality_report1/gst.asp
Floodplains	Plan Area	Vector (polygon)	Unknown	1996	FEMA National Flood Insurance Program	Federal Emergency Management Agency CD-ROM
Wetlands	Plan Area	Vector (polygon)	1:250K	2002	U.S. Fish and Wildlife Service	U.S. Fish and Wildlife Services at http://wetlands.fws.gov/downloads.htm
Groundwater	Plan Area	Vector (point)	Unknown	1909-2002	U.S. Geological Survey	U.S. Geological Survey at http://waterdata.usgs.gov/ca/nwis/gw
Groundwater	Plan Area	Vector (point)	Unknown	1969-2001	California Department of Water Resources	California Department of Water Resources at http://wdl.water.ca.gov/gw/admin/main_menu_gw.asp

Table 4. Continued

Theme	Geographic coverage	Data Format	Scale or Resolution	Temporal Coverage	Data Source	Distributor and Location
Groundwater	Ventura County	Vector (point)	Unknown	1971-2001	County of Ventura Water Resources	County of Ventura Water Resources Department at http://publicworks.countyofventura.org/vcpwa
Drains	Los Angeles County	Vector (line)	Unknown	1969-2001	Los Angeles County Public Works	Rivers and Mountains Conservancy (Identifier: drainsa.shp)
6. Vegetation						
Southern Coastal California Land Cover/Land Use	Plan Area	Raster	30 meter	2000	NOAA Coastal Services Center	National Oceanic and Atmospheric Administration (NOAA) at http://www.csc.noaa.gov/crs/lca/ca_so2000.html
National Land Cover Data	Plan Area	Raster	30 meter	2001	U.S. Geological Survey	U.S. Geological Survey at http://landcover.usgs.gov/nationallandcover.asp
LCMMP, Vegetation Data	Plan Area	Vector (polygon)	2.5 acre MMU	1997-2001	California Department of Forestry and Fire Protection	California Department of Forestry and Fire Protection at http://frap.cdf.ca.gov/data/frapgisdata/select.asp?record=cveg
California GAP Analysis Project	Plan Area	Vector (polygon)	1:100K	1999	University of California Santa Barbara	University of California Santa Barbara at http://www.biogeog.ucsb.edu/projects/gap/gap_data.html
Atlas of United States Trees	Plan Area	Vector (polygon)	1:10,000,000	1996	U.S. Geological Survey	United States Geological Survey at http://climchange.cr.usgs.gov/info/veg-clim
Wieslander Vegetation Type Maps (VTM)	Plan Area	Vector (polygon)	6 minute quad MMU	1920s-1930s	University of California Berkeley, Kelly Lab	University of California Berkeley, Kelly Lab at http://nature.berkeley.edu/~kueda/vtm
Gateway Cities COG General Plan Use	S/SE Los Angeles County	Vector (polygon)	Unknown	1990	California State University, Long Beach Map Lab	Rivers and Mountains Conservancy (Identifier: gen_plan_citiesa.shp and gen_plan_othera.shp)

Table 4. Continued

Theme	Geographic coverage	Data Format	Scale or Resolution	Temporal Coverage	Data Source	Distributor and Location
Land Use	Los Angeles River Watershed Management Area	Vector (polygon)	Unknown	2001	Los Angeles County Department of Public Works	Rivers and Mountains Conservancy (In-house use only; Identifier: lar_wma_lua.shp)
7. Wildlife						
California Natural Diversity Database (CNDDB)	Plan Area	Vector (polygon)	Varies	2004	California Department of Fish and Game	California Department of Fish and Game at http://www.dfg.ca.gov/whdab/html/rf_ftpinfo.html
Los Angeles County Breeding Bird Atlas	Los Angeles County	Image	10 square mile or 1/6 of 7.5′ quad	1995-1999	Natural History Museum of Los Angeles County	Natural History Museum of Los Angeles County at http://lyell.nhm.org/~lacbba/about.htm
Significant Ecological Areas (SEAs)	Los Angeles County	Vector (polygon)	Unknown	2000	Los Angeles County Regional Planning Department	Rivers and Mountains Conservancy (In-house use only; Identifier: existseaa.shp)
Species Recovery Plan Areas	No Digital Data	Text	Varies	Varies	U.S. Fish and Wildlife Service	U.S. Fish and Wildlife Service at http://endangered.fws.gov/recovery/index.html#plans
Habitat Conservation Areas	No Digital Data	Text	Varies	Varies	U.S. Fish and Wildlife Service	
8. Transportation						
Freeways	Plan Area	Vector (line)	Unknown	2000	Southern California Association of Governments	Southern California Association of Governments (Identifier: freewaysa.shp)
Freeways and Roads	Plan Area	Vector (line)	Unknown	2002	USC GIS Research Laboratory	USC GIS Research Laboratory (Identifier: freeway.shp)
Roads	Plan Area	Vector (line)	1:100K	2002	U.S. Department of Commerce and U.S. Census Bureau	U.S. Census Bureau at http://www.census.gov/geo/www/tiger/index.html

Table 4. Continued

Theme	Geographic coverage	Data Format	Scale or Resolution	Temporal Coverage	Data Source	Distributor and Location
Passenger Railways	Plan Area	Vector (line)	Unknown	2002	USC GIS Research Laboratory	USC GIS Research Laboratory (Identifier: railway.shp)
Bicycle Trails	Harbor Valley Area of Los Angeles County	Vector (line) (point)	Unknown	1993	Los Angeles County Department of Transportation	Los Angeles County Department of Transportation and/or Rivers and Mountains Conservancy (Identifier: harborbikea.shp) (Identifier: harborbikepointsa.shp)
Bicycle Trails	Valley Area of Los Angeles County	Vector (line) (point)	Unknown	1993	Los Angeles County Department of Transportation	Los Angeles County Department of Transportation and/or Rivers and Mountains Conservancy (Identifier: valleybikea.shp) (Identifier: valleybikepointsa.shp)
Bicycle Trails	Western Area of Los Angeles County	Vector (line) (point)	Unknown	1993	Los Angeles County Department of Transportation	Los Angeles County Department of Transporttion and/or Rivers and Mountains Conservancy (Identifier: westcenbikea.shp) (Identifier: westcenbikepointsa.shp)
Bicycle Trails	River Areas in Los Angeles County	Vector (line)	Unknown	2001	Los Angeles County Department of Transportation	Los Angeles County Department of Transportation and/or Rivers and Mountains Conservancy (Identifier: hydlbikea.shp)
Bicycle Trails	Eastern Los Angeles County	Vector (line)	Unknown	2001	Los Angeles County Metropolitan Transportation Authority	Los Angeles County Department of Transportation and/or Rivers and Mountains Conservancy (Identifier: eastbikea.shp)
Bicycle and Hiking Trails	Orange County	Vector (line)	Unknown	2001	Orange County Harbors, Beaches, and Parks	Rivers and Mountains Conservancy (Identifier: rhtrailsa.shp)
Hiking Trails	Los Angeles County	Vector (line)	Unknown	2001	Thomas Bros. Maps	Rivers and Mountains Conservancy (In-house use only; Identifier: latrnl_trla.shp)

Table 4. Continued

Theme	Geographic coverage	Data Format	Scale or Resolution	Temporal Coverage	Data Source	Distributor and Location
Hiking Trails	Ventura County	Vector (line)	Unknown	2001	Thomas Bros. Maps	Rivers and Mountains Conservancy (In-house use only; Identifier: ventrnl.shp)
Trail Heads	Santa Monica Mountains National Recreation Area	Vector (point)	Unknown	2000	Santa Monica Mountains National Recreation Area	Los Angeles County Department of Transportation and/or Rivers and Mountains Conservancy (Identifier: hydlbikea.shp)
9. Land Use						
Areas of Significant Agricultural Use	Plan Area	Vector (polygon)	1:100K	2000	Southern California Association of Governments	Southern California Association of Governments at http://mapsvr.scag.ca.gov/wags/index.html
Important Farmland	Ventura, Orange, and N. Los Angeles Counties	Vector (polygon)	1:24K and 1:100K	1984-2002	Farmland Monitoring and Mapping Program	State of California Department of Conservation, Division of Land Resource Protection at http://www.consrv.ca.gov/DLRP/fmmp/map_products/index.htm
Land Ownership	Los Angeles County	Vector (polygon)	Parcel	Current	Los Angeles County Office of the Assessor	Los Angeles County Office of the Assessor at http://www.lacountyassessor.com/extranet/DataMaps/pais.asp
Land Ownership	Ventura County	Vector (polygon)	Parcel	Current	County of Ventura Assessor's Office	County of Ventura Assessor's Office at http://assessor.countyofventura.org/MapPage.asp
Land Ownership	Orange County	Vector (polygon)	Parcel	Current	County of Orange Public Facilities and Resources Department	County of Orange Public Facilities and Resources Department at http://www.ocgeomatics.com/default.asp
Public and Conservation Lands	Plan Area	Vector (polygon)	1:100K	2003	California Resources Agency Legacy Project	California Spatial Information Library at http://gis.ca.gov/BrowseCatalog.epl (Identifier: PCTL03_1)

Table 4. Continued

Theme	Geographic coverage	Data Format	Scale or Resolution	Temporal Coverage	Data Source	Distributor and Location
Government Ownership	Plan Area	Vector (polygon)	1:100K	1997	Teale GIS Solutions Group	California Spatial Information Library at http://gis.ca.gov/BrowseCatalog.epl (Identifier: GOVTOWNA)
Park Areas/Sites	Los Angeles County	Vector (polygon) (point)	Unknown	2000	U.S. Army Corps of Engineers Report	Rivers and Mountains Conservancy (Identifier: parksa.shp) (Identifier: parks2a.shp)
Park Areas	City of Los Angeles	Vector (polygon)	Unknown	2002	USC GIS Research Laboratory	USC GIS Research Laboratory (Identifier: lapark.shp)
Census Tracts	Plan Area	Vector (polygon)	Unknown	2000	U.S. Census Bureau	U.S. Census Bureau at http://www.census.gov/geo/www/cob/tr2000.html
Census Block Groups	Plan Area	Vector (polygon)	Unknown	2000	U.S. Census Bureau	U.S. Census Bureau at http://www.census.gov/geo/www/cob/bg2000.html
Incorporated Places/ Census Designated Places	Plan Area	Vector (polygon)	Unknown	2000	U.S. Census Bureau	U.S. Census Bureau at http://www.census.gov/geo/www/cob/pl2000.html
County and County Equivalent Areas	Plan Area	Vector (polygon)	Unknown	2000	U.S. Census Bureau	U.S. Census Bureau at http://www.census.gov/geo/www/cob/co2000.html

Table 4. Continued

wetlands, and associated floodplains for example – whereas others describe the conditions at specific places and times – stream discharge and water quality at stream gauging stations and groundwater depth at groundwater well locations for example. The drain file listed in Table 4 provides some information on storm water collection and routing but there is an urgent need to check and update this file to produce a GIS dataset for the storm water conveyance system that covers the entire Plan Area given the impact this infrastructure is likely to have on opportunities for improving habitat conservation and/or watershed health.

Table 4 also lists numerous datasets describing the natural vegetation across all or parts of the Plan Area. Several products provide complete coverage at moderate resolution (30 meter cell size) but use different classification schemes for the vegetation itself. This is a problem because these differences will make it difficult to combine datasets and most, if not all, of these schemes will be too general for the work with focal species envisaged in the habitat conservation section of the analytical framework document (see Wolch et al., 2004 for details). More precise and detailed datasets are available for some existing open space areas (e.g. Angeles National Forest, Santa Monica Mountains) and the Wieslander maps will provide a rich guide to what types of vegetation were present in the Plan Area in the 1920s and 1930s when they are released later this year.

The wildlife layers listed in Table 4 provide only spotty information about the species present in different parts of the Plan Area. The first three products listed under this category provide very general information about the species themselves and their potential presence on the ground whereas the final three products provide greater detail about specific species in specific locations and/or areas. Some substantial geocoding work would be required to convert the verbal descriptions of Species Recovery Plan Areas and Habitat Conservation Areas to GIS data layers and these data would need to be checked against the vegetation actually present in these locations to determine whether or not the designated species are actually present or not. Substantial GIS database development as well as additional field work will be required to fill many of the gaps identified in the natural vegetation and wildlife categories.

The transportation files listed in Table 4 provide more or less complete coverage of road and railway systems across the Plan Area and some information about recreational trails and pathways. The latter spans several files that vary substantially in terms of their accuracy and the types of features included. Further work to combine and evaluate the quality (i.e. completeness, currency, accuracy, etc.) of these GIS datasets would be needed to support the recreational open space planning efforts envisaged in the appropriate analytical framework (see Wolch et al., 2004 for additional details).

The final land use category identified in Table 4 includes numerous datasets that describe the role and impact of people in the Plan Area. Hence, there are several GIS datasets that describe property ownership, another group delineates significant agricultural areas, a third group delineates park and designated open space areas, and the final group consists of 2000 Census boundary files that can be used to organize and integrate the 2000 Census results with any and all of the GIS datasets identified in Table 4. Most of the datasets in this category provide coverage for the entire Plan Area but several lack specificity (for example most of the park data layers do not adequately describe the facilities present in specific parks) and soon will be out-of-date (the 2000 Census data already refers to conditions four years ago and this information will be five or six years old when the final plans and tools are completed and released).

Last but not least, the large number and diversity of data themes listed in Table 4 will require the management of multiple geospatial data formats – point/line/polygon features (vectors), grid cells/pixels

(rasters), and various forms of imagery and photography – and implementation of a series of solutions to cope with the geographic registration and conflation problems that typically accompany geospatial data drawn from different sources in the next phase of the project.

CONCLUSIONS

This report summarizes the results of the GIS data search that was conducted as a part of Phase I of the Green Visions Plan Project. The search focused on freely available, public domain data sources and the results in Table 4 indicate that many GIS datasets that meet these criteria were found for parts or all of the Plan Area. However, this inventory also indicates that there are many data gaps given the goals and data requirements as outlined in the habitat conservation, watershed health, and recreational open space analytical frameworks prepared by Wolch et al. (2004).

The data gaps and shortcomings affect all aspects of the project. For example, the natural vegetation and wildlife layers identified in Table 4 provide varying levels of information about these landscape components across the Plan Area today. However, the information about habitat conditions and opportunities for restoration in the urban core is particularly poor, and there is little or no information about historic conditions. Turning next to watershed health, the DEM data will allow the division of the Plan Area into a series of nested watersheds and sub-watersheds but these data will need to be integrated with information about storm water conveyance systems to improve our knowledge of current hydrologic conditions and the opportunities for improving or restoring watershed health. Finally, the various park layers identified in Table 4 will need to be checked for completeness (prior work by the Green Visions Plan project team has found these data to suffer from various gaps and omissions –see Wolch et al., 2002 for details) and then augmented to identify the types of facilities present and the quality of the facilities located at specific parks.

The search for, acquisition, and use of these various data themes will accelerate over the lifespan of the Green Visions Project. From this vantage point, this particular report serves as a status report that summarizes our findings as of 30 June 2004. That said, there are numerous data sets describing the public transit network, schools, libraries, and land cover/land use that we need but which we have not acquired to date. Similarly, there are other data sets that we know about and will require some additional processing and/or modification to serve the needs in this project – the examples in this latter category include the historical topographic map series produced by the California Geographical Survey at California State University-Northridge and the general plan, traffic analysis zone, and related business activity data sets maintained by the Southern California Association of Governments.

The final two comments worthy of mention focus on data quality and maintenance. This report has described a large number and variety of GIS datasets that were developed by different agencies from a variety of sources. Substantial time and effort will be needed to not only fill the data gaps identified in this report, but also to check, modify, and fix the numerous spatial registration, attribute definition, and other inconsistencies that are embedded in the GIS datasets that were found. The long-term usefulness of the planning tools that will be developed in Phase II of the Green Visions Plan Project will also require that some further thought is given to data management issues. There are various paths that can be taken to manage the geospatial datasets that are prepared and used to develop the plan and the accompanying tools. The technical possibilities are numerous and the most substantial data maintenance challenges probably involve the development and implementation of data sharing agreements among the various government agencies that might contribute their data to the Green Visions Project.

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