

FY 2013 - 2017 Capital Improvement Program Technology Projects

Priority	Description	Total Estimated Costs	Appropriated Through FY 2012	Adopted FY 2013	Proposed FY 2014	Proposed FY 2015	Proposed FY 2016	Proposed FY 2017 and Beyond
1	Enterprise Resource Planning System (Financial and Human Resources) (71149)	3,000,000	0	1,500,000	0	0	0	1,500,000
* 2	311 Citizen Request Management (71150)	500,000	0	300,000	100,000	100,000	0	0
3	Land Management System (LMS) Replacement	1,500,000	0	0	1,500,000	0	0	0
4	Electronic Government (E-Government) (71206)	815,000	100,000	0	411,000	52,000	252,000	0
5	Department of Information Technology (DOIT) Equipment (71127)	7,852,269	6,027,269	325,000	500,000	500,000	500,000	0
6	Data Center Consolidation (71213)	500,000	50,000	150,000	150,000	150,000	0	0
* 7	Enterprise Content Management System (71151)	400,000	0	250,000	75,000	75,000	0	0
8	City Fiber Network Expansion (71212)	350,000	75,000	125,000	75,000	75,000	0	0
9	Enterprise Asset and Work Order Management Application	311,000	0	0	215,000	32,000	32,000	32,000
10	Integration of DoIT and DOT Fiber Networks	186,000	0	0	186,000	0	0	0
* 11	Geographic Information System - Water and Power Department (1009 and 3005)	2,817,729	1,717,729	0	350,000	250,000	250,000	250,000
* 12	Customer Information System (1011 and 3022)	6,360,884	2,860,884	645,000	1,950,000	580,000	175,000	150,000
* 13	Interactive Voice Response System (1016 and 3026)	966,043	591,043	0	100,000	100,000	100,000	75,000
* 14	Management Information Systems - Water and Power Department (1025 and 3119)	2,984,543	2,179,543	0	335,000	270,000	200,000	0
* 15	Radio Equipment Replacement (1065 and 3188)	2,386,279	2,236,279	0	75,000	75,000	0	0
* 16	Project Work Management System - Electric System (3140)	4,914,767	2,264,767	0	150,000	500,000	1,000,000	1,000,000
* 17	Engineering Services Installation/Maintenance of Fiber Optic System (3168)	794,419	394,419	0	100,000	100,000	100,000	100,000
* 18	ITS Equipment Upgrades/Replacement FY 2011 - 2015 (75906)	250,000	100,000	50,000	50,000	50,000	0	0
* 19	Energy Reporting System Upgrade (3193)	1,552,989	1,402,989	0	50,000	50,000	50,000	0
* 20	Transportation System Improvements - Lake Avenue from Washington Blvd to California Blvd - Phase II (75035)	898,700	898,700	0	0	0	0	0
* 21	Intelligent Transportation System (ITS) Phase II (75910)	3,354,000	3,134,000	220,000	0	0	0	0

FY 2013 - 2017 Capital Improvement Program
Technology Projects

Priorit	y Description	Total Estimated Costs	Appropriated Through FY 2012	Adopted FY 2013	Proposed FY 2014	Proposed FY 2015	Proposed FY 2016	Proposed FY 2017 and Beyond
* 22	Intelligent Transportation System (ITS) Project - Phase I (75701)	4,329,350	4,329,350	0	0	0	0	0
* 23	Pasadena Wayfinding System (75044)	2,197,785	259,680	1,938,105	0	0	0	0
* 24	Intelligent Transportation System (ITS) Master Plan Implementation Phase III	5,293,565	0	0	2,477,851	2,815,714	0	0
To	otal	15,214,269	6,252,269	2,450,000	3,212,000	984,000	784,000	1,532,000

^{*} A portion of project cost not included in summary total. See Special Considerations on project page.

Technology Projects

Enterprise Resource Planning System (Financial and Human Resources)

71149

Priority 1	Project No 71149	D. Description Enterprise Resource Planning System (Financial and Human Resources)	Total Estimated Costs	Appropriated Through FY 2012	Adopted FY 2013	Proposed FY 2014	Proposed FY 2015	Proposed FY 2016	Proposed FY 2017 and Beyond
	City Hall	Retrofit Reserve	1,500,000	0	1,500,000	0	0	0	0
	Unfunded	l	1,500,000	0	0	0	0	0	1,500,000
	Total		3,000,000	0	1,500,000	0	0	0	1,500,000

DESCRIPTION: This project provides for the upgrade and integration of the citywide financial system. The scope of this project includes the analysis, selection, purchase and implementation of software and hardware necessary to integrate and update the City's financial system.

JUSTIFICATION: The City of Pasadena's current financial system was implemented on July 1, 1997 and the current version is no longer supported by the vendor. In addition, various components are not integrated which results in numerous inconsistencies in the financial information provided. The non-integration requires an extremely labor-intensive process to validate the information for accuracy which results in an increased risk of human error.

SCHEDULE: This project will begin in FY 2013.

RELATIONSHIP TO THE GENERAL PLAN: This project is consistent with Public Facilities Element Policy 202.0 by achieving a high level of public service through more efficient management and greater work productivity.

HISTORY: This project was created and partially funded in FY 2013.

FY 2013 - 2017 Capital Improvement Program Technology Projects 311 Citizen Request Management

71150

Priority 2	Project No. Description71150 311 Citizen Request Management	Total Estimated Costs	Appropriated Through FY 2012	Adopted FY 2013	Proposed FY 2014	Proposed FY 2015	Proposed FY 2016	Proposed FY 2017 and Beyond
	General Fund	150,000	0	150,000	0	0	0	0
	Power Fund (Memo)	75,000	0	75,000	0	0	0	0
	Refuse Fund	50,000	0	50,000	0	0	0	0
	Water Fund (Memo)	25,000	0	25,000	0	0	0	0
	Unfunded	200,000	0	0	100,000	100,000	0	0
-	Total	500,000	0	300,000	100,000	100,000	0	0

DESCRIPTION: This project provides for the creation of a centralized 311 call center, development of a comprehensive knowledge base platform, and implementation of an enterprise Citizen Request Management (CRM) system to track constituent inquiries and requests for service received by the City of Pasadena. The 311 call center will serve as the primary point of contact for constituents seeking information, service and support from the City. The center will be staffed by customer service agents trained to handle a wide variety of customer interactions and equipped with the tools to record, route, monitor, and manage them effectively. A knowledge base will be developed and populated with Frequently Asked Questions (FAQs) and answers about City services and processes which could be easily consulted by the agents while the constituent is on the line. Inquiries that require additional departmental action or follow-up will be documented in a CRM system linked to existing internal work order applications which will support the efficient handling of citizen requests from intake to resolution. Constituents wishing to interact with the City without making a phone call will be offered a suite of self-service capabilities online, such as searching the knowledge base, initiating a service request, or following-up on the status of an issue they reported previously. These self-service capabilities will be delivered through an online web portal as well as through mobile applications designed for popular Smartphone platforms.

FY 2013 - 2017 Capital Improvement Program Technology Projects 311 Citizen Request Management 71150

JUSTIFICATION: The Department of Information Technology launched the Citizen Service Center in FY 2010 as part of a pilot project to gauge public acceptance of CRM technologies. To date this "self-service" only application has been well received by the community. However, its reliance on web-based technology has limited its effectiveness and has not resulted in a significant reduction in telephone calls for service across the city. It is anticipated that expansion of the Citizen Service Center to include a 311 Call Center will allow for the more efficient handling of telephone inquiries and request for service across the organization. Further, the 2011 windstorm illuminated the need for a single point of contact for information and services for the City's constituents during a disaster. Implementing a 311 Citizen Request Management system and creating a centralized Call Center will address the need to coordinate information across all City departments.

SCHEDULE: This project will begin in FY 2013.

RELATIONSIHP TO THE GENERAL PLAN: This project is consistent with Public Facilities Element Policy 202.0 by provding a high level of public service through more efficient management and greater work productivity.

SPECIAL CONSIDERATION: Separate projects are also shown under the Water System (1070) and Electric System (3203) sections. The contributing Water and Power Funds are not calculated in the Technology Section totals to avoid duplication.

HISTORY: This project was created and initially funded in FY 2013.

FY 2013 - 2017 Capital Improvement Program Technology Projects Land Management System (LMS) Replacement

Priority 3	Project No. Description Land Management System (LMS) Replacement	Total Estimated Costs	Appropriated Through FY 2012	Adopted FY 2013	Proposed FY 2014	Proposed FY 2015	Proposed FY 2016	Proposed FY 2017 and Beyond
	Unfunded	1,500,000	0	0	1,500,000	0	0	0
	Total	1,500,000	0	0	1,500,000	0	0	0

DESCRIPTION: This project provides for the replacement of the Tidemark Land Management System (LMS), to ensure continued information technology support for the delivery of Planning customer services. Tidemark is an enterprise system used by Planning, Economic Development, Fire, and Water and Power to record and monitor departmental processes, including discretionary reviews on proposed developments; plan review and building permits; code enforcement inspections; complaint tracking; film and special event permits; and public art installations. The system aslo serves as the land and parcel base that populates the Geographical Information System (GIS) used by all City departments.

JUSTIFICATION: Tidemark was purchased in 1999. The system is no longer supported and has reached the end of its useful life, and was identified in the fivr year IT Strategic Plan for replacement. Implementing a new Land Management System with current technology will deliver new management capabilities, increase departmental operating efficiencies, and provide customers with new online and self-services tools.

SCHEDULE: In FY 2013, staff will present a funding plan and schedule to replace the Land Management System to the City Council for consideration.

RELATIONSHIP TO THE GENERAL PLAN: This project is consistent with the Public Facilities Element Objective 2 by helping to provide a high level of service and greater work productivity by using available technology.

HISTORY: This project was created in FY 2009 and is currently unfunded.

FY 2013 - 2017 Capital Improvement Program Technology Projects

Electronic Government (E-Government)

71206

Priority 4	Project No. Description 71206 Electronic Government (E-Government)	Total Estimated Costs	Appropriated Through FY 2012	Adopted FY 2013	Proposed FY 2014	Proposed FY 2015	Proposed FY 2016	Proposed FY 2017 and Beyond
	Computing and Communication Fund	100,000	100,000	0	0	0	0	0
	Unfunded	715,000	0	0	411,000	52,000	252,000	0
	Total	815,000	100,000	0	411,000	52,000	252,000	0

DESCRIPTION: The Department of Information Technology (DoIT) is spearheading the implementation of E-Government services to enhance the delivery of information and services to the public and improve internal city operations to be more effective and efficient with the use of web centered technologies. The project includes implementing self-service online tools for constituents to conduct business with the City 24/7 through online web portals and mobile applications.

E-Government and Online Applications as a technology toolset provides the most significant opportunity for operational cost containment, maintaining service delivery levels and meeting customer expectations, helps the City become more citizen-centered, efficient, and results-oriented. The key objectives of this project are to implement a flexible, reliable and secure technology platform to serve as the foundation for future e-government and online services, including mobile and social networking platforms; creation of an Enterprise Architecture to maintain scalability, availability, reliability, and interoperability based on adopted standards; integrate internal business systems; adopt web-based, web-enabled, and mobile-enabled services to address current and future expectation of citizens and staff to connect with information and services; leverage and prioritize technology investment across multiple departments to increase the return on investment.

All departments within the City are part of this strategy and will be working closely with DoIT.

JUSTIFICATION: The Five-Year IT Strategic Plan completed in FY 2011 discusses E-Government and Online Applications as a technology toolset providing the most significant opportunity for operational cost containment, maintaining service delivery levels and meeting customer expectations. Other cities with mature E-Government strategies evolved towards delivering services online with interactive, transactional and integrated functionality that enhanced customer service while at the same time reducing operating and staffing costs. Availability of online services has become an expectation of Pasadena constituents and a necessary investment to automate processes to reduce costs and increase efficiencies.

FY 2013 - 2017 Capital Improvement Program Technology Projects Electronic Government (E-Government) 71206

SCHEDULE: In FY 2013, E-Government projects to be implemented include the following categories and projects.

Online Accounts: bill present, bill payment, account information, request and pay for birth certificates

Online Appointment Scheduling: housing appointment scheduling, health center appointment scheduling, public safety appointment scheduling

Online Permitting Applications: alarm permits, overnight parking permits

Online Application Submittals: business licenses application, animal license application, rental assistance/Section 8 housing application, Utility Assistance Program applications

Other projects also include plans to deliver web-based, web-enabled, and mobile-enabled capabilities.

RELATIONSHIP TO THE GENERAL PLAN: This project is consistent with the Public Facilities Element of the General Plan by helping provide a high level of public service through more efficient management of resources and greater work productivity.

HISTORY: This project was created as the "E-Commerce" project in FY 2000, modified in FY 2003, and initially funded in FY 2007. Phase I was completed in FY 2007 with a new online payment application.

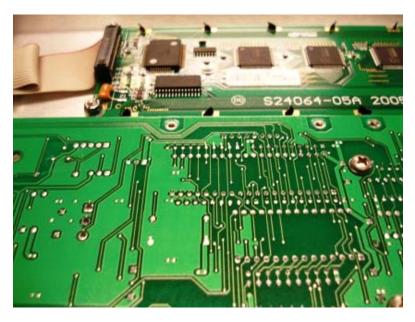
In FY 2012, The Citizen Service Center, a web-based application for residents to submit common service requests, such as pot holes and graffiti removal, was enhanced to incorporate new services and features. A public records request system to automate the routing of requests from the public was also implemented. The ability to purchase yard sale permits online was another new service launched in FY 2012.

Technology Projects

Department of Information Technology (DOIT) Equipment

71127

Priority 5	Project No 71127	Department of Information Technology (DOIT) Equipment	Total Estimated Costs	Appropriated Through FY 2012	Adopted FY 2013	Proposed FY 2014	Proposed FY 2015	Proposed FY 2016	Proposed FY 2017 and Beyond
	2005 Equ	ipment Leasing Fund	880,513	880,513	0	0	0	0	0
	2009 Equ	ipment Leasing Fund	650,000	650,000	0	0	0	0	0
	Computin	g and Communication Fund	5,466,756	3,891,756	75,000	500,000	500,000	500,000	0
	General F	und	750,000	500,000	250,000	0	0	0	0
	Library S	ervices Fund	105,000	105,000	0	0	0	0	0
	Total		7,852,269	6,027,269	325,000	500,000	500,000	500,000	0



DESCRIPTION: This project will provide for new and replacement equipment for the Department of Information Technology (DoIT), including but not limited to, funding for scheduled replacement of internal servers, routers, switches and other network and data center upgrades.

JUSTIFICATION: Citywide infrastructure changes are necessary and ongoing. New and replacement equipment is needed by DoIT to support the City's technology infrastructure and division-specific needs.

SCHEDULE: In FY 2013, annual system life cycle replacement of hardware and software will continue. Equipment supporting the City's fiber network equipment will be replaced, which will provide greater bandwidth capacity between City facilities and free up fiber strands for revenue generating opportunities. Network security equipment will be upgraded to protect City systems and services from increased cyber-attacks. Wireless services will be expanded to additional City facilities, conference rooms and public spaces.

RELATIONSHIP TO THE GENERAL PLAN: This project is consistent with the Public Facilities Element of the General Plan by helping to maintain a high level of public service through more efficient management and greater work productivity.

HISTORY: This project was created in FY 2002 and received initial funding in FY 2005. Requests for life cycle replacement occur annually. In FY 2012, annual system life cycle replacement of hardware and software was completed. High level projects completed include the replacement of the Storage Area Network (SAN) and Core Switches. Telephone Lifecycle Updates continued further expanding VoIP services.

FY 2013 - 2017 Capital Improvement Program Technology Projects Data Center Consolidation 71213

Priority Project No. Description 6 71213 Data Center Consolidation	Total Estimated Costs	Appropriated Through FY 2012	Adopted FY 2013	Proposed FY 2014	Proposed FY 2015	Proposed FY 2016	Proposed FY 2017 and Beyond
Computing and Communication Fund	400,000	50,000	50,000	150,000	150,000	0	0
General Fund	100,000	0	100,000	0	0	0	0
Total	500,000	50,000	150,000	150,000	150,000	0	0

DESCRIPTION: This project supports the installation of failover information systems for critical operational and public safety systems across two City data centers and the redesign of one data center to reduce the overall number of sites supported. The project includes: purchasing equipment and configuring systems for failover across data centers; redesigning an existing data center to increase space utilization and capacity; building network and power redundancies for high availability; and installing climate control equipment and monitoring tools to manage systems and facility remotely.

JUSTIFICATION: The City supports three data centers with no failover capabilities across the sites. The primary data center, located in leased space, supports most City departments and enterprise systems, the second site supports Police systems and the third site supports Water and Power systems. The primary site poses a higher risk of service interruption should there be a disaster or interruption in power. The site does not have a power generator on immediate standby and will require one to be delivered to the location. An IT Audit conducted in 2009 recommended the consolidation of four City data centers into a primary and secondary data center. In 2010, the data center supporting Library systems was consolidated as recommended.

SCHEDULE: In FY 2013, capacity at an existing data center space will be expanded to accommodate the consolidation of the leased data center facility.

RELATIONSHIP TO THE GENERAL PLAN: The project is consistent with Safety Element Goal D-1 by planning for emergency response and recovery from natural and urban disasters.

SPECIAL CONSIDERATION: Completion of this project is contingent upon completion of: 1) Replacement of HVAC Equipment; and 2) Replacement of the UPS (uninterruptible power supply) in the selected primary data center facility. Partial funding for these projects in included in the Building Preventive Maintenance project 71901.

HISTORY: This project was created and received initial funding in FY 2012. Partial configuration of one data center occurred in FY 2012 to accommodate future consolidation.

FY 2013 - 2017 Capital Improvement Program Technology Projects Enterprise Content Management System

71151

Priority 7	Project No.	 Description Enterprise Content Management System 	Total Estimated Costs	Appropriated Through FY 2012	Adopted FY 2013	Proposed FY 2014	Proposed FY 2015	Proposed FY 2016	Proposed FY 2017 and Beyond
	General F	- Gund	150,000	0	150,000	0	0	0	0
	Power Fu	nd (Memo)	65,000	0	65,000	0	0	0	0
	Water Fu	nd (Memo)	35,000	0	35,000	0	0	0	0
	Unfunded	1	150,000	0	0	75,000	75,000	0	0
	Total		400,000	0	250,000	75,000	75,000	0	0

DESCRIPTION: This project provides for the replacement of the document imaging and records management system. The replacement system, an Enterprise Content Management (ECM) system is expected to be used by all departments for document management needs and provide the following core feature functions: document imaging, content management, records management, e-forms, e-signatures, and automated workflow. The project will include the development of a standard taxonomy (document indexing scheme) and updated records retention schedules based on the taxonomy established per department.

JUSTIFICATION: The current imaging and records management system, which is electronic repository for all official City records, birth certificates, and planning and building permits, requires replacement after nearly ten years in service. In addition, nearly every City department identified document imaging, records management, automated workflow and e-forms as an efficiency and cost savings solution during the development of the 5-Year IT Strategic Plan. Electronic management of documents and other forms of content reduces the need for physical storage space, which reduces office space requirements and storage fees. Staff performing clerical duties such as copying and filing can be redirected to perform higher level functions and paper based processes and routing can be streamlined using automated workflow. Compliance with records and archiving policies will be greatly improved with features that include audit trails, permissions and digital signatures.

SCHEDULE: This project will begin in FY 2013 with roll-out to the City Clerk and Water and Power Departments. Pending identification of funding, FY 2014 and FY 2015 will include roll-out of other City departments.

FY 2013 - 2017 Capital Improvement Program Technology Projects Enterprise Content Management System 71151

RELATIONSHIP TO THE GENERAL PLAN: This project is consistent with the Public Facilities Element Policy 202.0 by providing a high level of public service through more efficient management and greater work productivity.

SPECIAL CONSIDERATION: Separate projects are also shown under the Water System and Electric System sections. The contributing Water and Power Funds are not calculated in the Technology Section totals to avoid duplication.

HISTORY: This project was created and received initial funding in FY 2013.

FY 2013 - 2017 Capital Improvement Program Technology Projects City Fiber Network Expansion 71212

Priority Project No. Description 8 71212 City Fiber Network Expansion	Total Estimated Costs	Appropriated Through FY 2012	Adopted FY 2013	Proposed FY 2014	Proposed FY 2015	Proposed FY 2016	Proposed FY 2017 and Beyond
General Fund	50,000	0	50,000	0	0	0	0
Telecommunication Fund	300,000	75,000	75,000	75,000	75,000	0	0
Total	350,000	75,000	125,000	75,000	75,000	0	0

DESCRIPTION: This project provides funding for expansion of the existing City fiber network, to support greater operational efficiencies through extension of the fiber backbone, connection of additional City facilities, and evaluation of the feasibility of connecting the Pasadena and Glendale fiber networks in cooperation with the City of Glendale. The project leverages the opportunities presented by other projects that involve installation of new underground infrastructure, including utility undergrounding projects, Transportation Department network expansion efforts, other street openings, and new commercial building construction. The project funds installation of an additional conduit or conduit and fiber as an incremental cost to other planned City projects.

JUSTIFICATION: The City's current fiber network provides a source of revenue through leases to local institutions and telecommunications firms and provides key connections between City facilities, eliminating the need for expensive leased lines. Expansion of the fiber network would allow for connection of additional City facilities (eliminating recurring leased line costs) and possible revenue generation.

Leveraging other City projects presents the opportunity to greatly reduce the cost of fiber network expansion. The incremental cost of adding a conduit to another street trenching project (e.g., utility undergrounding or power conduit construction) is significantly less than constructing additional fiber network independently/separately, estimated at \$5 to \$10 per foot versus \$125 per foot for a stand-alone project.

The project also supports the City's participation in the Tri-Cities' (Glendale, Burbank and Pasadena) exploration of areas for greater regional cooperation and cost savings associated with IT projects and operations. Glendale and Burbank have already connected their fiber networks. Interconnection of the Glendale and Pasadena fiber networks would also eliminate current ongoing expenses for leased telecommunications lines in both cities, including services linking Glendale libraries to Pasadena and Pasadena Fire to the Verdugo Fire Communications Center.

FY 2013 - 2017 Capital Improvement Program Technology Projects City Fiber Network Expansion 71212

SCHEDULE: This project is a multi-year effort, to be implemented as other City projects present opportunities for fiber network expansion. In FY 2013, redundancy at the City's primary data center will be completed and work to extend fiber to tehRose Bowl will continue. Other projects may include installation of a fiber link to Glendale, extension of the City fiber network in concert with utility undergrounding projects, and additional City facility connections.

RELATIONSHIP TO THE GENERAL PLAN: The project is consistent with Public Facilities Objective 2 by implementing more efficient development and utilization of public facilities.

HISTORY: This project was created and initially funded in FY 2012. In FY 2012, evaluation of a fiber link to Glendale and connection of the Villa Parke Community Center to City fiber were completed.

FY 2013 - 2017 Capital Improvement Program Technology Projects

Enterprise Asset and Work Order Management Application

Priority 9	Project No. Description Enterprise Asset and Work Order Management Application	Total Estimated Costs	Appropriated Through FY 2012	Adopted FY 2013	Proposed FY 2014	Proposed FY 2015	Proposed FY 2016	Proposed FY 2017 and Beyond
	Unfunded	311,000	0	0	215,000	32,000	32,000	32,000
	Total	311.000	0	0	215.000	32,000	32,000	32,000

DESCRIPTION: This project provides for the implementation of a web-enabled enterprise asset and work order management system that can be used across all City departments to consolidate disparate asset databases, work order systems and resource management tools. The system will manage assets, maintenance and project related work including, but not limited to, routine work, corrective work, preventive maintenance, emergency work, project, shutdown and outage work, and environmental, health and safety work. The system will include the following high level functionality:

- Maintain asset location and history
- Provide inventory management
- Establish and track work orders
- Schedule labor resources
- Track costs and create invoices
- Integrate with other systems, e.g. Enterprise GIS, Financial system, 311 Citizen Request Management system, customer information and billing systems

JUSTIFICATION: Currently, assets and work orders are managed and tracked in various ways by different departments, many using disparate, stand-alone Excel spreadsheets, custom or Microsoft-based databases that lack integration, and/or paper files. The results of this decentralized approach to asset management is less accuracy and reliability in the inventory numbers, less accountability for assets in general, less efficient use of staff time, and billing inaccuracies for those assets that are used as a basis to charge other departments and external customers.

Implementing a web-enabled enterprise asset and work order management system will provide a single source of data and timely information that will create better accountability and inventory of the assets, improve labor and resource productivity, improve billing accuracy, provide the ability to perform periodic reviews, improve customer satisfaction, and increase overall efficiency, while reducing costs.

FY 2013 - 2017 Capital Improvement Program Technology Projects Enterprise Asset and Work Order Management Application

SCHEDULE: This project will begin in FY 2014 subject to identification of funding.

RELATIONSHIP TO THE GENERAL PLAN: The project is consistent with Public Facilities Element Policy 202.0 by providing a high level of public service through more efficient management and greater work productivity.

HISTORY: This project was created in FY 2013 and is currently unfunded.

FY 2013 - 2017 Capital Improvement Program Technology Projects Integration of DoIT and DOT Fiber Networks

Priority 10	Project No. Description Integration of DoIT and DOT Fiber Networks	Total Estimated Costs	Appropriated Through FY 2012	Adopted FY 2013	Proposed FY 2014	Proposed FY 2015	Proposed FY 2016	Proposed FY 2017 and Beyond
	Unfunded	186,000	0	0	186,000	0	0	0
	Total	186,000	0	0	186,000	0	0	0

DESCRIPTION: This project provides for the integration of the Department of Information Technology (DoIT) and Department of Transportation (DOT) fiber networks, and leverages the two networks to meet needs related to City facility and traffic system connections, sharing of data and video across the two networks for City staff, and future public use. The project includes: updates to fiber network documentation to allow sharing of information in the City's GIS-based fiber records management system; interconnection of the two fiber networks at key locations; and fiber connections for Fire Station 33 on Lake Avenue and the traffic signals at New York Drive and Bradley Street.

JUSTIFICATION: DoIT manages a 25-mile fiber network designed to meet City and Pasadena Water and Power communications network requirements, generate revenue, support local institutions, and foster competition in the business telecom market. The DOT operates a 22-mile fiber network to support the City's Intelligent Transportation System (ITS). The two fiber networks are not currently integrated, limiting the City's ability to leverage the two infrastructures for increased operational efficiency. Interconnection of the two networks will: facilitate sharing of network capacity for City and transportation system needs; allow sharing of data generated within the DOT network with other City departments and the public; and provide lower cost opportunities to connect additional City and traffic system facilities via fiber (eliminating recurring leased line costs, upgrading capacity, and increasing security).

SCHEDULE: Implementation will begin pending the identification of funding.

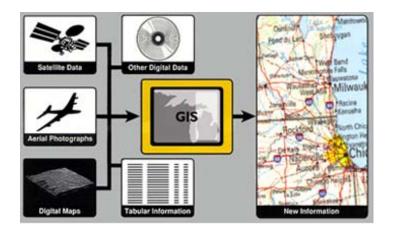
RELATIONSHIP TO THE GENERAL PLAN: The project is consistent with Public Facilities Element Objective 2 by through more efficient development and utilization of public facilities; and Policy 202.0 by maintaining a high level of public service through more efficient management and greater work productivity.

HISTORY: This project was created in FY 2012 and is unfunded.

Technology Projects

Geographic Information System - Water and Power Department (1009 and 3005)

Priority 11	Project No. Description Geographic Information System - Water and Power Department (1009 and 3005)	Total Estimated Costs	Appropriated Through FY 2012	Adopted FY 2013	Proposed FY 2014	Proposed FY 2015	Proposed FY 2016	Proposed FY 2017 and Beyond
	Power Fund		1,213,826	0	200,000	150,000	150,000	150,000
	Water Fund	953,903	503,903	0	150,000	100,000	100,000	100,000
Total		2,817,729	1,717,729	0	350,000	250,000	250,000	250,000



DESCRIPTION: This project provides for the analysis, development, and procurement of a departmental geographic information system (GIS) for the Water and Power Department. The base map has been completed, followed by application development, hardware procurement and/or procurement of custom, off-the-shelf programs, and conversion of utility data.

JUSTIFICATION: The geographic information system will reduce the cost of maintaining manually produced and updated maps and record systems. It will also reduce duplicate record keeping by different sections of the department. In addition, it will provide greater reliability, faster data access, and more efficient processing of information.

SCHEDULE: In FY 2013, work includes SDE, ArcGIS server and clients upgrades to V10.x; ArcFM upgrade; Spatial Wave's Maplet and MapLibrary upgrade; field GIS procurement; ESRI/ArcFM software training; Maplet and MapLibrary fine-tuning; data warehouse reports configuration/design; and AutoCAD to EXRI integration software procurement.

RELATIONSHIP TO GENERAL PLAN: This project is consistent with the Public Facilities Element of the General Plan by helping to maintain a high level of public service through more efficient management and greater work productivity.

SPECIAL CONSIDERATION: This project is also shown in the Electric System (Project 3005) and Water System (Project 1009) Sections. The appropriated dollar amount is not included in the Category Summary total for the Technology Projects Section to avoid duplication.

HISTORY: This project was created before FY 1994 and received initial funding in FY 1994.

FY 2013 - 2017 Capital Improvement Program Technology Projects Customer Information System (1011 and 3022)

Priority 12	Project No. Description Customer Information System (1011 and 3022)	Total Estimated Costs	Appropriated Through FY 2012	Adopted FY 2013	Proposed FY 2014	Proposed FY 2015	Proposed FY 2016	Proposed FY 2017 and Beyond
	Power Fund	2,931,081	536,081	645,000	1,500,000	100,000	75,000	75,000
	Water Fund	3,429,803	2,324,803	0	450,000	480,000	100,000	75,000
	Total	6,360,884	2,860,884	645,000	1,950,000	580,000	175,000	150,000



DESCRIPTION: The Customer Information System (CIS) provides for the customer billing for Water, Power, Refuse, and Sewer Services. System enhancements and upgrades are planned to add functionality to the CIS to enable the system to interface with MVRS meter reading software to read AMR and Probe Meters; bill and read interval data of large customers using MV90xi Commercial Customer Remote Meter Reading; bill and read interval data for selected residential, small and medium meters for the load research project; investigate the use of Mobile Dispatching of Service Orders in conjunction with the Field Service Automation program; provide and interface meter information to the GIS project; pilot new payment methods such as balance billing, preferred pay date, direct credit card payment; pilot enhanced interfaces with IWR to allow customers to start/stop service, change address, request service, update account information all through the Pasadena Water and Power web site.

JUSTIFICATION: The CIS Billing System reduces operational cost by maintaining a central data base of customer records and billing information. As the system matures, system upgrades and enhancements will be made. Interfaces with other systems will be made to maintain or enhance the capabilities of the system, support billing, meter reading, meter shops, and GIS, and provide customers with the highest level of service.

SCHEDULE: In FY 2013, work includes defining requirements for system upgrade with current vendor. If the current vendor cannot meet the requirements, an RFP for a new utility billing system and new vendor will be necessary.

FY 2013 - 2017 Capital Improvement Program Technology Projects Customer Information System (1011 and 3022)

RELATIONSHIP TO THE GENERAL PLAN: This project is consistent with the Public Facilities Element of the General Plan by helping to maintain a high level of public service through expanded services, efficient management and greater work productivity.

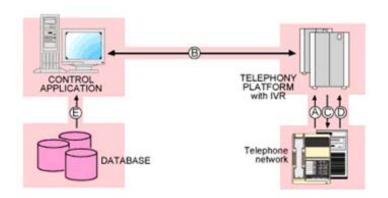
SPECIAL CONSIDERATION: This project is a compilation of two separate projects, one in the Electric System Section (Project 3022) and the other in the Water System Section (Project 1011). The total estimated cost and appropriations are not included in the Category Summary total for the Technology Projects Section to avoid duplication.

HISTORY: This project was created and received initial funding in FY 2000. One Power CIS System upgrade was completed in FY 2003 and a second was completed in FY 2009. One Water CIS System upgrade was completed in FY 2003, a second in FY 2007, and a third completed in FY 2009.

FY 2013 - 2017 Capital Improvement Program Technology Projects

Interactive Voice Response System (1016 and 3026)

Priority 13	Project No	Description Interactive Voice Response System (1016 and 3026)	Total Estimated Costs	Appropriated Through FY 2012	Adopted FY 2013	Proposed FY 2014	Proposed FY 2015	Proposed FY 2016	Proposed FY 2017 and Beyond
	Power Fund		645,192	370,192	0	75,000	75,000	75,000	50,000
	Water Fu	nd	320,851	220,851	0	25,000	25,000	25,000	25,000
	Total		966,043	591,043	0	100,000	100,000	100,000	75,000



DESCRIPTION: This project will provide for the procurement of the Pasadena Water and Power's portion of an Interactive Voice Response/Interactive Web Response (IVR/IWR) system.

JUSTIFICATION: The new IVR/IWR system will expand service to customers by providing immediate alternatives for automated information access and payments as well as personal assistance via telephone or internet. It is an integral part of the Water and Power Department's effort to increase customer service levels while reducing operating costs in a deregulated environment. The integration of the IVR/IWR system with Orcom will add the call-back functionality to the system.

SCHEDULE: In FY 2013, functionality will be expanded as needed to improve services to PWP customers. In addition, functionality to support electric the outage management system will be added.

RELATIONSHIP TO GENERAL PLAN: This project is consistent with the Public Facilities Element of the General Plan by helping to maintain a high level of public services, efficient management, and greater work productivity.

SPECIAL CONSIDERATION: This project is a compilation of two separate projects, one in the Electric System Section (Project 3026) and the other in the Water System Section (Project 1016). The total estimated cost and appropriations are not included in the Category Summary total for the Technology Projects Section to avoid duplication.

HISTORY: This project was created and received initial funding in FY 1999.

Technology Projects

Management Information Systems - Water and Power Department (1025 and 3119)

Priority 14	Project No. Description Management Information Systems - Water and Power Department (1025 and 3119)	Total Estimated Costs	Appropriated Through FY 2012	Adopted FY 2013	Proposed FY 2014	Proposed FY 2015	Proposed FY 2016	Proposed FY 2017 and Beyond
	Power Fund	2,328,371	1,728,371	0	250,000	200,000	150,000	0
	Water Fund	656,172	451,172	0	85,000	70,000	50,000	0
	Total	2,984,543	2,179,543	0	335,000	270,000	200,000	0

Management Information System



DESCRIPTION: This project provides for the development, upgrade, and maintenance of local area networks (LAN) at each of the four departmental worksites; acquisition of equipment to interconnect substations, water facilities, and existing networks; and integration of all information critical to Water and Power (PWP) operations into the same, non-redundant database. It will further:

- Install routers and firewalls in the Department's network structure;
- Convert Water and Power documents and drawings to electronic format and collect/validate field data;
- Procure an Automated Data Collection/Bar Coding system for the Warehouse;
- Convert the existing meter and transformer inventory system currently stored on the HP into a client-server application;
- Clean existing data prior to beginning the conversion process.

JUSTIFICATION: The Department's October 1991 MIS study found that considerable time savings and administrative and operational benefits would accrue if manual procedures were automated and if existing "islands of automation" were integrated. This would eliminate large amounts of data entry and re-entry performed by several groups, resulting in increased productivity and reduced errors. The barcode project will save time and money by automating inventory utilizing hand-held barcode readers and barcodes. These automated systems reduce time and labor required to perform inventory counts and virtually eliminate data entry errors, thus enabling the department to collect inventory accurately and efficiently at a lower cost and with greater integrity. The existing meter and transformer inventory systems are outdated and not serving the department's current needs and they need to be converted to a client-server type application.

FY 2013 - 2017 Capital Improvement Program Technology Projects

Management Information Systems - Water and Power Department (1025 and 3119)

SCHEDULE: In FY 2013, work includes network core switch upgrades/enhancements; application and database development; servers, RAM, and processor replacements/upgrades; NERC compliance; surveillance system replacement; HighJump system replacement/upgrade; Nice digital telephone/radio recording system replacement.

RELATIONSHIP TO GENERAL PLAN: This project is consistent with the Public Facilities Element of the General Plan by helping to provide a high level of service through more efficient management of resources.

SPECIAL CONSIDERATION: This project is also shown in the Water System (Project 1025) and Electric System (Project 3119) Sections. The total estimated cost and appropriations are not included in the Category Summary total for the Technology Projects Section to avoid duplication.

HISTORY: This project was created in FY 1991 and received initial funding in FY 1992.

FY 2013 - 2017 Capital Improvement Program Technology Projects Radio Equipment Replacement (1065 and 3188)

Priority 15	Project No. Description Radio Equipment Replacement (1065 and 3188)	Total Estimated Costs	Appropriated Through FY 2012	Adopted FY 2013	Proposed FY 2014	Proposed FY 2015	Proposed FY 2016	Proposed FY 2017 and Beyond
	Power Fund		1,183,452	0	50,000	50,000	0	0
	Water Fund	1,102,827	1,052,827	0	25,000	25,000	0	0
Total		2,386,279	2,236,279	0	75,000	75,000	0	0



DESCRIPTION: This project provides for the research, analysis, procurement, and implementation of new digital radio equipment for field operations. This project will also look into incorporating mobile data terminal technology or vehicle locator devices for Pasadena Water and Power (PWP) vehicles.

JUSTIFICATION: The existing radio equipment does not conform to the upcoming Federal Communications Commission rule requirements. Therefore, PWP plans to replace existing equipment with digital radio equipment that conforms to the new requirements.

SCHEDULE: In FY 2013, work includes procuring and configurating additional radios.

RELATIONSHIP TO GENERAL PLAN: This project is consistent with Objective 4 of the Public Facilities Element of the General Plan by helping to provide a high level of service and greater work productivity by using available technology. This project is also consistent with Public Facilities Objective 2 by providing more efficient development and utilization of public facilities.

SPECIAL CONSIDERATION: This project is a compilation of two separate projects, one in the Electric System Section (Project 3188) and the other in the Water System Section (Project 1065). The total estimated cost and appropriations are not included in the Category Summary total for the Technology Projects Section to avoid duplication.

HISTORY: The project was created and received initial funding in FY 2006.

Technology Projects

Project Work Management System - Electric System

3140

Priority 16	Project N 3140	o. Description Project Work Management System - Electric System	Total Estimated Costs	Appropriated Through FY 2012	Adopted FY 2013	Proposed FY 2014	Proposed FY 2015	Proposed FY 2016	Proposed FY 2017 and Beyond
	Power Bo	ond	4,914,767	2,264,767	0	150,000	500,000	1,000,000	1,000,000
	Total		4.914.767	2.264.767	0	150,000	500,000	1.000.000	1.000.000

DESCRIPTION: This project will provide the department with distribution of systemwide project breakdowns according to time, cost, material, and staff requirements, and scheduling and workflow management for Master Plan related projects.

JUSTIFICATION: This project will provide a process for project planning, management, and tracking, and eliminate lengthy research, calculations, and tedious manual processes previously done by staff. This system will also allow for more effective facilities management.

SCHEDULE: In FY 2013, additional hardware and sofware will be purchased. Additional Cascade licenses will be acquired to collect inventory and equipment data.

RELATIONSHIP TO THE GENERAL PLAN: This project is consistent with the Public Facilities Element of the General Plan by helping to maintain a high level of public service through more efficient management and greater work productivity.

SPECIAL CONSIDERATION: This project is also shown in the Electric System Section (Project 3140). The total estimated cost and appropriations are not included in the Category Summary total for the Technology Projects Section to avoid duplication.

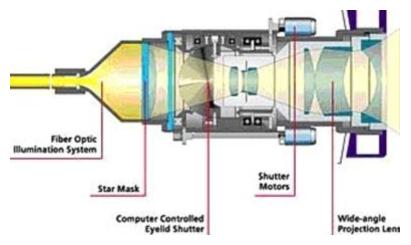
HISTORY: This project was created and initially funded in FY 1999.

Technology Projects

Engineering Services Installation/Maintenance of Fiber Optic System FY 2012-2016

3168

Priority 17	Project No.	Engineering Services Installation/Maintenance of Fiber Optic System FY 2012-2016	Total Estimated Costs	Appropriated Through FY 2012	Adopted FY 2013	Proposed FY 2014	Proposed FY 2015	Proposed FY 2016	Proposed FY 2017 and Beyond
	Power Bo	ond	694,419	394,419	0	100,000	100,000	100,000	0
	Total		694,419	394,419	0	100,000	100,000	100,000	0



DESCRIPTION: This project provides for the implementation of fiber-optic communications in Receiving Stations and Substations. This project also provides for engineering services, management, and the installation and maintenance of the Receiving/Substation Facilities fiber communications system.

JUSTIFICATION: This project is necessary to provide security and fire detection systems, internal communications sysems, network access (intranet) for engineering and diagnostic data, application to intelligent protection relays, and Power SCADA in the City's Power Distribution System Facilities.

SCHEDULE: In FY 2013, Engineering staff and field technicians will plan two projects to develop a communication network for the Smart Grid and will continue integration with SCADA.

RELATIONSHIP TO GENERAL PLAN: This project is consistent with the goal of the Public Facilities Element of the General Plan, specifically Objective #2 which calls for more efficient development and utilization of public facilities.

SPECIAL CONSIDERATION: This project is also shown in the Electric System Section (Project 3168). The total estimated cost and appropriations are not included in the Category Summary total for the Technology Projects Section to avoid duplication.

HISTORY: This project was created in FY 2002 and initially funded in FY 2003. This project has been segmented into five year increments starting in FY 2012.

Technology Projects

ITS Equipment Upgrades/Replacement FY 2011 - 2015

75906

Priority 18	Project No. 75906	DescriptionITS Equipment Upgrades/Replacement FY 2011 - 2015	Total Estimated Costs	Appropriated Through FY 2012	Adopted FY 2013	Proposed FY 2014	Proposed FY 2015	Proposed FY 2016	Proposed FY 2017 and Beyond
\ <u></u>	Gas Tax		250,000	100,000	50,000	50,000	50,000	0	0
	Total		250,000	100,000	50,000	50,000	50,000	0	0

Closed Circuit TV



DESCRIPTION: This project will upgrade, repair, replace, or install ITS components that will include, but are not limited to: Closed Circuit Television (CCTV) cameras, Changeable Message Signs (CMS), In-Roadway Warning Lights (IRWL), Video Detection Systems (VDS), fiberoptic cable communication systems, count-down pedestrian signals, miscellaneous TMC equipment, and other smart traffic control devices to improve the traffic mobility and safety along the City's mobility corridors during recurring and nonrecurring congestion.

JUSTIFICATION: Many of the City's ITS elements that were implemented in the early 1990s are still in place and operating today. Many of these devices are increasingly becoming more difficult and expensive to operate. Due to the rapid advancement in technology, many of these components have ceased to function not only due to lack of funds, but also because they have become obsolete by today's standards. Many parts or vendors that originally supplied the equipment are no longer available.

In addition, because of the high demand to make Pasadena's existing road network as efficient as possible, the City has installed many more ITS devices without appropriating capital costs for preserving the system's operability. These new devices include the IRWLs, Video Detection Systems, fiberoptic cable and components, and others. Currently, the City has 20 CCTV systems, 11 CMS, 60 VDS, and approximately four miles of fiber optic system. Under development, plans have been approved to install at least 15 more CCTVs, two CMS, six IRWL systems, eight miles of fiber optic system, and a number of additional VDS. The Metro Rapid Bus system is also being deployed, which will require specialized smart traffic signal equipment. This project is crucial to ensure traffic management function is maintained not only during day-to-day functions but also during special events, incidents on the freeway, construction detours and other nonrecurring events. This will also be critical in maintaining safety for those ITS devices intended to provide additional protection to pedestrians such as the IRWL system, flashing beacons, and countdown pedestrian signals.

FY 2013 - 2017 Capital Improvement Program Technology Projects ITS Equipment Upgrades/Replacement FY 2011 - 2015 75906

SCHEDULE: In FY 2013, one portable CMS/ CCTV camera, video detection equipment, and fiber optic communication equipment will be purchased and deployed.

RELATIONSHIP TO THE GENERAL PLAN: This project is consistent with the Mobility Element Objective 4.5 by improving and stabilizing the flow of traffic on established mobility corridors. It is also consistent with Public Facilities Element Objective 6 by the continued provision of a high level of design quality in all public streets.

SPECIAL CONSIDERATION: This project is also shown in the Transportation Section (Project 75906). The total estimated cost and appropriations are not included in the Category Summary total for the Technology Projects Section to avoid duplication.

HISTORY: This project was created in FY 2007 and received initial funding in FY 2011. This project replaces the CCTV Installation/Replacement project. This project has been segmented into five year increments starting in FY 2011 as project 75906. A new five year phase of this project will be created in FY 2016.

FY 2013 - 2017 Capital Improvement Program Technology Projects Energy Reporting System Upgrade 3193

Priority 19	Project No. Description 3193 Energy Reporting System Upgrade	Total Estimated Costs	Appropriated Through FY 2012	Adopted FY 2013	Proposed FY 2014	Proposed FY 2015	Proposed FY 2016	Proposed FY 2017 and Beyond
	Power Fund	1,552,989	1,402,989	0	50,000	50,000	50,000	0
	Total	1,552,989	1,402,989	0	50,000	50,000	50,000	0

DESCRIPTION: This project provides for creation of a data warehouse and reporting system to store, analyze, and monitor wholesale energy transactions. Currently there are several unique systems that track components of energy transactions. The project will extract data from the various sources, transform the data to the common data structure, and load the data into the data warehouse. A report-writing tool will be used to create standard reports for performance analysis, transaction verification, and risk control.

JUSTIFICATION: This project will improve overall performance analysis and audit capability. The Power Supply Business Unit transacts approximately \$75 million in energy transactions. Data includes power and gas trade positions, power and gas schedules, market prices, dispatch instructions, capacity positions, generation outage schedules, and transaction logs. The data is required by the Wholesale Operations Group (front office transactions), the Risk Management Group (middle office risk control and credit management), and the Financial Settlements Group (back office transaction settlement and energy accounting).

The proposed solution is to evolve from proprietary reporting tools from the transaction (Global Energy Decision's Schedule Management product) system and the California Independent System Operator (CAISO) settlement system to a repository with a common reporting tool (e.g., Crystal Reports.)

SCHEDULE: In FY 2013, consulting services will be contracted for additional reports, and enhancements/modifications of existing reports. Oracle licensing and storage disk space are needed to accommodate the growing data download from the CAISO.

FY 2013 - 2017 Capital Improvement Program Technology Projects Energy Reporting System Upgrade 3193

RELATIONSHIP TO THE GENERAL PLAN: This project is consistent with the Public Facilities Element of the General Plan by encouraging a high level of maintenance of existing facilities. The project is consistent with the Land Use Element by continuing to implement capital improvements which will maintain or rehabilitate infrastructure. It is also consistent with Land Use Element Objective 13 by providing adequate support for institutions that serve the needs of Pasadena's diverse residents and families.

SPECIAL CONSIDERATION: This project is also shown in the Electric System Section (Project 3193). The total estimated cost and appropriations are not included in the Category Summary total for the Technology Projects Section to avoid duplication.

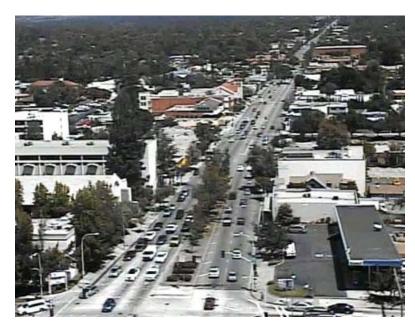
HISTORY: This project was created and received initial funding in FY 2007.

Technology Projects

Transportation System Improvements - Lake Avenue from Washington Blvd to California Blvd - Phase II 75035

Priority 20	Project No 75035	Description Transportation System Improvements - Lake Avenue from Washington Blvd to California Blvd - Phase II	Total Estimated Costs	Appropriated Through FY 2012	Adopted FY 2013	Proposed FY 2014	Proposed FY 2015	Proposed FY 2016	Proposed FY 2017 and Beyond
	Private Ca	pital - 201 N. Lake Avenue	301,000	301,000	0	0	0	0	0
	Private Ca	pital - 621 E Colorado Blvd	60,000	60,000	0	0	0	0	0
	Private Ca	pital - Hanover R.S. Limited Partnership	57,200	57,200	0	0	0	0	0
	Private Ca	pital - Pasadena Collection Office Project	147,500	147,500	0	0	0	0	0
	Private Ca	pital - Shea Property - 621 Colorado Avenue	117,000	117,000	0	0	0	0	0
	Private Ca	pital - Wasserman Construction Company	156,000	156,000	0	0	0	0	0
	Private Ca	pital - Western Assets - Plaza Las Fuentes II	60,000	60,000	0	0	0	0	0
	Total		898,700	898,700	0	0	0	0	0

Lake Avenue



DESCRIPTION: This project will complement the upgrades completed in Phase I with information technology system components as defined by the MTA under Category Tier 4. The Tier 4 upgrades will include, but are not limited to fiber optics transceivers, closed circuit TV cameras, and video detection equipment.

JUSTIFICATION: These improvements will provide capabilities for new traffic operation design and will upgrade this corridor to Smart Corridor status.

SCHEDULE: In FY 2013, construction of the communication infrastructure (that will provide gap closures to the existing fiber optics communication master plan) along main corridors such as Lake Avenue, Colorado Boulevard and other arterials will be completed.

RELATIONSHIP TO THE GENERAL PLAN: This project is consistent with the Mobility Element Objective 4.5 by improving and stabilizing the flow of traffic on established mobility corridors. The project is also consistent with Land Use Element Policy 19.2 by reducing traffic congestion.

SPECIAL CONSIDERATION: Phase I, a joint project with the Los Angeles County Department of Public Works, upgraded traffic signals along Lake Avenue from northern to southern city limits.

Technology Projects

Transportation System Improvements - Lake Avenue from Washington Blvd to California Blvd - Phase II 75035

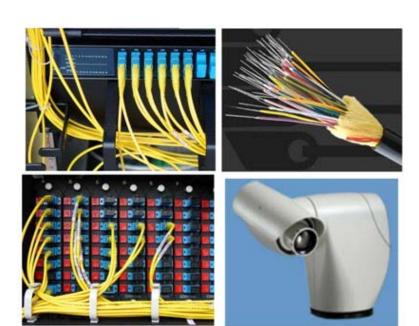
This project is also shown in the Transportation Section (Project 75035). The total estimated cost and appropriations are not included in the Category Summary total for the Technology Projects Section to avoid duplication.

IMPACT ON THE NORTHWEST: Portions of this project are located within Northwest Pasadena which is an area that has been targeted for revitalization.

HISTORY: This project was created and initially funded in FY 2004. The project cost and scope was reduced in FY 2012 to fully fund and complete the project in FY 2012.

FY 2013 - 2017 Capital Improvement Program Technology Projects Intelligent Transportation System (ITS) Phase II 75910

Priority 21	Project No. Description 75910 Intelligent Transportation System (ITS) Phase II	Total Estimated Costs	Appropriated Through FY 2012	Adopted FY 2013	Proposed FY 2014	Proposed FY 2015	Proposed FY 2016	Proposed FY 2017 and Beyond
	MTA Grant - Proposition C	2,684,000	2,684,000	0	0	0	0	0
	Private Capital - Huntington Hospital	450,000	450,000	0	0	0	0	0
	Private Capital - Westgate	220,000	0	220,000	0	0	0	0
	Total		3,134,000	220,000	0	0	0	0



DESCRIPTION: This project provides further design and implementation of the Pasadena ITS Master Plan through signal synchronization, the installation of fiber optic communication, CCTV cameras and other ITS components. Implementation corridors include:

- Sierra Madre Boulevard from Washington Boulevard at Eaton Canyon to Michillinda Avenue
- Fair Oaks Avenue from Orange Grove Boulevard to Montana Street
- Fair Oaks Avenue from Columbia Street to Walnut Street
- Hill Avenue from Colorado Boulevard to Walnut Street
- Foothill Boulevard from Sierra Madre Villa to Halstread Street.

JUSTIFICATION: This work is necessary to complete some of the unfunded fiber optic communication segments identified in the ITS portion of the National Transportation Bill HR 5394 (Rogan Projects). This fiber optic communication system will support the expansion of current traffic control systems and lay the groundwork to support future advances in ITS technology that demand higher communication bandwidth.

SCHEDULE: Design was completed in FY 2012. Construction will be completed in FY 2013.

RELATIONSHIP TO THE GENERAL PLAN: This project is consistent with the Mobility Element Objective 4.5 by improving and stabilizing the flow of traffic on established mobility corridors. The project is also consistent with Public Facilities Element Objective 6 by the continued provision of a high level of design quality in all public streets.

FY 2013 - 2017 Capital Improvement Program Technology Projects Intelligent Transportation System (ITS) Phase II 75910

SPECIAL CONSIDERATION: This project received \$2,684,000 in funding through the 2007 MTA call for projects.

This project is also shown in the Transportation Section (Project 75910). The total estimated cost and appropriations are not included in the Category Summary total for the Technology Projects Section to avoid duplication.

HISTORY: This project was created in FY 2009 and fully funded in FY 2013.

Technology Projects

Intelligent Transportation System (ITS) Project - Phase I 75701

Priority 22	Project No 75701	Description Intelligent Transportation System (ITS) Project - Phase I	Total Estimated Costs	Appropriated Through FY 2012	Adopted FY 2013	Proposed FY 2014	Proposed FY 2015	Proposed FY 2016	Proposed FY 2017 and Beyond
	FTA 5309	Эс	836,000	836,000	0	0	0	0	0
	Gold Line	e Surplus Funds	810,200	810,200	0	0	0	0	0
	MTA Gra	nt - Federal Flexible CMAQ Funds	683,150	683,150	0	0	0	0	0
	SAFTEA	-LU	2,000,000	2,000,000	0	0	0	0	0
	Total		4,329,350	4,329,350	0	0	0	0	0

Traffic Management Center



DESCRIPTION: This project provides for the installation of conduit and fiber optic communication lines on top priority arterial segments and the upgrade of control equipment at the Traffic Management Center (TMC). It also provides for the installation of a transit vehicle arrival information system with message signs at six Gold Line Stations and 23 major ARTS bus stops that will show the arrival time of the next ARTS bus. It will include an enhanced passenger information program to supplement the ARTS Vehicle Arrival Information System with interactive voice response and wayside signs. This project will also provide for the installation of vehicle counters at nine City public parking garages (three in Old Pasadena and six in the Civic Center area) as well as the installation of changeable message signs at key entry points that would indicate the real-time availability of the parking spaces at the various public parking garages.

JUSTIFICATION: This work is necessary to complete some of the fiber optic communication segments identified in the ITS portion of the National Transportation Bill HR 5394 (Rogan Projects). This fiber optic communication system will support the expansion of the current traffic control system and lay the groundwork to support future advances in ITS technology that demand a higher communication bandwidth. This project will provide the integration of the Public Parking Availability Information System to the City's TMC which will provide an integrated approach to managing traffic.

SCHEDULE: Construction transit component of this project began in FY 2012 and will be completed in FY 2013. The parking and traffic components will begin in FY 2013 and be completed in FY 2014.

RELATIONSHIP TO THE GENERAL PLAN: This project is consistent with the Mobility Element Objective 4.5 by improving and stabilizing the flow of traffic on established mobility corridors. The project is also consistent with Public Facilities Element Objective 6 by the continued provision of a high level of design quality in all public streets.

FY 2013 - 2017 Capital Improvement Program Technology Projects Intelligent Transportation System (ITS) Project - Phase I 75701

SPECIAL CONSIDERATION: The local match for the MTA Grant funds of \$210,200 is coming out of project 75506 - Gold Line Phase I - Project Enhancements.

This project can also be found in the Transportation Section (Project 75701). The total estimated cost and appropriations are not included in the Category Summary total for the Technology Projects Section to avoid duplication.

HISTORY: This project was created in FY 2007 and fully funded in FY 2011.

FY 2013 - 2017 Capital Improvement Program Technology Projects Pasadena Wayfinding System

75044

Priority 23	Project No. Description 75044 Pasadena Wayfinding System	Total Estimated Costs	Appropriated Through FY 2012	Adopted FY 2013	Proposed FY 2014	Proposed FY 2015	Proposed FY 2016	Proposed FY 2017 and Beyond
	Metropolitan Transportation Authority	259,680	259,680	0	0	0	0	0
	Pasadena Economic Development Funds	1,938,105	0	1,938,105	0	0	0	0
	Total	2,197,785	259,680	1,938,105	0	0	0	0



DESCRIPTION: This project provides for a unified design and implementation and management of a wayfinding system throughout the City to enhance the image of business district areas. This project will include the installation of dynamic and static signage such as parking guidance, gateway signs, business district area signage, local destination signs, and electronic information kiosks at three of the Metro Goldline stations within Pasadena.

JUSTIFICATION: The goal of this project is to enhance the image of the business district areas; provide navigation information to visitors; create a sense of community; improve access, identification and connectivity to adjacent areas; help drivers locate and identify parking; and promote economic vitality through convenient destination finding signage in local shopping areas.

SCHEDULE: This project will begin in FY 2013.

RELATIONSHIP TO GENERAL PLAN: This project is consistent with Mobility Element Policy 1.5 by promoting ease of access to local and regional transportation services by developing identifiable corridors and appropriate signage to accommodate travel within the City and to/from destinations outside the City.

SPECIAL CONSIDERATION: This project can also be found in the Transportation Section. The total estimated cost and appropriations are not included in the Category Summary total for the Technology Projects Section to avoid duplication.

HISTORY: This project was created in FY 2011 and fully funded in FY 2013.

FY 2013 - 2017 Capital Improvement Program Technology Projects

Intelligent Transportation System (ITS) Master Plan Implementation Phase III

Priority 24	Project No. Description Intelligent Transportation System (ITS) Master Plan Implementation Phase III	Total Estimated Costs	Appropriated Through FY 2012	Adopted FY 2013	Proposed FY 2014	Proposed FY 2015	Proposed FY 2016	Proposed FY 2017 and Beyond
	MTA Grant - Proposition C	4,234,851	0	0	1,982,280	2,252,571	0	0
	Unfunded	1,058,714	0	0	495,571	563,143	0	0
· · · · · ·	Total	5,293,565	0	0	2,477,851	2,815,714	0	0

Intelligent Transportation System Master Plan Implementation - Phase III



DESCRIPTION: This project will complete the communication system for the Intelligent Transportation System (ITS) Master Plan by closing the fiber communication gaps. The project will also include the installation of additional closed circuit television cameras, detection systems, upgrade or update of legacy ITS elements such as changeable message signs, cabinet and controllers, integration of permanent count stations to the Traffic Management Center (TMC) and other soft operational updates such as signal synchronization timing and advance traffic management operations. A significant portion of the ITS Project will close fiber optic communication gaps accounting for over seven miles of fiber along 10 corridors.

JUSTIFICATION: The use of ITS technologies assists in mitigating increased traffic congestion on local roads as well as improving access to the City's public transportation system. The City's ITS Master Plan includes a Transit Management System which provides an automatic vehicle location system, priority signalization, and real-time passenger information systems for buses on the Pasadena Area Rapid Transit System (ARTS), as well as a parking guidance system to alleviate congestion in downtown Pasadena by monitoring the number of available spaces in garages and surface lots. Installation of this fiber network will allow the City to reach more of the traffic signal network and provide for increased communication bandwidth and the ability to monitor traffic conditions along additional corridors.

SCHEDULE: This project will begin in FY 2014 and will be completed in FY 2015.

RELATIONSHIP TO GENERAL PLAN: This project is consistent with Mobility Element Policy 4.8 by expanding the TMC capabilities to provide priority treatment and monitoring of transit vehicles at traffic signals on major streets along with the use of advanced communication systems to provide additional traveler information services and monitoring of traffic and transit services by using automated vehicle location technology.

FY 2013 - 2017 Capital Improvement Program Technology Projects

Intelligent Transportation System (ITS) Master Plan Implementation Phase III

SPECIAL CONSIDERATION: This project received \$4,234,851 in funding through the 2009 Metro Call for Projects. The money will be given to the city in two payments starting in FY 2014 through FY 2015. This grant requires a local match of \$1,058,714.

This project can also be found in the Transportation Section. The total estimated cost and appropriations are not included in the Category Summary total for the Technology Projects Section to avoid duplication.

IMPACT ON THE NORTHWEST: A portion of this project is located in Northwest Pasadena which is an area that has been targeted for revitalization.

HISTORY: This project was created in FY 2010 and is currently unfunded.