

INFORMATION TECHNOLOGY

Overview of CIP Program

The Department of Information Technology (DoIT) builds, manages, and maintains City government information technology (IT) infrastructure – radio, telephone, and computer networks which are used by other City departments to serve their customers. DoIT also manages the City’s central data center, which houses most of the computer servers used by City departments. DoIT manages the development of certain computer applications projects on behalf of other departments. Prior to 2002, DoIT projects were included within the Executive Services Departmental CIP. In 2002, DoIT projects were included within the Fleets & Facilities Department CIP. DoIT projects are now displayed separately due to the size and complexity of the growing DoIT collection of IT projects.

The City’s radio network is used by the police, fire, public utilities, Seattle Center, and other departments to communicate and dispatch public safety officers and other field workers. The radio network is part of the larger King County 800-megahertz (MHz) radio network. It is interoperable – that is, any officer of any participating agency anywhere in the County can communicate with any other officer of any other participating agency. The City’s portion of the system consists of over 4,400 mobile (vehicle-mounted) and portable (handheld) radios, seven transmission sites, and associated electronics, microwave, and communications lines.

All City departments use the City’s telephone network. It consists of 26 major telephone switches and over 100 smaller switches known as “key systems,” with about 11,500 telephone lines and sets. It also includes special-function devices such as “interactive voice response” (IVR) systems that allow 24-hour, seven-day-a-week access by customers to perform functions such as paying municipal court tickets, reporting electrical outages, and obtaining the status of electric or public utility bills.

The City’s data communications network links together more than 9,000 computers used by every City department. These range from the largest computers – operating the City’s financial management system and utility customer billing systems – to the desktop computers used by many individual City employees.

All of these networks use fiber optic cable and copper wire (circuits) to link computers, telephone switches, and other electronics that are located at about 300 City government sites in King County. While many of these circuits are leased from common carriers such as Qwest, DoIT also constructs and maintains a City government-owned fiber optic cable network concentrated within the City, with links to sites elsewhere in the County. DoIT is also the lead agency for a consortium of public agencies in the construction of this network. The other agencies include the University of Washington, King County, State of Washington, Seattle School District, North/Central/South Seattle Community College Districts, General Services Administration (GSA), National Oceanic and Atmospheric Administration (NOAA), and the King County Library System. DoIT identifies routes or paths for the fiber optic cable network, then procures and installs fiber optic cables for each agency that needs to communicate along that path. These fiber optic cables carry telephone, radio, video, and computer traffic.

In the 2001-2002 biennium, DoIT constructed a new data center to house most of the computer servers used by City government departments. This new data center has two parts – an enterprise computer center and a consolidated server room. The enterprise computer center houses the largest computers used for the City’s financial management system (Summit), the Combined Customer Service System (CCSS) used by Seattle City Light and Seattle Public Utilities, the Human Resource Information System (HRIS), the Seattle Municipal Court Information System (MCIS), and Transportation’s work management and permitting system. The consolidated server room houses most of the mid-sized and smaller computer servers used by almost every City department for day-to-day operations.

DoIT also manages the development of certain computer applications on behalf of the Seattle Police Department, the Seattle Fire Department, the Seattle Municipal Court, and the Law Department (referred to as the City’s Law,

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Safety, and Justice (LSJ) departments by DoIT). These applications are used by those departments for dispatching, records management, and work management.

Highlights

The DoIT CIP provides for the following projects:

- Addition of a backup electrical power generator to Key Tower, so the DoIT-operated data center can continue operation even if building power fails during an emergency or disaster.
- Expansion of a standard data communications network in the new Civic Center buildings (Key Tower, new City Hall, new Justice Center). This standard network is known as “uniform data service.”
- Installation of additional fiber optic cable links and spurs to various locations, including Seattle schools and under-served areas such as south and southeast Seattle.
- Upgrade of the electronics and radios in the 800 MHz public safety radio network in accordance with the manufacturer’s replacement and improvement schedule.
- Upgrade of the telephone switches and other electronics in the City’s telephone network to introduce improved service and introduce new features that are useful to City employees and customers, specifically for 24-hour access to City services.
- Development and implementation of a replacement records management (RMS) computer system for the Seattle Police Department and Seattle Fire Department.
- Development and implementation of a replacement computer-aided dispatch (CAD) computer system for the Seattle Police Department and Seattle Fire Department.
- Division of the Law, Safety, Justice Information Technology Project (Project LSJIT), listed in Fleets & Facilities’ 2002-2007 Adopted CIP, into seven individual projects.

Project Selection Process

The City selects infrastructure projects based upon the following criteria:

- **Operation during emergencies and disasters.** This is the most important criterion in the selection process. During emergencies and disasters people rely on government for protection and life safety. City departments, in turn, rely upon their communication systems (radio, telephone) and computer systems to dispatch help to the public. To accomplish this, DoIT builds technology systems and networks which are owned by the City, so that the City does not have to depend upon private companies to restore service or fix problems during emergencies. Such systems and networks are also hardened and redundant. For example, there are multiple pathways of fiber optic cable extending to the 911 Center, and other major sites have backup systems such as diesel-fueled power generators.
- **Changes and improvements to technology.** The Department of Information Technology uses industry-standard equipment and software – hardware and software which is also used by most other major businesses and governments. This includes equipment and software from manufacturers such as Microsoft, IBM, Motorola, Cisco, Nortel, and Gateway. However, the industry is constantly developing new technology. The rapid improvement in the speed and capacity of the common desktop computer is one example of such

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developments, but similar improvements occur in telephone switches (which are really just specialized computers), radio transmission equipment, network electronics, and the computer software which operates and controls all this electronic equipment. As manufacturers develop new hardware and software, they eventually discontinue support for older electronic equipment, and older versions of the controlling software. To stay current with the manufacturers and the rest of industry, the City must constantly upgrade its information technology.

- **Extension of services “anytime, anywhere.”** Technology is rapidly changing our lives. Examples of this include: the increased availability and use of cellular telephones and wireless networks, the rise of services available on the Internet, and the increased number of desktop computers available in homes, businesses, and public places. These new technologies allow citizens access to many services from their homes, offices and vehicles – services such as purchase of goods and financial services. Similarly, the City can extend access of its services – using the same technologies – to the public. Already customers of Seattle City Light and Seattle Public Utilities can report electrical outages or access their account information via telephone anytime, 24 hours a day, seven days a week. Customers of the Seattle Municipal Court can pay fines using credit cards via telephone or the City’s web site. Customers of the Department of Design, Construction and Land Use can schedule certain construction inspections via an automated telephone system. The City, when it is cost effective, provides such “anywhere, anytime” services and information.

Project Funding and Schedule: Each project listed in the six-year plan is reviewed to determine viable funding sources including: Limited Tax General Obligation Bonds; Information Technology Fund; King County 911 Funds; Basic Life Support Fund; 800 MHz Levy; Federal Technology Grants; and General Subfund. DoIT, working with its partners, establishes the timeframe and estimates the cost of each planned project prior to review and approval by the City Council.

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Project Summary

Program/Project	Project ID	LTD	2002	2003	2004	2005	2006	2007	2008	Total
Technology Engineering and Project Management										
800 MHz Radio Program	D9KC00	0	850	500	750	0	0	0	13,130	15,230
Data, Telephone, & Video Program	COMMINFR A	0	0	840	1,381	2,400	1,500	1,500	1,500	9,121
Fiber Optic Communication Installation and Maintenance	FIBER	0	2,135	2,188	823	75	0	0	0	5,221
Key Tower Backup Generator	D3KTG1	0	1,000	0	0	0	0	0	0	1,000
Law, Safety, Justice Document Image and Management	Image	234	0	0	0	1,266	0	0	0	1,500
Mobile Data Communications	MDC	5,965	35	0	0	0	0	0	0	6,000
Seattle Fire Department Computer Aided Dispatch System	SFDCAD	0	1,857	677	0	0	0	0	0	2,534
Seattle Fire Department Record Management System	SFDRMS	0	1,243	679	0	0	0	0	0	1,922
Seattle Justice Information Systems	SEAJIS	220	900	0	0	0	0	0	0	1,120
Seattle Police Department Computer Aided Dispatch	SPDCAD	0	3,070	158	0	0	0	0	0	3,228
Seattle Police Department Record Management System	SPDRMS	0	4,000	1,250	0	0	0	0	0	5,250
Uniform Data Services	D3KTUD	588	331	219	168	116	0	0	0	1,422
Technology Engineering and Project Management Total		7,007	15,421	6,511	3,122	3,857	1,500	1,500	14,630	53,548
Department Total		7,007	15,421	6,511	3,122	3,857	1,500	1,500	14,630	53,548

**Amounts in thousands of dollars*

Fund Source Summary

Funding Source	LTD	2002	2003	2004	2005	2006	2007	2008	Total
800 MHz Levy	0	0	120	0	0	0	0	0	120
Basic Life Support Levy	0	0	250	0	0	0	0	0	250
Federal Technology Grants	65	1,500	0	0	0	0	0	0	1,565
Fire Department Contribution	0	0	165	0	0	0	0	0	165
General Subfund	0	1,187	580	0	0	0	0	0	1,767
Information Technology Fund	588	4,136	3,747	3,122	2,591	1,500	1,500	14,630	31,814
King County 911	0	0	197	0	0	0	0	0	197
Limited Tax General Obligation Bonds	5,854	5,837	0	0	0	0	0	0	11,691
Local Law Enforcement Block Grant	500	0	0	0	0	0	0	0	500
Public Safety Information Technology Fund	0	2,761	1,336	0	0	0	0	0	4,097
Public Safety IT 2002 CFB	0	0	116	0	0	0	0	0	116
To Be Determined	0	0	0	0	1,266	0	0	0	1,266
Department Total	7,007	15,421	6,511	3,122	3,857	1,500	1,500	14,630	53,548

**Amounts in thousands of dollars*

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800 MHz Radio Program

Program: Technology Engineering and Project Management **Start Date:** 1st Quarter 2002
Type: New Investment **End Date:** Ongoing
Project ID: D9KC00
Location: Not applicable

The 800 MHz Radio Program upgrades software and hardware for the City of Seattle's portion of the King County Regional 800 MHz Radio System. The 800 MHz Radio system provides the communication infrastructure required for health and safety operations such as 911, Medic One, Fire, and Police. The program of system upgrades ensures continued manufacturer support and overall communication functionality. Although the project funds are expended from the Information Technology Fund, these funds come from a combination of 800 MHz levy proceeds and user fees. Costs shown in 2008 reflect an anticipated major upgrade of the technology by the manufacturer. There are no anticipated operations and maintenance costs associated with this project.

Fund Source	LTD	2002	2003	2004	2005	2006	2007	2008	Total
Information Technology Fund	0	850	500	750	0	0	0	13,130	15,230
TOTAL FUNDS	0	850	500	750	0	0	0	13,130	15,230
<i>O&M Costs (Savings)</i>			0	0	0	0	0	0	0
Cash Flow		0	500	1,600	0	0	0	13,130	

Data, Telephone, & Video Program

Program: Technology Engineering and Project Management **Start Date:** Ongoing
Type: New Investment **End Date:** Ongoing
Project ID: COMMINFRA
Location: Not applicable

The Data, Telephone, & Video Program maintains the City's Data and Telephone switching systems through software and hardware maintenance, upgrades, and replacements. These projects are often unavoidable due to changing technology and/or mandated manufacturer requirements, and either reduce future costs or provide useful features which improve end-user productivity. The program is similar to an HVAC or traffic signal equipment program found in traditional CIP departments, as there is an inventory of capital assets that require maintenance, upgrades, and replacements to avoid unscheduled service disruption and system failures. Specific projects are chosen as the year progresses.

Although project funds are expended from the Information Technology Fund, the funds come from user fees. The City's data network systems require major overhaul in 2005 due to a manufacturer technology change. There are no anticipated operations and maintenance costs associated with this project.

Fund Source	LTD	2002	2003	2004	2005	2006	2007	2008	Total
Information Technology Fund	0	0	840	1,381	2,400	1,500	1,500	1,500	9,121
TOTAL FUNDS	0	0	840	1,381	2,400	1,500	1,500	1,500	9,121
<i>O&M Costs (Savings)</i>			0	0	0	0	0	0	0

*Amounts in thousands of dollars

Fiber Optic Communication Installation and Maintenance

Program: Technology Engineering and Project Management **Start Date:** Ongoing
Type: New Investment **End Date:** Ongoing
Project ID: FIBER
Location: Not applicable

This project provides for the installation and maintenance of the fiber network on behalf of fiber partners (General Services Administration, National Oceanic Atmospheric Association, Washington State Department of Information Services, Washington State Department of Transportation, King County, University of Washington, Seattle School District, South/Central/North Seattle Community College Districts, and other City departments). The fiber network provides a high speed communication network for the various agencies and departments. The expansion of the fiber network includes sites such as libraries, public schools, fire stations, police stations, water treatment facilities, sewage treatment facilities, community centers, universities, community colleges, City Light substations, and other City facilities. There are 22 main fiber projects and over 60 subprojects. Although the project funds are expended from the Information Technology Fund, the funds come from payments by fiber partners and departmental user fees. The operating and maintenance costs are funded through the departmental operating fund from access fees collected from fiber partners.

Fund Source	LTD	2002	2003	2004	2005	2006	2007	2008	Total
Information Technology Fund	0	2,135	2,188	823	75	0	0	0	5,221
TOTAL FUNDS	0	2,135	2,188	823	75	0	0	0	5,221
<i>O&M Costs (Savings)</i>			500	500	500	500	500	500	3,000

Key Tower Backup Generator

Program: Technology Engineering and Project Management **Start Date:** 2nd Quarter 2002
Type: New Facility **End Date:** 4th Quarter 2003
Project ID: D3KTG1
Location: Key Tower

The Key Tower Backup Generator Project consists of the design and installation of a 750Kw diesel generator in the City's Key Tower building. The generator supplies power required to maintain operation of critical City computer and communication systems utilized by several City departments in the event of an emergency. The generator utilizes the existing building electrical system to deliver backup power. Although fully appropriated in 2002, the project is completed in 2003. Operating costs are to be paid from the Information Technology Fund from cost allocations to customer departments.

Fund Source	LTD	2002	2003	2004	2005	2006	2007	2008	Total
Limited Tax General Obligation Bonds	0	1,000	0	0	0	0	0	0	1,000
TOTAL FUNDS	0	1,000	0	0	0	0	0	0	1,000
<i>O&M Costs (Savings)</i>			3	3	3	3	5	5	22
Cash Flow		100	900	0	0	0	0	0	

*Amounts in thousands of dollars

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Law, Safety, Justice Document Image and Management

Program: Technology Engineering and Project Management **Start Date:** 1st Quarter 2003
Type: New Investment **End Date:** TBD
Project ID: Image
Location: Not applicable

Law, Safety, Justice Document Image and Management project converts existing paper files to digital files and manages all files. This project was previously listed as part of the Law, Safety, Justice Information Technology Project (Project LSJIT) in Fleets & Facilities' 2002-2007 Adopted CIP. Converting the documents to digital copies reduces or eliminates the use of standard filing cabinets and their required floor space, and provides authorized personnel access to information from their computer. Misfiled, lost, or destroyed documents are eliminated through the storage and backup of files on the City's computer system with immediate availability. Planning for this project is estimated to be complete in 2004; sources for the estimated funding gap of \$1.26M for implementation are to be determined.

Fund Source	LTD	2002	2003	2004	2005	2006	2007	2008	Total
Limited Tax General Obligation Bonds	169	0	0	0	0	0	0	0	169
To Be Determined	0	0	0	0	1,266	0	0	0	1,266
Federal Technology Grants	65	0	0	0	0	0	0	0	65
TOTAL FUNDS	234	0	0	0	1,266	0	0	0	1,500
<i>O&M Costs (Savings)</i>			N/C	N/C	N/C	N/C	N/C	N/C	0

Mobile Data Communications

Program: Technology Engineering and Project Management **Start Date:** 1st Quarter 2000
Type: New Investment **End Date:** 1st Quarter 2003
Project ID: MDC
Location: Not applicable

The Mobile Data Communications project replaces existing systems currently in use by the Fire and Police Departments. The project involves placing laptop computers into police and fire vehicles for data access. Included in the project is Automatic Vehicle Locating linked to the City's Geographic Information System (GIS). This project gives Fire and Police vehicles access to current data when responding to any incident.

Fund Source	LTD	2002	2003	2004	2005	2006	2007	2008	Total
Limited Tax General Obligation Bonds	5,465	35	0	0	0	0	0	0	5,500
Local Law Enforcement Block Grant	500	0	0	0	0	0	0	0	500
TOTAL FUNDS	5,965	35	0	0	0	0	0	0	6,000
<i>O&M Costs (Savings)</i>			N/C	N/C	N/C	N/C	N/C	N/C	0

*Amounts in thousands of dollars

Seattle Fire Department Computer Aided Dispatch System

Program: Technology Engineering and Project Management **Start Date:** 1st Quarter 2001
Type: New Investment **End Date:** 3rd Quarter 2003
Project ID: SFDCAD
Location: Not applicable

The Seattle Fire Department Computer Aided Dispatch (CAD) Project replaces the dispatch system currently in use by the Seattle Fire Department. This project is one of four projects to upgrade the Fire and Police Computer Aided Dispatch and Record Management Systems, and was previously listed as part of the Law, Safety, Justice Information Technology Project (Project LSJIT) in Fleets & Facilities' 2002-2007 Adopted CIP. The design of the CAD project started in 2001 with an expected completion date of July 2003. Selection of the consultant to implement this system occurred in December 2002.

Fund Source	LTD	2002	2003	2004	2005	2006	2007	2008	Total
Public Safety Information Technology Fund	0	1,857	228	0	0	0	0	0	2,085
Basic Life Support Levy	0	0	125	0	0	0	0	0	125
Fire Department Contribution	0	0	165	0	0	0	0	0	165
800 MHz Levy	0	0	60	0	0	0	0	0	60
King County 911	0	0	99	0	0	0	0	0	99
TOTAL FUNDS	0	1,857	677	0	0	0	0	0	2,534
O&M Costs (Savings)			250	250	250	250	250	250	1,500
Cash Flow		1,858	676	0	0	0	0	0	

Seattle Fire Department Record Management System

Program: Technology Engineering and Project Management **Start Date:** 1st Quarter 2001
Type: New Investment **End Date:** 2nd Quarter 2004
Project ID: SFDRMS
Location: Not applicable

The Seattle Fire Department Record Management System (RMS) project replaces the record management system currently in use by the Seattle Fire Department. This project is one of four projects to upgrade the Fire and Police Computer Aided Dispatch and Record Management Systems, and was previously listed as part of the Law, Safety, Justice Information Technology Project (Project LSJIT) in Fleets & Facilities' 2002-2007 Adopted CIP. The design of the RMS project started in 2001 with an expected completion date of June 2004.

Fund Source	LTD	2002	2003	2004	2005	2006	2007	2008	Total
Information Technology Fund	0	100	0	0	0	0	0	0	100
General Subfund	0	239	0	0	0	0	0	0	239
Public Safety Information Technology Fund	0	904	554	0	0	0	0	0	1,458
Basic Life Support Levy	0	0	125	0	0	0	0	0	125
TOTAL FUNDS	0	1,243	679	0	0	0	0	0	1,922
O&M Costs (Savings)			N/C	N/C	N/C	N/C	N/C	N/C	0
Cash Flow		308	749	865	0	0	0	0	

*Amounts in thousands of dollars

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Seattle Justice Information Systems

Program: Technology Engineering and Project Management **Start Date:** 1st Quarter 2001
Type: New Investment **End Date:** 1st Quarter 2004
Project ID: SEAJIS
Location: Not applicable

The Seattle Justice Information System project implements the sharing of data between all four public safety agencies. This project was previously listed as part of the Law, Safety, Justice Information Technology Project (Project LSJIT) in Fleets & Facilities' 2002-2007 Adopted CIP. With implementation of this project, Seattle Police, Fire, Courts, and Law are able to efficiently utilize and share available information through the use of computer data files, eliminating the need to keep multiple copies for each agency. Updates, corrections, and additions to the files are available immediately to each agency, providing them with the most up-to-date and accurate information. This system provides protection of privacy and confidentiality, while streamlining workflows.

Fund Source	LTD	2002	2003	2004	2005	2006	2007	2008	Total
Limited Tax General Obligation Bonds	220	180	0	0	0	0	0	0	400
Information Technology Fund	0	720	0	0	0	0	0	0	720
TOTAL FUNDS	220	900	0	0	0	0	0	0	1,120
O&M Costs (Savings)			N/C	N/C	N/C	N/C	N/C	N/C	0
Cash Flow		220	900	0	0	0	0	0	

Seattle Police Department Computer Aided Dispatch

Program: Technology Engineering and Project Management **Start Date:** 2nd Quarter 2001
Type: New Investment **End Date:** 4th Quarter 2004
Project ID: SPDCAD
Location: Not applicable

The Seattle Police Department Computer Aided Dispatch project replaces the dispatch system currently in use by the Department. This project is one of four projects to upgrade the Fire and Police Computer Aided Dispatch (CAD) and Record Management Systems (RMS), and was previously listed as part of the Law, Safety, Justice Information Technology Project (Project LSJIT) in Fleets & Facilities' 2002-2007 Adopted CIP. Advertisement and selection of the consultant to implement the Police Computer Aided Dispatch System is expected to occur in December 2003.

Fund Source	LTD	2002	2003	2004	2005	2006	2007	2008	Total
General Subfund	0	149	0	0	0	0	0	0	149
Limited Tax General Obligation Bonds	0	2,921	0	0	0	0	0	0	2,921
King County 911	0	0	98	0	0	0	0	0	98
800 MHz Levy	0	0	60	0	0	0	0	0	60
TOTAL FUNDS	0	3,070	158	0	0	0	0	0	3,228
O&M Costs (Savings)			N/C	N/C	N/C	N/C	N/C	N/C	0
Cash Flow		211	1,472	1,545	0	0	0	0	

*Amounts in thousands of dollars

Seattle Police Department Record Management System

Program: Technology Engineering and Project Management **Start Date:** 1st Quarter 2001
Type: New Investment **End Date:** 2nd Quarter 2005
Project ID: SPDRMS

Location: 600 5TH AV

Neighborhood District: In more than one district **Neighborhood Plan:** Not in a Neighborhood Plan

The Seattle Police Department Record Management System project replaces the record management system currently in use by the Department. This project is one of four projects to upgrade the Police and Fire Computer Aided Dispatch and Record Management Systems, and was previously listed as part of the Law, Safety, Justice Information Technology Project (Project LSJIT) in Fleets & Facilities' 2002-2007 Adopted CIP. Advertisement and selection of the consultant to implement the Record Management System is expected to occur in June 2003. Project implementation is to be completed in July 2004, with conversion of existing data to the new system to be completed in April 2005.

Fund Source	LTD	2002	2003	2004	2005	2006	2007	2008	Total
Federal Technology Grants	0	1,500	0	0	0	0	0	0	1,500
General Subfund	0	799	580	0	0	0	0	0	1,379
Limited Tax General Obligation Bonds	0	1,701	0	0	0	0	0	0	1,701
Public Safety Information Technology Fund	0	0	554	0	0	0	0	0	554
Public Safety IT 2002 CFB	0	0	116	0	0	0	0	0	116
TOTAL FUNDS	0	4,000	1,250	0	0	0	0	0	5,250
O&M Costs (Savings)			N/C	N/C	N/C	N/C	N/C	N/C	0
Cash Flow		459	1,213	2,595	983	0	0	0	

Uniform Data Services

Program: Technology Engineering and Project Management **Start Date:** 1st Quarter 2001
Type: New Investment **End Date:** Ongoing
Project ID: D3KTUD

Location: 700 5TH AV

Neighborhood District: Downtown **Neighborhood Plan:** Not in a Neighborhood Plan

The Uniform Data Services Project creates a uniform computer data network within the Key Tower, Justice Center and City Hall. This service will support 4,000 employees upon full implementation. The system eliminates problems associated with utilizing different equipment and software employed by different departments for computer communications. The system handles a greater number of users transmitting a greater amount of electronic information in the everyday operations of the City. Although project funds are expended from the departmental operating fund, the funds come from customer department user fees. Net operations and maintenance costs associated with this project have not been calculated as the City continues to rely on the existing network during deployment. Overall operating costs are not anticipated to increase as a result of the project.

Fund Source	LTD	2002	2003	2004	2005	2006	2007	2008	Total
Information Technology Fund	588	331	219	168	116	0	0	0	1,422
TOTAL FUNDS	588	331	219	168	116	0	0	0	1,422
O&M Costs (Savings)			N/C	N/C	N/C	N/C	N/C	N/C	0

**Amounts in thousands of dollars*

