

Chapter 11: Capital Improvement Program

The 2006 Capital Improvement Program (CIP) is the set of projects Muni plans to undertake to replace, rehabilitate or enhance system assets. The CIP covers a 20-year period from FY2006-FY2025. Capital projects are major investments in rolling stock or in the physical plant, the costs of which would not normally be covered in the operating budget. For example, the purchase and installation of new fareboxes for the entire fleet is a capital project, whereas repairing or replacing a single damaged farebox is an operating cost. The CIP contains the fund projection assumptions, along with detailed project cost and funding plans. The need for this set of projects is described in greater detail in the sections preceding the CIP.

Developing Capital Projects

Capital projects are developed in a number of ways. Some are programmatic, such as the fleet and infrastructure replacement projects that recur on a regular basis. Expansion projects such as the Third Street Light Rail line are developed through major corridor or other planning studies. Finally, in past CIP update cycles, Muni has conducted a Call for Capital Projects to solicit new capital projects from Muni staff.

Estimating Costs

There are several types of capital project cost estimates used depending upon a project's stage in the development process. When a project is initially proposed, the person proposing the project develops a rough order-of-magnitude cost estimate. This could be based on past experience with similar projects or informal consultations with suppliers. Once the project is better defined, a CIP cost estimate is prepared. This provides an initial engineering estimate of the major project cost categories. At this level, contingency allowances are high since many project details have yet to be established. Once project funding has been identified, engineering prepares a Conceptual Engineering Report (CER). The CER establishes the baseline budget. At the end of the CER process, a decision is made whether to proceed into detailed design. During final design, an engineer's estimate is produced so that the project can enter the bid process. At project completion, the final cost is compared to the baseline to determine if changes to the estimation process are needed.

Setting Priorities

The projects included in the CIP are prioritized using a four-step process that considers program criteria, project specific criteria, project schedule and readiness, and funding availability. This priority establishes the order in which the estimated \$15.6 billion in project costs are funded using the \$8.0 billion in projected revenues.

Program

The CIP is organized as a set of programs that represents the multi-year nature of capital projects and the recurring cycles of many capital improvements, such as vehicle replacement and track rehabilitation. The programs are prioritized from fleet (highest priority) to equipment (lowest priority) as listed in Figure 85. The rationale for this order can generally be described as follows. Muni service is based on a fleet of over one thousand vehicles. Replacing the fleet on a regular schedule is the most cost-effective way to provide high quality service to Muni customers. The next element of a high quality service is the network of guideways and wayside infrastructure, including stops and platforms. The fleet and infrastructure programs are supported by a system of operations, maintenance and administrative facilities. The

facilities require appropriate equipment to service vehicles and infrastructure, and the facilities themselves must also be constructed, rehabilitated and maintained.

This ranking of programs does not establish an absolute priority. For example, a project that is a high priority in the facility program could be undertaken before a project that ranks low within the fleet program. A short description of each CIP Program is provided in Figure 86.

Figure 86: Capital Program Descriptions

Program	Description
Fleet Program	Rehabilitation and replacement of Muni's vehicles. This includes both revenue vehicles, used to transport passengers (motor coach, trolley coach, light rail, historic streetcar, cable car, and paratransit), and non-revenue vehicles, used to support the revenue fleet and the system infrastructure.
Infrastructure Program	Rehabilitation, replacement and modification of rail, communications, signals, overhead, subway, stations and cable car systems. Also includes adding and improving ADA-mandated Key Stops, additional accessibility improvements, and transit preferential streets.
Facilities Program	Develop, manage and maintain space for the operating, maintenance, administration and storage needs required to support Muni operations. Includes fixed equipment such as vehicle lifts and ventilation systems.
Equipment Program	Provides the tools needed for the continued operation of Muni's operating, maintenance and administrative functions, such as the replacement or acquisition of such items as rail grinders and computers.
Other Projects	A limited number of projects that do not fit into the CIP programs as described above.

Project Criteria

Once capital projects are grouped by capital program, each project is ranked within the program based on the project criteria listed in Figure 86. These criteria place highest priority on projects that are already committed, legally mandated, and/or provide a specific safety or security enhancement. Extra consideration is also given to projects that replace or rehabilitate an asset that is beyond its useful life and is negatively affecting service delivery or projects that improve accessibility to the system. Projects that positively benefit the operating budget are also given priority. This is followed by a criterion that reflects the degree to which the project supports the Proposition E Service Standards, as summarized in Figure 21. Next, projects are ranked according to whether they provide for the timely rehabilitation or replacement of an asset or whether they enhance or expand the current system. Project criteria are applied only when the primary project purpose or benefit meets those criteria. For example, while many projects contain safety and security elements, unless the primary purpose of the project is to address a specific safety or security need, the project would not qualify for the safety/security criteria.

Timing

When setting priorities for the overall CIP, the timing element, in terms of project schedule and readiness, is introduced. This set of criteria includes internal resource availability, and special circumstances, such as opportunities associated with combined procurements or construction activities that maximize cost effectiveness and/or minimize negative impacts on the community. Project readiness can generally be prioritized (from most ready to least ready) as 1) in construction or procurement phase, 2) in CER or design phase, 3) in the environmental phase or where the Project Study Report (PSR) is complete, 4) a PSR is underway, or 5) only a general concept.

Funding

The fourth level of prioritization involves applying funding criteria and constraints to the projects. Each year Muni must compete for funding with other agencies and projects at the local, regional, state and federal levels. Due to the limited number of these funding sources, the funds that Muni receives in any given year are not able to fully satisfy the capital needs. Added to this are restrictions that Muni's funding agencies place on the various funding programs. Again, this constrains Muni's ability to fund all capital

needs in a timely manner. For these reasons, some projects must be delayed or their funding must be spread out over a number of years. There also could be unique funding opportunities that Muni could take advantage of, thereby adjusting the capital priorities.

Figure 87: Project Criteria Definitions

Criteria	Description
Ongoing/ Committed	Construction or procurement is already underway or there are explicit public commitments from a direct action by the Municipal Transportation Agency Board or Board of Supervisors such as the decision to proceed with the Third Street Light Rail Project
Legally Mandated	Addresses legal mandates resulting from passage of laws, such as the Americans with Disabilities Act, state Clean Air regulations, or the voter-approved Proposition I. Examples include the Metro Accessibility Program and the Motor Coach Clean Air Device Retrofit project.
Safety/Security Need	Addresses specific, identified safety hazards within facilities and in the operation of vehicles and equipment; or addresses specific, identified security deficiencies in the detection of, or response to, threats to persons from planned acts of violence, life threatening emergencies or natural disasters. Examples include the Escalator Rehabilitation Program and the Kiepe Pole Retriever Retrofit projects.
Deteriorated Asset	Rehabilitation or replacement of an asset that negatively affects system performance. A deteriorated asset is one that is being replaced beyond its useful life or normal replacement cycle. Examples are the Rail Replacement and Overhead Rehabilitation programs
Accessibility	Projects that provide accessibility improvements not already covered under the legally mandated criteria. These projects will provide disabled passengers who are not presently able to use parts or features of the Muni system with increased accessibility. These are improvements that exceed the mandates of ADA such as the Digital Voice Annunciation System project and the Beyond Key Stops program
Operating Budget Benefit	Projects that result in operating cost savings. Includes projects such as the midlife vehicle rebuild programs, which should reduce unscheduled maintenance demand. These savings do not necessarily result in reductions in the overall operating budget, as resources may be redeployed to other areas.
Proposition E Service Standards	Supports one or more of the five Proposition E Service Standards: System Reliability, System Performance, Staffing Performance, Customer Safety and Employee Satisfaction. See the detailed description in Figure 21 for each service standard definition. Meeting one or more of the service standards will satisfy the requirements for this criterion
Regular Replacement	The optimal rehabilitation or replacement of an asset at the end of its useful life and within the normal replacement cycle of that asset. Regular replacement occurs before the asset becomes deteriorated. Examples include the future fleet replacement projects.
Enhance Existing	Improves or enhances an existing asset or service. Enhancements are improvements to existing service that does not add or expand service. Examples are the Flynn Ventilation System & Roof and the Paratransit Debit Card projects
New/Expansion	Increases service beyond current schedules or programs. Examples include the Third Street Light Rail Projects and the Historic Vehicle Program.

Capital Fund Projections

As with the previous CIP update, Muni has worked with its funding agencies to develop capital revenue projections for the major fund sources for which it is eligible. Like the CIP, these projections cover the 20-year period from FY2006-FY2025. The capital revenue projections are extrapolations based on a review of recent Muni and regional funding history, and projections developed by Muni’s funding agencies. Revenues projected for the 20-year period total \$8.0 billion in federal, state and local fund sources.

Applying Funds

The capital revenue projections have been applied to the projects in the CIP using a multilevel prioritization process. This process allows Muni to consider the amount of funding projected to be available in a particular year and describes the tradeoffs in the choices made in the capital program. Key

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considerations in this process are identifying appropriate funding sources for each project and identifying the required matching funds for each funding source.

As previously mentioned, Muni's capital needs (\$15.6B) far outstrip the projected capital revenues (\$8.0B). This gap widens when project eligibility requirements and timing are considered. For this reason many projects in the capital program will have to be deferred.

Major Changes Since FY2004 SRTP

Since the last SRTP was adopted in September 2003, there have been a number of significant changes to various aspects of the capital program. These changes are summarized here.

Federal 10% Flexible Funds

In previous years the programming of federal formula funds, consisting of Sect. 5307 and Sect. 5309 Fixed Guideway was conducted at the regional level solely through the use of a project scoring system. This scoring system assigned values to different types of projects, with a Score 16 being the typical highest scoring project (See Figure below). Due to the limited amount of formula funds available in any particular year in the region, only Score 16 projects have been funded. In this upcoming round of Transit Capital Prioritization, covering FY06-FY08, each transit operator will be able to use 10% of its total formula fund share for any lower scoring projects they choose. This will allow properties to fund projects such as facilities that are not normally funded through the federal formula program. For Muni these "flexible funds" will total approximately \$5.2M per year. In the coming years Muni will use its flexible funds for preventive maintenance, vehicle rehabilitation projects, and a number of facility projects. These funds will help to take the pressure off of Prop K to fund 100% these types of projects and can thereby serve as leveraging to the federal funds. This will help to stretch Muni's limited Prop K dollars further.

Figure 88: MTC Transit Capital Priorities Scoring of Projects

Score	Category
16	Revenue Vehicle Replacement/Rehabilitation
16	Fixed Guideway Replacement/Rehabilitation
16	Ferry Replacement/Rehabilitation
16	TransLink®
15	Safety
14	ADA/Non-vehicle Access Improvement
13	Fixed/Heavy Equipment, Maintenance/Operating Facilities
12	Intermodal Stations
12	Station/Parking Rehabilitation
11	Service Vehicles
10	Tools and Equipment
9	Office Equipment
9	Capitalized Maintenance, including Tires/Tubes/Engines/Transmissions
8	Operational Improvement/Enhancements
8	Expansion

Regional Funding Caps

In MTC's Transit Capital Priorities process, funding caps are set on projects to help distribute the available funds equitably throughout the region. In the past, fixed guideway programs such as the Rail Replacement and Overhead Reconstruction programs could receive up to \$7.5M in federal funds each year. For FY06-FY08, this cap has been raised to \$13M per year for the Overhead Reconstruction and Rail Replacement Programs. This will allow Muni to pursue a number of projects that previously were

deferred due to funding constraints. The additional local match needed for these increased federal funds will be provided from Proposition K funding.

Regional Measure 2

In March 2004, Bay Area voters passed Regional Measure 2 (RM2), which raised bridge tolls on the seven state owned bridges (the Golden Gate Bridge is not owned by the State) from \$2 to \$3. The additional \$1 will be used for a variety of projects to alleviate congestion in the transbay bridge corridors. At Muni, a number of capital and operating projects were included in RM2. For the Third Street Light Rail Project, funds have been allocated for Metro East Facility construction. Third Street startup and operating funding will also be available once the new light rail line nears opening. Capital funds are included for the purchase and rehabilitation of Historic Streetcars for service on a future E-Line, operating along existing tracks on The Embarcadero. Muni has been awarded RM2 funds in the Real Time Transit Information category for expansion of the NextBus real-time passenger information program, and some funds will be available for TransLink® -compatible faregates. Operating funds will be available to cover a portion of the cost to provide bus service along BART corridors during the hours when BART is not operating. During the so-called Owl hours of 12:00 midnight to 6:00AM, the 14-Mission will provide transit service in the BART corridor within San Francisco. Other regional transit operators will provide coverage into and out of San Francisco. Finally, capital funds will be available for TransLink® implementation.

Proposition K Sales Tax

In November 2003, San Francisco voters approved Proposition K (Prop K), an extension of the previous Proposition B half-cent sales tax for transportation projects. Out of the \$2.8B projected to be generated over the next 30 years, Muni's share is about \$1.5B. The SFCTA adopted the 30-year Prop K Strategic Plan in April 2005, making revenues available for project allocations. The funding available in the Strategic Plan is limited due to depressed revenues and financing costs. As a result, Muni is primarily able to program Prop. K funds as match to federal funds only. A companion to the Strategic Plan is the Prop K 5-Year Prioritization Programs (5YPPs). The 5YPPs process included development of project criteria and performance measures. The final output was a prioritized list of projects in five Prop K project categories. Prop K also restricts the use of sales tax revenues for operating and maintenance expenses. Although a number of projects received operating funds from Prop B, these projects will receive declining amounts of Prop K funds for the next five years.

Preventive Maintenance

To cover projected operating budget deficits, a portion of the activities typically covered by the operating budget will be funded as capitalized, or preventive, maintenance (PM). This is done through MTC's regional process, and requires deferring capital projects. In FY06, Muni will request approximately \$12M in preventive maintenance funds.

Criteria

A criterion that measures the impact of a new project on the operating budget was added at the request of the MTA CAC. The purpose of the Operating Budget Benefit criterion is to measure the estimated cost savings on the operating budget after the proposed project is implemented. For example, midlife vehicle rebuilds should reduce the demand for unscheduled vehicle maintenance.

Major Findings

Match Shortfalls

Federal funds generally require matching funds from non-federal (state, regional or local) sources. At this time Muni is running low on non-federal match for a number of reasons. The largest share of local match is provided by local half-cent sales tax revenues authorized by Prop K. With the passage of Prop K in November 2003, a reliable source of matching funds is guaranteed for the next 30 years. However, the

slowdown in the economy has reduced sales tax revenues in recent years. Also, the finance charges needed to make funds available to projects ahead of the sales tax generation schedule will reduce the total amount of available Prop K funding. Another significant non-federal match source is Regional Bridge Toll (AB664) revenues. These funds are typically used for non-federal match to major programs such as the rehabilitation and replacement of fleet and infrastructure. As with sales tax revenues, the slowdown in the economy has driven down toll bridge revenues. At the same time competition for these funds has intensified. An effort that may increase the amount of bridge toll revenues available to Muni is the reevaluation of the revenue split between the East and West Bay, although a resolution of this matter may be a number of years off. Finally, state funds provided through the STIP are largely targeted to the Third Street Light Rail project. These state sources are largely federalized, with the result that they are ineligible as local match and must themselves be matched with non-federal funds (see description of Federalized State Funds).

Regional Priorities

Many of Muni's capital needs are not likely to be funded based on past regional funding history. Regional funding priority is given to the replacement and rehabilitation of vehicle fleets and fixed guideways (see Figure 87). Due to the need within the region for these types of projects, federal funds for facility, non-revenue vehicles, MIS, and equipment projects are very limited. This has changed somewhat with the introduction of the 10% flexible funds in FY06-FY08, but funding these types of projects remains a challenge.

Muni is exploring a number of strategies to address the need for these critical projects. Part of the funding need is covered in the Prop K sales tax expenditure plan, as described previously. Many other transit operators are able to provide funding for these types of projects in their operating budget. Given the current budget situation at Muni, this is not an option in the near term. However, in the future there may be opportunities to reserve a portion of new revenues generated by such means as land leases or asset leaseback arrangements for the capital program. Finally, Muni will continue to work with MTC and the other transit operators in the region to identify ways to provide greater flexibility within the Capital Priority Process to allow a wider range of Muni's needs to be funded through the federal funding programs. As the oldest transit property in the region with some facilities approximately 100 years old, Muni's needs are often different than other operators in the region.

Local Sources

As previously mentioned, the passage of Prop K has gone a long way towards addressing the required match needed to leverage federal funds for many of Muni's capital projects. In addition, there are a number of factors that could help to address this match shortfall that are not assumed in this CIP. Changes to the Transit Impact Development Fee (TIDF) program and additional San Francisco Municipal Railway Improvement Corporation (SFMRIC) bonding capacity could provide additional local revenues. As these potential fund sources become better defined they will be incorporated into subsequent revisions to the CIP.

Project Shortfalls

Capital projects have funding shortfalls for various reasons. A project that has a higher priority and is in an advanced state of readiness will normally be funded first. Projects that are implemented in phases or segments may show a shortfall because funds are not available for full implementation. There may be insufficient funds for large construction projects that are still in the planning phase and where construction has not started. Finally while federal funding can be identified for a project, the required non-federal match is not always available.

Impacts on the Operating Budget

Once a capital project has been funded, its impact on Muni's financial resources is not necessarily complete. Many projects add costs to the operating budget, such as additional operators needed for expanding service, or added maintenance costs to keep new systems in working order. For many major

capital projects, the financial impacts on the operating budget have been estimated and accounted for in the Operating Financial Plan. Muni will continue to develop and refine the ongoing operating costs associated with capital projects to ensure that the projected operating budget can adequately accommodate these changes.

Replacement Cycles

A related issue is the need to replace capital assets on a regular basis. For the major fleet and infrastructure programs this need has been identified. However, for many systems, facilities, and equipment, replacement needs have not been included in the CIP. Muni recognizes that the 20-year capital program should include provisions to replace and rehabilitate all of its capital assets and will work to develop these costs for future CIP updates. The first step to determine Muni's non-fleet replacement needs is the Facility Lifecycle project, which is programmed with Prop K funds. This project would map out Muni's facility rehabilitation, replacement, and expansion needs over a period of years to improve long-range planning for funding Muni's facility needs.

Federal Funds

The regional fund programming requirements limit the types of projects that commonly receive federal formula funds. Federal formula funds are typically programmed for the highest scoring projects, which are score 16 projects as described in Figure 87. As a result, lower scoring projects remain unfunded even though there appear to be adequate funds projected over the 20-year period. It is anticipated that projects identified through future calls for capital projects, increased costs, or new mandates will create a need for these revenues. Specifically, as the move toward zero emission revenue vehicles advances, it is anticipated that costs for replacement revenue vehicles will increase sufficiently to require a significantly greater share of federal formula funding, using the funds that appear "unused" in the future capital program.

Federalized State Funds

TEA-21, the current federal legislation that authorizes appropriations for Federally assisted transportation programs, gives State Departments of Transportation the flexibility to use Federal highway funds for either transit or roadway projects. In California, Caltrans/CTC primarily gives transit operators Federal flexible funds, instead of the prior practice of allocating state gas tax or general fund monies. Caltrans instead uses the state funds primarily for roadway projects. As a result, almost all of the state funds programmed for Muni have been "federalized" before they are allocated, and are shown in the CIP under Federal funds as State STP. This is another contributing factor to Muni's issue with match shortfalls, since these "federalized" state funds have to be matched. However, Muni can request "State Only" funds, but for the reasons described above, CTC rarely approves these types of requests.

CIP Summaries

Figures 89-96 provide summaries of the capital program and details on the individual projects that make up the program.

The pie charts in Figures 89-92 present a number of ways to look at the overall capital program. Figure 89 shows the breakdown of the \$15.6B in costs by capital program. There is a total of \$8.0B projected from all fund sources available to Muni. The proportion for each fund source is summarized in Figure 90. Of the \$8.0B in total funds projected, the capital program is able to use \$6.4B for capital projects, as shown in Figures 91 and 92. Taken together these figures show that Muni will be able to fund less than 39.5% of its capital needs through FY2025. This is due to a combination of the limited amount of funds available to Muni, and Muni's inability to match capital projects to the various funding program requirements.

Figure 93 provides a summary by program of the CIP cost and funds over the next 20 years.

Figure 94 provides a breakdown of funds used by Muni capital projects by fund source.

Figure 95 displays how the four levels of prioritization yield Muni's capital priorities. The capital project criteria are applied reading left to right so that the highest priority projects are those that are ongoing or committed. To take this explanation one step further, among the projects that are ongoing or committed, the next highest priority is given to those projects with a legal mandate. This process is continued through the New and Expansion criteria. As previously mentioned, this ranking does not establish an absolute priority. A project with a lower priority could be undertaken before a higher-ranking project due to such factors as project readiness, fund availability, or any number of special circumstances.

Figure 96 shows a summary of project cost and funds over the 20-year CIP. This table gives a general idea of the project schedule and whether the project is funded for any particular year and as a project as a whole. It is important to note that this summary includes all funds that have been allocated, are programmed, or are planning estimates. Each of these is described in greater detail below.

As funds move from planned to programmed and ultimately to allocated, the level of certainty that these funds will be available to the project increases. At the highest level are allocated, or awarded, funds. Allocated funds have been approved and are available for Muni to make charges against. Programmed funds have been committed through the federal, state, regional or local funding processes. For planning purposes, projects with programmed funds are treated as funded projects even though the funds have not been allocated, because they are almost certain to be allocated at a later date. Planned funds are estimated to be available based on the funding projections. Projects that contain planned funds may not have gone through project review and prioritization by a funding agency. Planned funds are the least certain, and should be used only as a guide to what might be available to a project in the future.

The individual Capital Project Descriptions that cover the remaining pages of the CIP show the status of funds from Figure 96, as well as a summary description of the project. FTA, as part of the review process for the New Starts funds Muni hopes to receive for the Central Subway project, has asked Muni to divide the CIP by State of Good Repair and Enhancement/Expansion projects. FTA wants to see that all of Muni's State of Good Repair needs can be funded given projected revenues. The designation of projects as State of Good Repair or Enhancement/Expansion projects is given for this purpose. Many of the projects have been described in greater detail in the previous chapters in this SRTP, and are not necessarily described in great detail here.

Figure 89 - Cost By Capital Program

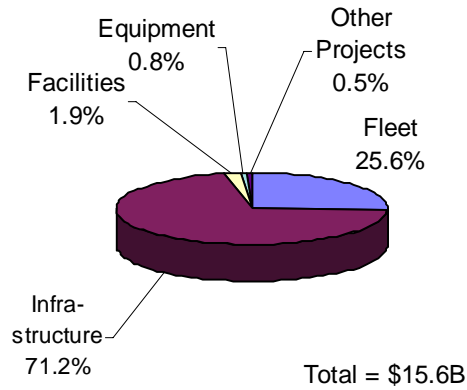


Figure 90 - Projected Funds by Source

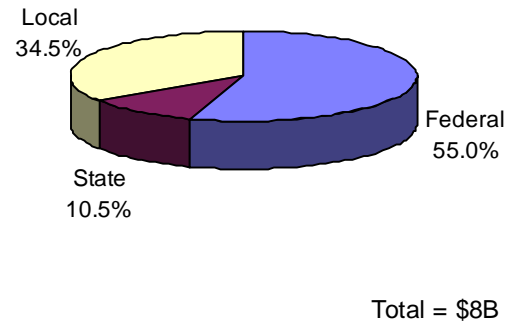


Figure 91 - Funds Applied By Source

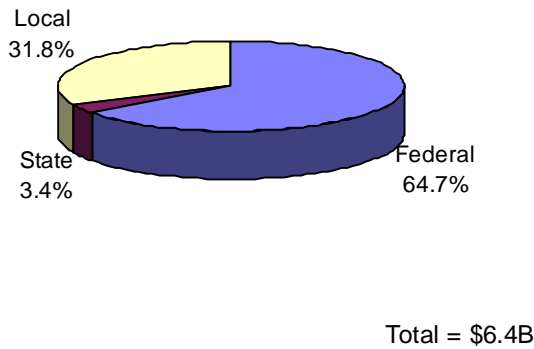
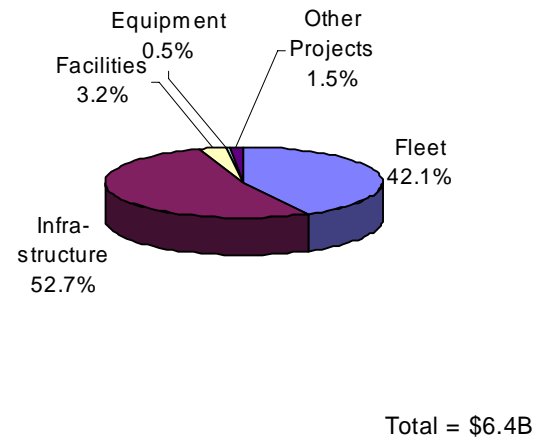


Figure 92 - Funds By Capital Program



Figures 88-91 do not include Operating & Maintenance Projects or Prop. B/K Operating Funds