8.0 IMPLEMENTATION PLAN

The purpose of this section is to present a schedule for implementing the recommendations of the Capitol Hill Transportation Study. The plan is organized around potential timeframes for addressing the recommendations, and it takes into account estimated costs for each recommendation.

The intent of this strategy is to present a logical sequence for study area improvements, and to estimate the level of resources that would be committed to make the improvements. The technical appendices give a line by line listing of the recommended improvements along with estimated costs for each item.

The implementation plan has been developed with the understanding that resources must be used strategically. There may not be sufficient budget to implement all of the recommendations as quickly as shown in the generalized time line. The cost estimates that have been prepared are presented at a conceptual level to allow comparison of projects for their relative costs versus benefits.

Most of the transportation deficiencies that were identified warranted some type of intervention, either as a way of correcting some existing problem in the transportation infrastructure, or as a way of improving infrastructure or refining operations to function more safely or efficiently in the future. Recommendations to address deficiencies were grouped into four categories, according to the nature of each recommendation. **Table 8-1** illustrates the timeframes associated with each recommendation category.

Table 8-1: Timeframes for Project Phasing

Category	Timeframe
Priority short term	as soon possible
Short term	0 to 12 months
Medium term	1 to 5 years
Long term	5+ years

Short term
Short term recommendations are categorized as those projects that could be executed within one day's time with very little or no construction work. More recommendations fall within the "short term" category than in medium or long term.

Of the more than 400 short term recommendations, 80 are categorized as "priority." Priority recommendations were selected by considering the accident rates and proximity to schools at the locations in question, and the degree to which community members have commented on the issue. These issues have been ranked to be addressed before other short term improvements, as their resolution would tend to have a greater effect on transportation safety at the most critical locations in the study area. A list of all priority short term recommendations is included as **Appendix A**.

Medium term
Medium term issues can be categorized as issues that can be addressed in 1 to 5 years. These issues generally require some form of significant construction work or replacement of infrastructure, or are tied together with additional issues which should all be addressed together.

Long term
Long term issues are issues that will be addressed in 5 or more years. These issues are usually associated with the involvement of other agencies or tied to larger more complicated issues in which a separate plan must be developed to mitigate these issues.

Although the types of projects recommended in the medium- and long-term recommendations are typically much more extensive – and expensive – than those recommended for short-term improvements, there is a much larger total number of projects in the short-term. Thus, even the short-term projects represent a significant investment of time and money. Therefore, even within time phases, there may need to be some prioritization of projects.

In addition to organizing projects in terms of their implementation phasing, cost estimates were also developed for each type of project. These cost estimates are rough order of magnitude, and do not include the cost of condemning or purchasing land. Estimates were developed through a simple process of developing unit costs for each type of improvement, then multiplying these costs by the total number of each type of improvement. Unit costs are shown in **Table 8-2**. Note that the unit costs in **Table 8-2** reflect general, recurring expenses, and do not include projects where the costs are location-specific. Sources of unit costs include bid costs and project experience from DDOT, and VDOT, and manufacturers of transportation signals and signage.

Table 8-2 Unit Costs for Capital Projects

Improvement	Unit Type	Cost / Unit
Signalize Intersection	Intersection	$250,000
Adjust Signal Phasing	Intersection	$100,000
Adjust Signal Timing	Intersection	$100,000
Traffic Sign (standard)	Sign	$100
School Zone Sign (with flashing beacons)	Sign	$300
School Zone Sign Installation (include electrification)	Sign	$450
Stop Bar	Each	$140
Traffic Delineators (posts)	Each	$26
Lane Markings (direction arrow)	Each	$5,000
Bike Lane	Linear Foot	$1.54
Lane Marking or other line	Linear Foot	$0.69
Letter	Each	$94
Eradication of old marking	Each	$22
Speed Bump	Each	$6,500
Raised Crosswalk / Speed Hump	Each	$8,000
Bulb-Out	Each	$3,000
Narrow Lane ("Choker")	Each	$11,500
Textured Pavement	Intersection	$5,000
Repaving	Linear Foot	$50
Rebuild Roadway	Linear Foot	$320
Move / Install Bus Shelter	Each	$5,500

Improvement	Unit Type	Cost / Unit
New Sidewalk	Linear Foot	$50
Create Ramp	Each	$800
Remove Sidewalk	Linear Foot	$0.75
Paint Crosswalk	Each	$200
Install Ped Crossing Signal	Each	$10,000
Install Audible Ped Crossing Signal	Each	$10,500

Figure 8-1 illustrates a potential schedule for implementing the recommendations, and also shows estimated total costs to complete the recommended improvements by type of work. According to the estimates, implementing the entire complement of recommendations would cost about $64 million in 2006 dollars. Of that, only about $1 million is accounted for by the priority short term projects, while the other short term projects would cost about $9.3 million, the medium term projects $7.9 million, and the long-term projects would cost about $45 million.

Figure 8-1: Potential Implementation Timeframes

TERM	ISSUE	COST	TIME FRAME										
			Months		Years					Year			
			0 Thru 6	6 Thru 12	1 Thru 5					5+			
Priority Short Term			Present: 2007		2008	2009	2010	2011	2012	2013	2014	2015	2016 - 2030
1.1 Road & Intersection													
	Traffic Control	$ 500,660	◇										
	Signage	$ 204,000	◇										
	School Signage	$ 22,300	◇										
	Pavement Markings	$ 3,860	◇										
	Traffic Calming	$ 191,500	◇										
1.2 Pedestrian													
	Sidewalk & ADA	$ 11,700	◇										
	Crosswalk	$ 16,000	◇										
1.3 Bike		$ 19,700	◇										
1.4 Parking		$ 1,400	◇										
	Subtotal	**$ 971,120**											
Short Term													
2.1 Road & Intersection													
	Traffic Control	$ 5,631,440											
	Signage	$ 9,060											
	Policy	$ 60,900											
	Pavement Markings	$ 7,260											
	Traffic Calming	N/A											
2.2 Pedestrian													
	Signage	$ 2,700											
	Crosswalk	$ 3,553,600											
2.3 Bike		$ 36,000											
2.4 Public Transportation		$ 5,000											
2.5 Truck & Bus		N/A											
2.6 Parking		$ 1,000											
	Subtotal	**$ 9,306,960**											
Medium													
3.1 Road & Intersection													
	Traffic Control	$ 700,000											
	Policy	$ 500											
	Pavement Markings	$ 3,500											
	Pavement	$ 400,000											
	Traffic Calming	$ 568,000											
	One-way Streets Conversion	$ 5,645,000											
3.2 Pedestrian													
	Sidewalk	$ 171,600											
	Crosswalk	$ 346,900											
	ADA Ramps	$ 22,400											
	Traffic Calming	$ 29,800											
	ADA Ramps and sidewalks	$ 4,000											
	ADA Ramps and crosswalks	$ 9,000											
3.3 Bike		N/A											
3.4 Public Transportation		$ 21,100											
3.5 Parking		$ 2,000											
	Subtotal	**$ 7,923,800**											
Long													
4.1 Road & Intersection													
	One-way Streets Conversion	$ 11,355,000											
	Geometrics	$ 3,285,000											
	Geometrics: AWI Projects												
	Redesign of Barney Circle	*$ 21,300,000*											
	New Blvd. along S.E. Freeway	*$ 9,274,000*											
4.2 Pedestrian		$ 500											
4.3 Bike		$ 206,700											
4.4 Truck & Bus		N/A											
4.5 Parking		N/A											
	Subtotal	**$ 45,421,200**											
	Grand Total of Implementation	**$ 63,623,080**											