

VI. CONCLUSIONS

In this chapter, we summarize the recommendations and cost impacts which we have made throughout the report, provide suggestions regarding the relative priorities of the recommendations, and identify any implementation issues which the City will need to address. In preparing these recommendations, we have classified them as being high, medium, or low priority. High priority recommendations are those which have significant cost (particularly cost savings) impacts, are perceived as critical to the mission of the Department of Public Works, or which are first steps involved in the implementation of other recommendations. Medium priority have lower cost implications, are not as mission critical, and whose implementation time frame can extend six months or more. Low priority recommendations are those which would improve Departmental operations but are not mission critical or whose implementation is not time sensitive.

This chapter consists of two tables. The first is a summary of recommendations. This table assembles all of the recommendations developed in this report, identifies the fiscal impact and projected benefits, assigns a recommendation priority, and identifies any key implementation issues. The second report is a cost breakout. It includes only those recommendations which have an estimated cost, cost savings, or revenue enhancement associated with the respective recommendation.

The following table is the summary of recommendations

**NASHVILLE DEPARTMENT OF PUBLIC WORKS
SUMMARY OF RECOMMENDATIONS
CHAPTER II: STREETS AND ROADS**

	Recommendation	Fiscal Impact and Benefits	Priority	Implementation Issues
2-1	<p>The project team recommends that the Traffic Control Section significantly increase staff in order to initiate, and continue to provide on an on-going basis, a preventive maintenance program which will allow the Section to proactively maintain Metro's 800 signalized intersections, as well as to maintain records regarding system reliability.</p>	<p>An estimate of the cost to minimally staff the Signal Maintenance and Construction Units is approximately \$405,500. Of this amount, an estimated \$76,500 would be increases in supplies and materials, and \$329,000 would be in personnel costs. New trucks will cost approximately \$300,000.</p> <p>Est. benefit: Preventively maintaining traffic signals increases system reliability and minimizes costs associated with emergency repairs, both in terms of direct materials and contractual costs as well as in the disruption of staff's scheduled work. Although the direct cost of increased reliability of signalized intersections cannot be quantified, in terms of decreased liability and motorist inconvenience, the elimination of unscheduled emergency repairs may provide cost savings.</p>	Medium	<p>As the Traffic Section does not currently possess the positions in its budget, these must be requested and approved in the upcoming budget.</p> <p>Although the direct quantifiable benefits are insignificant compared to the direct costs, there are important liability issues. As the report indicates, there were no signals which were preventively "re-lamped" in 2001, indicating that there is a possibility that signals may fail at critical times. Further, motorist inconvenience is high during these times, and should be minimized as a matter of public policy.</p>

**NASHVILLE DEPARTMENT OF PUBLIC WORKS
SUMMARY OF RECOMMENDATIONS
CHAPTER II: STREETS AND ROADS**

Recommendation		Fiscal Impact and Benefits	Priority	Implementation Issues
2-2	The capability to track signal operations and reasons for system failure should be incorporated into Metro’s proposed Intelligent Transportation System data collection and reporting.	<p>There should be no additional cost associated with this recommendation through incorporation into the grant-funded ITS. This information should also link to a job work order management system.</p> <p>The benefit of this information is that it will permit Department management to monitor signal activity on a regular basis, track outages, and prepare work plans to address systematic problems.</p>	Medium	There are no significant implementation issues.
2-3	Allow the Traffic Control Section to submit a “bid” for the installation of traffic signals as a measure to create a more competitive environment for this service.	Typically, this approach to competition has the result of reducing costs for the same level of service by approximately ten to fifteen percent. Based only on existing, open purchase orders with the current service provider, we estimate that this approach would yield savings of about \$54,000 per year.	Medium	This will require the Department to think like a private enterprise and assemble a work plan and staffing plan that can be competitive. There are some inherent bid requirements that cannot be overcome—such as bid bonds and performance bonds—but the competitive pricing evaluation can be adjusted to account for some private sector costs that the Department would not incur.

**NASHVILLE DEPARTMENT OF PUBLIC WORKS
SUMMARY OF RECOMMENDATIONS
CHAPTER II: STREETS AND ROADS**

	Recommendation	Fiscal Impact and Benefits	Priority	Implementation Issues
2-4	The project team recommends an increase of four M&R Workers in this Unit to accomplish routine sign maintenance and repair, inventory collection and maintenance, and proactive determinations of those signs in need of repair.	<p>The estimated cost of this recommendation is approximately \$204,059 in operating costs for personnel and materials; of this amount, \$124,059 would be for additional personnel, and \$80,000 for supplies and materials. In addition to the operating costs, there would be an estimated capital cost of \$125,000 for additional vehicles.</p> <p>Est. benefit: Non-quantifiable benefits include the reduction of liability due to poor sign visibility and/or absence of proper signage. The directly quantifiable benefits include the reduction in the numbers of incidents for which current staff members are required to replace signs on an emergency, or unscheduled, basis.</p>	Medium	<p>Again, the positions are not currently in the Unit's budget, and must be requested in the next fiscal year.</p> <p>Metro faces a potential liability issue through the non-replacement of signs which have faded significantly (average duration for signs is currently about 22 years – significantly above recommended levels), however the greater issue here is the lack of staff to proactively determine locations in which signs have been vandalized or removed.</p>
2-5	The project team recommends that the Department develop an automated inventory of signs maintenance. At a minimum, this could be an internally developed Access database; however, more ideally, this should be part of a master work order and control system.	<p>This recommendation has no cost implications.</p> <p>The benefits of this recommendation are improved management of work and inventory, resulting in a more efficient use of personnel and a more effective sign maintenance program.</p>	Medium	This should be incorporated into the job work order system.

**NASHVILLE DEPARTMENT OF PUBLIC WORKS
SUMMARY OF RECOMMENDATIONS
CHAPTER II: STREETS AND ROADS**

	Recommendation	Fiscal Impact and Benefits	Priority	Implementation Issues
2-6	The project team recommends combining the two currently separate disciplines of signal construction and signal maintenance.	<p>The consolidation of these two functions will allow the reduction of one of the Supervisor positions with an estimated cost saving of approximately \$57,800 annually in salary and benefits.</p> <p>Est. benefit: Greater flexibility of management in the deployment of personnel resources, particularly at lower-skilled levels. The consolidation allows the reduction of one managerial position, saving approximately \$57,800 annually.</p>	Medium	Although the costs of additional personnel recommended for these two sections far exceeds the quantifiable benefits, the reduction of one supervisory position somewhat abates this cost, but more importantly, it allows greater flexibility of a single manager to deploy resources. This will become important in the deployment of limited staff in instituting a comprehensive PM program.

**NASHVILLE DEPARTMENT OF PUBLIC WORKS
SUMMARY OF RECOMMENDATIONS
CHAPTER II: STREETS AND ROADS**

Recommendation	Fiscal Impact and Benefits	Priority	Implementation Issues
<p>2-7 Given the variance in the cost figures for milling, the project team does not, at this time, make a recommendation regarding the retention or outsourcing of the function. Rather, it is recommended that the Division begin capturing and analyzing data over the next 12 months to establish a basis for comparison to private providers, and to determine if there are certain characteristics of the in-house operation which make it either more cost-effective than private providers, or if there are characteristics of certain jobs which make obtaining bids from private contractors difficult or impossible.</p> <p>If data analysis indicates that this function is not cost-effective, the Division would be recommended to re-deploy approximately 8.1 FTE's in other areas. Given that the employees currently in the milling crew perform other functions throughout the year, this would allow the Division to enhance services in other areas, such as in concrete replacement and inspection. If the cost analysis holds after the collection of valid data, it would appear that the milling operation is effective, when compared to private contractors.</p>	<p>Est. cost: None at this time. Cost accumulation can be accomplished to a far greater degree, even without the purchase and implementation of an automated work management system.</p> <p>Est. benefit: When combined with recommendations regarding a slurry seal program for street maintenance, the Department has the opportunity to reduce substantially the costs of street maintenance.</p>	<p>High</p>	<p>Given the magnitude of the potential cost savings when combined with the design and implementation of a slurry program, this is a critical priority.</p> <p>An attractive feature of this particular issue is the ease with which it can be investigated and verified. This requires, first, a greater level of attention to detail regarding the accuracy of reported metrics, and secondly, a systematic and periodic analysis of the monthly costs associated with this function (as well as others).</p>

**NASHVILLE DEPARTMENT OF PUBLIC WORKS
SUMMARY OF RECOMMENDATIONS
CHAPTER II: STREETS AND ROADS**

	Recommendation	Fiscal Impact and Benefits	Priority	Implementation Issues
2-8	On a strict cost-effectiveness basis, the project team does not recommend the elimination of the paving function at this time. However, the project team recommends that the Department greatly expand its slurry seal program as a preventive maintenance measure. This recommendation will result in a proportional reduction in the requirement to overlay streets, as is currently done. Given that the full implementation of the slurry seal program will take between 12 and 24 months, the project team recommends the retention of the paving function for that duration of time. At that time, it is recommended that the Streets and Roads Division re-evaluate the cost-effectiveness and productivity of the paving crew.	Est. cost: None at present. Est. benefit: Again, costs obtained through the current work management system indicate a very large variance from month to month, although the highest-cost month on the team's analysis indicated an in-house cost that is between 28% and 35% greater than that available in the private sector.	Medium	The need for flexibility in meeting the expanded paving needs in Metro lowers the priority of this recommendation somewhat, however the project team still strongly recommends correcting the fundamental problems of the lack of reliable workload data as soon as possible. This recommendation may be easily implemented through use of existing automation resources and a greater degree of focus upon the accuracy of data submitted from the field.
2-9	Through a simple reallocation of areas of responsibility, the Division can attain rough parity in the workload distribution between East and West Centers.	Est. cost: None Est. benefit: The decreased travel time for West Center crews, combined with increased productivity of East Center crews suggest that a greater level of service will result from the realignment.	Medium	Immediately begin the transfer of AIM work orders emanating from the 12 th and 13 th Districts from the West Center to the East Center.

**NASHVILLE DEPARTMENT OF PUBLIC WORKS
SUMMARY OF RECOMMENDATIONS
CHAPTER II: STREETS AND ROADS**

	Recommendation	Fiscal Impact and Benefits	Priority	Implementation Issues
2-10	The Division should begin the process of determining optimum crew sizes for each of the functions performed at the Centers, as well as at the satellite locations.	<p>There is no cost associated with this recommendation.</p> <p>We would expect that the benefit of this recommendation would be a greatly enhanced level of productivity both in ditch cleaning and other crew based work such as street maintenance and repair, signs and signals, tree crews, and the like, resulting in greater cost efficiency.</p>	Medium	The implementation of this recommendation will require the Division to allocate time and effort to more than a surface level of analysis. Specifically, although an automated work management system will generate cost data and productivity of labor for certain tasks, it will require a higher level of analysis to perform comparative analyses for various crew sizes to determine the optimum sizes for each tasks. The project team provides a methodology for this type of analysis in the report for ditch maintenance crews. This methodology should be extended to other functions in the Division as well. Although an automated work management system will facilitate this effort, as the report shows, it is not a critical component.

**NASHVILLE DEPARTMENT OF PUBLIC WORKS
SUMMARY OF RECOMMENDATIONS
CHAPTER II: STREETS AND ROADS**

	Recommendation	Fiscal Impact and Benefits	Priority	Implementation Issues
2-11	The project team recommends the development of an annual work plan which will not only guide the Division in prioritizing and performing specific tasks, but will provide Department and Metro management with a document with which to hold the Division accountable for results. This plan should be coordinated with, and signed off by, the Engineering Division to assure coordination of maintenance and improvement projects.	<p>Est. cost: Increased time spent by Managers, Superintendents and Supervisors in the definition of targeted service levels, locations of work, availability of staff, and analysis of costs associated both with in-house labor efforts and those of private contractors.</p> <p>Est. Benefit: Greater level of accurate reporting for cost comparison purposes, as well as for the reporting of activity to Department management, Mayor and Metro Council. Greater ability to project resource limitations, “bottlenecks” and excess capacity.</p>	High	<p>Begin the process of accumulating sufficient workload data to make determinations of productivity levels. This should be followed by the definition of appropriate service levels given the restrictions of available personnel and equipment resources, and a plan for the accomplishment of targeted work.</p> <p>The accomplishment of an annual plan involves a great deal more than simply documenting productivity and calculating what is possible based on the available resources. This annual plan should be seen as a process whereby the concerns of managers of the Division, Department and Metro are incorporated. This will require a series of planned meetings and consultations with various stakeholders and interest groups to best match the Division’s resources to those required by the community.</p>

**NASHVILLE DEPARTMENT OF PUBLIC WORKS
SUMMARY OF RECOMMENDATIONS
CHAPTER II: STREETS AND ROADS**

	Recommendation	Fiscal Impact and Benefits	Priority	Implementation Issues
2-12	<p>The project team recommends that the Division discontinue input into the CostSum program and obtain a suitable job work order system which will facilitate the accumulation of pertinent data, as well as summarize this data for use in the annual planning process outlined above.</p>	<p>The costs for such systems vary greatly depending upon desired elements. If the Department is able to expand an existing license agreement with another Metro Department with a suitable information system, the cost could be as little as \$25,000 to \$50,000. However, if the existing systems in other departments are unsuitable for use in Public Works, the cost could be as great as \$350,000 to \$500,000 for a new system.</p> <p>Est. benefit: Greater accountability of managers of the Division, as well as a greater degree of accuracy and reliability of workload and activity reporting.</p>	High	<p>Although the implementation of this recommendation may be accomplished without the purchase of additional automated resources, as a practical matter, the size of Metro Nashville and the volume the workloads of the Division require either the purchase of a new work management system or the procurement of an expanded license agreement for the use of an existing one within another Metro Department.</p> <p>Given that several Metro departments require strong work order systems, it would be appropriate to conduct the expansion of an existing system or the acquisition of a new system in conjunction with those departments and Metro's information technology staff.</p>
2-13	<p>The project team makes the following recommendations to improve inventory management:</p> <ul style="list-style-type: none"> • Warehouse personnel should make weekly "spot checks" of inventory items which have been issued to Department personnel on longer-term bases. If items are found to be missing, these occurrences should be documented and the Division Assistant Director should be notified. Additionally, procedures should be established to penalize employees to whom the items were issued. 	<p>Est. cost: None other than additional time taken in identification of randomly-selected items for "spot check" and travel to sites. The costs for an improved inventory tracking system are included in the recommendation for a new job work order system.</p> <p>Est. benefit: Greater level of accountability could result in lower shrinkage rates, although the current rate is unknown at this time.</p>	Medium	<p>The Warehouse has instituted routine bi-weekly cycle counts, however, this has apparently not resulted in hoped-for results, as the project team found a low correlation of automated records and the items physically found in the inventory.</p> <p>The personnel at the Warehouse will be required to supplement these efforts with a systematic, weekly spot check of items issued on longer-term bases, and a sharing of the results, along with explanations for variances, of the bi-weekly cycle counts with the Department administration and</p>

**NASHVILLE DEPARTMENT OF PUBLIC WORKS
SUMMARY OF RECOMMENDATIONS
CHAPTER II: STREETS AND ROADS**

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<ul style="list-style-type: none"> • The results of the bi-weekly cycle counts should be issued to the Department’s Business Manager, as well as to the Assistant Director of the Division of Streets and Roads. Explanations for any discrepancy should accompany the bi-weekly report. • Procedures should be established in the Warehouse which will decrease the rate of discrepancy from current unacceptably high levels to no more than 3% at a single point in time. • The Department should also modernize its inventory software system, which is currently an older, limited capacity system. Since inventory items track primarily to the Department’s streets and roads operations, it would be appropriate to incorporate the inventory management into the recommended job work order system previously discussed. The costs for this would be included in the cost of the work order system. 			<p>Streets and Roads management.</p> <p>The need for an integrated inventory system should be included in the overall recommendations for a new job work ordering system; as with the recommendation for that system, this should be considered from the perspective of a Metro-wide initiative.</p>

**NASHVILLE DEPARTMENT OF PUBLIC WORKS
SUMMARY OF RECOMMENDATIONS
CHAPTER II: STREETS AND ROADS**

	Recommendation	Fiscal Impact and Benefits	Priority	Implementation Issues
2-14	The project team recommends that the current policy be revised to establish the Department of Public Works as the sole agency responsible for repairing all roadway damages, regardless of origin or cause. Those individuals or agencies receiving permits for roadway cuts should, at the time of purchasing the permit, pay a fee sufficient for Public Works to repair the cut. This variable fee should be assessed based on the proposed magnitude of damage. Once the cut is repaired, Technical Service should be notified, with that Unit making the appropriate revision in the pavement management system.	Est. cost: None Est. benefit: Although data do not exist to calculate the amount of cost dedicated to the repair of roadway cuts, Metro will almost certainly recover a substantial amount through the imposition of a fee for recovery of the direct costs expended by road crews in the repair. This work is not currently recovered.	Medium	Develop an ordinance which outlines a variable fee for roadway repair based on the magnitude of the damage.
2-15	The project team recommends that, once each of the pavement condition ratings is corrected in the system, with sufficient procedures developed and implemented for the retention of backup data, the Department utilize only the pavement condition ratings as the source for identifying street segments for repaving, with the objective being to maximize the overall pavement condition rating of Metro streets. It is recommended that, in absence of compelling reasons to resurface segments greater than 70 (such as to ensure even quality with adjacent segments recently resurfaced, repairing utility cuts, etc.), that the Streets and Roads Division discontinue the resurfacing of streets with pavement ratings which are 115% more than the average rating of all streets recommended for resurfacing.	Est. cost: None Est. benefit: Although the benefits of a purely mechanical method of street segment identification cannot be quantified, the result will be a maximizing of the overall street pavement index for Metro, with the resulting increase in “driveability” of its roadways.	High	Although the pavement management indexing system is currently in effect, and will require no change in procedure from the standpoint of personnel involved in the process, there have been recent problems with the reliance on corrupt data in the system. These data error problems should be corrected prior to use of the system under any scenario.

**NASHVILLE DEPARTMENT OF PUBLIC WORKS
SUMMARY OF RECOMMENDATIONS
CHAPTER II: STREETS AND ROADS**

	Recommendation	Fiscal Impact and Benefits	Priority	Implementation Issues
2-16	Nashville may wish to consider a more encompassing approach to planning its streets and other public work services by dividing the City according to maintenance districts. The Department should work with other Metro departments to utilize maintenance districts county-wide.	Est. cost: None While there is no cost to this change, it would result in a more effective maintenance program by creating a consistent division of responsibilities, and improved work planning and tracking.	Low	This project should be undertaken concurrently with development of Departmental job work order and a contract/project capital management system. Because this has potential to benefit all Metro departments with a field service requirement, it would be appropriate to discuss this option with other departments to develop a Metro-wide approach to maintenance district based service delivery.
2-17	The project team recommends that the Streets and Roads Division consolidate the East and West Centers with the Special Operations Unit. The Division should retain the two satellite locations; however these should be under the direction of a single manager, and utilized as staging points to minimize travel time to work sites. The consolidation of the three currently-separate units into a single organization will allow the reduction of the two M&R District Supervisors, resulting in a total reduction of four management positions.	Est. cost: None Est. benefit: Cost savings of approximately \$104,753 annually through the reduction of management personnel at the two satellite centers.	High	No impact on operation, however this change will result in the need for greater emphasis and reliance upon a functioning work management system to receive reports on productivity of Center crews, and the relay of AIM work order data to these Center staff. This should be facilitated by the transfer of the Office Managers from Human Resources to Streets and Roads.

NASHVILLE DEPARTMENT OF PUBLIC WORKS SUMMARY OF RECOMMENDATIONS CHAPTER III: CHIPPER DIVISION			
Recommendation	Fiscal Impact and Benefit	Priority	Implementation Issues
3-1	<p>The project team recommends that the Division convert its chipper service to a fleet based on combining grappler trucks in tandem with trailers.</p>	<p>Est. cost: None</p> <p>Est. benefit: We estimate that the annual cost savings for this change will be at least \$85,000 per year, assuming the same volume of collection.</p>	<p>High</p> <p>The Department is currently in the process of doing this.</p>
3-2	<p>The project team recommends that the Division alter its service delivery method to provide its chipper service strictly on a scheduled-route basis in order to facilitate the collection of curbside debris.</p>	<p>Est. cost: Citizens may perceive a lack of attention to customer service, however, this may be countered by explaining that customer service is increased for all residents through greater productivity of crews.</p> <p>Est. benefit: Annual savings between \$116,000 and \$232,000. Other benefits include reduction of time lost in driving to locations outside of normal daily routes, lower incidence of customer complaints due to passing by of brush on streets which has not been called in; and, the administrative time expended in tracking brush pick-ups of call in requests will be eliminated.</p>	<p>Medium</p> <p>This recommendation will not impact the daily operation of the Chipper Service other than the removal of the requirement to travel to sites outside the normal daily routes.</p>
3-3	<p>Metro should establish regulations on the preparation of brush for pick-up and rigidly adhere to those standards. This will have no cost requirement, but will result in greater work productivity.</p>	<p>Est cost: None.</p> <p>Est. benefits: This will increase employee productivity in terms of the length of time required to collect brush. It can also be expected to reduce the amount of brush cut and left by commercial firms.</p>	<p>Low</p> <p>Implementation of this recommendation will require considerable public information and the willingness on the part of Metro not to collect brush that does not meet the standard.</p>

NASHVILLE DEPARTMENT OF PUBLIC WORKS SUMMARY OF RECOMMENDATIONS CHAPTER IV: ENGINEERING					
Recommendation		Fiscal Impact and Benefits	Priority	Implementation Issues	
	Recommendations 4-1 through 4-10 constitute a series of recommendations for the improvement of the Capital Projects Management Process.	<p>There are no costs associated with these recommendations since they relate to operating procedures.</p> <p>Based on our experience with other governmental units, the MAXIMUS project team anticipates that the Department will experience a significant improvement in the overall effectiveness of its capital management program. This effectiveness will be observable in improved record keeping, greater timeliness, better cost control and financial management, and a vastly enhanced ability to provide project information to policy officials, other departments, and the public.</p>			
4-1	The responsibilities for Capital Projects management need to be clarified.	None	High	These responsibilities need to be clearly identified as assigned to the Engineer 3 assigned to the Capital Projects Management Section and the Engineer 3 held accountable for their delivery.	
4-2	Prepare a summarized twenty-four month bar chart schedule for all of the capital projects that will be designed and inspected by the Capital Projects Section.	None	High	The Engineer 3 is already working on this schedule.	

NASHVILLE DEPARTMENT OF PUBLIC WORKS SUMMARY OF RECOMMENDATIONS CHAPTER IV: ENGINEERING				
Recommendation		Fiscal Impact and Benefits	Priority	Implementation Issues
4-3	Microsoft Project should be more fully utilized for the scheduling of each project.	None	Medium	Training needs to be provided to all of the professional and technical staff of the Capital Projects Management Division in the use of Microsoft Project.
4-4	Prepare a monthly capital project status report.	None	High	The preparation of this monthly capital project status report should occur only after a draft report has been developed, and reviewed and critiqued by all of the important customers
4-5	More complete guidelines should be utilized to document resource requirements for the design and inspection of capital improvement projects.	None	High	The Assistant Director of Public Works – Engineering has discussed these guidelines with MAXIMUS. MAXIMUS will provide a copy of the guidelines it has utilized in the past.
4-6	A design authorization form should be completed before commencement of design.	None	High	The Assistant Director of Public Works – Engineering has discussed the design authorization form with MAXIMUS. MAXIMUS will provide a copy of the design authorization form it has utilized in the past.
4-7	A pre-design meeting should be conducted prior to the commencement of design.	None	Medium	This should be initiated immediately for all new capital projects.
4-8	A design report should be completed when the design is no more than 10% complete.	None	High	The Assistant Director of Public Works – Engineering has discussed the design report with MAXIMUS. MAXIMUS will provide a copy of the design report it has utilized in the past.
4-9	The Capital Project Management Section should utilize a time reporting system to capture the staff costs associated with design and inspection of capital projects.	None	High	The system, and written procedures for data collection, should be discussed with staff and a “pilot” conducted first. MAXIMUS will suggest alternatives to automate this system available at no cost to the Engineering Division.

NASHVILLE DEPARTMENT OF PUBLIC WORKS				
SUMMARY OF RECOMMENDATIONS				
CHAPTER IV: ENGINEERING				
Recommendation		Fiscal Impact and Benefits	Priority	Implementation Issues
4-10	A final report should be prepared upon completion of a capital project.	None	Low	The Assistant Director of Public Works – Engineering has discussed the final report with MAXIMUS. MAXIMUS will provide a copy of the final report it has utilized in the past.
4-11	Engineering Technician 3's assigned to construction inspection should document their inspection work.	None	High	This should be initiated immediately. MAXIMUS will provide a copy of the written procedure it has utilized in the past as a guideline for documentation of work by inspectors.
4-12	The document management procedure should be expanded to include a required table of contents and all documents should be maintained in a binder with all of the binders maintained in a centralized location.	None	High	The Assistant Director of Public Works – Engineering has discussed the document management procedure with MAXIMUS. MAXIMUS will provide a copy of the document management procedure utilized by another client.
4-13	The engineering staff within the Capital Project Management Section should be provided with access to the automated financial system from their desktop personal computer.	None	High	This should be discussed with the Finance Department, and training arranged for the staff requiring access to the system in the use of the automated financial management system
4-14	Metro should develop a contract management system for use by all departments. funds and improved public reporting.	Depending on the approach decided upon, a contract/project management system could cost from an estimated \$250,000 to \$1,000,000. The benefit of such a system would be an effective means of contract/project management, which should translated into a more efficient use of capital	High	This should be pursued as part of a Metro-wide strategy since this system could be applicable to all Metro departments which conduct capital projects.

NASHVILLE DEPARTMENT OF PUBLIC WORKS SUMMARY OF RECOMMENDATIONS CHAPTER IV: ENGINEERING				
Recommendation		Fiscal Impact and Benefits	Priority	Implementation Issues
4-15	Eight engineering positions should be added to the Public Works Department to carry out the development review and inspections. The added positions are necessary for the Department to carry out its review responsibilities.	The additional appropriation for these positions is estimated at \$400,000 for salaries and benefits.	High	
4-16	The Engineering Division needs to be reorganized in order to allocate work and skill sets to necessary tasks and to provide appropriate organizational priority to the Department's mission.	<p>There is no cost associated with the reorganization itself; however, several of the personnel changes will have some cost implications, and those are presented as they relate to the specific personnel actions in the following detailed recommendations.</p> <p>The MAXIMUS project team believes that this organization will provide for a more effective Engineering Division based on appropriate segmentation of duties and assignment of responsibilities, creation of work units that have specific focus, and the enhancement of a core capital management unit.</p>	High	The realignment of work is necessary if the Department is to be successful in meeting the needs of Metro's expanded public works programs.
	The responsibility for supervising Permits and Records would be assigned to the Engineer 3/Development Services.	None	High	This should be initiated as part of the overall organizational restructuring of the Engineering Division.
	A separate unit should be established within the Traffic Engineering Section with responsibility for Neighborhood Traffic Management.	None	High	The goals, objectives, and performance measures need to be defined for this program, focusing on proactive traffic management measures.
	The responsibility for managing the parking enforcement/structure program should be assigned to the Transportation Manager.	None	High	This should occur after the position is filled.

**NASHVILLE DEPARTMENT OF PUBLIC WORKS
SUMMARY OF RECOMMENDATIONS
CHAPTER IV: ENGINEERING**

Recommendation		Fiscal Impact and Benefits	Priority	Implementation Issues
	Responsibility for the pavement management program should be assigned to the Engineer 3 responsible for capital project management.	None	High	This should occur immediately. All staff associated with this program should be reallocated from Streets and Roads to Engineering. The responsibility for this program should be assigned to an Engineer 2.
	Responsibility for the pavement management program should be transferred to Engineering.	None	High	This recognizes that pavement management reflects engineering issues and a more comprehensive approach to right of way maintenance.
	Responsibility for the sidewalk management program should be assigned to a Construction Manager who will have lead management and project coordination responsibility.	None	High	This would create an organizational home for the sidewalk program and provide specific leadership responsibility. It will be important that the individual assigned to this duty have excellent public relations skills since much of this job will be public interaction.
	The responsibilities of the Engineer 2 responsible for bridge design should be broadened to include supervision of all staff assigned to the design of capital improvement projects.	None	High	The reallocation of duties need to occur within the context of the definition of the accountabilities for this position, just like the Engineer 3.
	The responsibility for construction inspection of public improvements constructed as a result of development, including storm drainage, should be retained within the Development Services Section.	None	High	This relates to a subsequent recommendation concerning the transfer of employees between Public Works and Water.

NASHVILLE DEPARTMENT OF PUBLIC WORKS SUMMARY OF RECOMMENDATIONS CHAPTER IV: ENGINEERING				
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	The responsibility for inspecting public improvements associated with commercial and industrial building permits (i.e., sidewalks, driveways, curb and gutter, storm drains, etc.) should be reassigned from the Permits Unit to the Development Services Section.	None	High	There is no significant implementation issue.
4-17	Staffing within the Engineering Division should be reallocated, with the addition of one other position, to bolster capital project management and the construction inspection of capital projects.	The upgrades in positions would result in a total increase in expenditures of between \$102,000 and \$120,000 (based on an individual increase of between \$6,000 and \$10,000 per position, plus fringe benefits), and the cost of an additional Engineer I. This is the most cost effective approach. To hire additional staff would obligate the Department to expend an estimated \$350,000 in annual salaries and benefits; the use of consulting engineers could be expected to result in costs ranging between \$1,200,000 and \$1,400,000, based on variable consulting rates.	High	These transfers should occur as soon as possible to create an organizational impetus for the changes in approaches to project planning and management.
	The vacant Engineering Technician 2 position within the Permits Section should be eliminated, and an additional Engineer 1 position allocated to the Design Unit within the Capital Project Management Section.	The estimated cost of the upgrade is included in recommendation 4-17.	High	
	An additional Engineer 1 position allocated to the Design Unit within the Capital Project Management Section.	The estimated cost of the new position is included in recommendation 4-17.	High	

NASHVILLE DEPARTMENT OF PUBLIC WORKS SUMMARY OF RECOMMENDATIONS CHAPTER IV: ENGINEERING					
Recommendation		Fiscal Impact and Benefits	Priority	Implementation Issues	
	The Assistant Public Works Director – Parking position should be eliminated and an additional Engineer 1 position allocated to the Design Unit within the Capital Project Management Section.	The estimated cost of the upgrade is included in recommendation 4-17.	High		
	One of the two Engineering Technician 2 positions within the Records Unit should be eliminated and an additional Engineer 1 position allocated to the Design Unit within the Capital Project Management Section.	The estimated cost of the upgrade is included in recommendation 4-17.	High		
	The Technical Services Coordinator position within the Capital Project Management Section should be transferred to the Information Technology Unit within Public Works Administration.	Est. cost: None	High		
	A Corrections Officer position within parking enforcement should be eliminated and an additional Engineer 1 position allocated to the Design Unit within the Capital Project Management Section.	The estimated cost of the upgrade is included in recommendation 4-17.	High		
	Two Engineering Technician 3's should be reallocated from Permits to construction inspection within the Capital Projects Management Section.	Est. cost: None	High		
4-18	Metro Nashville should increase the level of traffic engineering staffing by two positions at an estimated annual cost of \$130,000 and reallocate three other positions for neighborhood traffic management.	An increase in costs of \$130,000 annually Cost avoidance of \$110,000 annually	High	An office should be provided to co-locate all of the staff assigned to the Neighborhood Traffic Management Program.	
	The Engineering Technician 2 assigned to Signal Design should be reallocated to the Neighborhood Traffic Management.	Est. cost: None	High		

**NASHVILLE DEPARTMENT OF PUBLIC WORKS
SUMMARY OF RECOMMENDATIONS
CHAPTER IV: ENGINEERING**

Recommendation		Fiscal Impact and Benefits	Priority	Implementation Issues
	The Engineer 1 assigned to Signal Design should be reallocated to Neighborhood Traffic Management.	Est. cost: None	High	
4-19	The Engineering Division needs to enhance the extent of its performance measures.	Est. Cost: None	Medium	The management and supervisory team needs to be provided with training in the development of goals, objectives, and performance measures. While the measures should be adopted at the earliest opportunity, during the transition period for the organizational changes, it is not likely that the Department will be able to generate performance data that accurately reflects Division capacity. This will probably occur in the second year.
4-20	The Street Closure/Utility Cut Program should make permit issuance and requirements available on the Internet.	None	Medium	This will require the technical assistance of the information technology unit in Public Works Administration.
4-21	The MAXIMUS project team recommends that Metro complete as soon as possible a detailed sidewalk improvement plan before proceeding too extensively into its current initiative.	Est cost: None, since the Department has already entered into contracts for private consulting relative to a sidewalk program, and it is expected that this contract will provide much of this assistance. While there is no direct cost impact per se, a well-developed plan will result in a more effective program, more efficient use of financial resources, and greater customer satisfaction.	High	The Department should initiate this effort as soon as possible. In order to maintain current efforts, the Department should identify high priority projects that it should undertake immediately, while completing the larger program planning.

**NASHVILLE DEPARTMENT OF PUBLIC WORKS
SUMMARY OF RECOMMENDATIONS
CHAPTER IV: ENGINEERING**

	Recommendation	Fiscal Impact and Benefits	Priority	Implementation Issues
4-22	Metro Nashville should consider the co-location of the traffic operations center with the proposed dispatch/emergency operations center.	<p>Est. cost: Included within the Intelligent Transportation System grants.</p> <p>It is reasonable to expect that the potential cost savings for co-location could be significant if the technology issues warrant such joint services. Funding for the study should be available through the grant program for the Intelligent Traffic System project.</p>	High	The co-location needs to be evaluated as part of the implementation of the intelligent transportation system and the design of the new dispatch/emergency operations center.
4-23	The Parking Division staffing should be reduced by 2.6 FTE.	<p>Est. cost: None</p> <p>Est. benefits: This transfers the cost to implement other recommendations have called for the use of 1.6 of the positions for upgrades in the Capital Design Section of Engineering and a transfer to Staff Services.</p>	Medium	These changes should occur concurrently with other recommendations.

**NASHVILLE DEPARTMENT OF PUBLIC WORKS
SUMMARY OF RECOMMENDATIONS
CHAPTER IV: ENGINEERING**

	Recommendation	Fiscal Impact and Benefits	Priority	Implementation Issues
4-24	Automation of parking enforcement and data would improve parking operations and provide enhanced management reporting capacity.	<p>An automated system would cost Metro between \$125,000 and \$200,000, depending on the system selected, potential integration with the Court systems, and the purchase of remote technology for both parking enforcement personnel and police personnel.</p> <p>The benefits would be greater employee efficiency in issuing tickets, elimination of manual work load counts, and elimination of manual sorting and processing of tickets. This system will enable the automation necessary to expand ticketing productivity per enforcement officer described in the preceding recommendation. These efficiencies enable the reduction of parking enforcement work force which is also recommended.</p>	High	This should be carried out in conjunction with the Police Department and Courts.
4-25	The Department should consider returning to civilian parking enforcement personnel.	<p>Est. cost: None</p> <p>Est. benefit: This would result in an estimated savings of approximately \$15,000 to \$18,000 per year, based on five positions.</p>	Low	This change should occur on a transitional basis as positions become available.

**NASHVILLE DEPARTMENT OF PUBLIC WORKS
SUMMARY OF RECOMMENDATIONS
CHAPTER IV: ENGINEERING**

	Recommendation	Fiscal Impact and Benefits	Priority	Implementation Issues
4-26	The Engineering Division needs to improve its phone responsiveness to calls from other Departments or from developers.	<p>The only cost impact would be the potential monthly charges for additional phone lines if the Department were to install dedicated phone lines.</p> <p>The benefits would be improved turnaround for inquiries from other departments and external customers.</p>	Medium	These changes can be made during the process of realigning Engineering personnel.
4-27	The Engineering Division should locate an engineer in the offices of the Metro Planning Commission to assist in processing engineering conditions of approval. This is the same approach utilized for the Code Enforcement Department.	<p>Assuming sufficient work space and office equipment at present, there would be no cost associated with this recommendation.</p> <p>The benefit would be improved customer relations and interdepartmental coordination of plan review.</p>	Medium	Metro is considering instituting a one-stop development review office. It would be appropriate to include this function in the planning for that office.
4-28	Specific development guidelines should be developed for traffic engineering requirements that need to be integrated by developers in preliminary plats.	<p>There is no cost associated with this recommendation.</p> <p>It would have the benefit of providing clear guidance to developers and to other departments regarding engineering design requirements for preliminary plats.</p>	Medium	This should be undertaken in coordination with Metro Planning. The design process should be structured so that affected customers have the opportunity to participate in the preparation of the guidelines.

**NASHVILLE DEPARTMENT OF PUBLIC WORKS
SUMMARY OF RECOMMENDATIONS
CHAPTER IV: ENGINEERING**

	Recommendation	Fiscal Impact and Benefits	Priority	Implementation Issues
4-29	The Engineering Division should incorporate the reasons for any non-compliance aspects of the project in its project status reporting. Additionally, the Public Works Department and ADA Compliance Office should develop a protocol on how to resolve problems in engineering design where ADA standards and engineering requirements cause unavoidable incompatibility. This protocol should be reviewed by the Metro Legal Department for compliance with the obligations and intent of the settlement agreement. Once approved, this protocol would serve as the basis for decision making and coordination between Public Works and the ADA Office.	There is no cost impact in making this change. It will enhance the City's compliance monitoring for overall ADA enforcement.	High	The Division is currently developing and implementing a reporting system to ADA; that system should be expanded to incorporate this recommendation.
4-30	The Engineering Division should continue to revise its Standard Drawings to incorporate ADA design issues.	There is no cost impact in making this change. It will enhance the City's compliance monitoring for overall ADA enforcement.	High	The Division is currently developing and implementing a reporting system to ADA; that system should be expanded to incorporate this recommendation.
4-31	The Public Works Department needs to resolve several outstanding issues with the ADA compliance office and establish procedures to be more timely in future matters. There is no cost impact to this recommendation, but it will serve to enhance communications necessary for an effective ADA compliance program.	There is no cost impact in making this change. It will enhance the City's compliance monitoring for overall ADA enforcement.	High	This should be a focus of Departmental attention.

**NASHVILLE DEPARTMENT OF PUBLIC WORKS
SUMMARY OF RECOMMENDATIONS
CHAPTER IV: ENGINEERING**

	Recommendation	Fiscal Impact and Benefits	Priority	Implementation Issues
4-32	The Department should develop a slurry seal-based roadway resurfacing program as a means of maximizing roadway surface improvement at an efficient cost.	<p>The estimated cost benefit is between \$2,000,000 and \$4,700,000 less expensive per year when compared to the expanded program being proposed by the Department.</p> <p>In addition to significant cost savings, this approach can also be expected to reduce maintenance costs when considering the full life costs of Metro's roadways.</p>	High	<p>This represents a dramatic departure from the Department's historic approach to street maintenance and requires considerable planning. As part of its annual street inventory, the Department will need to determine the level of treatment that the respective roadways will need and begin developing a more complex maintenance schedule. In addition, the experience of most governments using slurry programs is that an extensive public information campaign needs to inform the public of what is being done and why.</p> <p>The Department should use experienced contractors to perform the work, applying standards for materials and applications should be equal to, or greater than, the standards established by the Tennessee Department of Transportation for slurry seal treatments.</p> <p>Because of the timing of the current asphalt overlay program and the need to develop a maintenance master plan, the estimated savings will not be realized until the FY 2003-04 fiscal year.</p>

**NASHVILLE DEPARTMENT OF PUBLIC WORKS
SUMMARY OF RECOMMENDATIONS
CHAPTER IV: ENGINEERING**

	Recommendation	Fiscal Impact and Benefits	Priority	Implementation Issues
4-33	<p>The MAXIMUS project team recommends that the Department undertake the slurry seal program for a period of two years and evaluate both the costs and results to validate the effectiveness and financial efficiency of the program to determine the need to retain the street paving and milling crews. If the conclusion is to eliminate those crews, then it would be appropriate for the Department also to consider the feasibility of further reducing the number of M & R Supervisors in the Streets and Roads Division.</p>	<p>Assuming that the evaluation concludes that the Department should continue the program, at that time, it would be appropriate to consider elimination of the Department’s street paving and milling crews.</p> <p>Recognizing that the work those crews are performing will still be required—although in less quantity—it could be expected that Metro could realize a cost savings of between ten and thirty percent of labor and equipment costs. For the purpose of this analysis, we believe that a cost reduction of \$200,000 per year would be a reasonable working estimate of additional savings.</p>	Medium	<p>This recommendation needs to be revisited after Metro has implemented a slurry program and evaluated its success.</p>

NASHVILLE DEPARTMENT OF PUBLIC WORKS			
SUMMARY OF RECOMMENDATIONS			
CHAPTER V: DEPARTMENT ADMINISTRATION			
Recommendation	Fiscal Impact and Benefits	Priority	Implementation Issues
5-1	<p>The project team recommends that the Office Managers and Office Support Representatives be transferred organizationally from the Human Resources Division the Streets and Roads Divisions and the centers at which they work.</p>	<p>Est. cost: None</p> <p>Est. benefits: Greater accountability of staff at the Centers, and greater flexibility of Streets and Roads management in prioritizing the time of these employees, who effectively work for these managers currently.</p>	<p>Low</p> <p>There are no complex implementation issues to consider, as this is an organizational change only, which will increase efficiency and effectiveness with which these employees are utilized.</p>
5-2	<p>The Department should establish a goal of integrating training and safety through establishing a formal program of safety training that is focused specifically on the findings of regular safety inspections within the department.</p>	<p>No cost is associated with this recommendation.</p> <p>The expected benefit should be a reduction in preventable accidents in the Department.</p>	<p>Low</p> <p>There are no significant implementation issues involved.</p>
5-3	<p>The Department should work with Metro Human Resources to develop a training program for supervisors that focuses on meaningful performance evaluations as a means of fostering employee development and encouraging work improvement. The program should start with the Director's Office and go throughout the department. Additionally, the Department's training officer should review all performance evaluations to determine either individual training needs for a given employee or observe any patterns of performance that warrant development of Department-wide training.</p>	<p>There is no cost associated with this recommendation.</p> <p>It can be expected to result in more effective evaluations, enhanced employee training, and better work performance.</p>	<p>Medium</p> <p>This recommendation should follow implementation of the organizational changes involving human resources.</p>

NASHVILLE DEPARTMENT OF PUBLIC WORKS SUMMARY OF RECOMMENDATIONS CHAPTER V: DEPARTMENT ADMINISTRATION				
Recommendation		Fiscal Impact and Benefits	Priority	Implementation Issues
5-4	The Department needs to secure personnel files by keeping the file cabinets holding personnel records locked at all times, with key access strictly limited.	Est. cost: None Benefits: Greater security of personnel records	High	There are no significant implementation issues involved.
5-5	The MAXIMUS project team recommends that the Department amend its accounts receivable process to minimize check handling and use the procedures being established by Metro.	There is no cost associated with this recommendation. The benefit will be improved controls over checks and reduced work load on staff.	High	This recommendation should be carried out in coordination with the Metro Treasurer and should be part of an overall accounts receivable strategy by Metro.
5-6	The MAXIMUS project team recommends that the Department develop a procedure to test the accuracy of the collection count.	Est. cost: The current counting house vendor may seek an increase in contract prices if required to provide more detailed counts that are necessary to assure count accuracy. Est. benefit: Assurance that Metro is receiving all of the funds it is due.	High	This may require a renegotiation of the current counting house contract.

**NASHVILLE DEPARTMENT OF PUBLIC WORKS
SUMMARY OF RECOMMENDATIONS
CHAPTER V: DEPARTMENT ADMINISTRATION**

	Recommendation	Fiscal Impact and Benefits	Priority	Implementation Issues
5-7	<p>The project team recommends that the Department begin immediately to establish the systems and procedures necessary to track and bill the fees that it is authorized to collect. Additionally, we recommend that the Department submit the revised fee ordinance to Metro Council for the Council's consideration at the earliest opportunity.</p>	<p>Est. cost: Staff costs to modify the Metro permit system.</p> <p>Est. benefit: Collection of these fees will result in an estimated revenue of at least \$106,000 per year. A potential issue will be whether the fee will deter people from obtaining required permits.</p>	High	<p>The Department has the established legal authority to collect these fees and to conduct inspections relating thereto.</p> <p>This will require significant coordination with Metro I.S. and the permitting system to develop the appropriate electronic management systems in order to accommodate the number of permits that will be generated.</p> <p>If the fees cannot currently be collected through Metro's permit system, then the Department should use a manual collection system until the permit system can be modified.</p> <p>Because of the time involved in setting up the permitting structure and integrating it into the current permitting system, it is not expected that any revenues will be received until FY2003-04.</p>

NASHVILLE DEPARTMENT OF PUBLIC WORKS SUMMARY OF RECOMMENDATIONS CHAPTER V: DEPARTMENT ADMINISTRATION			
Recommendation	Fiscal Impact and Benefits	Priority	Implementation Issues
5-8	<p>Based on our review of the operations of the Finance functions of the Department of Public Works, the MAXIMUS project team recommends that the Department reorganize and realign its administrative staff.</p>	<p>Including wages and fringe benefits, we estimate that these changes will cost approximately \$170,000.</p> <p>The benefit for this is improved coordination of administrative services, coordination of fleet use, enhanced management of departmental payroll, improved personnel services, and the capability to meet the information technology needs described throughout this report and summarized in this chapter.</p>	<p>High</p> <p>An effective administrative organization will be essential to carry out the other recommendations in this report.</p> <p>This reorganization also calls for transferring administrative functions from the Waste Management, Engineering, and Parking Divisions to create a coordinated administrative capacity.</p>
5-9	<p>Based on our review of the recommendations throughout this report, we further recommend that the Department be reorganized.</p>	<p>The estimated cost of this reorganization is the addition of the Deputy Director position, at an estimated \$85,000, including wages and fringe benefits.</p> <p>This organization will result in improved spans of control, better assignment of duties and responsibilities, and a more effective department.</p>	<p>Medium</p> <p>An effective administrative organization will be essential to carry out the other recommendations in this report. However, Metro is currently recruiting for a permanent Department Director. That individual should have the opportunity to review the organization before it is finalized.</p>

**NASHVILLE DEPARTMENT OF PUBLIC WORKS
SUMMARY OF RECOMMENDATIONS
CHAPTER V: DEPARTMENT ADMINISTRATION**

	Recommendation	Fiscal Impact and Benefits	Priority	Implementation Issues
5-10	The Public Works Department should develop its own internal long range systems plan, working in cooperation with the Metro Information Systems Department and the Office of Management and Budget systems.	While there is no cost associated with the plan if prepared internally and with the support of Metro IT, external assistance would cost between \$50,000 and \$75,000. The cost of implementation is based entirely on the elements ultimately included in the plan. Benefit: A departmental plan will enable the Department to prioritize its information technology needs relative to the departmental mission, thus effectively assigning limited I.T. resources.	High	This work should be coordinated with Metro I.T., with an anticipation that the DPW systems should be integrated with other information technology initiatives within Metro and useable by other Departments of Metro.
5-11	The Department should immediately replace the access doors to the work area, installing, at a minimum, four hour fire doors with secure locks. Access to the area should be strictly limited by the Director of the Department and the Director of Administration.	The cost of these doors is estimated at \$1,000. The benefit will be preventing people from accidentally, or intentionally, damaging the Departments computer networks and phone lines.	High	This is a significant potential security problem that needs immediate action. The Department should request that Facilities Maintenance install locked, 4-hour fire doors on both entries to the building areas housing the Department's servers and phone lines. Access approval should be provided only by the Department Director or Director of Administration.
5-12	The Department has recently begun an effort to document and update its policies and procedures. We strongly recommend that this continue and be given a high work priority.	We do not expect any cost implications to this recommendation.	Medium	This is already in process; its completion should wait on employment of the permanent Department Director.

NASHVILLE DEPARTMENT OF PUBLIC WORKS SUMMARY OF RECOMMENDATIONS CHAPTER V: DEPARTMENT ADMINISTRATION			
Recommendation	Fiscal Impact and Benefits	Priority	Implementation Issues
5-13	<p>Customer service needs to be a high priority of the Department. It needs to consider all of its actions in terms of how those actions will improve its ability to provide better customer service. This is a summary recommendation that encapsulates many of the recommendations included throughout this report. An internal call system should be part of the Department's work order system, discussed in the Streets and Roads chapter. One immediate step that the Department may wish to consider is how it might be able to integrate with the Customer Service Center that Metro is creating, in order to develop procedures for coordinated call taking, work ordering, and customer reporting.</p>	<p>Est. cost: None directly, but this capacity is included in the cost recommendations for a work order system that would be expected to have call in-take capacity.</p> <p>Benefits: Improved customer relations, enhanced ability to respond to calls for service, improved public reporting.</p>	<p>High</p> <p>This should be undertaken in conjunction with planning for development of Metro's central call center.</p>
5-14	<p>The Public Works Department should develop a department-wide strategic plan to identify and accomplish quantifiable and measurable goals and objectives. This should be done internally.</p>	<p>There is no direct cost associated with an internal planning effort.</p> <p>The benefits will be that the Department can establish specific targets for accomplishment and then track and report them. Organizations which focus their attention on goal achievement are generally successful through improved efficiencies and service effectiveness.</p>	<p>Medium</p> <p>While the Department should begin this process now, final sign-off should be held until the permanent Director is in place.</p>

**NASHVILLE DEPARTMENT OF PUBLIC WORKS
SUMMARY OF RECOMMENDATIONS
CHAPTER V: DEPARTMENT ADMINISTRATION**

	Recommendation	Fiscal Impact and Benefits	Priority	Implementation Issues
5-15	At the earliest opportunity, the Public Works Department and Metro Facilities Management should review the Department's South Fifth Street work complex and develop an intermediate range plan to resolve existing problems and to provide a better work environment for departmental personnel.	<p>A facility study conducted by an external consultant would cost an estimated \$75,000.</p> <p>There should be no cost for conducting the analysis, unless Metro decides to use an external review firm. Costs for implementation will depend upon the overall facilities improvement plan. The focus of the study should be on establishing a work environment that meets state and federal standards and is conducive to effective and efficient work performance by departmental personnel.</p>	Medium	There are no significant implementation issues involved.

The following table provides a summary of the estimated costs and benefits of those recommendations which have specific cost or savings estimates associated with them. In using this table to develop budgetary estimates, the MAXIMUS project team advises as follows:

- Operating costs and revenues are based on an assumption of full year operations. Since many of these recommendations will require planning and lead time, Metro should anticipate that it would incur the costs over a six to nine month period and savings would be realized over a six month period.
- Until the recommended operational and organizational changes are in place and operating, it would be appropriate to assume the lowest level of estimated cost savings.
- As noted in the earlier summary table, we anticipate that the savings for the slurry seal program will not be realized until the FY 2003-04 time period, due to the timing of the work and the need for start-up planning.
- Also as noted in the earlier summary table, we anticipate that the additional permitting revenue will not be received until the FY 2003-04 year, again due to lengthy start-up and system requirements.

NASHVILLE PUBLIC WORKS DEPARTMENT SUMMARY OF ESTIMATED COSTS AND SAVING							
Rec.	Estimated Operating Cost		Estimated Savings (Including Increased Revenue)		Capital Expenses		Comments
	Low	High	Low	High	Low	High	
2-1	405,000	405,000			300,000	300,000	Addition of 5 Signal Technician I's & 4 M&R Worker II's and associated supplies and materials. This includes three bucket trucks.
2-3			54,000	54,000			Allow the Traffic Control Section to submit bid to install traffic signals.
2-4	204,059	204,059			125,000	125,000	Addition of 4 M&R Worker II's in the Signs and Marking Unit and associated supplies and materials. Capital expense is for four additional vehicles.
2-6			57,800	57,800			Combine signal construction and signal maintenance reducing one supervisor position.
2-9			10,500	10,500			Reduction of overtime.

NASHVILLE PUBLIC WORKS DEPARTMENT SUMMARY OF ESTIMATED COSTS AND SAVING							
Rec.	Estimated Operating Cost		Estimated Savings (Including Increased Revenue)		Capital Expenses		Comments
	Low	High	Low	High	Low	High	
2-12					25,000	500,000	Metro Wide Cost for a Job work order system
2-17			104,753	104,753			Reduction of management personnel at two satellite centers.
3-1			85,000	85,000			Savings from converting the chipper service to a fleet based on combining grappler trucks in tandem with trailers.
3-2			116,000	232,000			Savings from changing the chipper service back to a strictly scheduled-route basis in order to facilitate the collection of curbside debris.
4-14					250,000	1,000,000	Metro Wide Cost for a contract/project management system
4-15	400,000	400,000					Eight positions added back in to the Department where the work had not been transferred.
4-17	102,000	120,000					Upgrade positions in the Engineering Division to bolster capital project management and the construction inspection of capital projects.
4-18	130,000	130,000					Increase traffic engineering staffing by two positions and reallocate three other positions for neighborhood traffic management.
4-24					125,000	200,000	Automated parking enforcement system; the cost savings is realized elsewhere.
4-25			15,000	18,000			Returning to civilian parking enforcement personnel.
4-26			2,000,000	4,700,000			Developing a roadway resurfacing program that would include slurry seal at 6, 12, & 18 years and structural overlay at 23 years. It is expected that the savings will be gained beginning in FY2003-04.

NASHVILLE PUBLIC WORKS DEPARTMENT SUMMARY OF ESTIMATED COSTS AND SAVING							
Rec.	Estimated Operating Cost		Estimated Savings (Including Increased Revenue)		Capital Expenses		Comments
	Low	High	Low	High	Low	High	
4-33			200,000	200,000			By undertaking a slurry seal program for two years to evaluate the costs and results to validate the effectiveness and financial efficiency of the program.
5-7			106,000	175,000			New revenue to be earned by collecting fees it is authorized to collect; it is expected that this will be earned in FY2003-04.
5-8	170,000	170,000					Wages and benefits associated with reorganizing the administrative staff.
5-9	85,000	85,000					Addition of a Deputy Director position.
5-10					50,000	75,000	Develop long-range IT plan using external assistance.
5-11					1,000	1,000	Installing doors on rooms where department's network servers and telephone links are maintained.
5-15					75,000	75,000	Cost of external facility management consultant.
Total	\$1,496,059	\$1,514,059	\$2,749,053	\$5,637,053	\$951,000	\$2,276,000	