

# ST. LOUIS COUNTY PUBLIC WORKS DEPARTMENT

## 2008 BUSINESS PLAN

### Executive Summary

*Marcus J. Hall, Public Works Director/Highway Engineer*

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#### **WHO ARE WE?**

##### **MISSION**

The mission of the Public Works Department is to provide a safe, well-maintained road and bridge system that will insure reliable and convenient access to County services, facilities, recreational and natural resource areas and employment centers to enhance the quality of life of St. Louis County residents and to promote the economic development of the area.

#### **WHAT DO WE WANT TO ACHIEVE?**

##### **VISION FOR THE PUBLIC WORKS DEPARTMENT:**

- Our infrastructure will meet standards comparable to other agencies that are similar to St. Louis County.
- We shall preside over a safe, well maintained road and bridge system which meets or exceeds the public's expectations for level of service (i.e. quality of driving surface, load carrying capacity, reduced number and severity of accidents, environmentally sensitive, fiscally responsible, efficient, driven by preventative maintenance using proper asset management techniques at the lowest life cycle cost.)
- The funding climate needs to change significantly in order to achieve this vision.

#### **HOW ARE WE GOING TO GET THERE?**

- The Department needs to focus our operations based on the analysis and outcomes provided by our management tools.
- The Department needs to do as much as it possibly can and operate as efficiently as possible in the current situation where we have an annual funding shortfall of \$29,095,300 for road & bridge infrastructure projects.
- The Department needs to address deficiencies in a different way. We cannot deliver the number of projects we need to keep the road and bridge systems healthy without additional funding.
- The Department needs to develop more economical solutions to address maintenance and engineering challenges. We will need to alter policies and guidelines such as using metal culverts instead of concrete, resurfacing instead of reconstruction, removing bridges instead of reconstructing, etc.
- The Department needs to look at the actual road and bridge systems to determine if they can and should be changed, with a view towards eliminating infrastructure under county jurisdiction.
- Snow & Ice Optimization Study will occur over the next three years and the implementation of any outcome may help us to reduce operational costs.
- We will be studying the creation of an internal service fund for purchasing equipment.
- Re-organization of the budget to make it easier to manage, more understandable and linked to specific programs areas.

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### **ORGANIZATIONAL UNITS**

The Public Works Department is divided into four major organizational units as described below:

1. **Engineering Operations**

The Engineering Operations organizational unit performs administrative activities, contract administration, design engineering, construction engineering, bridge engineering, traffic engineering, geotechnical engineering, environmental engineering, R/W activities, and GIS activities that all relate to the management of road and bridge assets throughout the county. The unit includes 79 employees located at four offices and is responsible for the development of road and bridge projects from conception to completion. This division is responsible for the management of the special revenue funds and capital projects funds that are used to fund the 10-Year Road & Bridge Construction Plan.

2. **Road and Bridge Maintenance**

The Road and Bridge Maintenance organizational unit is responsible for maintaining and keeping in repair road, bridge and related assets under the jurisdiction of St. Louis County. Key activities performed by the unit are snowplowing, grading, bituminous patching, dust control, roadside vegetation management, bridge maintenance, guardrail maintenance, ditching, signing, striping, crack sealing and the crushing, screening and placement of gravel and other materials. The unit includes 181 employees located in six main facilities and eleven outlying maintenance facilities.

3. Equipment and Shops

The Equipment and Shops organizational unit is responsible for the acquisition, maintenance and disposal of all equipment and vehicles utilized by the Public Works Department. This involves the management of the shops, storerooms, part inventories and related facilities. The building and grounds managed by the Public Works Department are also the responsibility of this unit, including the programming of facility repairs, major renovations and new structures falling under Fund 405, Agency 405000 Road and Bridge Building Construction. The unit includes 65 employees located in six main facilities and two outlying facilities.

4. Other Support Divisions

The Other Support Divisions organizational unit includes the Motor Pool, Land Survey Division and Mine Inspector.

The Motor Pool is funded through an internal service fund and provides a centralized pool of vehicles for use by all county departments. The Motor Pool unit is responsible for acquiring, operating, maintaining and the disposal of a fleet of vehicles in Duluth and Virginia. The Motor Pool includes eight employees located in two facilities.

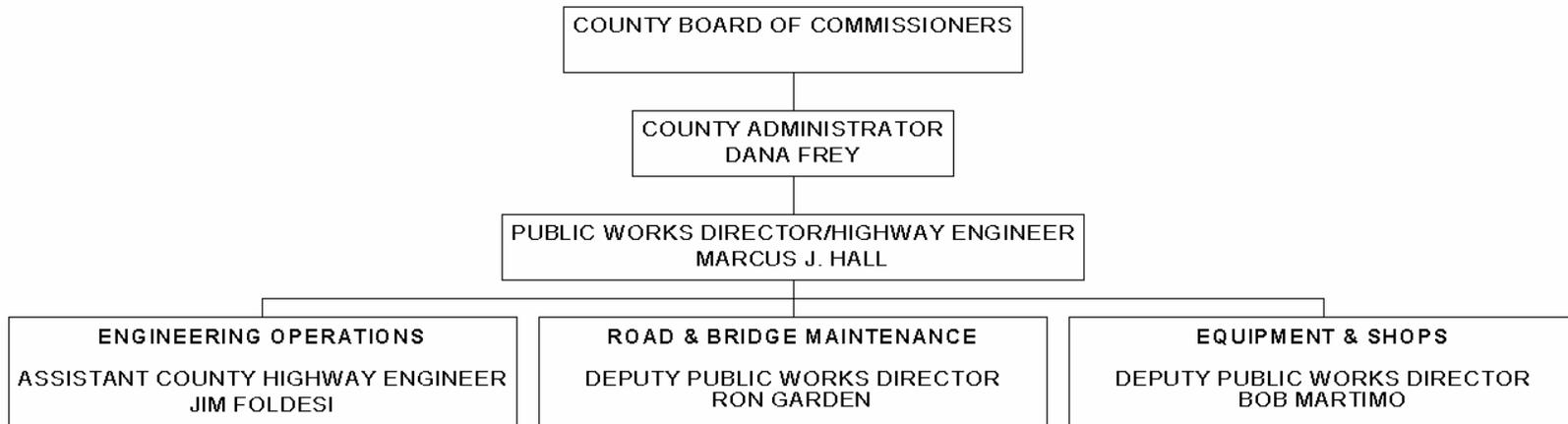
The Land Survey Division is funded by the General Fund and is responsible for the maintenance and restoration of approximately 26,000 Public Land Survey (PLS) corner monuments and associated records. They are also responsible for reviewing plats and performing land survey work for Public Works projects. The division is supervised by the County Surveyor and includes a total of 16 employees located in Duluth and Virginia.

The Mine Inspection Division is funded by the General Fund. The division was established in 1905 by state statute and is responsible for safety inspections of mines in St. Louis County. The division includes four employees located in Virginia. This division will be transferred to Employee Safety and Risk Management beginning January 1, 2008.

**BUDGET BREAKDOWN BY PROGRAM**  
**(% Allocation)**

	<b><u>Percentage of Resources 2007 Adopted Budget</u></b>	<b><u>Percentage of Resources 2008 Proposed</u></b>
<u>Engineering Operations</u>	<u>58.10%</u>	<u>54.96%</u>
Engineering and Design & Construction (Fund 200, Agency 200000)	11.20%	8.62%
Road and Bridge Construction (Local Levy) (Fund 200, Agency 203000)	5.00%	7.33%
Road and Bridge Construction (State & Federal Aid) (Fund 220, Agency 220000)	41.80%	38.70%
Unorganized Township Road Fund (Fund 210, Agency 210000)	0.10%	0.31%
<u>Road and Bridge Maintenance</u> (Fund 200, Agency 201000)	<u>21.50%</u>	<u>19.93%</u>
<u>Equipment &amp; Shops</u>	<u>15.80%</u>	<u>20.49%</u>
Buildings & Structures (Fund 405, Agency 405000)	0.80%	0.75%
Equipment & Shops (Fund 200, Agency 202000)	15.00%	9.40%
(Fund 436, Agency 436001)	0.00%	2.09%
PW Inventory Control (Fund 200, Agency 207000)	0.00%	8.25%
<u>Other Support Divisions within Public Works</u>	<u>4.70%</u>	<u>4.62%</u>
Land Survey (Fund 100, Agency 122001)	1.60%	1.39%
Mine Inspector (will be in Employee Safety & Risk Management as of 1/1/08) (Fund 100, Agency 138001)	0.40%	0.41%
Motor Pool (Fund 715, Agency 715001)	2.70%	2.09%
Motor Pool Inventory Control (Fund 715, Agency 716001)	0.00%	0.73%

**2008  
ORGANIZATIONAL CHART  
ST. LOUIS COUNTY PUBLIC WORKS  
DEPARTMENT**



Includes 7 Engineering Divisions and the Land Survey Division.

95 Employees and 56.35% of the 2008 Public Works Department Budget

Includes 4 Roadway Maintenance Divisions and the Bridge Maintenance Division

181 Employees and 19.93% of the 2008 Public Works Department Budget

Includes 6 Maintenance Shops and the Mine Inspector and Motor Pool

77 Employees and 23.72% of the 2008 Public Works Department Budget

# **Significant Trends and Impacts to the Public Works Department External and Internal Factors**

## **External Factors impacting how we do business:**

- Unstable and inadequate revenue sources on the federal, state and local level to preserve our current road & bridge infrastructure.
- Inflation and the erosion of buying power as it relates to fuel, equipment, labor and materials.
- Pressure from the trucking, logging and other industries to haul heavier loads over our roadways and to eliminate spring road restrictions, causing accelerated deterioration of roads and bridges.
- Higher public expectations of service levels.
- Increasing vehicle miles traveled and increases in average daily traffic on our roads and bridges.
- Influence of review agencies such as the US Army Corps of Engineers, Minnesota Pollution Control Agency and a myriad of other agencies which either delay the delivery of projects or cause unfunded mandates.
- Projects that require partnering financially with other agencies have the potential of being delayed by funding shortfalls.
- Weather has an affect on the cost of winter maintenance and summer maintenance activities and contracted projects.
- Availability of non-renewable resources (gravel, asphalt, etc.)
- Mature and developing technologies (Global Positioning System (GPS) satellites, etc.)
- Use of new and better construction materials as they are made available.
- Legislation (federal & state)
- Changes to the State Aid system and MN Department of Transportation policies.
- Addition of new project funding programs such as the Comprehensive Highway Safety Program, Rural Road Safety Account, Safe Routes to School and others.
- Competition for a limited number of potential employees in the labor market.

## **Internal Factors impacting how we do business:**

- Mass retirements
- Well trained work force that has been mentored by senior staff
- Civil Service
- Contracts & Work Rules
- Increased productivity created by using new technologies such as GPS and OneOffice project management software
- County Board Policy
- Administration's Policies
- Upgraded, modern maintenance facilities.
- Limiting factors in accomplishing maintenance activities are labor (work force), equipment and materials.
- The department has no control over increases in salaries and benefits.
- Size of our road and bridge systems
- Reduction in the size of the work force has reduced the ability to perform projects in-house.

## **WHAT DO WE WANT TO ACHIEVE?**

### **VISION FOR THE PUBLIC WORKS DEPARTMENT:**

- Our infrastructure shall meet standards comparable to other agencies that are similar to St. Louis County.
- We shall preside over a safe, well maintained road and bridge system which meets or exceeds the public's expectations for level of service (i.e. quality of driving surface, load carrying capacity, reduced number and severity of accidents, environmentally sensitive, fiscally responsible, efficient, driven by preventative maintenance using proper asset management techniques at the lowest life cycle cost.)
- The funding climate needs to change significantly in order to achieve this vision.

### **What this vision requires in 2008-2009:**

- The department needs to stay focused on the data produced by the new Maximo cost accounting system and other asset management tools, analyzing the data and using it to help make good decisions.
- Pursue additional revenue sources
  - State funding through the legislative process by active participation on the MN County Engineers Association Legislative Committee and the Transportation Alliance Board.
  - Applying for all federal and state programs. There are many new safety programs available such as Safe Routes to School, Rural Road Safety Account, Comprehensive Highway Safety Program, etc.
  - Trying to leverage all opportunities for federal funding, including annual appropriations funding and the upcoming 2009 SAFETEA-LU reauthorization.
  - Review the Capital Improvement Program and 10-Year Construction Plan for more cost effective project solutions (i.e. resurfacing vs. reconstruction.)
- Snow & Ice Optimization Study will occur over the next three years and the implementation of any outcome may help us to reduce operational costs.
- Re-organization of the budget to make it easier to manage, more understandable and linked to specific programs areas.

### **What this vision requires in the next 2-5 years:**

- 2008-2010 reorganization of maintenance operations will place us in a position to take advantage of efficiencies.
- The implementation of the Maximo fleet/cost accounting software will happen in January of 2008.
- We will evaluate our operations using these new tools, which will help us make better decisions moving forward.
- Implementation of a pavement management system and an evaluation of the 10-Year Construction plan.
- In order to meet our vision, we will need to invest in our infrastructure in a more efficient manner with the funding we have now and any potential future increases. We will have an increased emphasis on system preservation.
- Succession planning

## Public Works Department Goals, Objectives and Performance Measures

<b>Department Goal</b>	<b>Related Department Objectives</b>	<b>Commissioner Priority Area</b>	<b>Tactics, Initiatives &amp; Action Steps</b>	<b>Measure (KPI's or internal measures)</b>
1. Preside over a safe, well maintained road and bridge system which meets or exceeds the public's expectations for level of service	1.1 Reduce the total number of accidents within St. Louis County that occur on County State Aid Highways, County Roads and Un-Organized Township Roads that involve fatalities and injury.	1. Health & Well-being of County Citizens 2. Strong County Infrastructure	Pursue federal and state safety money in all its forms. Participate in the Towards Zero Death initiative. Perform safety audits on our highway systems and apply solutions in a cost-effective manner.	Reduce the total number of combined fatal and injury accidents that occur on County State Aid Highways, County Roads and Un-Organized Township Roads to 205 in the year 2009.
	1.2 Deliver the construction program on time.	2. Strong County Infrastructure 4. Healthy Local Economy	Maintain a fiscally constrained 10-year Plan. Perform proper programming & project scoping.	Deliver 90% of the Public Works Department projects programmed in the Capital Improvement Program (CIP) in the year they are scheduled.
	1.3 Provide high quality and cost effective road and bridge projects.	2. Strong County Infrastructure 5. Efficient, Effective Government	Improve methods for quality control on plan and specification development, especially for consultant plans.	Limit the average amount of cost overruns of road & bridge projects to 10% or less of the original contract amount contained in the qualifying low bidder's contract documents.
	1.4 Increase the overall pavement quality of the roads under St. Louis County jurisdiction (county state aid highways, county roads & unorganized township roads) to a level acceptable to the public.	2. Strong County Infrastructure 4. Healthy Local Economy	Pursue federal and state money in all its forms. Perform cost effective projects at the right time in the pavement's life. More proactive vs. reactive maintenance. Develop a fully functioning pavement management system.	75% of roadway miles shall be rated with a Pavement Quality Index (PQI) of 2.900 or higher and the weighted average PQI for all mileage shall be 3.100 or higher. Pavements having a PQI of 2.900 to 3.200 are defined as being in "fair" condition. PQI's range from 0.000 (worst) to 4.200 (best).
	1.5 Reconstruct and maintain the bridge system to a standard where no restricted bridges (weight, height, width) exist.	1. Health & Well-being of County Citizens 2. Strong County Infrastructure	Pursue federal and state money in all its forms. Concentrate efforts on restricted bridges and identify cost effective fixes to change the status of the bridge if possible. Maximize the use of the bridge crews for projects within their capabilities. Use consultants for design where necessary to deliver the projects.	Reduce the number of restricted bridges by 5% annually.

## Public Works Department Goals, Objectives and Performance Measures

<b>Department Goal</b>	<b>Related Department Objectives</b>	<b>Commissioner Priority Area</b>	<b>Tactics, Initiatives &amp; Action Steps</b>	<b>Measure (KPI's or internal measures)</b>
	1.6 Apply dust control to all gravel roads in accordance with the St. Louis County Public Works Department Gravel Retention & Dust Control Policy.	1. Health & Well-being of County Citizens 2. Strong County Infrastructure	As inflation is realized, pursue funding as necessary to allow us to meet the application requirements of the policy. If this is not an option, then amend the policy.	Apply full length dust control to 100% of the gravel roads under St. Louis county jurisdiction with an average daily traffic (ADT) of 200 cars per day or more and apply spot dust control in front of homes and businesses on 100% of the gravel roads under St. Louis County jurisdiction with an ADT between 50 and 199 cars per day.
	1.7 Place all Class 5 gravel produced in the annual crushing contracts on roadways requiring re-graveling.	2. Strong County Infrastructure 4. Healthy Local Economy	Prioritize the use of maintenance forces (labor, equipment and materials) to allow us to accomplish this task.	Annually place all class 5 gravel produced in the crushing contracts (approximately 320,000 tons) on roadways under St. Louis County jurisdiction using St. Louis County forces.
	1.8 Provide roadside mowing on all unorganized township roads, county roads and county state aid highways.	1. Health & Well-being of County Citizens 2. Strong County Infrastructure	Prioritize the use of maintenance forces (labor, equipment and materials) to allow us to accomplish this task.	Mow 100% of the mileage of the paved road system and 80% of the mileage of the gravel road system each mowing season.
	1.9 Comply with a new federally mandated minimum sign retro-reflectivity requirement by implementing a sign replacement program.	1. Health & Well-being of County Citizens 2. Strong County Infrastructure	The county will be divided into 10 areas that will receive new signs once every 10 years. Special projects, Adopt-A-Highway, replacing knockdowns, special events and construction projects are activities that will compete for time and money with this program.	Install a minimum of 4000 signs per year (approximately 10% of the total field inventory) on unorganized township, county roads and county state aid highways under St. Louis County jurisdiction.
2. Provide a safe and dependable fleet of equipment for our operators which ensures all equipment is available when needed and is safe for our employees and the public.	2.1 Ensure that we are prioritizing our purchases correctly and that what is purchased is being used effectively and economically.	2. Strong County Infrastructure 5. Efficient, Effective Government	Analyze our current needs, reviewing repair costs, review purchase vs. lease economics, sharing equipment between districts.	Under development
	2.2 Assure compliance with all state and federal statutes pertaining to employees & equipment.	2. Strong County Infrastructure 5. Efficient, Effective Government	Train and certify all technicians on proper US Department of Transportation (USDOT) vehicle inspections. Ensure all vehicles are USDOT certified.	Under development

## Public Works Department Goals, Objectives and Performance Measures

<b>Department Goal</b>	<b>Related Department Objectives</b>	<b>Commissioner Priority Area</b>	<b>Tactics, Initiatives &amp; Action Steps</b>	<b>Measure (KPI's or internal measures)</b>
	2.3 Provide a sufficient number of adequately maintained operation facilities for both engineering and maintenance divisions in order to aid in the accomplishment of the Public Works Department's mission.	2. Strong County Infrastructure 5. Efficient, Effective Government	Upgrade and maintain facilities as appropriate. Create a facilities inventory and repair and replacement schedule.	Under development
3. The goal for the Motor Pool Division is to provide transportation to County Departments at the lowest possible cost.	3.1 Maximize utilization of the motor pool by county departments.	2. Strong County Infrastructure 5. Efficient, Effective Government	Review the county policy on employee reimbursement rates. Make it easier for employees to use motor pool vehicles.	Under development
4. The goal for the Land Survey Division is to locate and perpetuate the Public Land Survey (PLS) corner markers in St. Louis County.	4.1 To the extent practical, certify all PLS Monument positions.	2. Strong County Infrastructure 4. Healthy Local Economy	The use of GPS and other new technologies will be used to make us more efficient in achieving this objective. We will also continue to capitalize on the work of private surveyors and the development of the GIS parcel layer.	Annually certify 210 or more PLS corner monuments.
5. The goal for the Mine Inspection Division is to promote mine safety.	5.1 Provide a timely response for compliance inspections	1. Health & Well-being of County Citizens 2. Healthy Local Economy		Under development
	5.2 Provide fast, professional responses for accidents.	1. Health & Well-being of County Citizens 2. Healthy Local Economy		Under development

## **Major Issues and Recommended Solutions**

As stated earlier, the major issue confronting the Public Works Department is unstable and inadequate revenue sources on the federal, state and local level to preserve our current road & bridge infrastructure. The following analysis helps to point out the current funding short fall:

### **St. Louis County Highway Facts**

<b>Road Type</b>	<b>Paved Miles</b>	<b>Unpaved Miles</b>	<b>Total Miles</b>
County State Aid Highway	1,103	276	1,379
County Roads	320	1,259	1,579
Unorganized Township Roads	14	20	34
Total Miles	1,437	1,555	2,992

St. Louis County has a total of 601 bridges that have a span of 10 feet or greater.

### **Condition of the St. Louis County Paved Highway System**

<b>PQI* Category</b>	<b>Percentage of Roadway System</b>	<b>Miles</b>
Very Good	24.4%	350
Good	16.9%	243
Fair	13.3%	192
Poor	12.8%	184
Very Poor	32.6%	468

\*PQI = Pavement Quality Index. This is a state provided index that combines roughness and surface condition into a single numerical rating.

### **Condition of St. Louis County Bridges**

121 Bridges within St. Louis County are either structurally deficient or functionally obsolete (20.1%), and are posted to restrict vehicles.

## 50-Year Life Cycle Cost Assumptions

In order to establish a 50-year life cycle cost, we have made the following assumptions:

1. In the next 50 years, 2/3 of our paved road system will be reconstructed to meet present day standards (1/3 of the system either meets the current standards or will never be upgraded).
2. Each of our paved roads will be resurfaced every 20 years.
3. Each of our gravel roads will receive a minimum of 4" of gravel every four years.
4. In the next 50 years, 2/3 of our bridges will be replaced.
5. Current (2007) costs which will be used for this analysis: \$1,500,000 per mile for a complete roadway reconstruction, \$170,000 per mile for a resurfacing, \$30,000 per mile for gravel roadway resurfacing, and \$250,000 per bridge.

These assumptions are based on just maintaining our current system. They include no inflation factors, no expansion of our existing system, no upgraded of our gravel roads to paved roads, and no increase in the number of lanes to handle greater traffic volumes.

## 50-Year Life Cycle Cost

### Reconstruction cost

(assumption #1)

$\$1,500,000 \times 2/3 \times 1,437 \text{ miles} = \$1,437,000,000$

### Resurfacing cost

(assumption #2)

$\$170,000 \times 1/20 \times 1,437 \text{ miles} \times 50 \text{ years} = \$610,725,000$

### Gravel roadway resurfacing cost

(assumption #3)

$\$30,000 \times 1/4 \times 1,555 \text{ miles} \times 50 \text{ years} = \$583,125,000$

### Bridge replacement cost

(assumption #4)

$\$250,000 \text{ per bridge} \times 2/3 \times 601 \text{ bridges} = \$100,166,667$

**TOTAL 50-YEAR LIFE CYCLE COST = \$2,731,016,667**

**Total allocation required each year = \$54,620,333**

## **Current Funding Levels**

The St. Louis County Transportation System is currently funded with five sources:

1. State Aid Gas Tax Dollars  
(constitutionally dedicated fund averaging approximately \$12,000,000/year)
2. Federal Gas Tax Dollars  
(shared with the state through the State Transportation Improvement Program or as a direct allocation to the County as a high-priority project – averaging approximately \$7,000,000/year)
3. Local Property Tax  
(averaging approximately \$5,300,000/year)
4. Unorganized Township Road Levy  
(currently set at \$225,000/year)
5. State Sales and Income Tax  
(only a small portion of this comes back to the County to pay for our county system – averaging approximately \$1,000,000/year)

Total actual average allocation to the St. Louis County Highway System per year = \$25,525,000.

## **Annual Funding Shortfall**

### **\$29,095,300**

### **Solutions:**

How can the Board help solve this issue?

- Approve our Additional Levy Requests (Form 14) as they arise.
- We need the Board to support the recommendations that will come from analyzing our asset management systems and how they will affect the 10-Year Construction Plan for road and bridge projects.
- We need the Board to support a shift towards more preventative maintenance to extend the life of our road and bridge system.
- We need the Board to support a review of our road and bridge system, with a view towards downsizing the systems. This may involve vacating roads, permanently removing bridges, shifting some roads to townships or other entities, etc.

How can the Public Works Department solve this issue?

- Follow up on the items required to accomplish the vision in 2008-2009 and the following sections of the business plan.

# **WHAT RESOURCES ARE WE GOING TO USE?**

## **Finance Plan**

### **2008-09 Budget Implications for Proposed Business Plan**

- Motor Vehicle Sale Tax (MVST) will help us with our operations budget. It will help us cover part of the increase in employee costs if we keep all other budget lines at the 2007 level.
- The erosion of buying power caused by inflation will still exist. We will be submitting for additional levy support as needed to fund areas that are critical to the County's operations.
- Reducing or consolidating supervisory staff
- Potential bonding for projects.
- Potential bonding for equipment purchases.
- We need the Board to support the maintenance reorganization plan.
- We need the Board to support the outcomes of our new cost accounting system for a more efficient fleet management system.

### **Medium & Long-Term Budget Implications for Proposed Business Plan**

- MVST will continue to increase and will help cover some cost increases, but will not be enough to keep us ahead of inflation.
- Serious consideration needs to be given to the level of local levy support of our county road and bridge system.
- It may be wise to shift some county roads to the unorganized township road system in unorganized townships to take advantage of the unorganized township road levy.
- It may be wise to shift some county roads to the organized township road system in organized townships to take advantage of the state aid support these roads enjoy. County roads do not receive any state aid.
- The potential elimination of infrastructure under county jurisdiction should allow us to concentrate the use of our limited resources where it is needed most.
- An eventual increase in the state and/or federal gas tax may alleviate some funding issues.

### **Contingency Planning**

- Program areas that were considered for budget cuts during the development of the 2008-2009 budget to deal with the budget ceiling involved projects, equipment, and reductions in staffing through attrition (holding positions open).
- A major reduction in revenue, whether it is 10% or 25%, would be reviewed by the Department with the same process. If we were asked to cut these amounts from our budget, the department would react as it did in 2003. In that case we looked at people, projects, equipment and programs. Programs that St. Louis County provides that other counties do not, such as calcium chloride for dust control, snowplowing private driveways, etc., would be looked at for elimination first (enhanced services). Preventative, proactive maintenance activities would come next. Emergency repairs would be third. Activities related to public safety and basic services would come last. As in 2003, the final resolution would most likely be a combination of cuts from most of these areas, after having a dialogue with the Board and Administration.
- A specific financial situation that could occur in the next 5-10 years is an increase to the federal and state gas tax, which would result in more revenue for projects. We would react by programming and delivering more projects. We are continuing to put more projects "on the shelf" in preparation for this event and in preparation for the re-authorization of the federal highway legislation.

## **Workforce Plan**

Our analysis indicates that the current staffing level within the Public Works Department is adequate to meet our current and future mission. We are constantly reviewing staffing needs in each of the organizational units as emphasis shifts and as possible efficiencies are recognized. We have tried to eliminate the use of consultants except on projects where specific competencies are required that are not available internally or are only needed on an intermittent basis. Retirements will cause a knowledge gap, but the Department is striving to minimize this by mentoring, cross training and challenging less experienced employees to step up to the challenge.

We are working in each of the key areas of employee retention, promotion and recruitment. In the area of retention, we are striving to maintain a positive atmosphere with a healthy, challenging work environment. In the area of promotion, we provide training opportunities and make sure the employees have all proper certifications for their current duties as well as looking at training in areas that would benefit them for future promotion. Lastly, in the area of recruitment, we have been attending career fairs at universities and secondary colleges, we hire temporary employees during the summer which exposes people to the county for potential permanent employment and we are considering a more formal internship program again. We have participated in programs administered by the local chapter of the American Society of Civil Engineers such as the tooth pick bridge contest, which promote engineering careers at the high school level. One of our employees sits on the civil engineering technician program board at Lake Superior College and promotes employment at St. Louis County through that forum.

## **Technology Plan**

The Department's technology plan deals with the computer software, computer hardware, telecommunications and MIS staff time required to run our operations. Our goal is to use technology to help us deliver services more efficiently at a lower cost. The Public Works Department and MIS staff meet several times each year to address work plans and budgets for each of the four areas mentioned above. The purchasing of hardware (PC's, servers, networking at facilities, etc.) is coordinated with the Purchasing Department to ensure the timely deployment of these assets. PC's are replaced on a 4-6 year timeframe. Because of this, we are trying to transition to a pay-as-you-go system using one of our budget line items versus the MIS Computer Hardware 5 Year Plan budget line item. Space plans for new facilities and remodeling projects are coordinated with MIS to ensure that the technology infrastructure is in place to serve the needs of the employees.

AutoCad drafting software and EaglePoint design software continue to be the products used to produce road and bridge plans. We continue to evaluate new products and major releases of existing, competing products to make sure we are using the most cost effective solutions for our operations. In addition, we use specialty products such as SignCad, AutoTurn and HydroCad for specific engineering solutions and have been reviewing other add-on products.

GIS continues to be a major technology player in our Department. The creation of new data layers is an ongoing project. Enterprise databases are tied to the GIS wherever possible. We are an integral player in the county-wide parcel layer. We continue to look for new ways to display and manage data in this medium, as we have seen the power of being able to view data spatially, helping us recognize trends and relationships that allow us to make better decisions when managing the county's infrastructure.

There are many databases maintained by the Public Works Department that are analyzed, used in making operational decisions and used by the public. Examples of these databases are the project listing in OneOffice and the County Surveyor's Control Point Database. It is our intent to consolidate the data using the same platforms (MS SQL Server) where possible and expand accessibility of these databases to the public.

There are two major ongoing software initiatives in the Public Works Department: The Maximo Cost Accounting/Inventory/Asset Management (Maximo) system and the OneOffice project management software. The Maximo system replaces the 15 year old ELKE system. The product will perform cost accounting, fleet & inventory management, work orders, asset management, project cost accounting, most purchasing tasks in Public Works and reporting. This product is being interfaced with the existing Mitchell Humphrey FMS software used by Purchasing and the Auditors Office and the existing Highline e-Personality software used by Civil Service and Payroll to form a seamless enterprise-wide system that is integrated with the products used by the rest of the county departments. The project is 95% complete, with Go-Live scheduled for January, 2008. Issues to be addressed in 2008 after Go-Live are ongoing training, identification of business process improvements, identification of new areas that we can expand the use of this product and report generation.

The OneOffice software has been in production for two years. This product tracks construction projects from conception to completion using Mn/DOT and Federal protocols. It is a standardized product that most counties and many cities now use throughout Minnesota to manage projects. The Public Works Department staff sit on a statewide steering committee chaired by Mn/DOT that drives improvements made to the product. In addition, we are beta testers for the product as changes are rolled out. 2008 will see many enhancements made to the product and put into production along with several new modules that will deal with electronic signature processes, online bid advertising, etc. This product has the potential of greatly enhancing this Department's presence on the internet and providing the public with greater accessibility to project related information.

## **Purchasing Plan**

In short, we buy things when we need them. Today, the world operates on “just-in-time” delivery. We should also operate like this where feasible. We should not carry large inventories of parts and supplies that have the possibility of becoming obsolete, require storage space, tie up capital and require continuous accounting. Most purchases in Public Works fall into the following main categories: parts, supplies, materials, fuel, vehicles, equipment and services in the form of consultants and construction contracts.

Most small purchases for parts, supplies and materials are made with credit cards as the items are needed with no resources necessary from Purchasing. When the purchases exceed the credit card constraints, the items are purchased by processing a purchase order through Purchasing. Most of these purchases are on an as needed basis and do not lend themselves to being scheduled.

Some major contracts and services have traditionally been purchased at the same time each year. Examples are fuel contracts in September, culverts in April and vehicles and equipment in November. The Purchasing Department keeps a schedule and has assigned buyers for these annual purchases. It is possible that this list could be expanded to cover more items if desired by the Purchasing Department.

Consultants for engineering and technical work are normally selected using the Quality Based Selection (QBS) Process. The Public Works Department normally solicits and selects the consultant and forwards this information in the form of a requisition to Purchasing, which then generates a purchase order once the consultant agreement and insurance information are complete. Most contracts are under the \$25,000 threshold that requires only the department head, purchasing and attorney’s office signatures. Contracts over the \$25,000 threshold are sent through the County Board. These contracts are done on an as-needed basis and are done with minimal resources from the Purchasing Department.

Construction contracts are bid throughout the year, but the Department strives to let most projects in the late winter/early spring time frame. A list of estimated bid opening dates is maintained on the Department’s website for viewing by potential contractors and the public. The complete list of projects is available in the budget, the County’s 5 Year Capital Improvement Program and the Department’s 10 Year Road & Bridge Construction Plan. Construction contracts are administered through the Public Works Department with minimal resources from the Purchasing Department.

## **Space & Facilities Plan**

The Department's Space and Facilities Plan deals with the maintenance, repair and modification of existing facilities and the construction of new facilities. The Department occupies 19 sites. Of the 19 sites, six are main, multi-purpose facilities. The Department manages 72 buildings characterized as follows: 18 garages, 10 salt sheds, 7 warm storage, 21 cold storage and 16 salt/sand storage buildings. In addition, the Department manages many parcels of county fee land associated with gravel mining operations and highway right-of-way.

A relatively recent major initiative has been the consolidation of maintenance facilities with other units of government in overlapping service areas. Joint use facilities are now located in Hibbing, Pike Lake, Ely, White Township and Bois Forte. Benefits to these co-located facilities have been proven through lower priced, higher volume purchases, shared labor and equipment, shared operating costs and intangible benefits such as information sharing and job experience. The Department will continue to look for opportunities to use this model in other locations.

The Public Works Department has taken a primary role in determining project needs and administering the consultant and construction contracts concerning Public Works facilities. In more recent years, these types of projects have been done with increasing consultation with Property Management, who are recognized as the experts in this area. The Department will continue to partner with Property Management and Purchasing to deliver projects that are consistent with county standards.

In 2008, it is a goal of the Department to create a comprehensive inventory of our facilities that will include the age of each structure, major building systems and anticipated repair and replacement schedules for these systems. From this inventory we can then develop a more accurate assessment of needs, which can then be prioritized and placed into a fiscally constrained capital improvement plan. The recent hire of a Deputy Public Works Director in charge of Equipment & Shops will allow the Department to put more emphasis into this area. The current complete list of projects is available in the budget and in the County's 5 Year Capital Improvement Program.

## Equipment Plan

Due to the large amount of vehicles and equipment managed by the Public Works Department, we felt it was necessary to recognize that an equipment plan should be part of our business plan. Regular fleet vehicles (sedans, pickups, vans and suburbans) are normally scheduled for replacement at 100,000 miles or 10 years old. Larger pieces of equipment (tandem trucks, excavators, graders, etc.) are scheduled for replacement by analyzing repair costs as the items age. Repairs greater than \$10,000 are reviewed to see if disposal or trade-in is a more economical option. With the implementation of the new Maximo fleet management software we hope to have more accurate operating cost and vehicle down time information that will enable us to make better decisions. New equipment acquisitions are reviewed on an annual basis for purchase versus lease economics. Reclaimers, belly dump trucks, larger dozers, large excavators and bridge inspection units are leased annually based on total purchase price and utilization. The present policy is that we will not purchase equipment if it used 3 months or less on an annual basis. The maintenance districts maximize the use of equipment by staggering project schedules and sharing equipment. Underutilized equipment is scheduled for liquidation.

In the 1988, David M. Griffith Fleet Maintenance Operations study conducted for the St. Louis County Public Works Department, a recommendation was made that adequate funding for equipment replacement become a priority for the department and the county. The funding amount recommended in this study was \$3.5 million per year. A 1990 management audit of the County Public Works Department, conducted by Deloitte and Touche used the same \$3.5 million dollar figure in their report. In that these reports are now a minimum of 17 years old, and applying a yearly inflation factor to the purchase of heavy equipment one would conclude that the \$3.5 million dollar figure would not accomplish today what it was intended to at the time of the study. As per the 1988 study the recommended turn around of equipment is 8 to 10 years for trucks and 12 years for the other types of equipment. The median age for most equipment types is 11 years old. The current amounts being budgeted for vehicles and equipment do not allow us to meet the recommendations of the studies. This has caused the Department to keep equipment longer than recommended and incur larger repair costs on those vehicles. The Department will continue to present budgets based on sound fleet management principles and will prioritize purchases according to the fiscal constraints applied by the budget process. In addition, we will be studying the creation of an internal service fund for purchasing equipment.

We were told to keep it to 10 pages. Does this count?

