

# Network Expansion Decision Making in Minnesota's Twin Cities

Norah Montes de Oca and David Levinson

**A qualitative analysis of the decision rules used by jurisdictions in Minnesota's Twin Cities metropolitan area is presented. Interviews were conducted with staff at the city, county, metropolitan, and state levels to determine how decisions about road investment, expansion, and new construction are made. Flowcharts were developed to provide a more systematic way of presenting that information. Most jurisdictions do not have extensive public participation processes, although several do, notably, the Metropolitan Council, Hennepin County, Ramsey County, and the City of Minneapolis. Jurisdictions with public participation have the most formal and extensive documentation of their investment decision process. The decision factors vary by jurisdiction, though safety, capacity, and pavement quality were important throughout.**

During the past 30 years, the change in demographic and development patterns in the state of Minnesota, particularly in the Twin Cities metropolitan area (Figure 1, map), has resulted in travel demand outpacing population growth (1). This means that the roadway capacity created in the 1970s to accommodate projected population growth has been quickly depleted as people make more trips than had been anticipated, leading to congestion (2).

The resulting system performance observed today is the consequence of decisions that were made about transportation investment in the past. These decisions are sometimes the product of explicit decision rules stated in documents such as the Minnesota Statewide Transportation Plan, State Transportation Improvement Program (STIP), Transportation Improvement Program (TIP), Transportation Policy Plan (TPP), capital improvement programs, individual county transportation plans, and so on; but they come from implicit practice as well, including engineering and planning judgment as described above, and are often discernable only by observing the actions of decision makers.

This paper aims to describe what decision rules have been used in the past and today, taking into consideration the latest scenario of scarce financial resources that jurisdictions have to face every day. It also explores evolution of the decision-making process over the years with the purpose of describing a general methodology for other metro areas. This description would explain some of the bureaucratic processes of government, and it is hoped that comparisons can be made. Increasing transparency of the decision-making process in at least an idealized form will make it possible to build empirically based on network growth prediction models, extending previous research by the authors (3).

Department of Civil Engineering, University of Minnesota, 500 Pillsbury Drive SE, Minneapolis, MN 55455.

*Transportation Research Record: Journal of the Transportation Research Board, No. 1981*, Transportation Research Board of the National Academies, Washington, D.C., 2006, pp. 1–11.

This paper is organized by the two main approaches for the different levels of government; formal processes and informal processes. First, the methodology used in this research is described. Background of historical decision making is provided. Findings about the current process at the city, county, metro area, and state levels follow. In conclusion, a summary of the interview findings in all levels of government is given.

## METHODOLOGY

To uncover formal and informal procedures, performance measures, and decision rules that have actually been used, interviews were undertaken with Minnesota Department of Transportation (Mn/DOT), Metropolitan Council, county, and City of Minneapolis planners, engineers, and staff involved in the decision-making process on future network growth. These interviews were conducted in groups as well as individually.

The method consisted of recorded face-to-face interviews with open-ended questions, which can be an effective means of generating a variety of responses. These responses represent differing perspectives to a standard list of questions. Also, face-to-face interviews, while often time-consuming and laborious, have the highest response rates (4).

The following free-form questions were asked in each interview:

- What is the procedure for a project to be approved for construction?
- What are the most important policies to look at when making decisions about a project for the network growth?
  - What are the main criteria to choose between different projects?
  - What performance measures are considered important when selecting a project?
  - Is there a ranking system that the projects go through to be selected?
  - Have there been changes in the criteria used today as compared with what was used 20 years ago about network development?
  - Are there any informal procedures for the decision-making process?
  - How important of a role do politics play in the decision-making process?

Interviews were conducted with staff at the state DOT, the Metropolitan Council, six of the seven counties in the metro area, and the City of Minneapolis.

## BACKGROUND

From the late 1950s through the 1980s, the Minnesota Department of Transportation and other state-level transportation agencies focused primarily on the construction of the U.S. Interstate highway system.

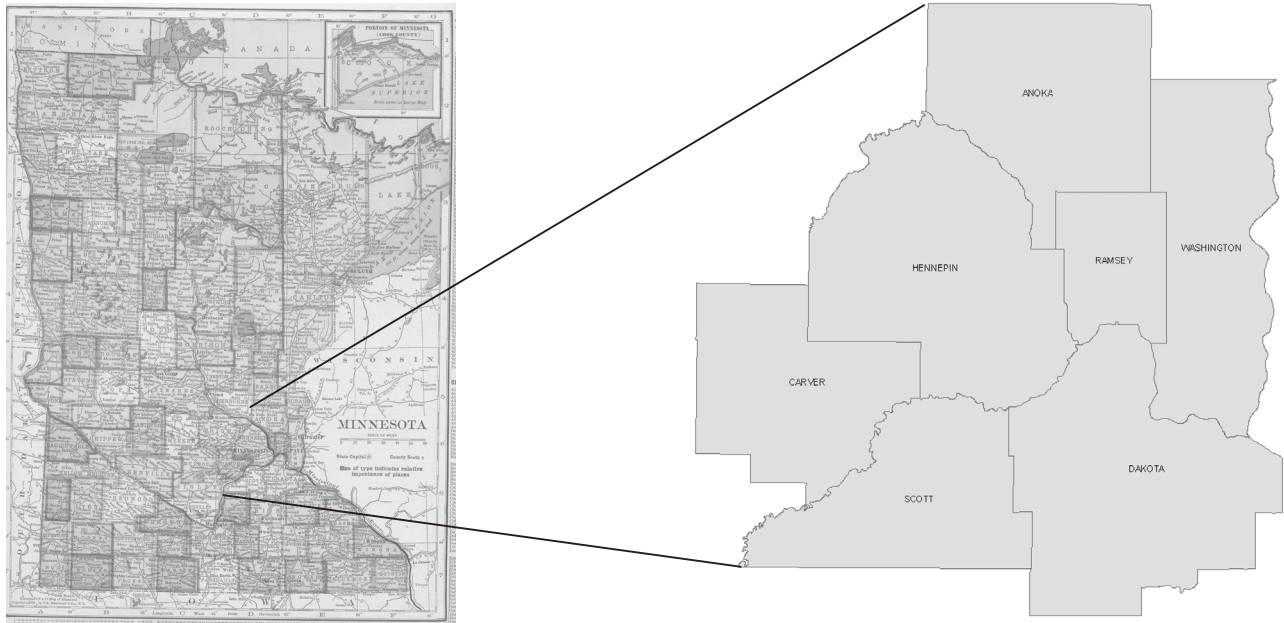


FIGURE 1 Twin Cities metropolitan area map.

Mn/DOT relied on the nationally developed Interstate plan and the locally developed Backbone System Plan to guide this effort (5). After completion of the Interstate highway system, focus shifted within transportation agencies throughout the country from large-scale, capital-intensive investments to the improved management of a mature infrastructure and an increased concern for the environment.

Policy plans in the 1970s and 1980s aimed to complete the metropolitan Interstate highway system. According to the Metro District–Office of Program Management director, because the system was smaller and still new, the focus on management and preservation in those plans was not nearly as great as it is today.

By the mid-1990s, the excess roadway capacity built in previous decades was largely utilized, and problems with levels of congestion started to rise (5). According to the Mn/DOT East Metro Area manager, during the past 10 years, congestion has been the driving force for projects around the metro area. Nonrecurring congestion has increased as well, and it was found that 13% of traffic crashes were secondary crashes from incident-related congestion (6). With no more excess roadway capacity, safety issues rising in prominence, and some new budget constraints, the need for better planning strategies arose.

Over time there has been no single criterion for selecting projects. Safety issues, road conditions, and capacity are factors that were involved in the selection process. That process was at best informal. A county engineer stated that in the past, “The way that pavement and preservation projects were selected depended on what road the county engineer drove and decided needed to be fixed. The department director would drive different roads and would say what to change. Decisions were not so difficult because the decision-making process was based more on how the system was perceived, and there was little oversight of the process and trust in the engineers.”

## FORMAL PROCESSES

### City of Minneapolis

In Minneapolis, located within Hennepin County, the community, the Park Board, the Library Board, the Department of Public

Works, the Capital Long-Range Improvement Committee (CLIC), the mayor, and the City Council are all involved in the project selection process.

CLIC uses the goals, expectations, and policies of the City of Minneapolis Comprehensive Plan in the evaluation of capital requests. The committee is authorized to have 33 appointed members, composed of two members per council ward and seven at-large members for the mayor. Members include lawyers, neighborhood activists, state consultants, senior planners with more than 20 years of experience, and homemakers. Members of this committee are knowledgeable about the issues facing the city, in which most of the members have lived for more than 25 years. CLIC reviews some projects that have been previously approved by the City Council as well as new projects for the fifth year of the 5-year plan (7).

The process starts with a group meeting to explain to each scorer how the process works. At this meeting the group is split into two task forces: Transportation (officially titled Transportation and Property Services) and Human Development (officially titled Government Management, Health and Safety, and Human Development).

Each scorer receives a book containing all the proposals, which are submitted by various city departments and independent boards and commissions (i.e., Library and Park Boards, Public Works Department, Traffic Control Department).

All scorers are encouraged to read project descriptions and prepare questions before the next meeting. Projects are presented by the city departments named above. The need to try to make legacy investments on the infrastructure that the city needs is emphasized. The committee meets weekly for a couple of months, reviewing more than 100 projects every year.

The evaluation system has four sections: project priority, contribution to city goals, operating cost considerations, and qualitative criteria. All these sections have point allocations, with a maximum of 300 points.

Figure 2 describes the concepts on which the ratings are to be based in an illustrative way. Each task force ranks projects in its field as a group. The task forces define the ranges that must be used for approx-

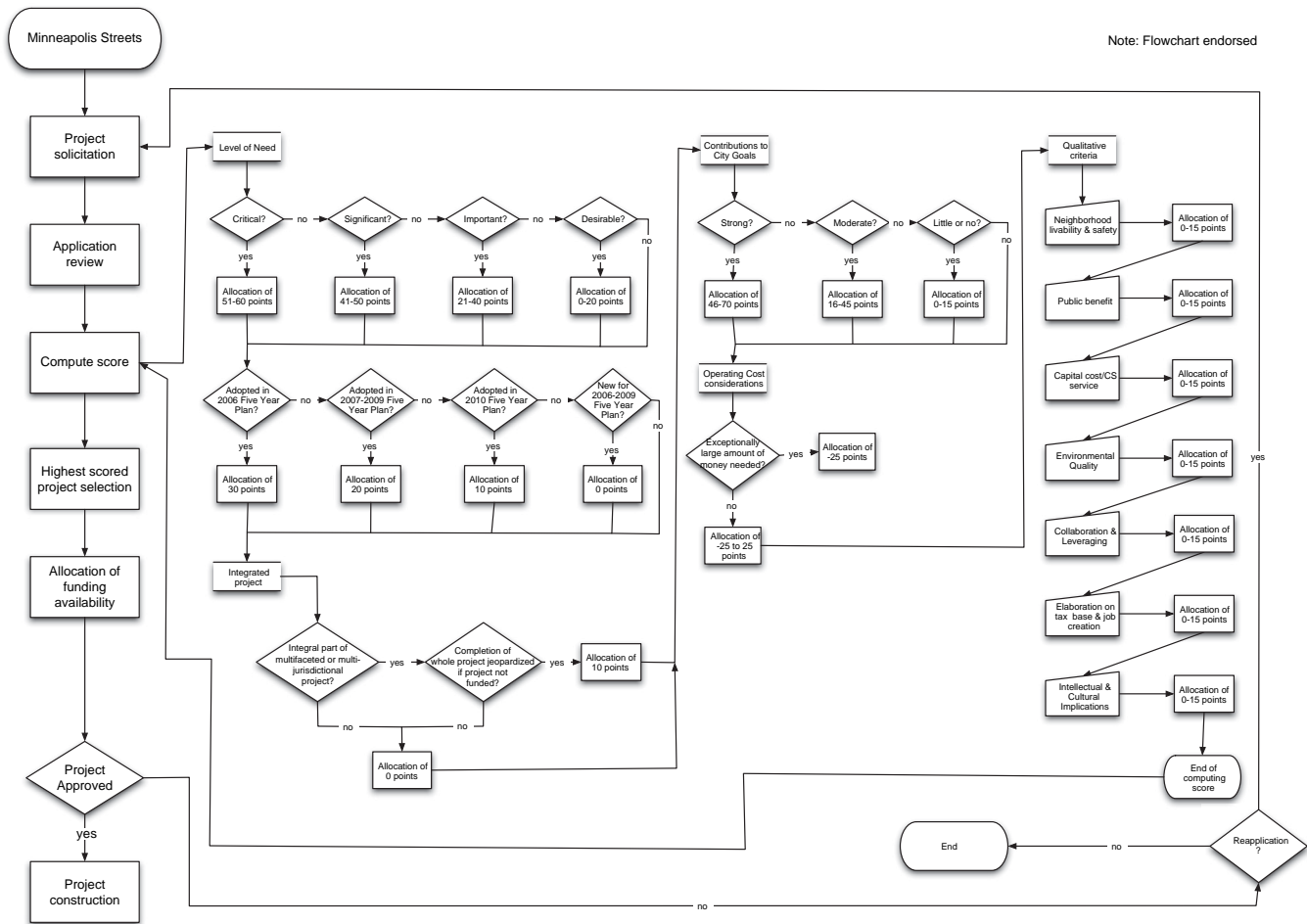


FIGURE 2 City of Minneapolis ranking score process.

imately two-thirds of the points for each project as a group, and the remaining one-third is scored individually. The categories ranked by each task force as a group are (a) level of need, (b) in adopted 5-year plan, and (c) contributions to city goals—objectives.

When a project focuses on transportation, the assigned task force reviews it. Each project is assigned a level of need by the presenters, which the task force may change. Few projects qualify for the “critical” evaluation. If a motion is carried to change the level of need from “critical” to “significant” by the task force, both task forces will score that part of the project in the range of 41 to 50 points (instead of the initial 51 to 60 points proposed by the presenter), depending on how strongly each member feels about the project.

The operating costs category is placed in the CLIC rating form with the contributions to city goals—objectives subtotal. This category ranges from -25 to 25 points. The -25 points are given if exceptionally large amounts of new operating funds are needed. The main question to be answered by each project presenter is whether this project would result in an estimated annual operating cost increase or decrease. The city aims to be careful to fund only projects that it will be able to afford later.

After the point allocation process takes place, CLIC tries to fund the projects with the highest scores. Project selection is based on points as well as the funding category available. When a project is presented and does not have any other means of funding, CLIC is reluctant to allocate points to that project.

**Counties**

At the county level, funding sources vary depending on whether the project is to be a county state aid highway (CSAH) or a county road (CR). CSAHs (classified as minor arterials or collectors) are eligible for state aid under the Minnesota Highway User Tax Distribution Fund (HUTDF), state bond funds, federal aid, and county property taxes. The remaining roads under the county’s jurisdiction (CR) get their funding almost entirely from county property taxes. The county can still compete for federal and state bridge bond funding. Counties receive 29% of HUTDF. Cities and townships through municipal state aid programs receive 9%, and the state allocates the remaining 62% to state trunk highways.

In the Twin Cities metropolitan area, there are seven counties: Anoka, Carver, Dakota, Hennepin, Ramsey, Scott, and Washington. Anoka, Scott, Dakota, and Washington Counties do not have a point ranking system for their project selection process, although they do have priorities that influence the selection process. Ramsey and Hennepin Counties have point ranking systems described in detail below.

*Ramsey County*

Ramsey County’s Public Works Technical Advisory Committee ranks projects. The committee comprises city engineers and administra-

tors representing cities of small, medium, and large population within the county. The committee and the county's Public Works Department use a list of rating factors to determine a rating and prioritizing score for projects (8).

As shown in Figure 3, Ramsey County's Transportation Improvement Program has a point ranking system through percentages, which add up to only 90%, as the official document states. The rating factors are as follows:

- Structural deficiencies (10%). This includes structural deficiencies in the physical condition of the road adjusted to consider the average daily traffic (ADT) per lane.
- Need for maintenance (10%). A project for which drainage issues have been identified adjacent to the roadway will receive 50% of this score. The remaining 50% of this score relates to other fac-

tors such as maintenance problems not considered in the pavement management score. The scoring may be based on both measurable factors and professional judgment.

- Annual average daily traffic (AADT) (10%). This factor considers the total number of vehicles that travel daily on average on a road.
- Geometrics-safety (20%). The level of service and the number and nature of accidents may be considered in this factor.
- Cities' position (30%). A city expresses the need for a project in a letter or resolution. It is suggested that a city prioritize the projects requested. Prioritized projects are scored on the basis of the priority given to each one.
- Access management (10%). When a project is located in a city with an adopted access management policy, the city agrees to work with the county to combine or eliminate access points as part of the

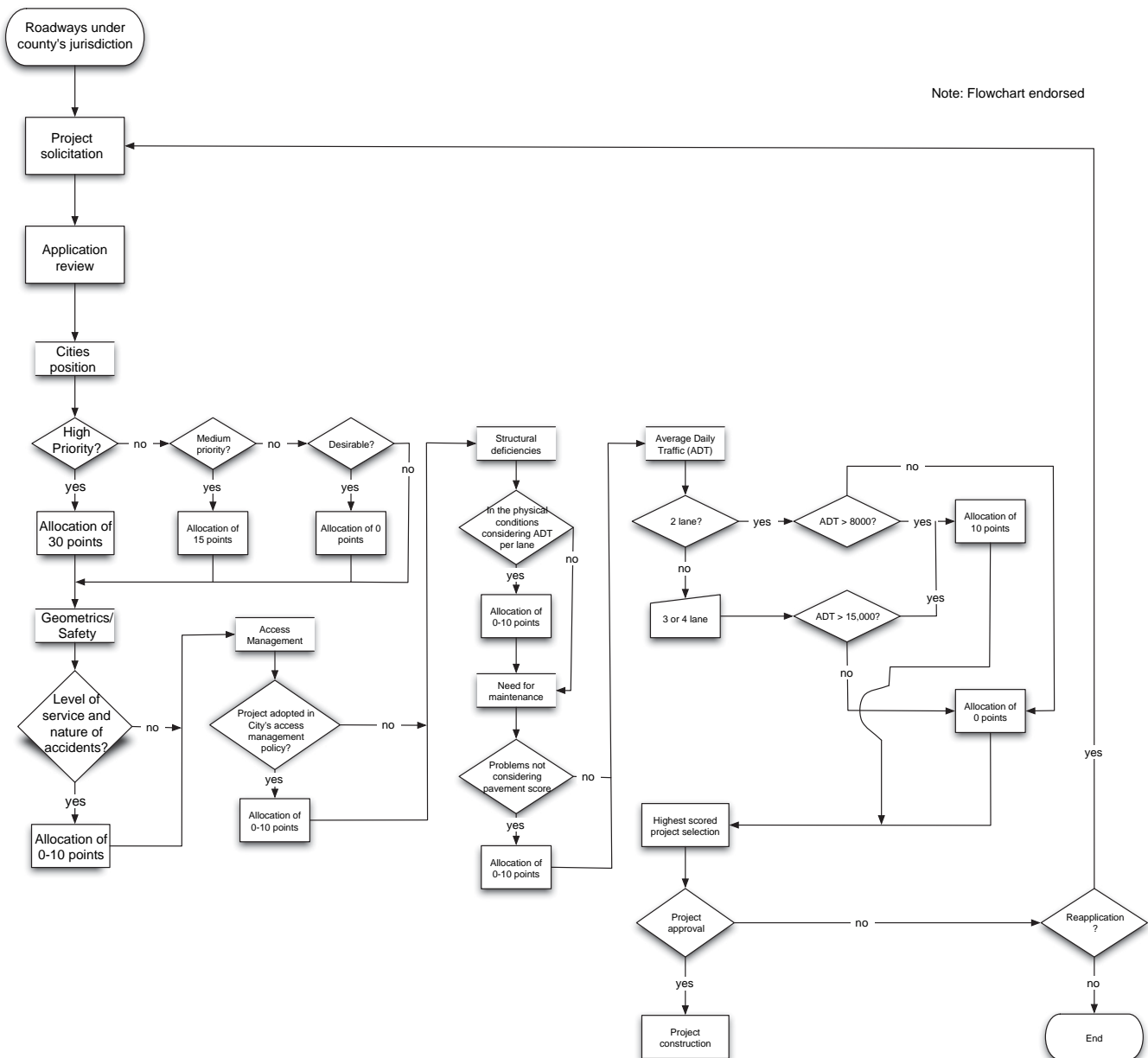


FIGURE 3 Ramsey County ranking process.

project in an effort to reduce vehicular crash rates, reduce congestion, and improve pedestrian safety.

According to the Ramsey County Public Works director, the political involvement in the county is almost removed. Politicians are informed of exactly how the process works and what the criteria are for selecting projects through the written formal plan.

*Hennepin County*

Hennepin County has the most complete ranking system and formal process, which are shown in Figure 4. It has four main criteria that are used to score projects. These criteria include three technical factors (road capacity, pavement conditions, and crash rates) and a municipal support factor (approval). According to the Transportation Capital Improvement Program (CIP) Project Scoring, it is possible to determine the projects that have the greatest technical need and for which funding may be the most appropriate, presuming that sufficient municipal support exists or could be generated. A total score

for all four factors is listed and is followed by a number indicating the rank for each individual factor.

It is recognized that other factors may influence the selection, such as coordination with other projects, type and availability of funding, geopolitical distribution of projects, and high crash rates.

**Minnesota Department of Transportation—Metro District**

The Metropolitan Council manager of transportation systems planning and the Metro District—Office of Program Management director agreed that at the state level Mn/DOT, driven by its strategic plan, looks at three priorities when making investment decisions: preserve, manage, and expand (5). The first formal policy plan that articulated the preserve—manage—expand criteria was written in the mid 1990s, according to the Metropolitan Council manager of transportation systems planning.

When it comes to large-capacity expansion projects, especially new links, Mn/DOT first examines the previous plans before it

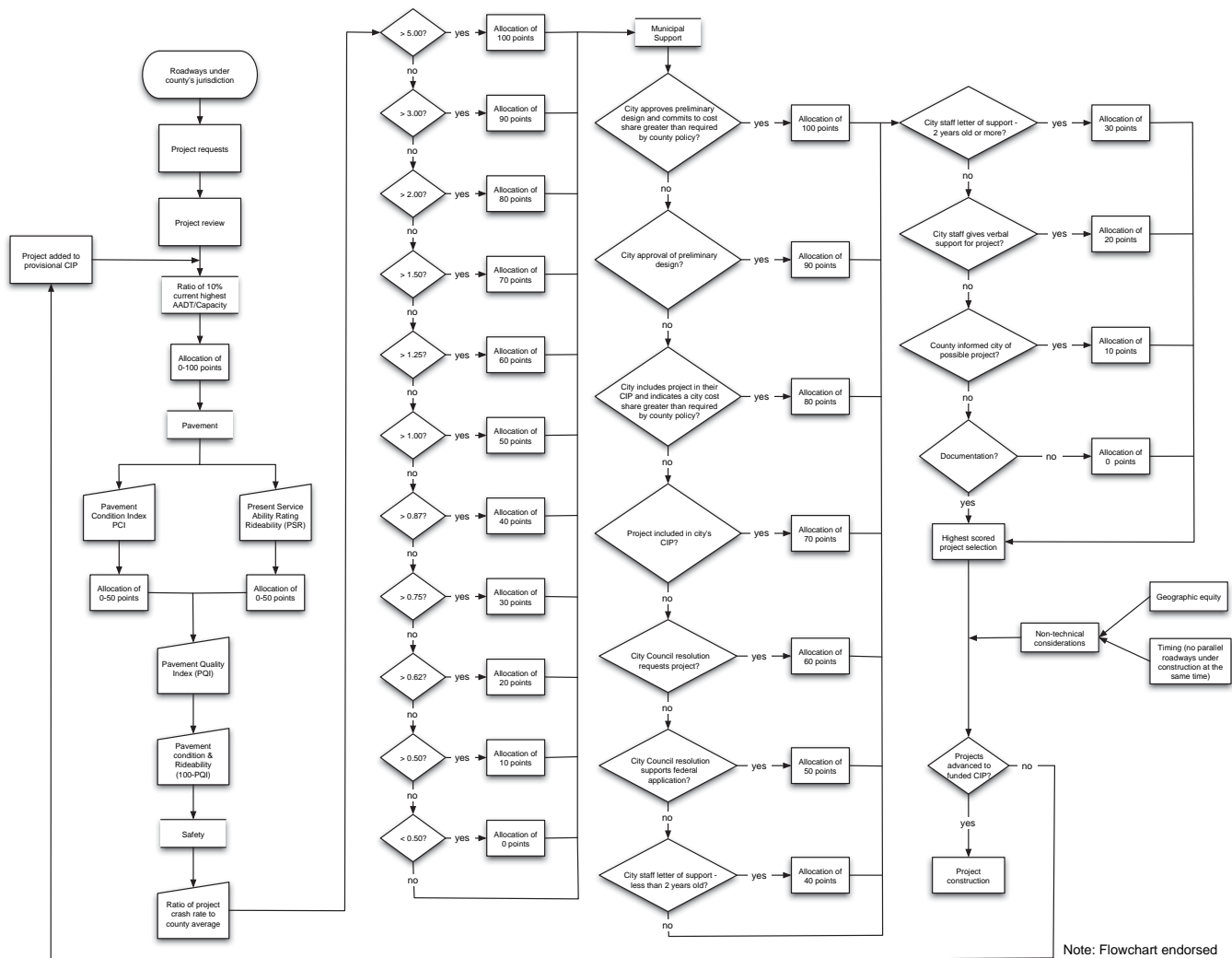


FIGURE 4 Hennepin County ranking process.

Note: Flowchart endorsed

considers performance criteria, so the outcome today aims to retain commitments, thus implementing maps drawn decades ago. Figure 5 shows another rule that assumes that if Mn/DOT has reconstructed or added capacity to a roadway section in the past 10 years or if a roadway is in its current STIP, that roadway is not going to be touched within the next 30 years. This does not mean that it won't get any attention if maintenance is required.

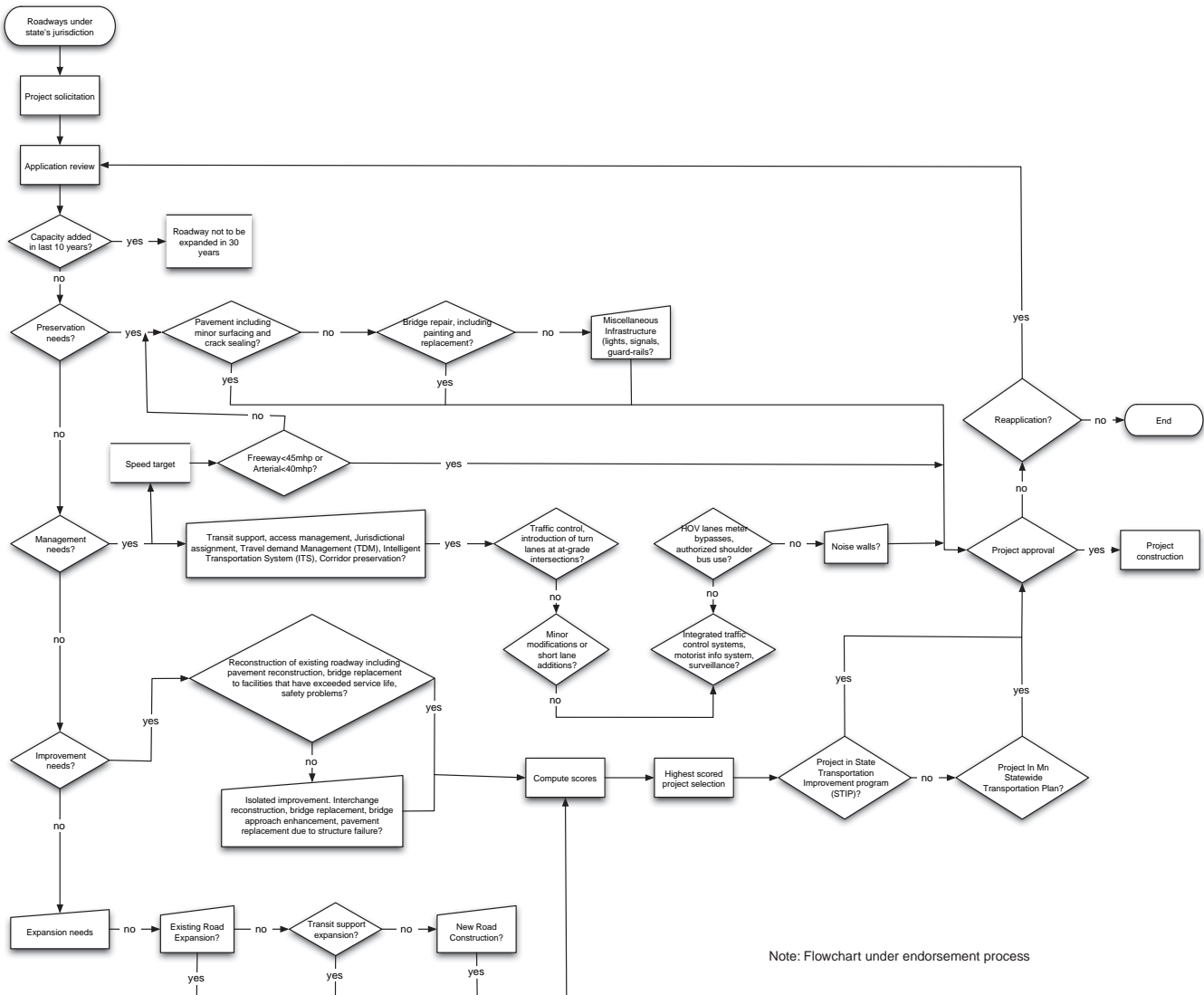
The department identifies the needs, on the basis of performance measures and targets, for a 20- to 25-year horizon with both financially constrained (extrapolating the current budget) and unconstrained plans (9). The majority of the needs in that analysis are mobility related. Mn/DOT uses speed targets to evaluate different system-level investments. For freeways the target is 45 mph (72 km/h); for arterials it is 40 mph (64 km/h).

According to the Metropolitan Council manager of transportation system planning, while there are expansion possibilities in the suburbs, in the heart of the city, where the core of the traffic problems lies, there are few expansion opportunities. Targets are established by the system plans to ensure that preservation needs and safety needs are fully met, and remaining funds are then used for mobility.

By setting aside some funds, Mn/DOT attempts to ensure that projects related to satisfying safety needs get funded. Safety projects have a better chance of being funded if they are on the 200 high crash locations list, which traffic safety experts within the agency update every 3 years. Safety issues lead more often to expansion than to management investments.

State planners invest to serve multiple aims. To make a specific investment that is only a safety fix is extremely difficult when other projects also address preservation and mobility. It is virtually impossible not to address multiple objectives on roads in the metro area. When a road is rebuilt to modern standards, not only will it be safer (it is hoped), but it also will have new pavement (satisfying preservation) and perhaps additional capacity with higher speeds (satisfying mobility needs). Thus capacity-expansion projects on roads that recently have been resurfaced or rebuilt are less likely to be selected than capacity-expansion projects on roads that also need reconstruction.

System plans have set aside specific percentages of dollars available every time; these percentages are 50% to 60% for preservation, about 20% to 25% for management, and 30% to 15% for expansion (Metropolitan Council manager and Metro District Office Program Management director).



Note: Flowchart under endorsement process

FIGURE 5 State-level ranking process.

Mn/DOT does not produce a rank list that says a specific project will be built before any other project; the reason for this is primarily that it can't be guaranteed that a project will complete engineering and pass environmental reviews in a specific time or order. Detailed engineering before funding is now unlikely, as it is believed that without available funds for construction, money should not be spent on design. Once a project is selected, it still must be designed before construction can start, adding delays, though the move toward design-build may speed this process.

Although lists are produced identifying unmet needs, these lists need to be simplistic and direct about what Mn/DOT's assumptions are. This list does prioritize on the basis of performance criteria.

When Mn/DOT goes from the planning stage of projects toward much more specific construction phases, it encounters issues that may delay those projects, including local community approval, environmental impact, right-of-way purchase, and inflation.

When Mn/DOT gets to the project selection stage, it takes into consideration how long the list of needs is for each category and

whether or not certain projects are eligible. The State Transportation Improvement Program Highway Investment Plan categories are the following:

- Preservation—bridge repairs, road repairs, resurfacing, and reconditioning.
- System management—cooperative agreements; right-of-way; supplements—overruns; enhancement activities; landscaping—rest area—wetland mitigation; planning; safety, traffic, and capacity; safety, hazard elimination; safety, rail-highway; and traffic management.
- Replacement—bridge replacement and reconstruction.
- Expansion—interregional corridors and other major construction.

Many projects are moved from one category to another, depending on the needs level of a particular area. Today at the state level there is no explicit prioritizing between safety and mobility.

Figure 6 shows the project selection process that was found through the interviews. According to the 1997 Transportation System Plan,

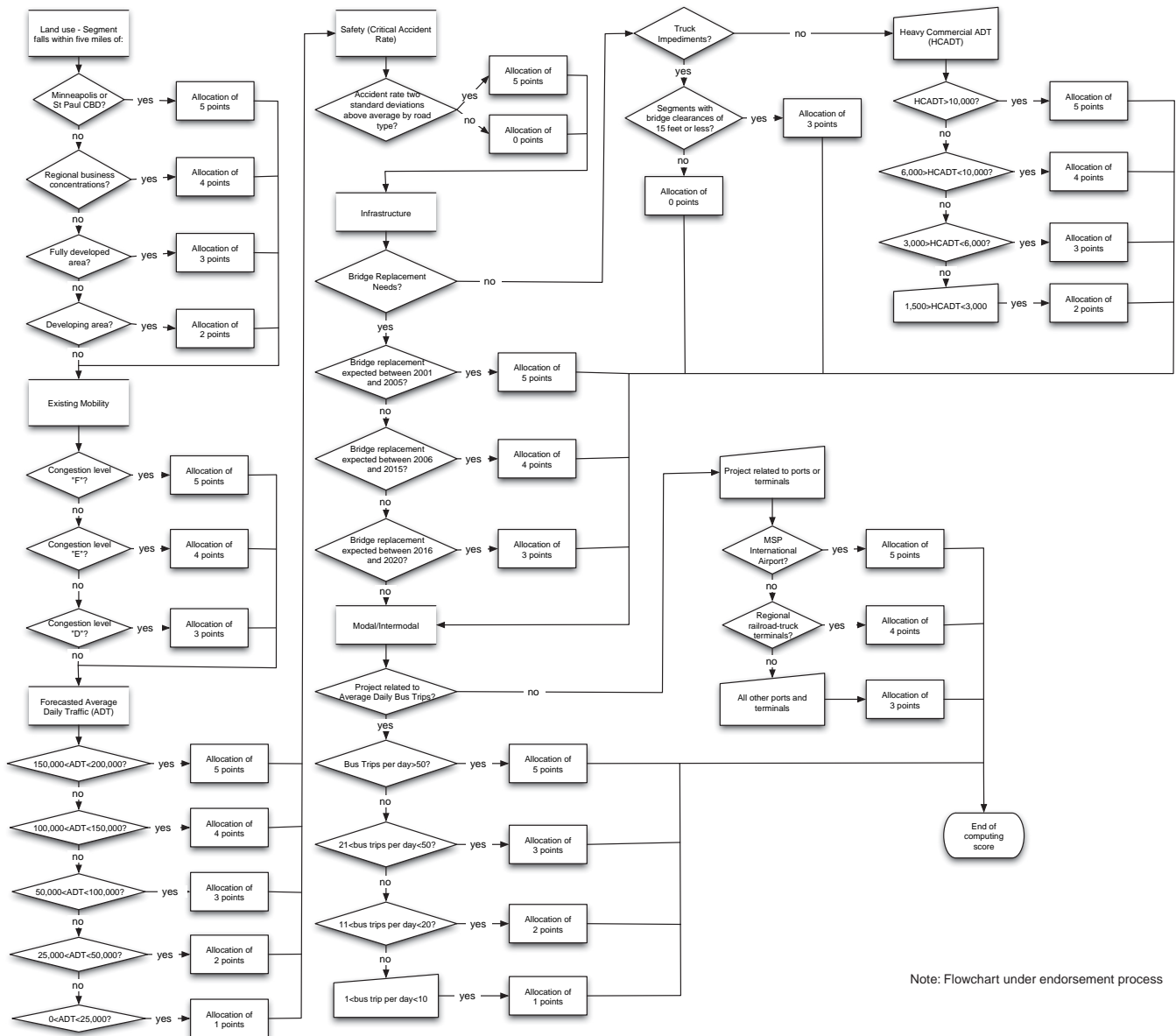


FIGURE 6 State-level computing score process—improvement and expansion.

however, there is a ranking point system for improvement and expansion projects (shown in Figure 6). Although Mn/DOT staff made no reference to it and on questioning implied it was deprecated, it is still a good reference to get an idea of what aspects of the transportation network had more importance at one time.

### Cooperative Agreements

For local projects, state aid cooperative agreements may be used, which are managed by the Mn/DOT State Aid Office. There is no point system; it is a free-form process in which agencies submit applications (sometimes only two pages long), which are reviewed by the Mn/DOT functional groups (i.e., Bridge, Maintenance, Geographic Information System, Hydraulics, Construction, Soils/Materials, Transportation Planning or Preliminary Design, Right-of-Way, Surveys, Site Development, Design Standards, Traffic). A panel of five or six city–county engineers who have no projects that specific year are brought together to rate the projects. The projects are separated by categories: preservation, management, improvement, and expansion, which are in Mn/DOT's priority order. However, not all preservation projects get selected before management projects. Within each category, this panel ranks projects. This process involves less time compared with the Metropolitan Council selection process, and it works well, according to the North Metro Area manager. The application is not as time-consuming as the one the Transportation Advisory Board (TAB) has.

### Transportation Advisory Board and Metropolitan Council

In the Twin Cities region, the Transportation Advisory Board, which includes local officials, and the Metropolitan Council, which does not, act as the metropolitan planning organization and thereby allocate federal funds (10). TAB, created by the state legislature in 1974, consists of 34 members, 10 municipal elected officials, seven county commissioners, four representatives of state and regional agencies (Mn/DOT, Minnesota Pollution Control Agency, Metropolitan Airports Commission, and the Metropolitan Council), eight citizen representatives, four transportation mode representatives, and one chair. TAB is responsible for soliciting and evaluating applications for federal transportation funding and for conducting public hearings.

TAB puts together a group of scorers who rate projects. This group of scorers is the Technical Advisory Committee (TAC), which is formed by state, regional, county, city, and township representatives. Most of the volunteer scorers have many years of experience in transportation as planners, engineers, or specialists in safety, air quality, and so on. TAC's Funding and Programming Committee (F&PC) ranks all categories of projects except Hazard Elimination/Safety and Railroad Surface and Signals.

The projects that are seeking federal funding go through the Metropolitan Council selection process and criteria. The Metropolitan Council through TAB has a point ranking system to select projects. Each project is assigned a numerical ranking in various categories, for a maximum of 1,200 points for the Surface Transportation Program (STP). Each scorer reviews the responses to one criterion, not the entire project. This point system does not

allow a valid comparison across categories for deciding what project is better.

The project scorers evaluate the responses in questioning whether the project provides the benefit described in the application and how well the responses for a particular question compare with each other within the project category. The project that provides the most benefit in each category will get 100% of the points available. The rest are rated on the basis of how they compare with the best project in that category. For example, the project that provides the greatest air quality benefit will get 100% of the points available. The rest are prorated on the basis of how they compare with the best project.

Table 1 shows the point range variation for the STP. This point range depends on the funding category. There also are a Congestion Mitigation Air Quality Improvement Program (CMAQ) and a Transportation Enhancement Program (TEP). An STP project may function as a reliever, expander, connector, augments, or non-freeway principal arterial. Under CMAQ, a project may function as transit expansion or demand/system management. For TEP, a project can be functioning as scenic and environmental, bicycle and pedestrian, or historical and archaeological groups. Selection process flowcharts of STP, CMAQ, and TEP as well as the point range variation can be seen at [www.ce.umn.edu/~levinson/Papers/DecisionRules.html](http://www.ce.umn.edu/~levinson/Papers/DecisionRules.html).

### INFORMAL PROCESSES

It is important to mention that the process for decision making was deduced for levels of government that do not have a formal one, basically on the basis of the information obtained through the interviews. This information tries to represent the process as much as possible, assigning percentages on the basis of the general questions asked to each person interviewed. All informal processes flowcharts can be seen at [www.ce.umn.edu/~levinson/Papers/DecisionRules.html](http://www.ce.umn.edu/~levinson/Papers/DecisionRules.html).

#### Anoka County

According to the Anoka County Highway Department 5-Year Highway Improvement Plan 2005–2009 and interviews, Anoka County's priorities are safety, pavement quality, and preservation. The county believes that it is less costly to invest in rehabilitation projects than to wait until total reconstruction is needed. The proposed road improvements must have a benefit–cost ratio greater than 1 for a project to move forward, and there must be a corridor and environmental study.

#### Scott County

In Scott County, the priorities are safety and roadway capacity (i.e., level of congestion). One of the county's guidelines is to keep AADT less than 15,000 on three-lane roadways. The county has noticed that when AADT values rise to between 12,000 and 15,000, crash rates increase. The input from the townships and cities within the county also plays an important role in the decision-making process. The county averages six expansion projects every 8 years.



TABLE 1 Regional Solicitation Process Under Surface Transportation Program by Transportation Advisory Board

	Reliever	Expander	Connector	Augmenter	Non-Freeway Principal Arterial
Relative importance of the route	0–100	0–100	0–100	0–150	0–100
Deficiencies and solutions on category	425	425	425	375	425
Crash reduction	—	0–150	0–150	0–100	0–150
On principal arterial	0–50	—	—	—	—
On the reliever	0–50	—	—	—	—
Access management	0–125	0–175	0–125	0–125	0–175
Air quality	0–100	0–50	0–75 <sup>a</sup>	0–100	0–50
Congestion reduction	—	0–50	0–75 <sup>b</sup>	0–50	0–50
On principal arterial	0–50	—	—	—	—
On the reliever	0–50	—	—	—	—
Cost-effectiveness	275	275	275	275	275
Crash reduction	0–125	0–125	0–125	0–125	0–125
Congestion reduction	0–75	0–75	0–75 <sup>a</sup>	0–75	0–75
Air quality	0–75	0–75	0–75 <sup>b</sup>	0–75	0–75
Development framework implementation	300	300	300	300	300
Employment, housing, and transportation integration	0–200	0–200	0–200	0–200	0–200
Intensity	60	60	60	60	60
Linkages	60	60	60	60	60
Brownfields and natural resources	40	40	40	40	40
Affordable/life-cycle housing	40	40	40	40	40
Integration of modes	0–100	0–100	0–100	0–100	0–100
Maturity of project concept	0–100	0–100	0–100	0–100	0–100
Total	1,200	1,200	1,200	1,200	1,200

<sup>a</sup> Good movement.

<sup>b</sup> Shoulder improvement.

## Dakota County

Dakota County's informal process starts by using the prior year's County Board-adopted CIP (2005–2009). Projects not completed in 2005 will be “pushed back” to 2006.

The Dakota County Transportation Plan for 2025 identifies four principles that apply to all aspects of the transportation system: transportation planning; safety and standards; social, economic, and environmental impacts; and public and agency involvement. Its top priorities are safety, environmental impact, and roadway capacity.

With a collision rate for county highways of approximately 2.2 crashes per million vehicle miles traveled for the 3-year period from 2000 through 2002, the county considers an intersection can operate safely with up to 75,000 vehicles per day.

When there are two projects and the county has money for only one of them, projects are analyzed to determine which one would best implement policy, strategy, investment level, or address an emerging need. The project development time also would be looked at. The project that would benefit the system the most would be programmed first, and the other project would be programmed within the CIP but for a future year. Some projects requested are not included due to funding constraints.

## Washington County

Washington County's top priorities are safety, the capacity of the roadway, and pavement conditions. While it does not have a point

system for road expansion, it does have a traffic signal ranking system (TSRS) and a pavement preservation ranking process. The TSRS program budgets for one traffic signal installation per year. Today, the county is trying to formalize the process. The county selects one traffic signal project a year on the basis of TSRS ranking. Pavement preservation projects are selected through the ranking on the basis of the pavement condition index. The implementation depends also on matching funds from local jurisdictions. In the past projects were subjectively selected on the basis of what roads the county engineers drove and believed needed to be fixed.

## ANALYSIS AND EVALUATION

On the basis of the findings of this paper, every level of government has different priorities (Table 2). To assemble this table, there was a need to allocate points informally to those jurisdictions that do not have a formal scoring system. This point allocation was based on each jurisdiction's priorities.

According to Table 2, the main criteria are pavement conditions and maintenance, followed by capacity utilization measures such as ADT and finally safety. Flowcharts were sent to each jurisdiction for final review and endorsement (the status of whether the flowchart was endorsed is shown in the table).

Explicit use of benefit–cost ratios was not a common criterion. In all the interviews, only three jurisdictions mentioned them: Anoka County, Washington County, and Mn/DOT. Clearly the factors that make up benefits and costs are important in many other decision processes, but they tend not to be laid out as clearly. This

TABLE 2 Top-Priority Criteria's Percentages by Jurisdictions

Jurisdiction	Priorities				
	Safety/Crash Reduction (%)	Congestion, Capacity, ADT (%)	Cost-Effectiveness (%)	Air-Environmental Quality (%)	Pavement-Maintenance (%)
State		47			52
Anoka	33		33		33
Hennepin	25	25			25
Carver	—	—	—	—	—
Dakota		35			65
Scott	50	50			
Washington	33	33			33
Ramsey	20	10			20
City of Minneapolis	21		58	21	
Metropolitan Council	35	19		23	

Jurisdiction	Priorities			
	Community Involvement (%)	Access Management (%)	Endorsed by Jurisdiction?	Point Allocation
State			Pending	Formal
Anoka			No	Informal
Hennepin	25		Yes	Formal
Carver	—	—	—	—
Dakota			Pending	Informal
Scott			No	Informal
Washington			Yes	Informal
Ramsey	30	10	Yes	Formal
City of Minneapolis			Pending	Formal
Metropolitan Council		23	Pending	Formal

may be because the jurisdictions believe there are nonmonetary factors. This is particularly true with safety; engineers and planners were reluctant to state the explicit trade-off between spending on safety projects versus spending on capacity projects. There must be a trade-off—not all resources are spent on safety projects, but it is not something to be admitted. The City of Minneapolis and the Metropolitan Council are the jurisdictions that expressed concerns for air and environmental quality as a factor for their decision-making process. Hennepin and Ramsey Counties have allowed community involvement to be an important part of their process. At the state level, the biggest concerns revolve around what everyday users notice: congestion and a comfortable ride (pavement conditions).

## CONCLUSIONS

To document the process of network investment decision making—starting from an idea of a project, its evaluation, its results, and finally its construction—this research interviewed a number of engineers, managers, planners, and staff members from a variety of jurisdictions.

A gap was found between how staff perceives the decision-making process and how official documents suggest it happens. Most of the persons interviewed at different levels of government made references to official documents, saying that the selection process takes into consideration various issues, such as safety, capacity, pavement conditions, and so on, but they did not give a clear answer on how proj-

ects that are in those official documents get selected. The findings suggest that in the past, projects basically were selected depending on engineers' perceptions of the transportation system. However, safety issues, road conditions, and capacity were present in the engineers' minds when they selected projects.

Presently, even at levels of government that do not have a ranking system, the main criteria are based on performance measures, safety being the most important among them.

The findings indicate that counties that surround the core of the Twin Cities do not have a ranking point system, while Hennepin and Ramsey Counties, containing Minneapolis and St. Paul, do. But each one of them has some type of criteria when selecting projects. And the more developed counties that contain the center of the metropolitan area have a more formal decision-making process and a ranking system. The Metropolitan Council also has a formal process for its solicitation.

Surprisingly Mn/DOT has backed away from a formal process as described in the 1997 Transportation System Plan and now prefers to use a more informal, less quantitative process. This decreases transparency in the system and decreases the likelihood that an outsider could predict what projects will be selected.

Some jurisdictions declined to endorse the flowchart presented and did not provide any other alternative. The main reason for that was political concern because there is an implication that such a "restrictive" process could bring some controversy and issues with the community, the jurisdiction, and politicians.

This paper suggests that future research make a comparative, detailed analysis of decision-making rules in different metropolitan areas. This analysis would have the purpose of pairing measures of effectiveness with the decision-making rules of each area, which would produce a more realistic way to identify what users want and perhaps would establish a correlation between investment policies and community characteristics.

## REFERENCES

1. Karamalapati, R., and D. Levinson. Induced Supply: A Model of Highway Network Expansion at the Microscopic Level. *Journal of Transport Economics and Policy*, Vol. 37, No. 3, Sept. 2003, pp. 297–318.
2. *Metro Division Transportation System Plan 1997*. Minnesota Department of Transportation, St. Paul, 1997.
3. Yerra, B., and D. Levinson. The Emergence of Hierarchy in Transportation Networks. *Annals of Regional Science*, Vol. 39, No. 3, 2005, pp. 541–553.
4. Neuman, W. L. *Social Research Methods, Qualitative and Quantitative Approaches*, 4th ed. Allyn and Bacon, Toronto, Ontario, Canada, 2000.
5. *Metro Division Transportation System Plan 2001*. Minnesota Department of Transportation, St. Paul, 2001.
6. Minnesota Department of Transportation. Office of Traffic, Security, and Operations. *2002 Freeway Volume—Crash Summary* (electronic version). [www.dot.state.mn.us/trafficeng/otepubl/CongestionReport-2004.pdf](http://www.dot.state.mn.us/trafficeng/otepubl/CongestionReport-2004.pdf). Accessed May 17, 2005.
7. *2005 Capital Guidelines*. Minneapolis Capital Long-Range Improvement Committee, Minneapolis, Minn. Document obtained March 22, 2005.
8. *Transportation Improvement Program Development Process*. Ramsey County Public Works Department, Arden Hills, Minn. Document obtained Jan. 31, 2005.
9. *Metro Division Unmet Needs Report—Draft, 1998*. Metropolitan Division, Minnesota Department of Transportation, St. Paul, 1998.
10. Metropolitan Council. *Transportation Advisory Board for Metropolitan Council*. [www.metrocouncil.org/services/tab.htm](http://www.metrocouncil.org/services/tab.htm). Accessed Oct. 2004.

---

*The Metropolitan Policy, Planning, and Processes Committee sponsored publication of this paper.*