

Transportation and Quality of Life: Assessing and Comparing Dimensions

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Objectives

- Understand what QOL means to Minnesotans & identify where transportation falls within this mix
- Assess & evaluate transportation-related QOL indicators
- Better understand the role of Mn/DOT programs & services in QOL

Study Methods

- Literature Review
 - Completed mid-Nov., 2010
- Focus Groups
 - 24 groups completed Fall 2010
- Questionnaire (Spring, 2011)



Background

“Quality of Life” (QOL)

- Multiple definitions
- Lack transportation indicators
 - USDOT priority ‘livability’
- Assess & evaluate customer needs & expectations
- Use QOL as a framework



Methods: Sample

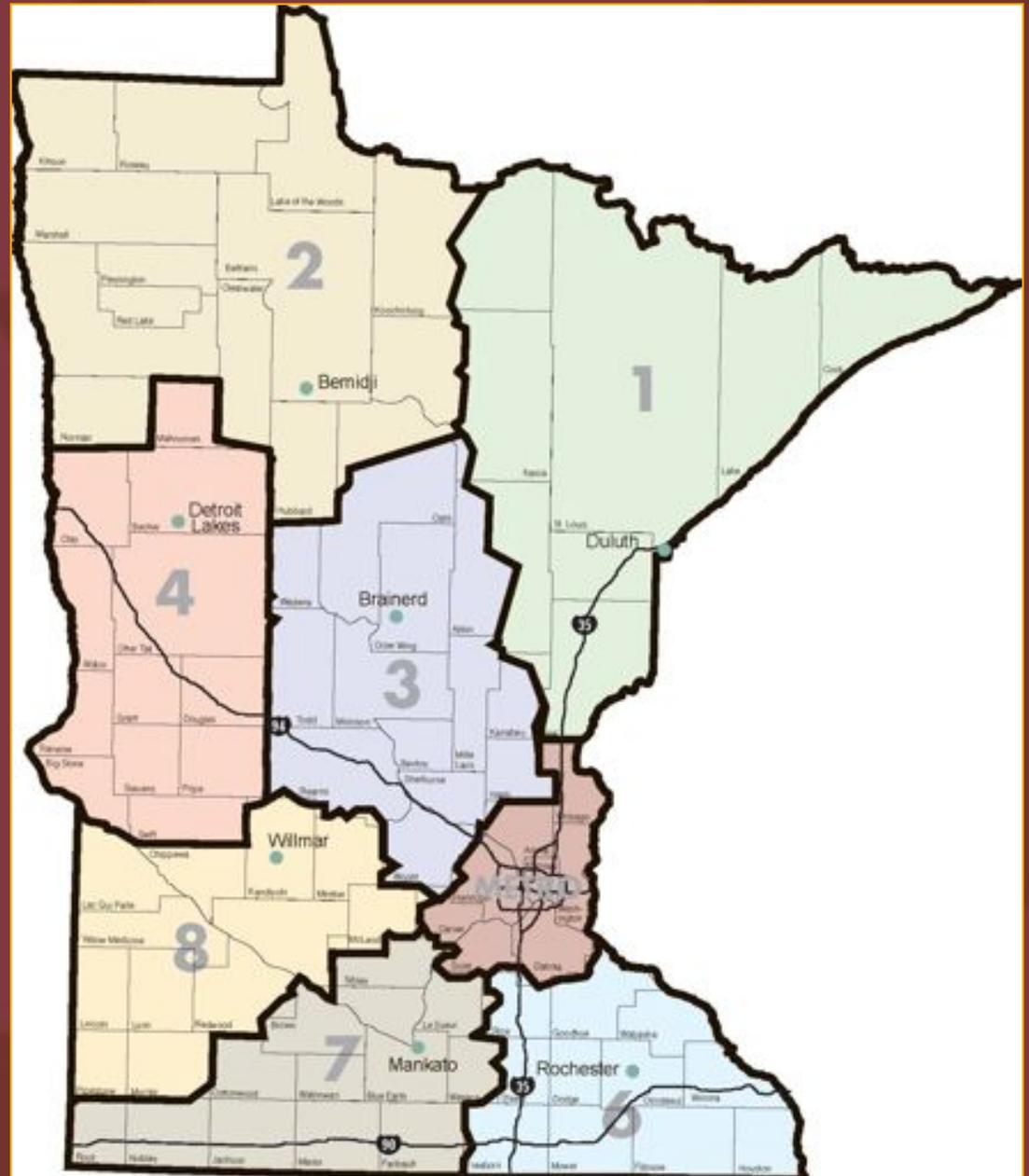
- Sample

Telephone census-block
purchased list

Screened

Sample represented:

- Variety of locations & community sizes
- All Mn/DOT districts
- Multiple age groups (20-34, 35-59, 60-75)
- Select exploration among diverse groups



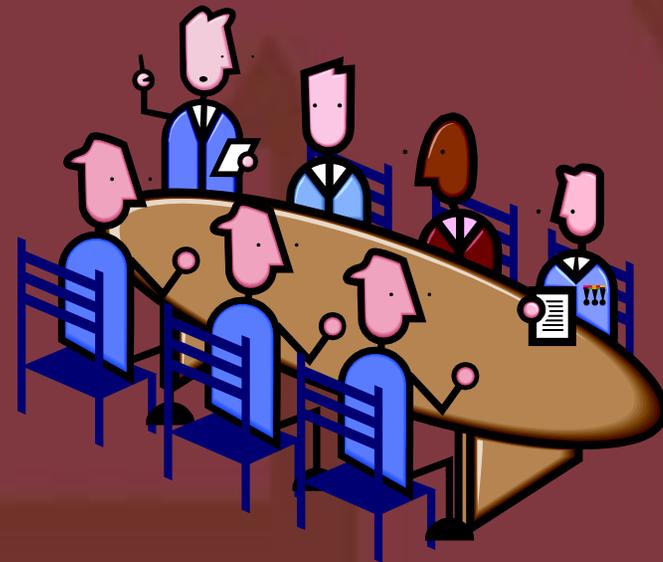
Quality of life domains among MN (10)

- Education
- Employment/finances
- Environment & housing
- Family, friends, & neighbors
- Health
- Local amenities
- Recreation & entertainment
- Safety
- Spirituality & individual psychic
- Transportation



Results

- Respondents: 215 Minnesota residents participated in focus groups
- QOL Themes mirror pilot & WHO QOL
- Transportation –related themes:
 - Access
 - Design
 - Environment
 - Maintenance
 - Mobility
 - Safety
 - Transparency



Major Themes

*Summary & examples
(QOL contributors & detractors)*

Access - Contributors

Accessibility refers to access to destinations or people's ability to reach the destinations they must visit in order to meet their needs and desire to visit to satisfy their wants (CTS).

Public Transportation	Service Transportation	Air Travel	Non-motorized Transportation	General access
<ul style="list-style-type: none"> • Local bus system • Free for students • express bus • LRT options • Amtrak services • NorthStar • Intercity bus • bus improvements and route & destination expansion 	<ul style="list-style-type: none"> • Taxi service • Medical van service • Shuttles to twin cities • Specialized service, door to door • Dial-a-ride 	<ul style="list-style-type: none"> • Regional airports • Access to MSP • MSP good airport • Good connecting flights • Multiple carriers 	<ul style="list-style-type: none"> • Recreation trails, bike, walk horse, hike, trail connectivity • Paved bike, walk trails • Can bike anywhere, commuter lanes in town • Skyways & subways • Expansion of bike/walk routes & destinations 	<ul style="list-style-type: none"> • Road access in/out of town • Plenty of roads and alternate routes • Multiple ways to get around town • Compactness of city • Proximity to all places in-town and out • "Network" is significant

Access - Detractors

Public Transportation	Service Transportation	Air	Non-Motorized Transportation	General Access
<ul style="list-style-type: none"> •Lack inter-city bus, need bus to Twin Cities •Not enough LRT •Need more bus routes & destinations •Inadequate rail, need more •Missing bus connections, long waits 	<ul style="list-style-type: none"> •Taxi expensive •No dial-a-ride on weekends 	<ul style="list-style-type: none"> •Price to fly out of small airports •Limited carriers •Lack regional airports •Expensive •Cheaper to drive to MSP than shuttle or fly 	<ul style="list-style-type: none"> •Need more bike trails •Too many bikes on highway •Need more sidewalks •Add more bike lanes •Extend bike/walk lanes and options 	<ul style="list-style-type: none"> •Lack of alternate routes to/from town •Limited options to travel to Twin Cities •No good way to get to certain areas

Access quotes

- “The Amtrack service is the best kept secret around” (St. Cloud respondent)
- “It’s nice to hop on the light rail at the Mall of America and take it downtown” (Mankato)
- “I personally don’t want to give up my car but I don’t understand why others won’t” (Brainerd respondent)
- “The cost of light rail versus buses—it’s a big waste of money” (Minneapolis respondent)

Design - Contributors

Design describes the physical layout of the transportation system and includes the multiple components that make up the system; roads, signs, and lights are basic design attributes.

Quality & Efficiency	Signage	Lights
<ul style="list-style-type: none">• Easy to follow streets• Scenic drives• Round-a-bouts good when people know how to use	<ul style="list-style-type: none">• Good highway signs• Well marked speed limits, mile markers & signs• Alternative routes & detours well marked	<ul style="list-style-type: none">• Well timed lights

Design - Detractors

Quality & Efficiency	Signage	Lights	Costs
<ul style="list-style-type: none"> •Confusing city grid/ street names/ planning •Round-a-bouts confusing & dangerous, need education •Poor design combined on/off ramp •Dead ends •Trouble intersections •No bus shelter 	<ul style="list-style-type: none"> •Signs/indicators inconsistent, poor design, especially across state lines •Stop sign, right of way uncertainty 	<ul style="list-style-type: none"> •Too many lights •Poor timing with LRT on Hiawatha •Stoplights slow commute •Motorcycles don't trip the turn lights •Stop lights timing is off, poor timing •Need flashing yellow light to warn upcoming stop light 	<ul style="list-style-type: none"> •Cost of HWY 10 •Cost of new rail greater than benefit •Cost of bridge, maintenance (e.g. 35W \$250 million) takes \$ away from others, balance project priority decision •Diamond express lanes, very expensive, hardly used

Design quotes

- “The road system (freeways) have made a huge improvement to our quality of life” (Rochester)
- “I appreciate that there are no toll roads in Minnesota” (Bloomington)
- “The bypass has contributed to the community quality of life by taking the trucks out of downtown” (Willmar)
- “Roundabouts are ok but they need better signage” (Duluth)
- “As population expands, we aren’t going to be able to keep up with the roads” (Mankato)

Environment - Contributors

Parts of the environment are shaped and influenced by the transportation system. Transportation fuel consumption contributes to air pollution; the transportation system also adds considerable sound and light to the environment.

Sound pollution

- Reduced noise in some areas
- Lack of air traffic, no noise
- Quiet zone for rail road

Environment - Detractors

Air pollution	Sound pollution	Light pollution
<ul style="list-style-type: none">• Car-centric culture negatively impact air quality and health• Idle buses increase air pollution• Increased carbon emissions with more cars on the road	<ul style="list-style-type: none">• Sound - wider roads, now more traffic, much louder, need quieter roads, sound pollution• Increased noise as road system expands• noise pollution from trains	<ul style="list-style-type: none">• Light pollution• Intersections too bright• LED stop lights too bright• Light pollution from city street lights

Environment quotes

- (We need) “the ability to rank which system emits the least green house gases” (Bemidji)
- “The quiet zone has been very positive” (No train whistles late at night-Detroit Lakes)
- “The bus would reduce our carbon footprint but access is limited and we have to drive to the bus stop” (Duluth)
- “Billboards are interfering with the scenic corridor on 169” (Mankato)

Maintenance - Contributors

Maintenance is a broad category that describes road surfaces, paint indicators, general repair, and seasonal upkeep including snow and ice removal.

Road quality	Snow removal	Efficiency
<ul style="list-style-type: none">• Good roads, well maintained, potholes and roads repaired• Improved road surfaces• Overall good upkeep• Compared to other cities/states, roads are better condition	<ul style="list-style-type: none">• Excellent snow & ice removal• Clean roads, effective plowing• Roads good in all 4 seasons	<ul style="list-style-type: none">• Construction efficiency, quality, speed finishing projects

Maintenance - Detractors

Road quality	Snow removal	Efficiency
<ul style="list-style-type: none">•Lack Paint lines hard to see, need paint improved & maintained, improve lane markings•Road surfaces worn down, potholes, rough roads•Surfaces hard to see, at night, in the rain, paint indicators worn away, can't see under snow•Rough roads, pot holes, damages cars, worse in some rural areas•Detour roads torn up from increased use, alternate routes not same quality of main roads, not well marked	<ul style="list-style-type: none">•No snow removal after dark•Large piles of snow need to be removed after plowing•Limited snow removal in some rural areas•Cars blocked in by plowing	<ul style="list-style-type: none">•Need more funding to get the job done•Concrete vs. asphalt, cost vs. endurance

Maintenance quotes

- “Our snow and ice removal is remarkable.” (Minneapolis)
- “Does MnDOT check or compare how long roads last? They just don’t seem to last as long as they used to” (Rochester)
- “More funding to increase maintenance so fillings don’t fall out when driving” (Brainerd)
- “How does asphalt compare to concrete?” (Minneapolis)

Mobility - Contributors

Mobility describes movement, the actual process or experience involved with moving from one point or another and is defined as the movement of people from one place to another in the course of everyday life (Hanson, 2010).

Traffic flow & Congestion	Commute time/ travel time	Construction
<ul style="list-style-type: none">•Auto movement is good in the city•Less congestion, no traffic jams, good flow of traffic•Good flow, improved with 4 lanes & bypasses•Ease of travel, roads not congested, can drive with restricted vision•No rush hour	<ul style="list-style-type: none">•Short distances/ commutes•Can get across town fast•Speed of travel, quick to get around	<ul style="list-style-type: none">•New bridge open now, quick construction, safe now

Mobility – Detractors

Traffic flow & Congestion	Commute/Travel Time	Construction
<ul style="list-style-type: none">• Main arteries very congested, freeways sometimes slower• Congestion, seasonal tourism traffic• Need more overpass & bypass bridges - reduce lights & congestion	<ul style="list-style-type: none">• Commute time increased by construction• Heavy weekend traffic on HWY• Travel time to cities• RR crossing, very long delays• Long time to get across town	<ul style="list-style-type: none">• Seasonal impact, results in more congestion & longer commutes• Timing of construction projects, many detours, lasts entire season, long duration of construction projects, poor signage in construction• Road construction can't keep up with demand, weather issues, major roads get priority over others, roads deteriorate "trickle down"• Construction time frame: 24/7 vs. day shift only, night scheduling• Construction: Timing - done during rush hour, alt routes for construction also under construction

Mobility quotes

- “There is a real good flow all the way through town” (Detroit Lakes)
- “It doesn’t take you long to get from one side of town to the other (comparison to St. Cloud) (Willmar)
- “I don’t know why some construction gets a round-the-clock work schedule and others don’t” (Duluth)
- “Need exit ramps to relieve summer tourism traffic” (Virginia)

Safety - Contributors

The most basic measure of state traveler safety is Minnesota traffic fatalities resulting from crashes (Mn/DOT). Multiple safety hazards exist that may contribute to a vehicle crash including physical conditions and human behavior,.

Bikes & Pedestrians	Specific Features	Train and Public Transportation
<ul style="list-style-type: none">•new road incorporates bike trail and walk access, safe & nice size	<ul style="list-style-type: none">• Rumble strips•LED lights, brighter intersections•Signs warn for delays, crashes, weather conditions•Emergency white light at intersections•Flashing yellow light to prepare for stop signs•Law enforcement response	<ul style="list-style-type: none">•railroads have safer crossings, need whistle for safety

Safety - Detractors

Driver Behavior	Bikes & Pedestrians	Specific Features	Train & Public Transportation
<ul style="list-style-type: none"> •Driver behavior - people not following rules, pass on right, •Cell phone use / texting while driving •Traffic speed vs. posted limit, drivers going too fast, speed limits too high 	<ul style="list-style-type: none"> •Need more sidewalks and crossing guards •Bike accidents, bike transport safety (for worker's commute) bike safety off trails, running lights, too many bikes on the highway, bikers riding against traffic •Pedestrian safety for right turns 	<ul style="list-style-type: none"> •Bad intersections & dangerous trouble areas •Exit/entrance on ramps on loop intersections •Round-a-bouts – dangerous & confusing •Deer crossing •Fog line and paint indicators hard to see (night, rain) •evacuation/safety concerns, limited transit options without private vehicle 	<ul style="list-style-type: none"> •Public transit safety concerns, Buses - safety and access for older people, bus safety, intimidating to use. •Buses driving too fast •Dangerous RR crossings

Safety quotes

- “I love the rumble strips—best thing they have ever done.” (Bemidji)
- “I really get irritated with cell phones” (Bloomington)
- “Bikers don’t seem to think that the rules apply to them” (Willmar)
- “It’s very hard to see the white lines on a rainy night” (Bemidji)

Transparency

Mn/DOT has measured transparency in terms of getting construction projects out for bid on schedule. The objective is to deliver construction projects on the schedule announced to communities, contractors and travelers (Mn/DOT).

Subthemes:	Communications & Planning	Finances
<i>Contributors</i>	<ul style="list-style-type: none">•551 works well	<ul style="list-style-type: none">•Funding allocated per capita
<i>Detractors</i>	<ul style="list-style-type: none">•Better communication with public•Create openness (online)•Reduce politics of the Department•Change Department mission (service to the system user)•Research more innovative strategies (eg. Concrete vs asphalt)	<ul style="list-style-type: none">• Transparency in budget•Long range funding of MnDOT

Transparency & Communications

- “I’ve never researched MnDOT. Not sure of what all they do”(Duluth)
- “The (MnDOT) website very helpful—cameras show different road conditions “ (Bloomington)
- “Is there more money being spent in some areas rather than others? Who prioritizes where the money goes? Who decides which roads are worse? (Mankato)
- “Need to send out opinion poll or find other ways to ask how road construction will affect you. The road ultimately affects us, not them” (Bemidji)

Future Needs

- Design system to match projected growth, with a streamlined process.
- Address sustainable environmental management
- Complete in-process projects & use more durable & efficient construction materials.
- Mobility increases travel speed & free flow of traffic
- Attend to current safety issues & use emerging technology

Conclusions

- Transportation a factor in quality of life
 - Within transportation, 7 transportation themes emerge
 - Future transport needs include all categories
- Communication: primary areas + opportunities to improve and expand
 - Additional research needed

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