SouthWest Transit Park-and-Ride
Bike and Pedestrian Facilities

Prepared by Sarah Sularz

A capstone project completed in
partial fulfillment of the requirements for the
Master of Landscape Architecture Degree
University of Minnesota

May 2016

THE 1956 FEDERAL HIGHWAY ACT ENSURE PROGRESS AND AUTOMOBILE FRIENDLY ROADWAY DEVELOPMENT FOR THE FOLLOWING 60 YEARS.
THE AMERICAN SUBURB WAS DESIGNED TO GIVE EACH FAMILY DWELLING WITHIN THEIR OWN MINIATURE ESTATE—A SEPARATE HOUSE WITH ITS OWN YARD, GARDEN AND DRIVEWAY FOR A CAR.
MILLENNIALS HAVE THE LARGEST U.S. ESTIMATED PURCHASING POWER...

DONATE
INVEST
SAVE
SPEND

$1.68 TRILLION

happiness passion diversity sharing discovery justice integrity family practicality duty

MILLENNIALS

BOOMERS
Whole 'Hoods in which more people walk or cycle, rather than drive, are safer, nicer, places to live.

CONVENIENCE IS KEY!
convenient facilities such as access to water, seating, and safety elements can increase usership.

People who live in neighborhoods with sidewalks are 47% more likely to be active at least 30 mins a day.

Using MultiModal transportation systems, including bicycles and commuter buses can reduce roadway emissions up to 22% annually.

Health studies show that for every $1 spent on trails, there are $3 in savings in direct medical costs.

11 different routes departing from 7 different P&R stations, serving 45+ miles.


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MOMENTUM
PROJECT GOALS

Embrace New Modes of Transportation: BIKING & WALKING

Increase Bicycle and Pedestrian Access to Southwest Transit Stations

Create Public Space Centralized at Station Plazas & Event Spaces

Redefine Experiences of Biking and Walking in the Suburbs
11 BUS lines serve commuters and students through Carver and Hennepin Counties. For only $3.00 each way this commute includes:

- WiFi
- Quiet work zones
- “Rider Rewards” - 700+ Users
- SW Prime Service

**RIDER STATS**

SWT serves 7 stations throughout Chaska, Chanhassen and Eden Prairie as well as Downtown MPLS, The University of Minnesota, Normandale College, and Target North Campus in Brooklyn Park.

Total of 1,032,889 rides provided in 2013.

Ridership up 2% from 2014-2015

Increase of 6.4% in State Fair service (almost 90,000 rides),
Increase of 53.3% in our Vikings game service
Take a look at what currently exists as far as bike paths, trails, and sidewalks all the way from Ramsey County to Carver County. It is clear that a difference in trail connectivity and type is established when you cross county lines, from urban to suburban.

This project addresses both the analysis and design strategies needed to improve those bike paths and walkable areas.
Carver County's total population increased by 36% from 2000-2015.

**TOTAL POPULATION 2000:**
70,205
The population density was 197 people per square mile

**TOTAL POPULATION 2010:**
91,042
The population density was 242 people per square mile

**TOTAL POPULATION 2015:**
est. 98,741
The population density is 257 people per square mile
WHERE TO START...

CHANHASSEN

22 MILES S.W. OF DOWNTOWN MPLS

HWY 5

HWY 212

minnesota river

lake ann

lake susan

lake riley

lotus lake

lake minnewashta

hazeltine lake

CHASHKA

CHASKA

212

EDEN PRAIRIE
WHERE WE WORK.

In just 10 years, there has been a 6% increase in commuters who leave Carver County for work. That’s 25% more than the state’s average. For so many people to be commuting every day by car can have huge environmental and physical impacts on the cities and towns they traverse.

Comparatively fewer workers in MN leave their home county for employment.

18.1% MPLS househholds do not own cars.
31% of all USA CO2 emissions come from transportation.
<2.5% Carver County households do not own cars.
This project delves into social perception of biking and walking as transportation in suburban life. Knowing the changes in demographics of target populations is important when planning new types of transit paths in the suburbs.

In Chanhassen we are seeing a rise in medium and high density housing units. Single family homes are no longer the future trajectory for this town.

**HOUSING PERMITS** pulled per year for a 6-year span has changed the suburban fabric. This map and chart to the left help show how communities are growing in areas already previously densified. These smaller cities and towns are growing due to reducing suburban sprawl trends and higher density housing styles being in demand.
POTENTIAL REACH

30 MIN BIKE / 15 MIN WALK

CHANHASSEN

CHASKA

30 MINUTES

15 MINUTE
CHANHASSEN TRAILS

ROUTE QUALITY

county line
existing trails
proposed trails

county line
unsafe routes
bike friendly routes

17 MIN BIKE / 15 MIN WALK
THE MAJORITY OF AMERICAN COMMUNITIES, DEVELOPED AFTER 1950, ARE DESIGNED FOR PRIVATE AUTOMOBILE RATHER THAN PUBLIC TRANSPORTATION. THIS SUSTAINED EMPHASIS ON DESIGN, PUBLIC POLICY, AND INVESTMENT FAVORING PRIVATE AUTO TRAVEL HAS MADE IT DIFFICULT FOR TRANSIT TO SERVE THESE COMMUNITIES.
19

CYCLE POTENTIAL

THE 4 TYPES OF TRANSPORTATION CYCLISTS

FEARLESS
1-3%

7-9%
WILLING!

INTERESTED
60%

30-33%
NO WAY!

The table below shows the population, average commute time, working age, use of public transportation, percent commuter, mean in poverty, and median H.H. income for different areas:

<table>
<thead>
<tr>
<th>Population</th>
<th>Average Commute Time</th>
<th>Working Age 16-65</th>
<th>Use Public Transportation</th>
<th>Percent Commuter</th>
<th>Mean In Poverty</th>
<th>Median H.H. Income</th>
</tr>
</thead>
<tbody>
<tr>
<td>STATION CENSUS BLOCK</td>
<td>1,688</td>
<td>22 MIN</td>
<td>66%</td>
<td>0%</td>
<td>80%</td>
<td>7.83%</td>
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<tr>
<td>1 MILE RADUIS</td>
<td>7,582</td>
<td>22 MIN</td>
<td>61.5%</td>
<td>2.1%</td>
<td>70-80%</td>
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<tr>
<td>3 MILE RADUIS</td>
<td>33,175</td>
<td>23 MIN</td>
<td>64.1%</td>
<td>3.3%</td>
<td>60-70%</td>
<td>2.30%</td>
</tr>
<tr>
<td>CITY OF CHANHASSEN</td>
<td>22,952</td>
<td>23 MIN</td>
<td>60.8%</td>
<td>2.8%</td>
<td>55%</td>
<td>2.0%</td>
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<td>CARVER COUNTY</td>
<td>91,042</td>
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<td>61.7%</td>
<td>1.7%</td>
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<td>2.2%</td>
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<tr>
<td>MINNESOTA STATE</td>
<td>5,454,700</td>
<td>23 MIN</td>
<td>50%</td>
<td>3.4%</td>
<td>47.5%</td>
<td>6.0%</td>
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ROUTE TYPOLGIES

1. TRAILS CONVERGE

2. PARK TRAIL

3. LOCAL THOROUGH WAY

4. ROADWAY TRAIL

30 MIN BIKE / 15 MIN WALK
TRAILS CONVERGE
INTERSECTIONS MATTER

- Cornus sericea L. ‘cardinal’
- Taxus x. media ‘tauntonii’
- Perovskia atriplicifolia ‘russian sage’
- Prunus cerasilera ‘mt. saint helens’
- Salix nigra ‘black willow’

YOU ARE HERE

30 MIN BIKE / 15 MIN WALK

- Amelanchier × grandiflora ‘autumn brilliance’
- townhomes
- private walk
- blvd + seat
- sidewalk
- tree lined blvd
- west bound
- 4’
- 5’
- 8’
- 8’
- 11’
- 12’
- 12’
- 10’
- 1-5’
- 8’
- planting + seating
- bituminous bike trail
- wayfinding station
- pedestrian path
- tree line

- wayfinding station
- pedestrian path
- tree line
ESTABLISH CONNECTION

SOME HAVE CALLED THE SMART CITY TREND THE MOST TRANSFORMATIVE THING TO HAPPEN TO CITIES SINCE THE URBAN RENEWAL MOVEMENT OF THE 1960s. IT’S HAPPENING IN LARGE PART BECAUSE OF DEMOGRAPHIC, ECONOMIC AND FISCAL CHANGES AFFECTING CITIES IN AMERICA AND AROUND THE GLOBE.
4. ROADWAY TRAIL

12' shoulder
6' path

116' green space
private homes

acquirable land

12' median
12' shoulder
14' 4' path

south bound

north bound

30 MIN BIKE / 15 MIN WALK

@ 101 / GREAT PLAINS
ROADWAY TRAIL DEFINED
@ 101 / GREAT PLAINS

30 MIN BIKE / 15 MIN WALK

acquirable land

11’ 12’ 9’ 14’ 12’ 11’ 11’

median

south bound

north bound

12’ 5’ path rest station

108’ infil. planting zone

private homes
“ALL TRULY GREAT THOUGHTS ARE CONCEIVED WHILE WALKING.”

Friedrich Nietzsche, *Twilight of the Idols*
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BIKE TRAILS

RESIDENTIAL

SOUTHWEST VILLAGE STATION

30 MIN BIKE / 15 MIN WALK

LAKE SUSAN

LAKE RILEY

RICE MARSH LAKE

BANDIMERE PARK

WILSON’S NURSERY

BEARPATH GOLF & COUNTRY CLUB

RILEY RIDGE PARK

REGIONAL COMMERCIAL

SHOPPING

DAYCARE

RILEY RIDGE PARKSHOPPING DAYCARE

REGIONAL COMMERCIAL

WILSON’S NURSERY

BANDIMERE PARK

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BEARPATH GOLF & COUNTRY CL
BIKE STREET TYPES

RESIDENTIAL TRAFFIC
ON or OFF street bike lanes with low speed limits, 0-999 ADT, paved route.

LOCAL TRAFFIC
ON or OFF street bike lanes with medium speed limits, 1000-5,999 ADT, paved route.

COMMUTER TRAFFIC
ON or OFF street bike lanes with high speed limits, 6000+ ADT, paved route.

30 MIN BIKE / 15 MIN WALK
CENTRAL STATION: DEFINED

4.30 acres at station block
Regional commercial establishments
Hosts 400+ cars; interior and exterior lot
Indoor 5am - 9 pm
discontinuous sidewalks
entrance points hidden
standing water and runoff on site
parking structure under utilized
uncontrolled intersections
crossing excessive roadways

30 MIN BIKE / 15 MIN WALK

HWY 212

LYMAN BLVD

GREAT PLAINS BLVD

1.64 acres

.65 acres

9.37 acres

0.65 acres
SW VILLAGE N. ARRIVAL

30 MIN BIKE / 15 MIN WALK
Pavegen tiles
Self leveling concrete bed

• carbon fibre
• aluminum
• recycled tire
• mosaic tile
• nylon fabric
• granite

• asphalt
• carbon fibreglass
• cork

TOP SURFACE OPTIONS

ENERGIZE
Stratavault System

DEFINE EDGE

corten steet edge
stratavault structural system
3/4" red river rock
biochar urban soil
T.I.G.E.R. GRANTS

$500 MILLION of FEDERAL MONEY offered
Modal and geographic equity
Rural projects awarded minimum of $1 Million

SELECTION CRITERIA:
• SHOW SAFETY INCENTIVES
• STATE OF GOOD REPAIR
• IMPROVE QUALITY OF LIFE
• ENVIRONMENTAL SUSTAINABILITY

LANDSCAPE ARCH. FOUNDATION

Case studies investigation
No minimum award $ amount

SELECTION CRITERIA:
• LANDSCAPE PERFORMANCE
• UNIQUE PROJECT
• STUDENT / SPONSOR / PARTNERSHIP
• SPECIFIC PERFORMANCE OBJECTIVES

FUNDING

“US DOT will consider the project’s ability to foster a safe, connected, accessible transportation system for the multimodal movement of goods and people”

us-dot.tiger2016/how-to-complete-discretionary-grants

“The CSI program is highly collaborative with the goal of better integrating the innovative work being done by academia and practice to advance our knowledge of landscape performance.”

lafoundation.org/foundation/case-study-investigation
PARTNERSHIPS

CONTRIBUTERS

Southwest Transit
Carver County Planning Commission
University of Minnesota - college of design
CURA - center for urban and regional studies

THANK YOU

CAPSTONE COMMITTEE

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Mukhija, Viniti. The Informal American City: Beyond Taco Trucks and Day Labor (Urban and Industrial Environments).


