Appendix

Health Impact Assessement

Health Assessement

The environments where we live, work, and socialize have major impacts on our well-being. Specifically, research points to linkages between our built environments and the growing numbers of people who suffer from respiratory and cardiovascular problems, fatal and non-fatal injuries, obesity, mental health issues, and a lack of physical activity. Though these issues are complex and causality cannot be assigned to our urban environments alone, we do know that the way we build our cities impacts our health—both positively and negatively.

In the 2011 Gallup-Healthways Index, the Omaha MSA ranked 45th out of 190 MSAs for overall well- being. The metropolitan area's residents showed particularly strong rankings in emotional health (14th), life evaluation (24th), and physical health (23rd). Yet Omaha ranked 160th out of 190 MSAs nationwide in the category of healthy behaviors. This was a measure of residents' habits in smoking, eating healthily, consumption of fruits and vegetables, and the frequency of physical activity. Although this is primarily a reflection of individual choices, the built environment plays a role in decision-making—are there places nearby to buy fresh food? How easy and enjoyable is it to take a walk in your neighborhood? Is it possible to safely ride your bike to do a short errand?

This assessment is a general overview of the health impacts the Transportation Master Plan will likely have. If implemented, the recommended projects will likely have a positive impact on community health. Projects with the greatest health benefits are those associated with active transportation, specifically walking and bicycling. Impressively, the City already has 199 miles of existing trails (including multi-purpose trails), and another 84 miles have been proposed through previous planning efforts. The recommended Core Bicycle System Projects would add 36.6 miles to the network, and the aspirational projects would add 50.33 miles more. These projects, and to a lesser degree the vehicle- based projects, will create greater opportunities for physical activity close to home and improve access to community facilities.

Physical Activity

According to the 2010 health Report Card by Live Well Omaha, 63.2 percent of Douglas County adults are overweight or obese, and 9.9 percent of the county's adults have been diagnosed with diabetes. Less than one third (29.6 percent) of adults reported that they get at least 20 minutes of exercise three times per week. The city's children are also struggling; Live Well Omaha Kids reports that one third of Omaha's children are at an unhealthy weight, and half of minority children are at an unhealthy weight.

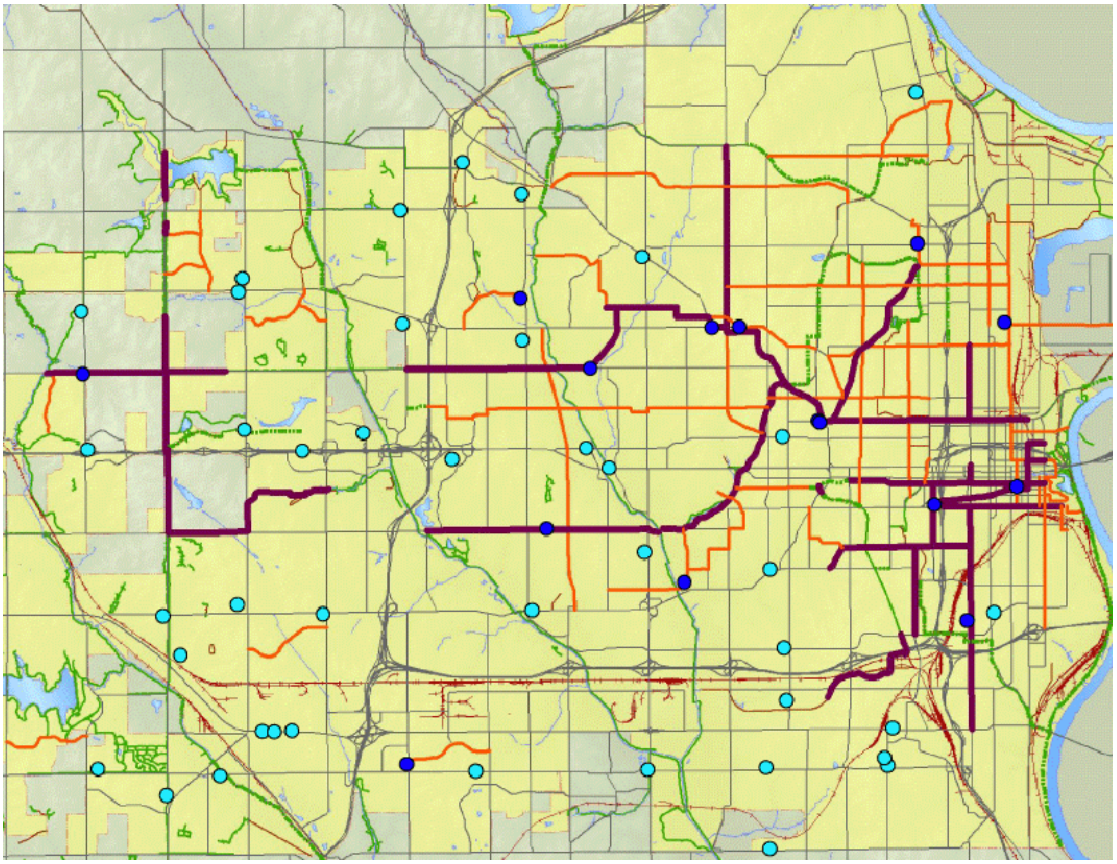
The relationship between a lack of physical activity and poor health is scientifically proven. Physical activity does not have to be as purposeful as going to the gym or playing a sport—it can be achieved through daily activities such as walking to school, bicycling for errands, or walking to transit on the daily commute.

A recent study highlights the positive health impacts that bicycle and pedestrian facilities can have on nearby residents. In Miami, the Ludlam Trail Community Benefits study estimated that residents

within the proposed trail's immediate area could expect to lose or keep off between 32,664 to 109,939 pounds of weight collectively per year, burning between 2.19 million and 7.39 calories as a community per week from trail use. These estimated benefits are from a trail of just 5.25 miles, whereas the proposed Core Bicycle System projects would add 36.6 miles to the network. Although there are differences between the use of an on-street facility versus a multi-use path, the potential health impacts in Omaha are substantial. Further benefits can be realized if the City reworks its policies regarding sidewalk construction, and actively works to address its current backlog.

Access

Within the scope of community health, accessibility can be defined as a person's ability to reach health-related facilities, services and amenities within a reasonable time and cost. Investments in the built environment can promote access by providing mode choices and an efficient, interconnected network. A number of studies have proven linkages between access to transportation, green space, and food with health conditions such as obesity, diabetes, heart disease, and poor mental and social health.



Map A. The proposed bicycle system (in burgundy and orange) and locations of healthy food sources. Dark blue dots represent -sellers with a score of 5, light blue dots represent those with a score food of 4.

Access to Healthy Food

One factor in poor community health is the accessibility of healthy food options, defined as fruits, vegetables, and whole grains. Omaha and Douglas County residents have a low intake of fruits and vegetables, even lower than the national average; a recent study by the University of Nebraska Medical Center revealed that fewer than 5 percent of Omaha's children eat the recommended servings of fruits and vegetables every day.

In 2010, a Nutrition Environment Measures Study (NEMS) was completed for Douglas County. The study surveyed food-sellers across the county, taking note of the availability of items such as fresh fruits, vegetables, healthy grains, and milk. The data was then analyzed and each store given a health accessibility score of one to five, with five being the highest. According to data from this study, 56 food stores within the City limits have a score of either 4 or 5. If the Core Bicycle System projects are implemented successfully, ten of these high-scoring stores will gain improved accessibility, and an additional five stores will gain accessibility through the aspirational projects.

Access to Parks and Schools

Parks are important facilities to community health. As places to exercise, get outdoors, and gather with friends and neighbors, they provide a critical service to residents. The City of Omaha has over two hundred parks within its boundaries. If the Core Bicycle System projects are completed, access will be improved to 17 parks including major green spaces such as Adams Park, Elmwood Park, Hanscom Park and Memorial Park. If the aspirational projects are completed, an additional 20 parks will have improved access, including new bike access to Carter Lake and Miller Park.

The proposed transportation projects will also improve access to schools. If the core bicycle projects are completed, 33 schools will have improved access. If the aspirational projects are completed as well, an additional 44 schools will have improved access, for a potential positive impact at 77 schools. Improved accessibility will provide opportunities for older children to ride bicycles to school rather than taking the bus or driving themselves. This not only takes cars off the road, but the students gain benefits from increased physical activity. For example, if a high school student bikes 15 minutes to school, she would burn approximately 100 calories. To go to and from school every week adds up to 1,000 calories burned per week. Over a typical school year of 36 weeks, this student would burn 36,000 calories—equivalent to ten pounds of weight.

Safety

During the two-year analysis period of the Transportation Master Plan, Omaha and its immediate surroundings in Douglas County experienced a total of 25,092 transportation-related accidents, with 5,126 accidents involving non-fatal injuries and 39 accidents involving fatalities. About thirty percent of these accidents were rear-end collisions, which suggests that the arterial roadways are carrying a combination of local and regional traffic that create conflicts between turning and through-moving vehicles. Notably high crash rates are present downtown, most likely due to the complex environment of pedestrians, vehicles, turns, and one-way streets.

The Transportation Element's recommended projects will improve community safety. For road diet projects, the decreased vehicular speeds, lower number of vehicles, and better definition of space will translate into fewer crashes. The Federal Highway Administration's study titled Evaluation of Lane Reduction "Road Diet" Measures on Crashes found on average a 19 percent reduction of crashes on road diet corridors in suburban corridors. Some corridors have seen even greater reductions; after its road diet Edgewater Drive in Orlando, Florida saw a 34 percent reduction in crashes and a 68 percent reduction in injuries.

The proposed new streets will provide needed network connections, particularly downtown where the original roadway grid has eroded in some blocks. By providing intuitive connections between streets that currently have barriers, drivers can more successfully—and safely—navigate the area, resulting in fewer accidents.

Environmental Health Benefits

By encouraging mode choice through improved pedestrian and bicycle facilities, it is anticipated that some people will elect not to drive on shorter trips. This reduces pollutants from vehicle emissions, which are linked to respiratory problems, cancer, and lung function. Other environmental benefits related to health are improvements in stormwater management. For projects involving road diets and streetscape improvements, the amount of impervious surface will be reduced. The increase of pervious surface area helps contain runoff, which in turn helps prevent runoff of microbial and chemical contaminants reaching storm sewers, eventually impacting drinking water.

Mental Health Benefits

Mental Health benefits are difficult to quantify, but common knowledge suggests that traffic congestion elevates stress levels of drivers. Research shows that for people consistently commuting on congested roadways, there are long-term effects from the chemicals our bodies release when under stress. When these chemicals build up, they can cause suppressed immune function, high blood pressure, and high blood sugar levels. Because the primary goal of the recommended projects is to improve mobility throughout the City of Omaha, every single project should improve the driving experience through less (or better managed congestion), improved physical environments, and mode options.

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Master List of All Project Candidates

The lists on the following pages provide details for all candidate projects initially considered in the Transportation Element's development. As many of these ideas originated from previous plans and studies, including the MAPA Transportation Improvement Program and Long-Range Transportation Plan (LRTP), the origin of the candidate is provided. These projects formed the basis of the comprehensive evaluation process described in Section 5, and this list was eventually developed into the project recommendations to be programmed into future Transportation Improvement Programs and City of Omaha Capital Improvement Programs. Refer to the map of project candidates, included as an appendix to the Transportation Element, for geographic location of these candidates.

Roadway Capacity Projects

Project Number Assigned	Project Name	Basic Description and Purpose	Origin of this Idea
RC-001	Fort St Capacity Project	Widening project including turn lanes at intersections, from 123rd St to 132nd St	2011-2016 TIP
RC-002	144th St and Blondo St	Two sections. 144th St and Blondo St from 135th St to 153rd Ave, from W Dodge Rd to Eagle Run Dr	2011-2016 TIP
RC-003	168th St Capacity Project	Widen with turn lanes, from W Center Rd to Q St	2011-2016 TIP
RC-004	168th St Capacity Project	Widen with turn lanes, from W Center Rd to Poppleton St	2011-2016 TIP
RC-005	114th St Capacity Project	Widen with TWLTL on Center Lane, from Burke St to Pacific St	2011-2016 TIP
RC-006	108th St Capacity Project	Widen with turn lanes, from Madison St to Q St	2011-2016 TIP
RC-007	120th St Capacity Project	Widen with turn lanes, from Stonegate Dr to Fort St	2011-2016 TIP
RC-008	108th St Capacity Project	Widen for Two Way Left Turn Lane (TWLTL), from Q St to L St	2011-2016 TIP
RC-009	156th St Capacity Project	Widen to 4 lanes, from Blondo St to Pepperwood	2011-2016 TIP
RC-010	108th St Capacity Project	Construction of connector road, closing of island break & lengthening of left-turn lane and addition of right turn lane, from L St to M St	2011-2016 TIP
RC-011	West Center Rd Capacity Project	Widen 16ft Median to 28ft median urban divided with dual left turn lanes at W Center and 156th St, from Industrial Rd to 159th St	2011-2016 TIP
RC-012	108th St Capacity Project	Widen to 4 lane urban , from W Dodge St to Blondo St	2011-2016 TIP
RC-013	Industrial Road Capacity Project	Widen 4 lane divided rural to 6 lane Urban divided with turn lanes, from 132nd St to 144th St	2011-2016 TIP
RC-014	108th St Capacity Project	Construction of connector road, closing of island break & lengthening of left-turn lane, and addition of right-turn lane, from Q St to L St	2035 LRTP
RC-015	90th St Capacity Project	3 Lane with TWLTL, from F St to L St	2035 LRTP
RC-016	Pacific St Capacity Project	4-lane divided with left turn lanes (LTL)s, from 180th St to 168th St	2035 LRTP
RC-017	Harrison St Capacity Project	4-lane divided with LTLs, from 156th St to 144th St	2035 LRTP
RC-018	156th St Capacity Project	3-Lane, 1NB, 2SB, from Pacific St to S of Dodge St	2035 LRTP
RC-019	168th Capacity Project	4 lane divided with LTLs, from W Dodge Rd to W Maple Rd	2035 LRTP
RC-020	Q St Capacity Project	3 lane with TWLTL, from 48th St to 96th St	2035 LRTP
RC-021	Ida Rd Capacity Project	4 lane urban with LTLs, from N-133 to 120th St	2035 LRTP
RC-022	Pacific St Capacity Project	4-Lane urban, from 180th St to 192nd St	2035 LRTP
RC-023	Fort St Capacity Project	4-Lane Divided with LTLs, from 132nd St to 144th St	2035 LRTP

Roadway Capacity Projects

Project Number Assigned	Project Name	Basic Description and Purpose	Origin of this Idea
RC-024	Harry Anderson Dr Capacity Project	3 lane urban, from Harrison St to Q St	2035 LRTP
RC-025	180th St Capacity Project	4 lane urban, from Maple to Ida	2035 LRTP
RC-026	222nd St Capacity Project	3 Lane Urban, from Harrison St to W Center Rd	2035 LRTP
RC-027	Skyline Dr Capacity Project	3 Lane Urban, from W Center Rd to W Dodge Rd	2035 LRTP
RC-028	Fort St Capacity Project	4 lane divided, from 168th St to 204th St	2035 LRTP
RC-029	Ida St Capacity Project	3 lane urban, from 180th St to 204th St	2035 LRTP
RC-030	State St Capacity Project	4 lane divided, from 144th St to N-133	2035 LRTP
RC-031	State St Capacity Project	3 Lane urban, from 144th St to 204th St	2035 LRTP
RC-032	108th St Capacity Project	3 Lane urban, from Fort St to Ida st	2035 LRTP
RC-033	180th St Capacity Project	3 Lane urban, from Maple St to Ida St	2035 LRTP
RC-034	120th St Capacity Project	4 lane urban, from Fort St to Rainwood Rd	2035 LRTP
RC-036	144th St Capacity Project	6 lane urban divided, from Maple St to Harrison St	2035 LRTP
RC-044	48th St Capacity Project	Upgrade the existing two-lane roadway to a three-lane urban section with chanelization at major intersections, from L St to Q St. Construct storm sewers.	City of Omaha 2011-2016 CIP
RC-046	78th St Capacity Project	Widen to three lanes, from W Center St to Pacific St	City of Omaha 2011-2016 CIP
RC-047	84th St Capacity Project	Reconstruct to a standard three-lane urban section, from Pacific St to Harney St	City of Omaha 2011-2016 CIP
RC-048	96th St Capacity Project	Widening the section to a full five-lane section to match the intersections of 96/Harrison and 96/Q., from Y St to Park Dr	City of Omaha 2011-2016 CIP
RC-049	120th St Capacity Project	Upgrade two-lane rural to five-lane divided urban roadway with channelization at major intersections, including widening bridge over Big Papillion Creek., from W Maple St to Fort St	City of Omaha 2011-2016 CIP
RC-050	F St Capacity Project	Upgrade the existing two-lane roadway to a three-lane urban section, from 148th St to 156th St	City of Omaha 2011-2016 CIP
RC-051	Fort St Capacity Project	Upgrade existing two-lane roadway to a five-lane urban section with channelizations at the major intersections, from 123rd St to 132nd St	City of Omaha 2011-2016 CIP
RC-052	Harrison St Capacity Project	Upgrade to six-lane divided section with channelization at the major intersections, from 157th St to 169th St	City of Omaha 2011-2016 CIP
RC-053	Dodge St Capacity Project	6-lane roadway, from Happy Hollow St to 69th St	TMP Workshop
RC-054	Ida St	4 lane divided, from 180th St to 132nd St	2035 LRTP
RC-055	84th St	Widen to 7 lanes, add turning capacity at key intersections as needed, from Harrison to Center	TMP Workshop
RC-056	Maple Road	Widen to 6 lanes, from 144th St to Maplewood Drive	TMP Workshop
RC-058	16th St	Total street reconstruction to add lanes, bike lanes, and on-street parking, from Dodge St to Howard St	Downtown Master Plan

Road Diets

Project Number Assigned	Project Name	Basic Description and Purpose	Origin of this Idea
CS-002	Cuming St Road Diet	Reduce to two-through-lanes in each direction and add streetscape amenities, from 30th St to Saddle Creek Rd	Destination Midtown Master Plan
CS-003	Center St Road Diet	Reduce to three lanes with on-street parking and a strong pedestrian character, from Hanscom Park to 32nd St	Destination Midtown Master Plan
CS-008	30th St (Main St)	Streetscape improvements, coverting to 3 lane section with one turn lane in the center and parallel parking, from Craig Ave to Interstate 680	Downtown Florence Master Plan
CS-009	90th St	4-lane to 3-lane road diet, add bike lanes, from Dodge Rd to Arbor Street	TMP Workshop
CS-010	24th St	4-lane to 3-lane road diet, add bike lanes, from L St to Leavenworth St	TMP Workshop
CS-012	Millard Ave	Lane Diet and Complete Street concept, from 144th St to Industrial Rd	TMP Workshop
CS-013	Q St	Reduce to two-through-lanes in each direction and add streetscape amenities. Bike lanes should be included if right-of-way permits, from 27th St to Hwy 75	South Omaha Development Project/TMP Workshop
CS-016	16th St	4-lane to 3-lane road diet. This will retain on-street parking and add bicycle lanes for Project B-017., from Commercial Ave/Sprague Street to Capitol Ave	TMP Workshop
CS-018	Douglas St	Remove one travel lane (right-hand lane in the direction of travel) to add on-street parking and sidewalk adjacent to Gene Leahy Mall, from 8th St to 10th St	TMP Workshop
CS-020	60th St	4-lane to 3-lane road diet, including on-street bike lanes, from Sorenson Pkwy to NW Radial Hwy	TMP Workshop
CS-021	Northwest Radial Highway	Reduce 6-lane section to 4 lanes, including bicycle lanes and on-street parking, from Fontenelle Blvd to Cuming St	TMP Workshop
CS-022	Leavenworth St	4 to 3 lane road diet, with bike lanes. May include 2-lane typical sections in certain areas, from 10th St to 39th St	TMP Workshop

Intersections

Project Number Assigned	Project Name	Basic Description and Purpose	Origin of this Idea
IN-002	Sorensen Expressway/North Freeway Capacity Addition	Extend Right-Turn Lane/ramp, Add additional lane to ramp	2011-2016 TIP
IN-004	Dodge/Douglas Couplet at Turner Blvd reconfiguration	S curve reconfiguration to restore land to park and move one-way couplet beginning to east of Turner Blvd	2011-2016 TIP
IN-005	90th/West Maple Intersection Capacity	Add additional left-turn lanes to provide dual lefts on all four-legs of intersection	2011-2016 TIP
IN-007	58th/NW Radial Design Modification and Signalization	Reconfigure intersection of Maple St & NW Radial Hwy. Install New Signals	2011-2016 TIP

Intersections

Project Number Assigned	Project Name	Basic Description and Purpose	Origin of this Idea
IN-009	30th/McKinley Intersection Upgrade	Safety project-Chanelization, lane additions	2011-2016 TIP
IN-010	63rd/NW Radial Safety Improvements	Safety project to improve pedestrian crossing	2011-2016 TIP
IN-011	W Center Rd/156th St Capacity Improvements	Additional intersection capacity: widen 4 lane 16 ft median to 4 lane 28 ft median urban divided with dual left turn lanes	2035 LRTP/ City of Omaha 2011-2016 CIP (406)
IN-012	Maple St/NW Radial Highway Intersection Improvements	Reconfigure intersection. Install new signals	2035 LRTP
IN-013	Dodge St/Saddle Creek Rd Interchange Modernization	Modernize/redesign grade separation	Destination Midtown Master Plan
IN-014	42nd St/Leavenworth St	Reconstruct the intersection to allow northbound and southbound left-turns.	Destination Midtown Master Plan
IN-015	40th St/Davenport St	Reconstruct the intersection to increase sight distance and to reduce potential for collisions	Destination Midtown Master Plan
IN-017	20th St/I-480	Construct on/off ramps to provide a second set of ramps to serve the Events District.	Omaha Downtown Master Plan
IN-018	24th St/Davenport St	Construct a roundabout to calm traffic along 24th St	Omaha Downtown Master Plan
IN-019	30th St/Ames St	Improve the key intersection with adequate turning movements and pedestrian accommodations	North Omaha Development Project
IN-025	72nd St/Military St	Reconfigure the northbound right-hand turn lane and establish wayfinding and gateway features	Benson-Ames Master Plan
IN-028	144th St/W Center Rd	Dual left turns eastbound and west bound	TMPWorkshop
IN-029	52nd St/Happy Hollow Blvd	Roundabout; consider figure-8 dual roundabout. Sidepath needs separate crossing provision.	TMPWorkshop
IN-030	31st St/Paxton St	Roundabout	TMPWorkshop
IN-031	42nd St/Paxton St	Roundabout	TMPWorkshop
IN-032	120th St/Q St	Dual left turn lanes and 2 thru lanes EB	TMPWorkshop
IN-033	NW Radial Hwy/Hamilton St	Dual NB/SB left turn lanes	TMPWorkshop
IN-034	132nd St/W Center St	Reconstruct the intersection (consistently the highest accident rate intersection in town). Include striped crosswalks and either reconstruct corner radii to control free-flow right turns or add channelizing islands.	TMPWorkshop
IN-043	Farnam St/25th St	Remove channelized right turn lanes, allowing sufficient corner radii for appropriate design vehicle movements	TMPWorkshop
IN-044	Fort/Saddlebrook	Intersection improvements to allow new path (MP-025) to connect to sidewalk across intersection	TMP Workshop/ City Staff

New Streets (Not Associated with Private Development)

Project Number Assigned	Project Name	Basic Description and Purpose	Origin of this Idea
NS-PUB-001	120th St Extension	Construct 3 lane urban cross-section extending road from Hwy 36 to Rainwood Road	2035 LRTP
NS-PUB-002	192nd St Extension	3 Lane urban section extending road from Maple Rd to Hwy 36	2035 LRTP
NS-PUB-003	16th St	Connect 16th St between Capitol Ave and Dodge St	Omaha Downtown Master Plan
NS-PUB-004	Capitol Ave	New connection to provide a direct vehicular and pedestrian link	Omaha Downtown Master Plan
NS-PUB-005	Douglas St	New connection to provide a direct vehicular and pedestrian link	Omaha Downtown Master Plan
NS-PUB-006	Little Italy connection	Provide addtional access to and from this isolated area	Omaha Downtown Master Plan
NS-PUB-007	New Connection	New East-West Connection from Paxton Blvd to Sprague St	North Omaha Development Project
NS-PUB-008	New Connection	New East-West Connection from NW Radial Hwy to Lake St	North Omaha Development Project
NS-PUB-009	New Connection	New connection from Seward St to Grant St	North Omaha Development Project
NS-PUB-010	New Connection	New connection from Seward St to proposed road (NS-PUB-008)	North Omaha Development Project
NS-PUB-011	New Connection	New connection from Ohio St to Bedford Ave	North Omaha Development Project
NS-PUB-012	New Connection	New connection from Larimore Ave to Grand Ave	North Omaha Development Project
NS-PUB-014	117th St Extension	Create a new connection with signalized intersection at the at-grade portion of Dodge St from Dodge Rd South Frontage to Miracle Hills Dr	TMP Workshop
NS-PUB-016	New Street Parallel to Keystone Trail	New street along Keystone Trail Corridor to provide public edge for 72nd/Dodge development concepts in TMP from Cass St to Dodge St	TMP Workshop
NS-PUB-017	South side of Furniture Mart property	Formalized, improved public street along current Rose Blumkin Drive. Includes bridge across creek (refer to BG-015) from Howard St to 72nd St	TMP Workshop
NS-PUB-018	Miracle Hills	New two-lane urban street constructed along park edge as shown in TMP redevelopment concept for Miracle Hills from Blondo St to Dodge St	TMP Workshop
NS-PUB-019	Capitol Ave	Allow Capitol Ave to connect directly with 20th St from 19th St to 20th St	Omaha Downtown Master Plan
NS-PUB-020	11th St	Extend 11th St from Nicholas to Cuming (with an eastward curve) to allow direct access to highway network, per Downtown Omaha Master Plan alignment from Nicholas St to Cuming St	Omaha Downtown Master Plan
NS-PUB-021	Mill Valley Road Ext	New street and bridge over Papio Creek from Mill Valley Rd / 109th Ct to Miracle Hills Dr	TMP Workshop

Bicycle and Pedestrian Projects

Project Number Assigned	Project Name	Basic Description and Purpose	Origin of this Idea
B-001	16th St Bike Lanes	Bike Lanes, from 4-lane to 3-lane road diet (Project CS-016) from Cuming St to north of Nicolas St	Omaha Downtown Master Plan
B-002	15th St Bike Lanes	Bike lanes to be restriped in conjunction with conversion to a two-way street (Project OW-004) from Capitol Ave to Leavenworth St	Omaha Downtown Master Plan
B-003	Harney St Bike Lanes	Bike Lane. Would be superseded by Harney St Bikeway project (B-100) from 15th St to 11th St	Omaha Downtown Master Plan
B-004	Howard St / St Mary's Ave Bike Lanes	Two-way bike lanes on Howard to coincide with Howard conversion (already occurring). One-way bike lane along St. Mary's from 13th St to I-480.	Omaha Downtown Master Plan
B-006	13th St	Shared Bike/Parking Shoulders from Leavenworth St to Pierce St	Omaha Downtown Master Plan
B-007	Leavenworth St	Proposed Aksarben Bikeway. Bike lanes where restriping will allow and sharrows to fill in gaps in lanes from Riverfront Trail (proposed) to I-480	Omaha Downtown Master Plan
B-008	Mike Fahey Bicycle Boulevard	Bicycle Boulevard (Sharrows). Project description and cost estimate include a bridge over railroad to connect to Riverfront Trail; project extends from Riverfront Trail (proposed) to 16th St	Omaha Downtown Master Plan
B-009	Capitol Ave and Farnam St Bicycle Boulevard	Bicycle Boulevard (Sharrow Markings) from 16th / 8th St to 8th St / 15th	Omaha Downtown Master Plan
B-010	11th St Bicycle Boulevard	Bicycle Boulevard (Sharrow Markings) from Leavenworth St to Farnam St	Omaha Downtown Master Plan
B-012	Conagra Dr Bicycle Boulevard	Bicycle Boulevard (Sharrow Markings) from Farnam St to 10th St	Omaha Downtown Master Plan
B-013	7th St and Pierce St Bicycle Boulevard	Bicycle Boulevard (Sharrow Markings) from Leavenworth St to 6th St	Omaha Downtown Master Plan
B-014	6th St and Marcy St Bicycle Boulevard	Bicycle Boulevard (Sharrow Markings) from Riverfront Trail (proposed) to Leavenworth St	Omaha Downtown Master Plan
B-015	Sprague St Bike Lanes	Improvements to include bicycle lanes and standard sidewalks. Bicycle boulevard with traffic calming appropriate if cost and impacts are prohibitive, from Paxton Blvd/New Street Extension if constructed (refer to NS-PUB-007) to 16th St	North Omaha Development Project
B-016	Lake/Grant St Bicycle Corridor	Bike lanes and sidewalks along Lake and Grant, upgrading streets to complete streets standards from 45th St to 16th St	North Omaha Development Project
B-017	16th St	Bike Lanes, from 4-lane to 3-lane road diet (Project CS-016). Extends north to Fort Street with Project B-061 from Sprague St to north of Nicolas St	North Omaha Development Project
B-018	24th St	Bike Lanes through restriping wide travel lanes, using sharrows where needed. Coordinate with Project P-008 from Cuming St to Lake St	North Omaha Development Project
B-019	33rd St	Bike Lanes or sharrow-based Bike Boulevard, depending on feasibility from likely cost and property/community impact from Cuming St to John A Creighton Park Blvd	North Omaha Development Project

Bicycle and Pedestrian Projects

Project Number Assigned	Project Name	Basic Description and Purpose	Origin of this Idea
B-020	Pratt St-42nd St Bicycle Boulevard	Bicycle Boulevard as recommended in NODP. Uses Pratt St from 52nd to 42nd, then 42nd from Boyd/ Paxton Trail to Pratt, from 52nd St to Boyd St.	North Omaha Development Project
B-023	Turner Blvd Bicycle Boulevard	Bike Lanes added only in conjunction with two-way conversion, from 30th St to Harney St.	TMP Workshop
B-024	Florence Blvd Bicycle Boulevard	Bike Lanes through restriping wide travel lanes, using sharrows where needed. This may involve removal of one side of on-street parking. From Commercial Ave to Locust St.	TMP Workshop
B-025	Elmwood Park Rd Bicycle Boulevard	Sharrow markings to create a route from Pacific to the UNO campus, connecting to Leavenworth corridor, from Pacific St to UNO Campus.	TMP Workshop
B-026	67th St Bicycle Boulevard	Installing Sharrows from Pacific St to Pine St.	TMP Workshop
B-027	Mockingbird Dr Bicycle Boulevard	Neighborhood Bike Boulevard (uses sharrow markings) from 96th St to 108th St.	TMP Workshop
B-028	Westwood Ln Bicycle Boulevard	Bike boulevard/shared street through neighborhood streets. Alternative alignments may need to be used in more detailed design. From 120th St to 132nd St.	TMP Workshop
B-029	Stonegate Dr Bicycle Boulevard	Bike boulevard/shared street through neighborhood streets. Alternative alignments may need to be used in more detailed design. From 120th St to 124th St.	TMP Workshop
B-030	Eagle Run Dr Bicycle Boulevard	Bike boulevard/shared street through neighborhood streets. Alternative alignments may need to be used in more detailed design. From east of 132nd St to 120th St.	TMP Workshop
B-031	Maplewood Blvd Bicycle Boulevard	Bike boulevard/shared street through neighborhood streets. Alternative alignments may need to be used in more detailed design. From Maple St to 90th St connecting to Keystone Trail.	TMP Workshop
B-032	138th St Bicycle Boulevard	Bike boulevard/shared street through neighborhood streets. Alternative alignments may need to be used in more detailed design. From Maple St to Fort St.	TMP Workshop
B-035	162nd St	Bike boulevard/shared street through neighborhood streets. Alternative alignments may need to be used in more detailed design. From California St to Blondo St.	TMP Workshop
B-036	Rolling Ridge Rd	Bike boulevard/shared street through neighborhood streets. Alternative alignments may need to be used in more detailed design. From 156th St to 168th St.	TMP Workshop
B-037	32nd St	Add bike lanes and on-street parking from Woolworth St to Vinton St	BikeOmaha Pilot Projects
B-038	Hamilton St	Restripe to add bike lanes/sharrows, one side of on-street parking from 30th St to Fontenelle St / NW Radial Hwy	TMP Workshop
B-039	Pratt St	Bike boulevard, add roundabouts and traffic diversion at key intersections as needed (these may be implemented later after bike boulevard) from 30th St to 42nd St	TMP Workshop

Bicycle and Pedestrian Projects

Project Number Assigned	Project Name	Basic Description and Purpose	Origin of this Idea
B-040	60th St / Webster St	Bike lanes (sharrows as needed). Includes a bike-only connection across Happy Hollow parkway strip. From NW Radial Hwy to Happy Hollow Blvd.	TMP Workshop
B-041	Woolworth St	Bike Lanes, shared street (sharrow routes) from 24th St / Twinridge Blvd to Center St	TMP Workshop
B-043	Cuming St	Bike Lanes (this project coincides with CS-002) from 30th St to NW Radial Hwy	TMP Workshop
B-044	40th St	Bicycle route/bicycle boulevard based primarily on sharrow installation and reorientation of traffic control from Leavenworth St to Boulevard Trail (at Paxton)	TMP Workshop
B-045	Western St / Nicholas St	Bike boulevard, new bike path from west of 102nd from Happy Hollow Trail to Lee Valley Park. Steep grades and visibility problems associated with vertical curvature make Western a difficult candidate; alternative routes should be explored.	TMP Workshop
B-046	10th St	Stripe bicycle lanes on wide travel lanes; resurfacing may not be needed. North of Jackson may need to be accomplished with a combination of bike lanes and sharrows. From Pacific St to Doorly Zoo/Bridge over I-80.	TMP Workshop
B-047	Cuming St	Bike lanes added in conjunction with road diet restriping. From 30th St to 13th St	TMP Workshop
B-048	Boyd St, 79th St and 78th St	Bike lanes through reconstruction of street for curb and gutter (if that happens) from 88th St to 78th St/ Bedford St intersection	TMP Workshop
B-049	Wirt St and Bedford St	Bike lanes or bike boulevard on local streets. May include a pedestrian hybrid beacon at Bedford and 72nd if warranted. From Military Ave to 78th St	TMP Workshop
B-050	Northwest Radial Highway	Reconstruct roadway (when design lifespan requires) for four travel lanes, bike lanes and wider sidewalks from Military Ave to Fontenelle Blvd	TMP Workshop
B-051	84th Street Bikeway	Reconstruct non-curbed portions of street to add bike lanes; restripe portions around Methodist Hospital (south of Dodge) as appropriate to add bike lanes. From Maple Rd to Center Rd.	TMP Workshop
B-052	Corby St-Saddle Creek Rd	Bike lanes and sharrows along neighborhood streets connecting Hamilton St to Benson commercial district from 60th St to Hamilton St	BikeOmaha Pilot Projects
B-053	Mercy-Shirley-60th Bike Route	Shared bike routes from Mercy Rd to 57th St via a collection of neighborhood local streets from 78th St to 57th St	BikeOmaha Pilot Projects
B-054	48th St-Poppleton St	Bike route (with primarily sharrow marking) connecting from Leavenworth to Woolworth routes from Leavenworth St to Woolworth St	BikeOmaha Pilot Projects
B-055	Howard St	Bike boulevard, with markings and signage indicating right to full lane usage and stop sign orientation for free flow from Happy Hollow Blvd to 48th St	BikeOmaha Pilot Projects

Bicycle and Pedestrian Projects

Project Number Assigned	Project Name	Basic Description and Purpose	Origin of this Idea
B-057	Westover Connector	Provides on-street connection between two major legs of the Fairacres Park trail system from 144th to Big Papio Trail from 123rd St to 126th St	TMP Workshop
B-058	31st Avenue Bike Lanes	Widen street to include bicycle lanes from Paxton Blvd Trail to Metro Community College from Paxton Blvd to Saratoga St	North Omaha Development Project
B-059	Pratt St Bike Boulevard - 16th to 30th	Bicycle Boulevard as recommended in NODP. Makes use of existing pedestrian bridge over US 75 to connect two halves of project length from 16th St to 30th St	North Omaha Development Project
B-060	Pratt St Bike Boulevard - 52nd to 60th	Continuation of Pratt St Bicycle Boulevard (as recommended in NODP) to proposed bike lanes on 60th St to come from project CS-020 from 52nd St to 60th St	TMP Workshop
B-061	16th St Bike Lanes	Stripe bicycle lanes on wide travel lanes; resurfacing may not be needed. Follows bicycle lane project B-017, which requires more extensive restriping for a 4-lane to 3-lane road diet from Sprague St/ Commercial Ave to Fort St	TMP Workshop
B-062	Military Avenue Bike Lanes	Stripe bicycle lanes on wide travel lanes; resurfacing may not be needed from Fontenelle Blvd to Hamilton St	TMP Workshop
B-063	Martin Avenue Bicycle Route	Add shared-lane markings to continue bicycle route from CS-026 to north from Belvedere/Curtis to Minne Lusa Blvd	TMP Workshop/ City Staff
B-064	Minne Lusa Bicycle Route	Add shared-lane markings to provide formal connection from Miller Park to the north from Martin Ave to Redick St	TMP Workshop/ City Staff
B-100	Harney St Bikeway (Downtown)	Reconstruct for two-way dedicated bike lane and one lane median from 10th St to 24th St	TMP Workshop
B-101	13th St and Capitol Ave Bikeway Branch	Branch of Harney St Bikeway north on 13th from Harney to Capitol, then east on Capitol from 13th to 10th from Harney St to 10th St	TMP Workshop
B-102	13th St and Cass St Bikeway Branch	Branch of Harney St Bikeway north on 13th from Capitol to Cass, then east on Cass from 13th to 10th from Capitol Ave to 10th St	TMP Workshop
B-103	24th St Bikeway Branch	Branch of Harney St Bikeway/Cultural Trail from Harney at 24th to Joslyn Art Museum from Harney St to Dodge St	TMP Workshop
B-104	Harney St Bikeway (Midtown)	Reconstruct for two-way dedicated bike lane and raised median. Preserves one-way flow and two travel lanes from 24th St to 42nd St	TMP Workshop
MP-002	Riverfront 4 Trail	10' concrete pedestrian and bicycle trail from Abbott Dr-Millers Landing to Kiwanis Park	2011-2016 TIP
MP-005	Boulevard Trail	Completion of Boulevard Trail from 50th and Happy Hollow to Fontenelle Park	North Omaha Development Project
MP-006	Boulevard Trail upgrading	Multi-use trail upgrade from Fontenelle Blvd to Adams Park	North Omaha Development Project

Bicycle and Pedestrian Projects

Project Number Assigned	Project Name	Basic Description and Purpose	Origin of this Idea
MP-007	North Expressway Right-of-Way Trail	Multi-use trail from Lake St to Sprague St	North Omaha Development Project
MP-008	Sorensen Pkwy Trail	Multi-use trail from Fontenelle Blvd to Miller Park	North Omaha Development Project
MP-009	Happy Hollow Blvd	Multi-use trail alongside road right-of-way. Signage should be provided for traffic control at important points from 50th St to Keystone Trail	Benson-Ames Master Plan
MP-010	Pacific St	Bike Trail/side path along Pacific from Big Papio Trail to Keystone	TMP Workshop
MP-011	Hanscom-Spring Lake Connector	Side path along streets connecting Hanscom Park along Hanscom Blvd, Vinton St, and Deer Park Blvd from Ed Creighton Blvd to Spring Lake Dr	Previous Trails Plan
MP-012	144th St	Complete sidepath on east side of 144th from Dodge Rd to Pacific St	Previous Trails Plan
MP-013	Fairacres Trail: Pacific-132nd	Sidepaths and off-street trails connecting from 144th to Westover Connector at 126th. Uses MUD and Jewish Community Center properties. From 126th St to 144th St.	Previous Trails Plan
MP-014	Fairacres Trail: West Fairacres Park	Connection through West Fairacres Park between 120th and 123rd Streets. May include pedestrian hybrid beacon crossing. From 120th St to 123rd St	Previous Trails Plan
MP-015	Lee Valley Park Connector	Path connection through Lee Valley Park connecting to tunnel crossing under I-680 from I-680 to 108th St	Previous Trails Plan
MP-016	Burt St Trail (east)	New trail alongside property lines south of Burt Street connecting to 124th Street and California St path west of 132nd from 124th St to 132nd St	TMP Workshop
MP-017	Burt St Trail (west)	New Trail alongside California and Burt Streets from 132nd St to 144th St	TMP Workshop
MP-018	UNMC Connector	Extend Harney St Bikeway through the UNMC campus, tying to Howard St bike boulevard if possible from 42nd St to 48th St	TMP Workshop
MP-019	Field Club Trail Extension II	Short extension of Field Club from UNMC extension (project MP-012) to Harney St Bikeway extension through UNMC from Saddle Creek Rd to UNMC Trail	TMP Workshop
MP-020	North Omaha Trail	Connection through North Omaha neighborhoods along historic rail alignment, from Cuming St (near Saddle Creek) to John A Creighton/Sprague Street intersection from Cuming St to John A Creighton Park Blvd (at Sprague St)	TMP Workshop
MP-021	P-MRNRD West Papio Extension	Extend West Papio Trail per preexisting alignment, in cooperation with P-MRNRD from Harrison St to Millard Ave	TMP Workshop/ City Staff
MP-022	West Papio Trail - 168th and Maple Section	Complete this portion of West Papio Trail, possibly through SID contribution from Maple Rd to Existing Trail End (South of 162nd Ave)	TMP Workshop/ City Staff
MP-023	144th St Multi-Use Path (Ellison to Redick)	Complete this portion of 144th St Trail. Includes bridges over water crossing from Ellison St to Redick St	TMP Workshop/ City Staff

Bicycle and Pedestrian Projects

Project Number Assigned	Project Name	Basic Description and Purpose	Origin of this Idea
MP-024	144th St Multi-Use Trail (Larimore extension)	Complete missing trail segment from current end of 144th St eastside path south of Fort (complete to Larimore, where existing trail to the south currently terminates) from Larimore St to halfway point between Larimore and Fort	TMP Workshop/ City Staff
MP-025	Saddlebrook Drive alignment (south of Fort)	Trail/path connection from Fort to existing trail from Redmon/Standing Bear Lake connector path to Fort St	TMP Workshop/ City Staff
MP-026	Tranquility Park Multi-Use Path/Big Papio Trail Extension	Extend Big Papio North trail through Tranquility Park, utilizing pre-existing planned trail alignments from Military Rd to Current end of Big Papio North trail	TMP Workshop/ City Staff
MP-027	West Papio Trail Gap Completion - 144th and F	Fill in missing trail gap, possibly achieved through SID contribution. from existing end of trail east of 144th to existing end of trail north of L (near Hillsdale)	TMP Workshop/ City Staff
MP-028	Sorensen Parkway - 52nd to 56th Path	Multi-Use Path connecting existing sidepath to project proposed in NODP (MP-008) from 52nd St to 56th St	TMP Workshop/ City Staff
MP-029	State St Conector Trail	Multi-Use Path from Wenninghoff Rd to 83rd St	TMP Workshop/ City Staff
MP-030	Spring Lake Trail Extension	Extension of the Spring Lake Trail from I St to the Riverfront Trail South Branch from I St to Riverfront Trail	TMP Workshop/ City Staff
MP-031	Field Club Extension - UNMC	Extend Field Club Trail through Medical Center campus from Saddle Creek Rd to Leavenworth St	Previous Trails Plan
MP-032	Crown Point West Connector Path	Construct connector trail between Standing Bear and Tranquility paths from Standing Bear Lake Trail to Tranquility Park Trail (MP-026)	Previous Trails Plan
MP-033	Wenninghoff Connector Trail	Connect to Cunningham Lake Trails generally along Wenninghoff. Alignment assumes use of a pre-existing alignment from a City proposed trails spatial dataset. From Fort St to State St	Previous Trails Plan
MP-034	Highway 36 Sidepath	Sidepath along Highway 36 from north Omaha to Bennington community from N 52nd Ave to 156th St	TMP Workshop/ City Staff
MP-035	South Omaha Trail	Complete connection from Keystone Trail to Field Club Trail around and over UPRR right-of-way using 36th St from 43rd St to Existing south end of Field Club Trail (at Vinton St)	TMP Workshop/ City Staff
MP-036	Riverfront Trail South Leg	Extend Riverfront Trail south to Omaha city limits from Heartland of America Park to Harrison St	TMP Workshop/ City Staff
MP-037	Hanscom-Field Trail connection	Create multi-use path along the north side of Center Street connecting 36th Street to the Field Club Trail	TMP Workshop/ City Staff
P-003	Pedestrian overpass over North freeway	Replace the existing structure from Pratt St / 28th St to Pratt St / 27th St	North Omaha Development Project
P-005	Maple St Pedestrian Improvements	Pedestrian activiated crossings at mid-block locations from 58th St to 72nd St	Benson-Ames Master Plan
P-011	Vinton St	Streetscape improvements from 13th St to 24th St	City of Omaha 2011-2016 CIP

Bicycle and Pedestrian Projects

Project Number Assigned	Project Name	Basic Description and Purpose	Origin of this Idea
PC-001	Howard St/19th St Pedestrian Improvements	Construction of nodes to shorten crossing distance for pedestrians and increase sight distance for vehicular traffic	2011-2016 TIP
PC-002	NW Radial Hwy/60th St Pedestrian Improvements	Accommodate and encourage safe ped/bike crossing	Benson-Ames Master Plan
PC-003	NW Radial Hwy/61st St Pedestrian Improvements	Accommodate and encourage safe ped/bike crossing	Benson-Ames Master Plan
PC-004	Maple St/60th St Pedestrian Improvements	Improve pedestrian amenities:narrower crossing distances, wider crosswalks and decorative paving	Benson-Ames Master Plan
PC-005	Maple St/61st St Pedestrian Improvements	Improve pedestrian amenities:narrower crossing distances, wider crosswalks and decorative paving	Benson-Ames Master Plan
PC-006	Maple St/63rd St Pedestrian Improvements	Improve pedestrian amenities:narrower crossing distances, wider crosswalks and decorative paving	Benson-Ames Master Plan
PC-007	120th St/(mid-block between Farnam and Jackson) Pedestrian Improvements	Pedestrian hybrid beacon signal to allow cyclists and pedestrians on the West Fairacres Trail a protected crossing	TMP Workshop
PC-008	114th St/(at Lamp St) Pedestrian Improvements	Pedestrian hybrid beacon signal to allow cyclists and pedestrians on the West Fairacres Trail a protected crossing	TMP Workshop

Transit Projects

Project Number Assigned	Project Name	Basic Description and Purpose	Origin of this Idea
TR-002	Fixed Route Transit on Farnam and Harney Sts	Based on an earlier concept of single-track, single direction on each of the one-way streets	Omaha Downtown Master Plan
TR-003	Streetcar Extension	Second Phase of Downtown Master Plan routes, consisting primarily of a loop from the core Farnam-Harney corridor north to I-480	Omaha Downtown Master Plan/Other Studies
TR-004	Streetcar	Third Phase of Downtown Master Plan routes, including extensions north and south along 24th Street.	Omaha Downtown Master Plan/Other Studies
TR-005	Dodge Street Transitway	Westward extension of premium transit on Dodge featuring capital improvements to reduce travel times	TMP Workshop

Streetscape and Landscape Projects

Project Number Assigned	Project Name	Basic Description and Purpose	Origin of this Idea
P-004	NW Radial Hwy Streetscape	Incorporate Green Street standards. Upgrade street landscaping and incorporate a pedestrian/bike pathway from 48th St to 72nd St	Benson-Ames Master Plan
P-007	State St	Street lined center island as well as a colonnade of street trees and new ornamental lighting from 30th St to Mormon Visitor Center	Downtown Florence Master Plan
P-012	Underwood Avenue - Dundee Business District Streetscape	Streetscape improvements per RDG/Kiewit Foundation plan from 49th St to 51st St	City of Omaha 2011-2016 CIP

Bridge Replacements and Repairs

Project Number Assigned	Project Name	Basic Description and Purpose	Origin of this Idea
BG-002	St Mary's St	Enhance the interstate bridge with pedestrian amenities and on-street parking	Destination Midtown Master Plan/2011-2016 CIP
BG-003	Leavenworth St	Enhance the interstate bridge with pedestrian amenities and on-street parking	Destination Midtown Master Plan/2011-2016 CIP
BG-004	Q St	New roadway bridge includes a 10' sidewalk on the northside	South Omaha Development Project
BG-005	10th St	Widen the existing bridge to add one lane and walkways on both sides of the bridge	2011-2016 TIP
BG-006	26th St	Bridge replacement	2011-2016 TIP
BG-007	Farnam St	Add architectural amenities	2011-2016 TIP
BG-008	Harney St Bridge	New street lights and architectural amenities	2011-2016 TIP
BG-009	L St	Replace the bridge	City of Omaha 2011-2016 CIP
BG-010	72nd St	Reconstruct the pedestrian overpass	City of Omaha 2011-2016 CIP
BG-011	84th St	Bridge replacement	City of Omaha 2011-2016 CIP
BG-012	96th St	Replace bridge with culvert	2011-2016 TIP
BG-013	Gateway Bridge	New Bridge over Missouri River in conjunction with 16th Street approach roadway north of John J Pershing.	2035 LRTP
BG-014	Lee Valley Trail	Tunnel crossing under I-680 embankment to connect Lee Valley Trail with new street and Western Avenue bike route	TMP Workshop
BG-015	New Street (NS-PUB-017)	New bridge connecting current Howard Street to Rose Blumkin over Little Papio Creek. Associated with NS-PUB-017.	TMP Workshop
BG-016	Pratt St / 27th St intersection	Improve and upgrade the existing pedestrian bridge structure.	North Omaha Dev. Project

Table 5.1.1 Bicycle and Multi-Use Path Projects Screened from Capital Program Consideration

Project Number	Project Name	Project Number	Project Name
B-001	16th St Bike Lanes	B-051	84th Street Bikeway
B-002	15th St Bike Lanes	B-053	Mercy-Shirley-60th Bike Route
B-003	Harney St Bike Lanes	B-054	48th St-Poppleton St
B-004	Howard St / St Mary's Ave Bike Lanes	B-055	Howard St
B-008	Mike Fahey Bicycle Boulevard	B-058	31st Avenue Bike Lanes
B-009	Capitol Ave and Farnam St Bicycle Boulevard	B-059	Pratt St Bike Boulevard - 16th to 30th
B-010	11th St Bicycle Boulevard	B-060	Pratt St Bike Boulevard - 52nd to 60th
B-012	Conagra Dr Bicycle Boulevard	B-061	16th St Bike Lanes
B-013	7th St and Pierce St Bicycle Boulevard	B-062	Military Avenue Bike Lanes
B-014	6th St and Marcy St Bicycle Boulevard	B-063	Martin Avenue Bicycle Route
B-015	Sprague St Bike Lanes	B-064	Minne Lusa Bicycle Route
B-016	Lake/Grant St Bicycle Corridor	MP-002	Riverfront 4 Trail
B-017	16th St	MP-005	Boulevard Trail
B-019	33rd St	MP-006	Boulevard Trail upgrading
B-020	Pratt St-42nd St Bicycle Boulevard	MP-007	North Expressway Right-of-Way Trail
B-023	Turner Blvd Bicycle Boulevard	MP-008	Sorensen Pkwy Trail
B-024	Florence Blvd Bicycle Boulevard	MP-011	Hanscom-Spring Lake Connector
B-025	Elmwood Park Rd Bicycle Boulevard	MP-015	Lee Valley Park Connector
B-026	67th St Bicycle Boulevard	MP-016	Burt St Trail (east)
B-027	Mockingbird Dr Bicycle Boulevard	MP-017	Burt St Trail (west)
B-028	Westwood Ln Bicycle Boulevard	MP-018	UNMC Connector
B-029	Stonegate Dr Bicycle Boulevard	MP-021	P-MRNRD West Papio Extension
B-030	Eagle Run Dr Bicycle Boulevard	MP-022	West Papio Trail - 168th and Maple Section
B-031	Maplewood Blvd Bicycle Boulevard	MP-025	Saddlebrook Drive alignment (south of Fort)
B-032	138th St Bicycle Boulevard	MP-026	Tranquility Park Multi-Use Path/Big Papio Trail Extension
B-035	162nd St	MP-027	West Papio Trail Gap Completion - 144th and F
B-036	Rolling Ridge Rd	MP-028	Sorensen Parkway - 52nd to 56th Path
B-038	Hamilton St	MP-029	State St Conector Trail
B-039	Pratt St	MP-030	Spring Lake Trail Extension
B-040	60th St / Webster St	MP-031	Field Club Extension - UNMC
B-044	40th St Bicycle Boulevard	MP-032	Crown Point West Connector Path
B-045	Western St / Nicholas St Bicycle Boulevard	MP-033	Wenninghoff Connector Trail
B-046	10th St Bicycle Lanes	MP-034	Highway 36 Sidepath
B-048	Boyd St, 79th St and 78th St	MP-036	Riverfront Trail South Leg
B-050	Northwest Radial Highway	MP-037	Hanscom-Field Trail connection

Metric 1.1: Modal Options

Outcomes. Substantial increases counted as an increase of one travel lane per direction or greater. Examples of this would be a two-lane to four-lane widening with no other modes benefiting. Typically, scores of 2 were reserved for intersection projects that added turn lanes or proposed channelized intersections. These also applied to two-lane to three-lane capacity projects.

Metric 1.2: Street Congestion

Outcomes. This metric depended on travel demand model results and as such not all projects could be evaluated under it. Projects not 'visible' to the model were assessed according to engineering judgment and the typical outcomes of similar projects (for example, projects proposing to add turn lanes at intersections were determined to eliminate some congestion if the model showed congestion along the corridor; these projects thus received a score of 4).

Metric 1.3: Street Options (Parallel Routes)

Outcomes. Most projects did not add new street network and thus received neutral scores. Specific project performance is explained in the Scoring Notes field of the project list.

Metric 1.4: Street Connectivity (Intersections and Turn Options)

Metric 1.1 Modal Options

Methodology: Judgment of capacity increase based on project description, GIS analysis used to determine connection to multi-modal projects (e.g. bike projects)

POTENTIAL SCORES	
1	Substantial increase only to SOV capacity
2	Increase only to SOV capacity
3	SOV capacity with minor bike/ped benefit
4	Bike/ped or transit benefit
5	Benefit to 2+ modes

Table 5.1.2 Development-Related Projects Screened from Capital Program Consideration

Project Number	Project Name
IN-007	New signal and geometric modification to intersection of NW Radial and 58th St
IN-012	New signal and geometric modification to intersection of NW Radial and Maple St
NS-PUB-008	Connection from Northwest Radial Highway to Lake Street
NS-PUB-011	Ohio to Bedford Connecting Street (North Omaha)
NS-PUB-014	117th Street Extension (across Dodge Road)
NS-PUB-016	New connection from Cass to Dodge, parallel to the Keystone Trail
NS-PUB-017	Howard Street Bridge Connection
NS-PUB-018	Miracle Hills connection from Blondo to Dodge
NS-PUB-020	New connection; extension of 11th Street from Nicholas to Cuming

Metric 1.2 Street Congestion

Methodology: Use travel demand model and compare roadway link V/C ratios from baseline to build scenario

POTENTIAL SCORES	
1	Adds significant congestion
2	Adds some congestion
3	Neutral
4	Eliminates some congestion
5	Eliminates significant congestion

Metric 1.3 Street Options

Methodology: Use GIS to measure and count new links

POTENTIAL SCORES	
1	Removes more than one network option or separates neighborhoods or travel sheds
2	Removes one network option
3	Neutral
4	Adds one network option
5	Adds or opens multiple network options or connects neighborhoods or travel sheds

Outcomes. Very few projects either lowered or increased the link/node ratio, so most received a 'no change' score of 3. The projects that increased this ratio are new street projects, most associated with adjacent site redevelopment prospects, and the high scores assigned to those projects under this metric led many of them to perform well. In all reality most of the New Public Street projects would not be implemented until private land development occurred, meaning that the elevated ranking may not mean they become short-term obligations to the City.

Metric 2.1: Operational Safety

Outcomes. High accident rates tend to be focused on very limited, specific extents of corridors. For this reason, few projects showed much of an impact on a corridor's acciden- trate. Projects where there was determined to be a likelihood of increased accident rates usually involved physical changes to roadway design that increased speeds, extended the crossing distance at intersections, or increased potential conflict points (such as projects that increased the number of median openings along a corridor, such as CS-002, the Cuming Street road diet).

Metric 2.2: Walking and Biking Accessibility

Outcomes. The outcome of this metric depended on how many of the quarter mile buffer areas mentioned above intersected with a project. Using GIS, each project was assigned a number of how many buffer areas intersected with it and this number was normalized on a per-mile basis.

Roughly half of the projects on the list did not intersect with any of these community facility buffer areas. This was especially common for West Omaha suburban projects due to the self-contained, planned community nature of much of that area's development (where parks and schools are often located inside the square mile bounded by major arterials). Because of this high number, which would account for the bottom two fifths of the list and a part of the middle fifth, all projects with no community facilities were assigned a score of 1 (or that reserved for the lowest fifth) and the remaining projects were divided evenly into quartiles by rank.

Metric 2.3: Access to Healthy Food Sources

Outcomes. Healthy food sources were identified from a compre- hensive survey of food-vending businesses throughout Douglas County. The survey collected extensive information on the types, variety and affordability of food sold at different locations. In general, those locations that provided at least two types of

Metric 1.4 Street Connectivity
Methodology: Use GIS network analysis to calculate links and nodes; count both in each scenario and compare resulting ratios

POTENTIAL SCORES	
1	Lowers link/node ratio
2	Score not assigned
3	No change
4	Score not assigned
5	Improves link/node ratio

Metric 2.1 Operational Safety
Methodology: Compare project intent to calculated accident rate from GIS datasets

POTENTIAL SCORES	
1	Tends to increase crashes on bike/ped corridor
2	Tends to increase crashes
3	No safety effect
4	Tends to reduce crashes
5	Tends to reduce bike/ped crashes

Metric 2.2 Walking/Biking Accessibility
Methodology: Use GIS buffering to measure and tally intersection of walk sheds with project alignment

POTENTIAL SCORES	
1	Projects performing in the bottom fifth, when all projects are sorted in order of accessibil- ity, in providing connections to community facilities
2	Second-lowest fifth
3	Middle fifth
4	Second-highest fifth
5	Highest fifth

fresh fruits and vegetables, whole wheat grain products, rice, fish and a variety of meats were selected as healthy food sources.

Areas considered 'vulnerable communities' are those where basic health indicators demonstrate higher levels of health risk and a greater incidence of diet-related health problems.

Projects received favorable scores under this metric if they improved the walking conditions between healthy sources and non-served areas (defined as those areas beyond a half-mile walk from the store), if they created new connections that might make the trip easier, if they allowed bicycle or transit travel to extend the half-mile reach, or if they enhanced intersections making a street easier to cross.

Metric 2.4: Impacts of Vehicle Delay

Outcomes. This is another model-driven metric. Delay and the alleviation of delay are both estimated by comparable volume-to-capacity ratios in each scenario's model outputs. Generally, most capacity projects were seen to decrease delay based on this measurement and thus received higher scores.

Metric 2.5: Impacts of Vehicle Miles Traveled

Outcomes. Based on scenario-wide model results, the lowest overall VMT was achieved in the Transportation Enhancements scenario, the next-lowest in the Beltway scenario, and the highest VMT in the de facto LRTP/TIP scenario. A project was scored based on the highest performing scenario to which it was assigned (as some projects were assigned to more than one scenario).

Metric 2.6: Impervious Surfaces

Outcomes. This metric assigned scores of 3 to most projects, as they did not add impervious surface. Roadway widening projects, either for capacity or bicycle lanes, uniformly received low scores for this project. Multi-use paths did as well, as they are assumed to use an impervious surface in their construction.

It was rare that projects removed impervious surface and thus received high scores, but notable examples include the Harney Street bicycle track projects (B-100 to B-104), which proposed conversion of one lane of travel to a raised landscaped median.

Metric 3.1: Appropriateness to Context

Outcomes. The intent of the metric was to measure fit of a project to its surroundings. Very few projects were assigned a

Metric 2.3 Healthy Food Access
Methodology: GIS buffer analysis around qualifying food source locations to determine accessibility

POTENTIAL SCORES	
1	Degrades access to quality food in vulnerable community
2	Degrades access
3	No effect
4	Improves access
5	Improves access in vulnerable community

Metric 2.4 Impacts of Vehicle Delay
Methodology: Travel demand model and comparison of roadway links between different scenarios

POTENTIAL SCORES	
1	Adds delay to congested corridor (2010 LOS E or F)
2	Adds delay
3	Neutral
4	Decreases delay
5	Decreases delay to congested corridor

Metric 2.5 Impacts of VMT
Methodology: Travel demand model and comparison of aggregate VMT for different scenarios

POTENTIAL SCORES	
1	Worst-performing scenario
2	Score was not assigned
3	Middle-performing scenario
4	Score was not assigned
5	Best-performing scenario

Metric 2.6 Impervious Surfaces
Methodology: GIS calculation of impervious area addition (added lanes × lane width × project length)

POTENTIAL SCORES	
1	More impervious surface
2	More impervious surface, 2010 congested corridor
3	No more impervious surface
4	Score was not assigned
5	Less asphalt

score of 1; only those requiring additional right of way from neighborhoods to increase vehicle capacity were considered to be 'destructive' to the surrounding environment.

At the same time, it was important for non-roadway projects to be considered in the broader scheme of the Omaha transportation system. This involved considering how appropriate transit capital investments would be in corridors not likely to support additional density and development, especially given the fiscal limitations that Metro Transit typically faces.

Metric 3.2: Consistency with Neighborhood Plans

Outcomes. Although application of this metric was relatively straightforward, certain projects did not originate in previous studies but meet the general intent and goals of the plan. The need to recognize these kinds of projects led to the addition of a score of 4 (which had been absent in the previous version of the criteria).

The assignment of a score of 1 for this metric often involved a degree of subjective judgment, as there are rarely prohibited actions in a plan that a later project candidate could embody. For that reason, scores of 1 were assigned sparingly.

Metric 3.3: Contribution to Complete Streets

Outcomes. The key indicator in this metric is speed. Although average speeds can be reported in the travel demand model, not all project candidates would be evaluated as such and engineering judgment was used to estimate effects on speed in other projects.

In addition, intersection-specific projects do not have the same impacts on vehicle speed that street corridor projects do, making the assignment of scores to these kinds of projects difficult. Engineering judgment was used to assess whether physical changes to an intersection as envisioned in the candidate project concept would have an effect on speeds. For example, roundabouts, bulbout curb extensions and enhanced crosswalks likely do affect speeds, although simply adding crosswalks or adding a traffic signal do not.

Metric 3.1 Appropriateness to Context
Methodology: GIS-based comparison of project type/ scope to future land use and community facilities

POTENTIAL SCORES	
1	Destructive
2	Unsupportive
3	Neutral
4	Consistent
5	Improves

Metric 3.2 Neighborhood Plans
Methodology: Qualitative analysis based on a project's consistency with plan's intent

POTENTIAL SCORES	
1	Counter to plans
2	Score was not assigned
3	No clear relationship
4	Project is consistent with the intent of a neighborhood plan, even if not defined as a project idea in that plan
5	Supportive of and directly responsive to project proposals in plans

Metric 3.3 Complete Streets
Methodology: Qualitative assessment

POTENTIAL SCORES	
1	Increases vehicle speed and discourages non-SOV modes
2	Discourages non-SOV modes
3	No change
4	Improves access for one mode
5	Improves access for 2 or more modes

Metric 3.4: Quality of Public Realm/Street Character

Outcomes. This metric uses a ratio of proposed street width to average building height. This is intended to identify where wider roads in less intense land uses are likely to create barriers to the community or be seen as inconsistent with neighborhood character. This measures the ratio of average building height to traveled-way width and its match to context.

This metric was intended to capture both the interest in aesthetics expressed by some stakeholders and to identify where larger project footprints were likely to be inappropriate. In very few cases were scores other than 3 assigned to projects, mostly because new roadway widening projects are located mostly in planned suburban environments where subdivision walls separate private property from the roadway project. The notable exceptions to this occurred in cases where a roadway widening proposed acquisition of right-of-way from parks or other community facilities, or where road diet projects envisioned to add on-street parking could reduce the perceived width of the travelway.

Metric 3.5: Quality of Public Realm – Landscape/ Streetscape Addition

Outcomes. Recognizing project-specific additions from the Green Streets Plan, this metric tracked the addition or removal of trees and other landscaping in a project.

Metric 3.6: Community Preference

Outcomes. Expressions of community preference were likely to be made in the opportunities for interaction with the consultant team, although staff have forwarded on comments from residents during the Omaha TMP process. Staff comments factored into this evaluation as well. Most projects were assigned a score of 3 unless specific comment was made otherwise. Nearly no projects were strongly opposed by the community, and even some projects that had some opposition also had support.

Metric 3.7: Parks and Community Facilities Accessibility

Outcomes. Very few projects if any removed bike or pedestrian access. Most projects were given a score of 3 or 4 and projects with bike lanes were not assumed to add anything beyond existing sidewalks.

Metric 3.4 Street Character
Methodology: GIS-based comparison of project type/ scope to future land use and community facilities

POTENTIAL SCORES	
1	Ratio changed to be greatly out of character
2	Changed to somewhat out of character
3	No change
4	Change improves ratio
5	Greatly improves

Metric 3.5 Landscape/Streetscape
Methodology: GIS-based calculation of tree coverage (project length × tree spacing assumption)

POTENTIAL SCORES	
1	Removes greenspace when Green Streets Plan says it should add
2	Removes green space
3	Neither adds nor removes
4	Score was not assigned
5	Adds greenspace

Metric 3.6 Community Preference
Methodology: Review of past plans, proposals and reports

POTENTIAL SCORES	
1	Strong opposition
2	Some opposition
3	Little indication
4	Generally supported
5	Greatly supported

Metric 3.7 Parks Accessibility
Methodology: GIS-based network analysis indicating 1/4-mile walk accessibility

POTENTIAL SCORES	
1	Removes bike and pedestrian access
2	Removes bike or pedestrian access
3	Neutral
4	Adds bike or pedestrian access

Metric 4.1: Unique Financing

Outcomes. Most projects are likely to qualify only for standard funding sources. The score of 4 was added later in the process to recognize the potential of the City of Omaha's sewer separation program to help fund street reconstruction along the lines of a candidate project's vision. If there were other financing mechanisms, such as business improvement districts, the project received a score of 5. Projects likely to be carried out in conjunction with private development generally received scores of 5 for this metric, causing many of them to rise in rankings. Staff have already identified that these projects would not necessarily be a public responsibility.

Metric 4.2: Economic Development

Outcomes. Most projects received a neutral score, as the consultant team applied a fairly conservative estimate of economic development potential. Those projects receiving the highest scores were projects central to improved land access, greatly enhanced public amenities (including streetscape and the addition of on-street parking) or that showed potential to add significant person-moving capacity to a corridor.

Metric 4.3: Project Feasibility, Cost and Constructability

Outcomes. Although a subjective metric, the project team began to realize a need to account for general feasibility other than simply relying on cost. A major reason for this is the LRTP's use of costs for long-term projects that include an annual inflation factor in their cost estimate. As cost information estimating a project's cost in current dollars was not readily available, this broader metric allowed the project team to factor in other elements that may make cost less of an impediment to a project's moving forward. The complexity of some projects, especially special projects such as the Harney Bike Trail and Dodge Transitway projects, were reflected in lower scores for this metric.

Metric 4.1 Unique Financing

Methodology: Qualitative assessment of projects based on likelihood for different funding options

POTENTIAL SCORES

1	Project relies entirely on the generation of a new revenue source or agency other than City
2	Score was not assigned
3	Standard funding sources
4	Overlap with Combined Sewer Overflow (CSO) areas may yield potential for project cost-sharing with that program
5	Unique finance (BID, tolls, etc.)

Metric 4.2 Economic Development

Methodology: Qualitative assessment

POTENTIAL SCORES

1	Impedes adjacent economic opportunity
2	Score was not assigned
3	Neutral
4	Somewhat improves
5	Greatly improves

Metric 4.3 Project Feasibility

Methodology: Score calculated arithmetically based on system below

SCORING SYSTEM

All projects begin with a score of 5. One point is deducted for each of the following, and a project may exhibit any or all of these factors (though no project is to be scored less than 1).

Engineering is complicated beyond basic roadway/facility construction concerns

Multiple bridges are involved

Environmental impacts

Significant property impacts

Unusually high cost (more than 50% above standard unit cost estimates and any future-year inflation adjustment)

Multiple jurisdictions involved (especially outside of Nebraska)

Metric 4.4: Concurrency with Committed Public Services

Outcomes. Although expanding Omaha's public service area relies to a large extent on sanitary improvement districts (SIDs), it is already sufficiently large to account for most projects. The general definition used for this area corresponds with the boundary for future sewer expansion limits set by staff at the April 2011 workshop with the consulting team.

Metric 4.5: Project Utility

Outcomes. Though originally the intent of this metric to reward projects that added capacity, the project team later added a neutral score intended to keep from 'downgrading' the score of projects addressing some critical need.

Project utility for transit projects is based on estimates for daily ridership as determined by the regional travel demand model.

Metric 4.6: Facilitate Goods Movement

Outcomes. This metric is used for determining negative impacts on freight movement potential based on physical changes to the roadway. Projects such as roundabouts, mid-block traffic calming and intersection reconstructions using smaller corner radii were assigned lower scores for this reason (and scores of 1 if the projects were on a city-designated truck route).

The projects determined to improve freight movement potential were those that alleviated congestion on major truck corridors (or corridors with Interstate highway access) or that eliminated a need for turns or sharp curves in truck routes.

Metric 4.7: Parking Facilities

Outcomes. Another straightforward metric to apply, projects receiving a score of 1 were generally located in business districts or in neighborhoods with limited on-site parking. Bicycle lane projects were generally identified to avoid situations of possible conflict with on-street parking, although in places where this conflict appeared to happen the project received a lower score nonetheless.

Metric 4.4 Concurrency
Methodology: GIS-based overlay of project with sewer service area

POTENTIAL SCORES	
1	Project outside public service boundary
2	Score was not assigned
3	outside service boundary, but serving critical need
4	Score was not assigned
5	within service boundary

Metric 4.5 Project Utility
Methodology: Travel demand model results augmented by qualitative assessment

POTENTIAL SCORES	
1	Degrades people movement capacity
2	Maintains
3	Does not add (or remove) people movement capacity, but addresses other critical factors such as corridor accident rates, roadway defects, etc.
4	Score was not assigned
5	Improves

Metric 4.6 Goods Movement
Methodology: GIS-based overlay of truck routes and projects, comparing proposed design criteria

POTENTIAL SCORES	
1	Degrades truck route(might include elements such as roundabouts that impede movement)
2	Degrades
3	Neutral
4	Score was not assigned
5	Improves truck mobility

Metric 4.7 Parking Facilities
Methodology: Qualitative Assessment

POTENTIAL SCORES	
1	Removes in area of need
2	Removes
3	No effect
4	Score was not assigned
5	Adds parking

Travel Demand Model

This describes the model used to analyze scenarios for the City of Omaha It includes non-motorized trips and transit trips (both walk access and drive access). In this version, auto trips are still daily trips as in the MAPA model.

The MAPA model follows the standard four step modeling process:

- Trip generation (calculating trip ends from households and jobs)
- Trip distribution (linking trip ends to form trips)
- Mode choice (dividing trips by mode)
- Assignment (assigning trips to the network)

In the MAPA model, the mode choice component has been limited to converting auto person trips into auto vehicle trip. No other modes are modeled. Travel times from the assignment step are fed back to the trip distribution step using the Method of Successive Averages (MSA). Ten MSA iterations are used.

The multimodal model follows the same general structure with two major changes. First, a non-motorized trip model has been added between the trip generation and trip distribution steps. Second, transit mode choice and transit assignment have been added. The transit modeling has been added between the final two auto assignment steps to avoid doing the transit calculations in every MSA iteration, i.e. to reduce computer run time. New parameters have been applied in the trip generation, trip distribution and mode choice (auto occupancy) steps for two reasons: 1) to make them compatible with the expanded trip definition, and 2) to update them to match the National Household Transportation Survey data (NHTS). The auto assignment procedures and coefficients are unchanged from the MAPA model.

The multimodal model is implemented in a TransCAD macro in the same way that the MAPA model is and uses most of the MAPA model script.

Trip Generation

Trip generation rates were estimated from the 2009 National Household Travel Survey (NHTS) data including the local add-on samples. Rates were estimated for the five standard NHTS trip types:

- home-based work (HBW)
- home-based shopping (HBSH)
- home-based social/recreational (HBSR)
- home-based other (HBO)
- nonhome-based (NHB)

Each trip has a production, i.e. it is produced by a household member. For the four home-based trip categories, the production location will also be either the origin location or destination location. For nonhome-based trips, the number of productions tabulated at the household level serves as a control total on the total number of nonhome-based trips.

Production rates were estimated for 16 household classes - household sizes 1, 2, 3 and 4+ crossed with vehicle availability 0, 1, 2, and 3+. For several household classes with 0 autos or 1 auto for the larger households, the local sample size was very small. In these cases, rates were estimated using the national sample for households within Metropolitan Planning Organization (MPO) regions with populations of less than 1 million.

Production rates were estimated applying weights in accordance with recommendations in the NHTS documentation.

Note that for some estimates requiring ratios, different weights should be used for the numerators than for the denominators. For example, for estimates of daily trips per household, travel day weights are used for the numerator (since the numerator involves person trips) and household weights are used for the denominator (since the denominator is the weighted number of households). (2009 NHTS User's Guide, p. 7-5)

Weighting the production rates produced higher trip rates than were calculated without weighting. Nevertheless, as discussed below in more detail, it appears that the calculated trip rates are too low to match observed traffic levels. Therefore, the trip rates are multiplied in the model by 115%.

An attempt was made to estimate attraction rates from the NHTS data by regressing the attractions by trip type against the households and employment totals in the attraction TAZs. The resulting statistical models attributed too many attractions to households. This suggests that the geocoding of attraction trip ends in the NHTS may not always be accurate. Without a good source of local attraction rate data, attraction rates were estimated from other models.

Non-Motorized Trips

The non-motorized (walk and bike) trip model l is implemented between trip generation and trip distribution rather than in a post-distribution mode choice step. The rationale for this placement in the model chain is that the decision to walk or bike is inseparable from destination choice. People don't think about all destinations, choose one, and then notice that it isn't feasible to walk there. The choice of walking/biking and destination are made together. Putting the walk/bike model ahead of trip distribution better captures these dynamics than placing the walk/bike model after distribution.

The first step in the non-motorized is to develop trip tables of possible trips for each of the five trip types using a gravity model with very steep friction factors. This assures that the modeled non-motorized trips will be predominantly intrazonal and very short interzonal trips.

These possible trips are multiplied times shares calculated with a binary logit model. The "3 Ds" – "Density", "Diversity", and "Design" – are used as independent variables. The 3 Ds have been used extensively in studies of land use/transportation interactions throughout the United States. "Density" includes separate measures of housing density (units per square mile) and employment density (employees per square miles). "Diversity" concerns whether there are a mix of land uses, especially jobs and housing. "Design" approximates the walkability of a neighborhood by counting the number of intersections per square mile (GIS calculations from U.S. Census TIGER data).

The model incorporates these variables both directly and indirectly. Model variables include:

- HD2 – square root of the number of housing units per square mile
- ED2 – square root of the number of jobs per square mile
- IDEX – intersection density index relative to land use density calculated as:

  intersections per square mile / ((HD2 + ED2) ^ 0.5)

The HD2, ED2, and IDEX variables were calculated d at both the production and attraction TAZs (which can be the same TAZ in the case of intrazonal trips). TIn the logit model, the large negative constant indicates that without the influences of density, diversity and design – walk/bike shares will be small. All of the "3 D" variables have positive effects – the higher the 3 Ds, the greater the calculated walk/bike share. The highest shares are calculated where there are high 3 D scores for both the origin and destination TAZ.

Trip Distribution

After application of the non-motorized trip model, the non-motorized trips are subtracted out in order to calculate motorized trip ends. The motorized trip ends are then combined with the 2006 base year internal-to-external and external-to-internal productions and attractions estimated by MAPA. As the MAPA trip ends were only available for three trip types, trip distribution has been applied at the three trip type level – home-based work, home-based nonwork and non-home based.

The distribution models have been implemented using gamma functions which were developed using weighted NHTS data, including trip origins and destinations. While it would be possible to match the NHTS data very closely (except for "noise" due to the relatively small sample), the coefficients have been selected to result in slightly longer trips, This higher trip lengths combined with the 115% multiplier on the estimated trip production rates cause the base year model to load enough traffic on the network to match traffic counts. The gamma functions coefficients are:

- HBW – alpha=1000, beta=0.5, gamma=.05
- HBNW – alpha=1000, beta=1.5, gamma=1.0
- NHB – alpha=1000, beta=.075, gamma=.075

Transit Model

The multimodal includes transit modeling comprised of a coded transit network, transit skimming, transit model choice modeling, and transit assignment.

Transit Network – The transit network is coded using standard TransCAD conventions. Routes are coded onto the underlying street layer, and stops are coded on the routes layer. In this version, stops were automatically inserted everywhere. As this creates more stops than exists, no dwell time is assumed for each stop. This automatic stops system is probably adequate for planning purposes in this region and may even be the best option for future planning, as it is difficult to forecast the best stop locations for future years.

Transit Skimming – Transit skimming is done using TransCAD's standard Shortest Path method procedures. The network is skimmed twice – once for walk access trips (i.e. trips with walk access on both ends) and once for drive access trips (i.e. trips with drive access on the home or production end and walk access on the attraction end). This process is very similar to skimming the roadway network for the shortest travel time except that TransCAD keeps track of the separate components of transit trip impedance. For walk access trips, this includes:

- fare,
- access walk time,
- initial wait time,
- in-vehicle time,
- transfer walk time,
- transfer wait time, and
- egress walk time.

For the existing transit network, it is assumed that the in-vehicle bus time is equal to twice the free-flow driving time.

The drive access skims also keep track of drive access time and drive time. It is assumed that drive access trips will only access the network at designated park-and-ride locations.

Transit Mode Share – The model assumes that walk access will be used, if available. Therefore the model computes

walk access transit trips first. Then for origin-destination pairs for which no walk access trip is available, the model calculates drive access mode shares and calculates drive access transit trips.

The transit shares are determined by 1) the walkability at both trip ends and 2) travel time. This is very different from common practice which focuses largely on 1) income and 2) travel time. In my research, I have found that excluding walkability from transit modeling leads to overestimation of transit ridership in pedestrian intolerant suburban areas.

The non-motorized trip model estimates a hypothetical walk/bike mode share for each TAZ pair based on the walkability at the two TAZs, even in cases where the TAZs are too distant for a non-motorized trip. These shares form the basis of the transit mode shares. If the transit generalized travel time, including the cost of the fare in time equivalents is equal to the generalized auto travel share, including the cost of driving in time equivalents – then, the mode share will be equal to the hypothetical walk/bike share.

This would represent a sort of best case scenario, because as noted above, it is assumed that bus in-vehicle time is equal to twice auto free-flow time. In addition, there is access walk time, egress walk time, and wait time assumed to be equal to half the headway. Furthermore, the bus route may be more circuitous and/or a transfer may be required. In general, the generalized transit travel time is much greater than the generalized auto travel time.

The calculated walk access shares decline in proportion to the square of the ratio of the auto generalized travel time to the transit generalized travel time. If the transit time is twice as long, the share is one fourth the hypothetical walk/bike share. If the transit time is three times as long, the share is one ninth as great.

For drive access trips, it is assumed that the travel time is even more important. The share declines in proportion to the cube of the ratio of generalized auto time to generalized transit time.

While not including income may reduce the model's ability to match base year transit ridership which may be largely comprised of "transit dependent" riders, I think that the disadvantages are more than outweighed by the advantages for planning purposes. Rather than trying to forecast how many poor people there will be in the distant future and where they will live, the walkability construct focuses planning efforts on factors that could attract "choice" riders – improving the overall coverage of the transit system, improving walkability around transit stops, reducing transit travel times, and possibly including economic disincentives to driving (tolls and/or parking charges).

Transit Assignment – Both walk access and drive access trips are assigned to the transit network using standard TransCAD Shortest path procedures.

Auto Assignment

The multimodal model uses a master network so that all scenarios – both base and future are coded within a single network. For each scenario there are functional class fields (including the number of lanes) and speed fields. These scenario-specific fields are used to populate the fields actually used in a model run.

Using a master network is common practice, even without transit modeling. However, with transit modeling, it becomes almost essential because it is critical that the transit layers be kept in sync with the road layers. All editing is done with the transit route system open.

Other than the introduction of the master network, the auto assignment process is unchanged from the MAPA model. The same functional classes, daily capacities, and BPR function coefficients are used. There are 10 Method of Successive Averages (MSA) iterations.

One significant difference is that all turn penalties, other than prohibited movements, have been eliminated. The over-assignment of cross-river interstate trips has been prevented by assigning a K-factor in the distribution step of 0.4 to such trips for all trip types. (All other k factors are 1.0.)

Public Involvement Summary

The City of Omaha began the Transportation Element with a commitment to make the process both community driven and technically sound. In order to assure that this would be the community's plan, great efforts were made to meet with, work with and communicate with as many citizens as possible in multiple formats. These efforts actively involved residents, employees, and local business interests from around the city. This section provides greater details about the public outreach efforts undertaken in developing the Transportation Element.

Public Meeting	Date	Estimated Attendance
TMP Kickoff Meeting	November 16, 2010	200
TMP Visioning Meeting	January 18, 2011	30
TMP Priorities Meeting	September, 2011	385
Design Workshop #1	March, 2011	30
Design Workshop #2	March, 2011	70
Final Public Meeting	May 1, 2012	425
Group Meeting	**Date**	**Estimated Attendance**
ITE Omaha Chapter	November 3, 2010	40
ACEC Omaha Chapter	November 17, 2010	200
Aksarben Elmwood Park Neighborhood Association	November 18, 2010	25
Kiwanis Club	November 18, 2010	30
Rotary Club - Elkhorn	December 23, 2010	20
Creighton University	January 11, 2011	15
Old Market Business Association	February 1, 2011	50
South Omaha Business Alliance	February 3, 2011	30
South Old Market Neighborhood Association	February 21, 2011	25
Buidling Owners and Manager Association of Omaha	February 22, 2011	35
TMP Media Briefing	March 3, 2011	5
Gifford Park Neighborhood Association	March 24, 2011	10
Nebraska Planning and Zoning Association	March 30, 2011	30
South Omaha Neighborhood Alliance	April 7, 2011	25
Union Pacific Work Group	April 11, 2011	35
LOCate Meeting	April 15, 2011	5
Omaha by Design Advisory Committee	April 20, 2011	10
Mutual of Omaha	May 3, 2011	30
WELCOM of the Midlands	May 12, 2011	25
Fit Nation - New Orleans	May 13, 2011	40
Chamber of Commerce Leadership Class	May 18, 2011	200
US General Services Administration Employee Meeting	May 18, 2011	35
ProRail Nebraska	May 21, 2011	20
Midtown Business Assocation	May 23, 2011	15
Omaha Sierra Club	June 23, 2011	30
Douglas County Board of Health	August 17, 2011	40
Downtown Omaha Incorporated	September 1, 2011	40
Dundee Memorial Park Neighborhood Assocation	September 12, 2011	30
Benson Ames Alliance	September 14, 2011	30

Union Pacific Work Group	September 26, 2011	25
Heartland Active Transportation Summit (Day One)	September 30, 2011	200
Heartland Active Transportation Summit (Day Two)	September 31, 2011	50
Greater Omaha Chamber of Commerce Transportation Meeting	October 3, 2011	15
Public Health Association of Nebraska	October 13, 2011	50
Rail-Volution Conference	October 18, 2011	50
Assocation of Pedestrian and Bicycle Professionals	October 27, 2011	30
Omaha World Herald Briefing	October 28, 2011	3
North Downtown Alliance Meeting	November, 2011	30
FIT City New York Conference	November 3, 2011	30
Bikeway Bike Shop	November 12, 2011	35
Omaha Press Club	November 17, 2011	20
UNO Geography Club Symposium	November 17, 2011	30
Development Community Forum	December 13, 2011	40
ProRail Nebraska	February 18, 2012	20
Omaha by Design Advisory Committee	March 21, 2012	35
Park Pride Atlanta Conference	March 26, 2012	30
Midtown Buisness Association	May 16, 2012	15
Omaha Engineers Club	May 22, 2012	60
Live Well Omaha Board Meeting	May 23, 2012	35
West Omaha Optimist Club	May 31, 2012	30

Guidance on Complete Streets Implementation

1.0 Application to City Projects

All City capital improvement projects, including roadways, initiated subsequent to the adoption of this Policy, shall fully integrate its Complete Streets goals and principles from the earliest project scoping and budgeting phases. As this Complete Streets Policy establishes higher and more comprehensive goals and criteria than Ordinance No. 40446 this policy shall supersede it for roadway projects. All projects shall be initially defined such that the overall project budget is sufficient to assure conformance with this policy.

2.0 Capital Improvement Projects

Consideration of this Complete Streets Policy and its long-range goals shall be incorporated into the planning, scoping, budgeting, funding, design, approval and implementation process for all City facilities, roadways, and right-of-way infrastructure. The Planning Department shall provide coordination and support. Departments shall consult the Master Plan, Capital Improvement Program, and other relevant City master plans for guidance.

In planning and designing City projects that include or impact roadways, City Departments shall consult the Public Works Department and shall consult City master plans and policies related to pedestrian, bicycle, transit, and vehicle transportation. All projects shall strive to advance and integrate multiple goals, including a high-quality public realm, placemaking, Green Streets, and economic development. City projects shall seek cost-saving opportunities through such integration.

Projects shall anticipate opportunities to incrementally achieve fully complete streets and networks over time, and in future phases of work. Departments shall take care that their work does not adversely affect the pedestrian realm and opportunities for multi-modal travel and facilities.

Projects should anticipate funding needs and seek resources to acquire necessary right-of-way and/or easements. Where the costs of acquiring right-of-way to provide separate accommodations for each mode of travel are cost-prohibitive, innovative or multi-use facilities within the existing right-of-way that accommodate both pedestrians and bicyclists may be considered, if appropriate for the roadway and its context.

For City parks projects, park land may be used for bicycle/pedestrian trails and other elements of the transportation system that provide connectivity and support people's access to parks and recreational/outdoor activities.

City utilities and utility partners will provide guidance on ensuring that Complete Streets Policy implementation does not create public safety hazards or reductions in levels of utility service unacceptable to utility customers. Utility projects will seek to support and advance implementation of this policy and related right-of-way conditions.

3.0 Project Budgets

It is the responsibility of each project to budget appropriately for implementation of this policy, in a context-sensitive manner. This includes budgeting for right-of-way and/or easement acquisition. Where primary funding sources for City projects are narrowly constrained (e.g. restricted to utility, affordable housing, or other purposes), the City will actively pursue additional funding sources to allow implementation of this policy to a high standard.

4.0 Private Projects

In reviewing zoning, site plans, subdivision plans, planned unit developments, and other projects that include streets or private drives or other internal circulation routes, City staff shall seek full compliance with the intent of this Complete Streets Policy. To ensure that its goals and principles are fully incorporated into the City of Omaha zoning and development review process, staff across departments shall receive appropriate training. The Planning Department also shall provide appropriate information and education to the development community and applicants.

In reviewing projects subject to Article 22 of Chapter 55 of the Municipal Code, the City shall approve compliance only as it conforms to the goals and intent of this Complete Streets Policy. A system shall be developed to track approvals of compliance; a multi-disciplinary staff team to assess impacts on Complete Streets shall review such approvals annually.

If City staff recommends additional measures regarding private projects, that process will include public review and input.

5.0 Complete Streets Program

The City will implement this policy through a Complete Streets Program based in the Public Works department. The Program will be developed and implemented in consultation with other departments and partners. It will be appropriately staffed to provide multi-modal transportation planning; it will be coordinated with City programs and initiatives for bicycling, pedestrians, transit and trails.

The Complete Streets Program will be structured as an element of the master plan implementation and be inclusive of all relevant City Departments. The Program shall facilitate citywide staff training, public education, document development and/or updates, departmental Complete Streets efforts, and other actions as necessary to fully implement this Complete Streets policy.

An interim report on the development and progress of this program shall be delivered to Omaha City Council within 12 months of policy adoption.

6.0 Modal Networks

The City shall advance projects that are needed to close gaps and to complete priority transportation networks and routes for people using each individual travel mode.

7.0 Street Design Standards

The City shall refer to the following national guidelines, recognized by the Omaha City Council:

1. Designing Walkable Urban Thoroughfares: A context sensitive approach (Institute of Transportation Engineers/ Congress for the New Urbanism)
2. Urban Street Design Guide, and Urban Bikeway Design Guide (National Association of City Transportation Officials)

Flexible and innovative context-sensitive design solutions that conform to these guidelines are encouraged for both public and private projects. Updated street design standards and criteria that reflect these national guides will be developed in the course of revising the Transportation Criteria Manual.

The design of roadway water quality controls and storm drain infrastructure (as required by ordinance for new roadways and major roadway reconstructions) shall be incorporated into this approach.

In Downtown and existing mixed-use centers Great Streets Design Standards shall continue to apply.

8.0 Green Streets Guidelines

A multi-disciplinary City staff team shall develop specific Green Streets principles, guidelines, and metrics. The guidelines shall reflect national best practices as well as green infrastructure referenced in existing city policies. They shall address roadway-design related stormwater infrastructure and management for both water quality and runoff volume; the linking of trails and greenbelts with roadway networks; and other relevant sustainability, environmental and ecosystem goals.

The integration of Green Streets principles and metrics shall be overseen by the Environmental Services Division of the Public Works Department. They shall be administered as an integral part of street design and project reviews.

9.0 Staff Training

The City will provide information and training on this Complete Streets policy and its principles, and best practices for implementation, to relevant City staff across departments within 150 days of policy adoption. Continuing education inclusive of all aspects of this policy shall be provided on an annual basis. The training materials shall be offered to regional and City partner agencies.

10.0 Outreach and Education

The City and partner organizations will provide ongoing public information and education about Complete Streets to Omaha residents; community groups and leaders; transportation, planning, design and engineering professionals; and the private development community. The City will meet at least annually with representatives of Metro Transit, Douglas County, MAPA and NDOR to review best practices in Complete Streets implementation and evaluate cross-agency efforts.

11.0 Metrics for Evaluation

Complete Streets Policy metrics will be developed, tracked and reported. For mobility goals, they include miles of new and improved sidewalks and bicycle facilities and a number of accessible transit stops. Additional metrics that reflect the comprehensive goals of the policy will be developed within 12 months of policy adoption.

12.0 Code Amendments

City staff will conduct a diagnosis to identify: 1) what, if any, provisions in current code or criteria are in conflict with implementation of this Complete Streets policy, or otherwise present impediments, and 2) what code and criteria amendments are needed, if any, to address impediments or to otherwise advance the implementation of the Complete Streets policy.

Upon adoption of a major revision to the Municipal Code by the City Council, necessary updates on this policy shall be issued to create consistency with all Land Development Codes and language related to roadways, right-of-way, street classifications, overlay districts, and other applicable elements.

13.0 Roles and Responsibilities

The Public Works Department, as the administrator of the Complete Streets Program, shall have lead responsibility for implementation of this policy.

Final authority for the construction of elements in the City right-of-way, as well as reporting responsibility for exceptions granted to this policy, resides with the Public Works Department. As per City Charter and Municipal Code, the following functions and programs shall be assigned to the Public Works Department: city engineering; traffic engineering; street construction, maintenance and street lighting. The Public Works Department shall jointly and collaboratively address these goals for the community's roadways, coordinating with other City departments and partner agencies as needed.

14.0 Exceptions Reporting

The Public Works Director shall report each exception granted through the mechanism established in this policy, including City projects, and shall oversee the timely public posting of such reports on the City of Omaha website.

A quarterly summary report on exceptions granted shall be provided to a multi-disciplinary City staff team responsible for guiding Complete Streets implementation. An annual report shall be provided to the City Council.