1 Executive Summary

The Milwaukie Transportation System Plan (TSP) is the City's long-term plan for transportation improvements and includes policies and projects that could be implemented through the City Capital Improvement Plan, development review, or grant funding. The 2007 TSP planning process was a great opportunity for the community to fully define its transportation goals and discuss how the whole transportation system ~~can~~ could be improved to support livability in Milwaukie. The 2013 TSP update process provided an opportunity to ensure that the plan reflected current conditions and took into account the latest forecasts and projections.

Milwaukie is a city of approximately 21,000 people and just under five square miles. Part of Milwaukie is designated as a Town Center in the 2040 Growth Concept. Though Milwaukie's population is expected to grow moderately (approximately one % per year), the city lies at the intersection of several regional transportation facilities and downstream from several areas slated for significant growth in Metro's 2040 Growth Concept.

THE PURPOSE OF A TRANSPORTATION SYSTEM PLAN (TSP)

~~One of the~~ A primary purpose~~s~~ of ~~creating~~ an up-to-date TSP ~~(and keeping it updated)~~ is to fulfill the State of Oregon Transportation Planning Rule (TPR) requirements for comprehensive transportation planning in the cities of Oregon. The TSP is ~~used as~~ a guiding policy document for long-term transportation planning and presents the City's goals and policies while outlining and prioritizing proposed improvements for pedestrian, bicycle, public transit, ~~and~~ motor vehicle, and freight systems; downtown parking; and neighborhood traffic management ~~(as well as other non-motorized elements)~~. In addition, the TSP outlines the financial forecast for potential funding ~~for the City,~~ and ties that back to potential prioritized improvements to determine any funding shortfalls for projects. When funding shortfalls exist, potential concepts for generating additional revenue ~~for the City~~ are outlined to help guide ~~the~~ City funding-related decisions ~~towards policy decisions related to funding~~.

The TSP strives to determine existing problem areas for all modes of transportation, looks into the future to identify the needs created by growth, and provide~~s~~ solutions to existing and future needs ~~along~~ with guidelines to develop the desired multimodal transportation system. Identifying specific transportation system needs will help the City guide its future transportation system investments and determine how land use and transportation decisions can be brought together beneficially for the community.

After Chapter 4 Future Forecasting Process, each section of the TSP ~~(after the Future Forecasting Chapter)~~ includes a long-range master plan and an action plan. The action plans address those transportation improvements that could be made using limited local funding sources. The final prioritization of transportation system improvements will be determined by the Milwaukie City Council as part of the annual capital improvements planning and budgeting process.

WHO WAS INVOLVED IN THE CITY'S TSP UPDATES?

During the 2007 TSP update process, the City of Milwaukie launched an extensive public outreach and involvement process (see Appendix ~~A~~ B). Citizens, partner agencies, and business representatives were invited to join one or more mode-specific working groups and the TSP Advisory Committee. The working groups were created to focus on different subtasks of the TSP, including: Traffic and Street Network Solutions, Pedestrian and Bike Solutions, Street Design, Transit Solutions, Downtown Parking, and Freight Access. The Advisory Committee ~~(AC)~~ oversaw both technical and policy review of the TSP, and offered guidance on the final prioritization of projects and strategies.

In 2013, the City conducted a smaller-scale update to the TSP in order to maintain compliance with Metro's 2035 Regional Transportation Plan (RTP). The public engagement component of the 2013 TSP update was far less intensive than the one in 2007, as the proposed changes did not involve major policy decisions and instead focused on the following elements:

- Update existing figures, tables, and text to reflect current conditions.
- Adjust the TSP's planning horizon year from 2030 to 2035.
- Remove completed projects and update project descriptions as needed.
- Add the final Portland-Milwaukie Light Rail (PMLR) alignment to master plan maps.

The 2013 TSP update, driven by the RTP compliance requirement, allowed the City to confirm that the master plans for the various travel modes (e.g., pedestrian, bicycle, public transit, etc.) will help the region move toward meeting its performance targets for 2035, including reductions in congestion, percentage of single-occupancy vehicle trips, and vehicle miles traveled per capita.

TSP UPDATE PROCESS

In addition to data collection and public involvement, ~~the~~ a TSP update consist~~ed~~s of seven main elements. The following sections describe each of these elements in more detail.

Goals

Transportation goals and policies form the basis for how the local transportation system will be developed and maintained over the next ~~20~~ 22 years. The City's transportation goals support a multimodal approach to transportation planning and reflect how citizens think about and experience Milwaukie's transportation system. The City's nine transportation goals are:

- **GOAL 1 Livability:** Design and construct transportation facilities in a manner that enhances the livability of Milwaukie's community.
- **GOAL 2 Safety:** Develop and maintain a safe and secure transportation system.

- **GOAL 3 Travel Choices:** Plan, develop, and maintain a transportation system that provides travel choices and allows people to reduce the number of trips made by single-occupant vehicles.
- **GOAL 4 Quality Design:** Establish and maintain a set of transportation design and development regulations that are sensitive to local conditions.
- **GOAL 5 Reliability and Mobility:** Develop and maintain a well-connected transportation system that reduces travel distance, improves reliability, and manages congestion.
- **GOAL 6 Sustainability:** Provide a sustainable transportation system that meets the needs of present and future generations.
- **GOAL 7 Efficient and Innovative Funding:** Efficiently allocate available funding for recommended transportation improvements, and pursue additional transportation funding that includes innovative funding methods and sources.
- **GOAL 8 Compatibility:** Develop a transportation system that is consistent with the City's Comprehensive Plan and coordinates with County, State, and regional plans.
- **GOAL 9 Economic Vitality:** Promote the development of Milwaukie's, the region's, and the state's economies through the efficient movement of people, goods, and services, and the distribution of information.

Existing Conditions

Project staff reviewed existing conditions to establish how the transportation systems within Milwaukie currently operate in terms of quality, effectiveness, accessibility, and safety. Sidewalk and pavement conditions, roadway and intersection traffic volumes, transit and freight operations, as well as parking, rail, environmental justice and natural resources were all reviewed with the goal of understanding the "bigger picture" of the City's transportation needs. Additional detail related to these topics can be found in Chapter 3.

Forecasting Future Traffic Conditions

The forecast year for this plan is ~~2030~~ 2035. The City used Metro's urban area transportation forecast model to forecast future p.m. peak-hour traffic volumes at study area intersections. This is a complex model that takes many anticipated trends in demographics, changes in land use, population, etc. into account when forecasting future traffic volumes. Some of the more important assumptions include the projected growth in population in Clackamas County and the rest of the Metro region, residential and employment growth in downtown Milwaukie, and an increase in transit use within the Metro region. See Chapter 4 for more detail.

Identification of Needs and Potential Improvements

The traffic volume projections forecasted from the Metro model formed the basis for identifying potential roadway deficiencies and evaluating alternative circulation improvements within Milwaukie. Needs for other modes were then identified, based on the future traffic forecasts and deficiencies in the existing infrastructure (sidewalks, bike lanes, transit stops, etc.).

Collectively, the master plans in Chapters 5 through 12 of the TSP describe the proposed capital and operational improvements to the transportation system between ~~2008~~ 2013 and ~~2030~~ 2035. While many of these potential improvements are presented as benefiting one mode, when possible, multiple modes are combined into one project. For instance, the Railroad Ave

road-widening project listed in the ~~Auto~~ Street Network Master Plan could include new bike lanes and sidewalks, as well as improvements for freight and transit.

Between the 2007 and 2013 TSP updates, the PMLR project became more defined, with construction starting in 2012. A thorough feasibility and impact study was conducted for the PMLR project, identifying and developing appropriate mitigation for the new light rail system's impacts to Milwaukie's transportation infrastructure. The warranted improvements are being constructed as the new light rail system is being built. Once completed, PMLR will become a part of the City's transportation system and will be further studied to identify and address needed improvements as part of future updates to the TSP.

In June 2013, the Tacoma Station Area Plan (TSAP) was adopted to address potential redevelopment opportunities near the new PMLR station at Tacoma St. The TSAP included a list of approximately 20 projects identified to meet new transportation needs. These projects were assigned order-of-magnitude costs and were added to the relevant project lists for the various modes.

Ranking and Prioritizing Improvements

The action plans in Chapters 5 through 12 focus on the highest priority projects that are most likely to be funded over the next ~~15~~ 22 years with limited City funds. The action plans are built upon the premise that, given the limited funds available, the City should prioritize funding of transportation projects that 1) effectively address identified problems, and 2) best meet the City's Goals.

To prioritize the projects as part of the 2007 TSP update, project staff and the ~~AC~~ Advisory Committtee used three sources: the project rankings from the working groups, evaluation of each project against the nine TSP Goals, and other information regarding dependence on other projects, neighborhood support, etc. Using this approach, project staff and the ~~AC~~ Advisory Committtee developed a relative ranking of the projects, grouping them into three categories (high, medium, and low priority).

For the 2013 TSP update, project staff did not reevaluate projects against the nine TSP Goals but, instead, considered the input generated around a public meeting that was held to discuss transportation project priorities. For approximately 20% of the existing projects, the priority classification was adjusted to reflect changes in current conditions or a new awareness of community need. For new projects arising from the Tacoma Station Area Plan (TSAP), staff assigned a priority to each based on input from the TSAP Advisory Committee as well as staff knowledge of overall system needs.

Financing Transportation Projects

The financially constrained action plan lists in Chapters 5 through 12 identify which projects the City should prioritize for funding with limited City funds. While these action plans will set the priorities for use of local funds, ~~it~~ they do~~es~~ not assume funding sources such as State or regional grants, or contributions from local development. Therefore, the "financially constrained" lists are very constrained.

Given the limited availability of funding, the City will have to make tradeoffs when deciding how to spend the limited funds each year. As part of the 2007 TSP update, the ~~AC~~ Advisory Committee determined that the City should use a strategic approach that funds a range of high priority "implementable" projects. This approach encourages the City to tackle smaller projects with local funds, but also use local funds as the required local match to leverage State and

federal funds for larger high priority projects. The 2013 TSP update reaffirmed this strategic approach.

The primary function of the TSP is to provide guidance for long-range policy and investment decisions about needed improvements to the transportation system over the next 22 years. The Consolidated Action Plan in Table 13-3 (located in Chapter 13 Funding and Implementation Plan) provides a list of the highest priority projects for the community. This list is utilized to build the "Transportation Priority Project—Unfunded" section of the City's 5-year Capital Improvement Plan (CIP). The CIP is a list of projects for the City's water, wastewater, stormwater, and transportation systems that are scheduled to be funded in the short term. As funding becomes available, projects are moved from the unfunded section of the CIP to the section recommended for funding. Projects in the CIP section recommended for funding are reviewed by the City Council for funding every 2 years through the City's budgeting process. In essence, the CIP is the primary implementation mechanism for TSP projects.

Recommendations

The Milwaukie TSP focuses on Milwaukie's transportation needs and decisions. Therefore, participants in the 2007 planning process created a set of recommendations that implemented State and regional policies but ~~are~~ were tailored to Milwaukie's current and future needs. From all of the input that citizens and businesses offered during the 2007 TSP process, there were some clear messages. The highest priorities established in 2007 for improving transportation in Milwaukie ~~are~~ were:

- Improve pedestrian and bicycle facilities throughout the city.
- Enhance public transit service.
- Maintain existing facilities.
- Manage traffic in neighborhoods (address "cut-through" traffic) as regional traffic volumes increase.
- Improve safety and accessibility of crossings over major corridors.

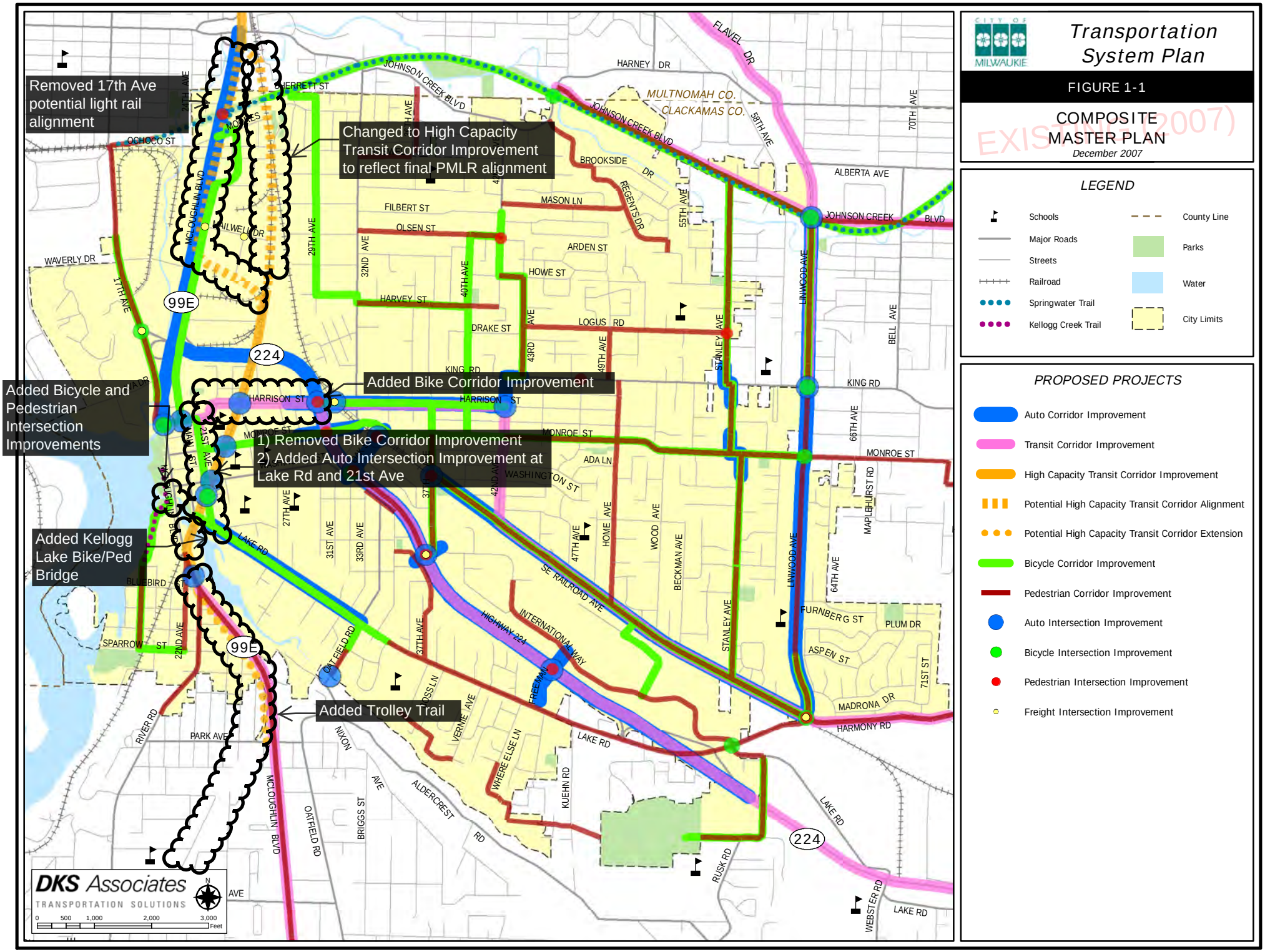
Though it is common for people to be focused on their own street, neighborhood, or bus line, a broad number of people identified the following areas as a priority in 2007:

- Downtown
- Milwaukie Marketplace area
- Railroad Ave
- Railroad crossings throughout the city

The 2013 TSP Update process did not involve the same level or depth of public involvement and discussion, as it was intended as only a minor refresh of the 2007 document. However, public comments gathered at and around a public meeting held in June 2013 largely confirmed the above recommendations (with at least one exception, that there was no clear identification of the Milwaukie Marketplace as a priority area). In 2013, people appear to be generally more supportive of projects that serve to improve multiple modes of transportation than those that enhance only one aspect of the larger transportation system. In addition, there is a clear emphasis on improving east-west connections across the community, especially to mitigate the divisive effect that Hwy 224 has in separating downtown from the predominant population in the eastern neighborhoods.

The following section summarizes the specific recommendations that resulted from the analysis of each mode and aspect, including: pedestrian, bicycle, public transit, motor vehicle, freight, street design, neighborhood traffic management, and downtown parking. Figure 1-1, the

Composite Master Plan Map, summarizes the recommended improvements on one map, showing the location of recommended master plan improvements for pedestrian~~s~~, bicycle~~s~~, public transit, motor vehicle~~s~~, and freight modes.


Removed 17th Ave potential light rail alignment
Changed to High Capacity Transit Corridor Improvement to reflect final PMLR alignment
Added Bicycle and Pedestrian Intersection Improvements
Added Bike Corridor Improvement
1) Removed Bike Corridor Improvement
2) Added Auto Intersection Improvement at Lake Rd and 21st Ave
Added Kellogg Lake Bike/Ped Bridge
Added Trolley Trail
DKS Associates
TRANSPORTATION SOLUTIONS
0 500 1,000 2,000 3,000 Feet
Transportation System Plan
FIGURE 1-1
COMPOSITE MASTER PLAN
December 2007
EXISTING (2007)
LEGEND
Schools
Major Roads
Streets
Railroad
Springwater Trail
Kellogg Creek Trail
County Line
Parks
Water
City Limits
PROPOSED PROJECTS
Auto Corridor Improvement
Transit Corridor Improvement
High Capacity Transit Corridor Improvement
Potential High Capacity Transit Corridor Alignment
Potential High Capacity Transit Corridor Extension
Bicycle Corridor Improvement
Pedestrian Corridor Improvement
Auto Intersection Improvement
Bicycle Intersection Improvement
Pedestrian Intersection Improvement
Freight Intersection Improvement

PEDESTRIAN FACILITIES

Walking is the most affordable and accessible of all transportation modes. It is also clean, low-impact, and healthy for the individual. A safe and comfortable pedestrian environment allows people of all ages and abilities to travel independently.

Milwaukie's pedestrian system is challenged by an incomplete arterial/collector sidewalk system, a lack of local street connectivity, arterial crossings with potential safety and connectivity issues, and a lack of complete multiuse trails (see Chapter 3).

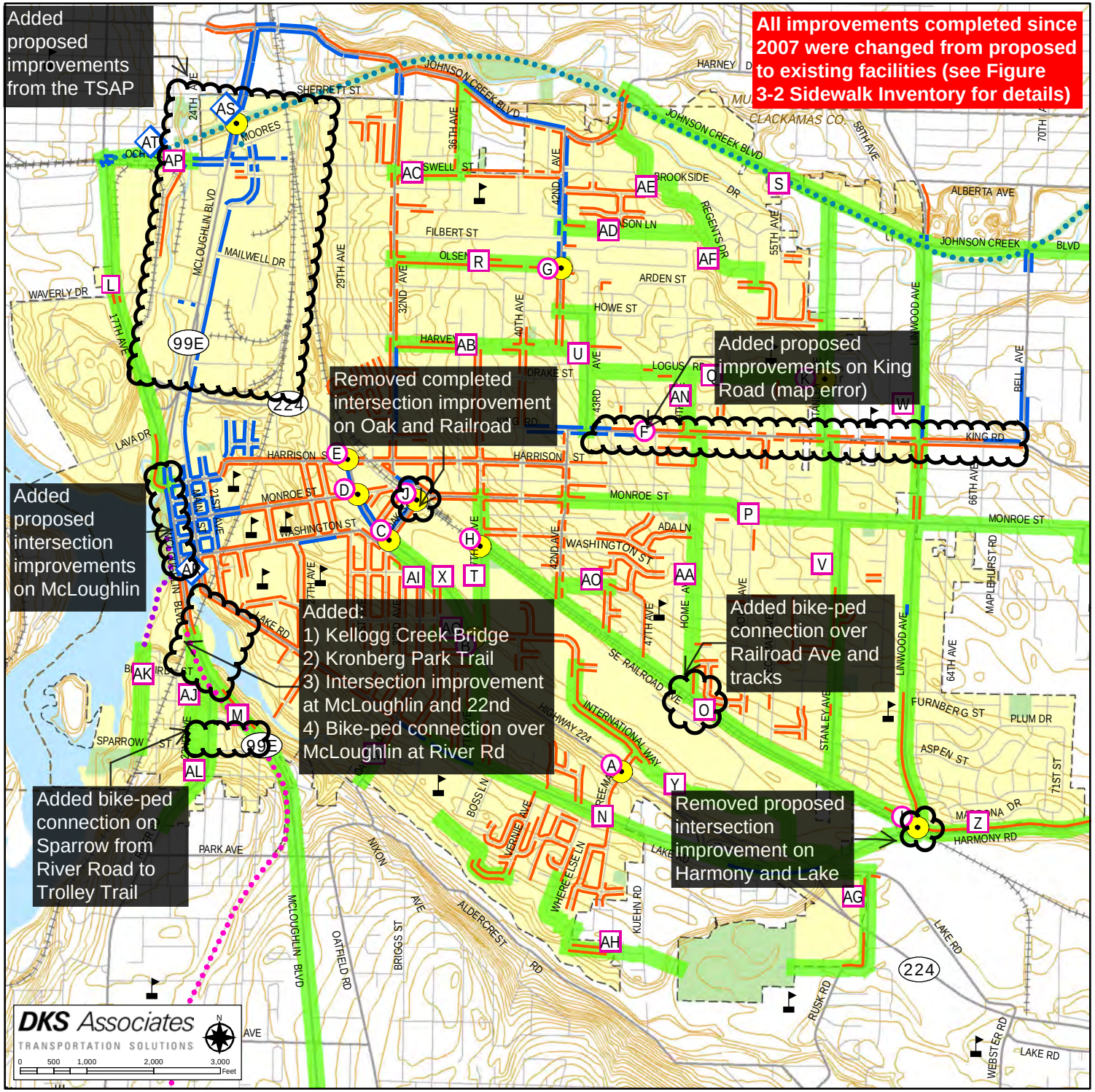
The City has several strategies for addressing pedestrian system needs and guiding project prioritization. The prioritization process helps to focus community investment on those projects that are most effective at addressing critical needs, while deferring other projects of lesser importance. The strategies for pedestrian facilities include:

- Key pedestrian corridors to connect neighborhoods with schools, parks, activity centers, and major transit stops.
- Arterial crossing and safety enhancements.
- Fill gaps in the network where some sidewalks exist.
- Pedestrian corridors that connect to major recreational uses.
- Enforcement of laws that protect pedestrians.
- Education about pedestrian safety and available walking routes.

These strategies would be implemented by projects that address needs and deficiencies.

Key Recommendations

- **Arterial and Collector Street Improvements:** Construct walkways along key collector and arterial streets, especially when project is publicly funded:
  - Monroe St from 42nd Ave to eastern city limit
  - Stanley Ave within the city limits
  - Linwood Ave within city limits
  - 17th Ave north of downtown
  - Railroad Ave within the city limits
- **Local Street Improvements:** Walkways on local streets will be mostly constructed by new/infill development.
- **Intersection Improvements:** Construct intersection improvements to improve pedestrian safety near Hwy 224 and the Milwaukie Marketplace:
  - Oak St by the railroad tracks
  - Harrison St and Hwy 224
  - Railroad Ave and 37th Ave
- **Develop and distribute walking maps** that show routes to major destinations such as parks, schools, commercial areas, and trails.
- **Enforce against motorists** who speed and run stop signs.



CITY OF MILWAUKIE

Transportation System Plan

FIGURE 1-2

PEDESTRIAN MASTER PLAN

December 2007

EXISTING (2007)

LEGEND

Existing Sidewalks
- < 5 ft. Width
- 5 ft. - 10 ft. Width
- Springwater Trail
- Kellogg Creek Trail

Proposed Improvement
- Pedestrian Facilities
- Pedestrian Intersection Safety Improvement
- Trolley Trail

- Schools
- Major Roads
- Streets
- Railroad
- 10' Contours
- County Line
- Parks
- Water
- City Limits

PROPOSED PROJECTS

Improve Intersection to Increase Pedestrian Safety

- (A) Freeman Way/HWY 224
- (B) 37th Ave/HWY 224
- (C) Oak St/HWY 224
- (D) Monroe St/HWY 224
- (E) Harrison St/HWY 224
- (F) King Rd crossing improvements
- (G) Olsen St/42nd Ave
- (H) Railroad Ave/37th Ave
- (I) Harmony Rd/Lake Rd
- (J) Oak St/railroad tracks
- (K) Stanley Ave/Logus Rd

Provide Pedestrian Facilities Where Not Currently Present

See Table 5-1 for L - AQ project descriptions

Enhance Existing Pedestrian Connection

- (AR) Construct pedestrian underpass under HWY 99E at Kellogg Creek
- (AS) Improve ramp at Springwater Trail/HWY 99E
- (AT) Complete Springwater Trail along Ochoco St

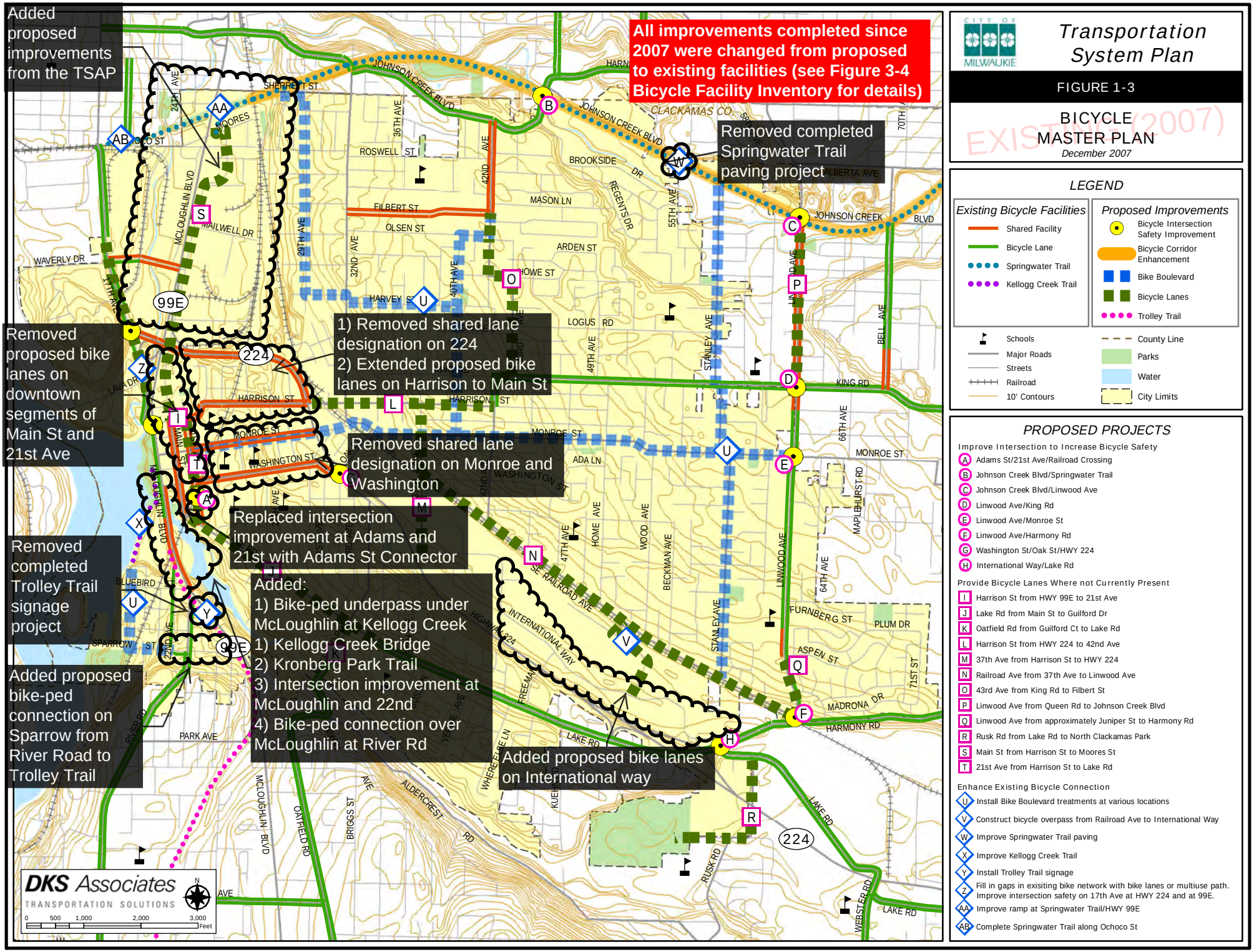
BICYCLE FACILITIES

The bicycle is a human-powered vehicle that allows people of all ages to move independently, at relatively low cost and with little impact to the environment. Bicycling promotes the well-being of people who live and work in Milwaukie, with the added benefit of reducing auto traffic on city streets.

Milwaukie's existing bicycle system is deficient in three primary ways: lack of connectivity, difficult crossings, and insufficient street designations. Recommended improvements should be aimed at closing the gaps in the bicycle network, improve crossing safety, maintaining the existing system, improving signage, and educating bicyclists and motorists.

Key Recommendations

- ~~**Bike Boulevard**~~ **Neighborhood Greenway Improvements:** Prioritize "neighborhood greenways" (also sometimes referred to as "bike boulevards") as a method for providing safe bikeway connections to other transportation modes and between parks, schools, activity centers, and regional destinations. Establish neighborhood greenways along the following routes:
  - Monroe St from downtown to Linwood Ave
  - Stanley Ave from Railroad Ave to Springwater Trail
  - 29th Ave from Springwater Trail to Monroe St (via Harvey St and 40th Ave)
  - 19th Ave and Sparrow St to Trolley Trail
- **Bikeway Improvements:** Improve existing bikeways by paving, striping, adding signage, establishing bike lanes where appropriate, etc.
- **Intersection Improvements:** Make key intersections safer and more functional for bicyclists with treatments such as improved striping, accessible signal buttons, and bicycle detection devices.
- **Education:** Improve education for bicyclists and drivers and encourage bicycling through planned bicycling events.
- **Maintenance:** Keep bike lanes clear of debris.
- **Coordination with Other Jurisdictions:**
  - Work with other jurisdictions on long-range projects such as route connectivity and trail system planning and construction.
  - Improve response on day-to-day issues such as sweeping out bike lanes and enforcing traffic and parking laws.



CITY OF MILWAUKIE

Transportation System Plan

FIGURE 1-3

BICYCLE MASTER PLAN

EXISTING (2007)

December 2007

LEGEND

Existing Bicycle Facilities
- Shared Facility
- Bicycle Lane
- Springwater Trail
- Kellogg Creek Trail

Proposed Improvements
- Bicycle Intersection Safety Improvement
- Bicycle Corridor Enhancement
- Bike Boulevard
- Bicycle Lanes
- Trolley Trail

- Schools
- Major Roads
- Streets
- Railroad
- 10' Contours
- County Line
- Parks
- Water
- City Limits

PROPOSED PROJECTS

Improve Intersection to Increase Bicycle Safety
- A Adams St/21st Ave/Railroad Crossing
- B Johnson Creek Blvd/Springwater Trail
- C Johnson Creek Blvd/Linwood Ave
- D Linwood Ave/King Rd
- E Linwood Ave/Monroe St
- F Linwood Ave/Harmony Rd
- G Washington St/Oak St/HWY 224
- H International Way/Lake Rd

Provide Bicycle Lanes Where not Currently Present
- I Harrison St from HWY 99E to 21st Ave
- J Lake Rd from Main St to Guilford Dr
- K Oatfield Rd from Guilford Ct to Lake Rd
- L Harrison St from HWY 224 to 42nd Ave
- M 37th Ave from Harrison St to HWY 224
- N Railroad Ave from 37th Ave to Linwood Ave
- O 43rd Ave from King Rd to Filbert St
- P Linwood Ave from Queen Rd to Johnson Creek Blvd
- Q Linwood Ave from approximately Juniper St to Harmony Rd
- R Rusk Rd from Lake Rd to North Clackamas Park
- S Main St from Harrison St to Moores St
- T 21st Ave from Harrison St to Lake Rd

Enhance Existing Bicycle Connection
- U Install Bike Boulevard treatments at various locations
- V Construct bicycle overpass from Railroad Ave to International Way
- W Improve Springwater Trail paving
- X Improve Kellogg Creek Trail
- Y Install Trolley Trail signage
- Z Fill in gaps in exisiting bike network with bike lanes or multiuse path. Improve intersection safety on 17th Ave at HWY 224 and at 99E.
- AA Improve ramp at Springwater Trail/HWY 99E
- AB Complete Springwater Trail along Ochoco St

PUBLIC TRANSIT FACILITIES

The availability, convenience, and desirability of public transit are key aspects of a system that must support the movement of people to, from and through Milwaukie. Transit trips reduce single-occupant vehicle trips (which reduces traffic and energy consumption), serves community members who cannot drive (including the elderly, disabled, and youth), and minimizes transportation system impacts to the environment, such as vehicle emissions and soil and water pollution from impervious surface runoff.

Though transit service in Milwaukie needs to be improved in many ways, its greatest deficiencies are in the areas of service levels, safety, and convenience of service. There is a disparity between the City's goals for transit service and use, and the system's ability to meet those goals today. To close this gap, the City and TriMet should simultaneously pursue three types of improvements: service enhancements, capital improvements, and policy improvements.

Key Recommendations

- **Service Enhancements:**
  - Add a bus route on Railroad Ave (extending to Clackamas Town Center via Harmony Rd)
  - Add a bus route on Johnson Creek Blvd
  - Reduce headways to less than 30 minutes on all routes.
  - Enhance service on north-south routes.
  - Improve reliability of all routes.
- **Capital Improvements:**
  - Install shelters at bus stops that meet TriMet criteria.
  - Improve downtown bus stops and shelters, and include ample bike parking.
  - Construct a new bus layover facility at the Southgate park-and-ride.
- **Policy Recommendations:**
  - Eliminate the layover function of the downtown transit center.
  - Expand transit service. Provide service in "transit disadvantaged" areas. Fund local service enhancements through savings made from transit capacity improvements.
  - Provide appropriately located and sized park-and-ride facilities. Provide park-and-rides on Milwaukie's fringe for commuters and park-and-rides inside Milwaukie for Milwaukie residents.
  - Improve transit safety.
  - Reinvest transit "savings" within Milwaukie. Any savings derived from new capacity should be contained and reinvested within the Milwaukie service area.

Transportation System Plan

CITY OF MILWAUKIE

FIGURE 1-4

PUBLIC TRANSIT MASTER PLAN

December 2007

EXISTING (2007)

LEGEND

Existing Facilities

- Bus Stop
- Park and Ride
- Bus Route
- Bus Route Number

Proposed Improvements

- Park and Ride
- New or Rerouted Bus Route
- Bus Rapid Transit Route
- High Capacity Transit Route

- Schools
- Springwater Trail
- Kellogg Creek Trail
- Major Roads
- Streets
- Railroad
- County Line
- Parks
- Water
- City Limits

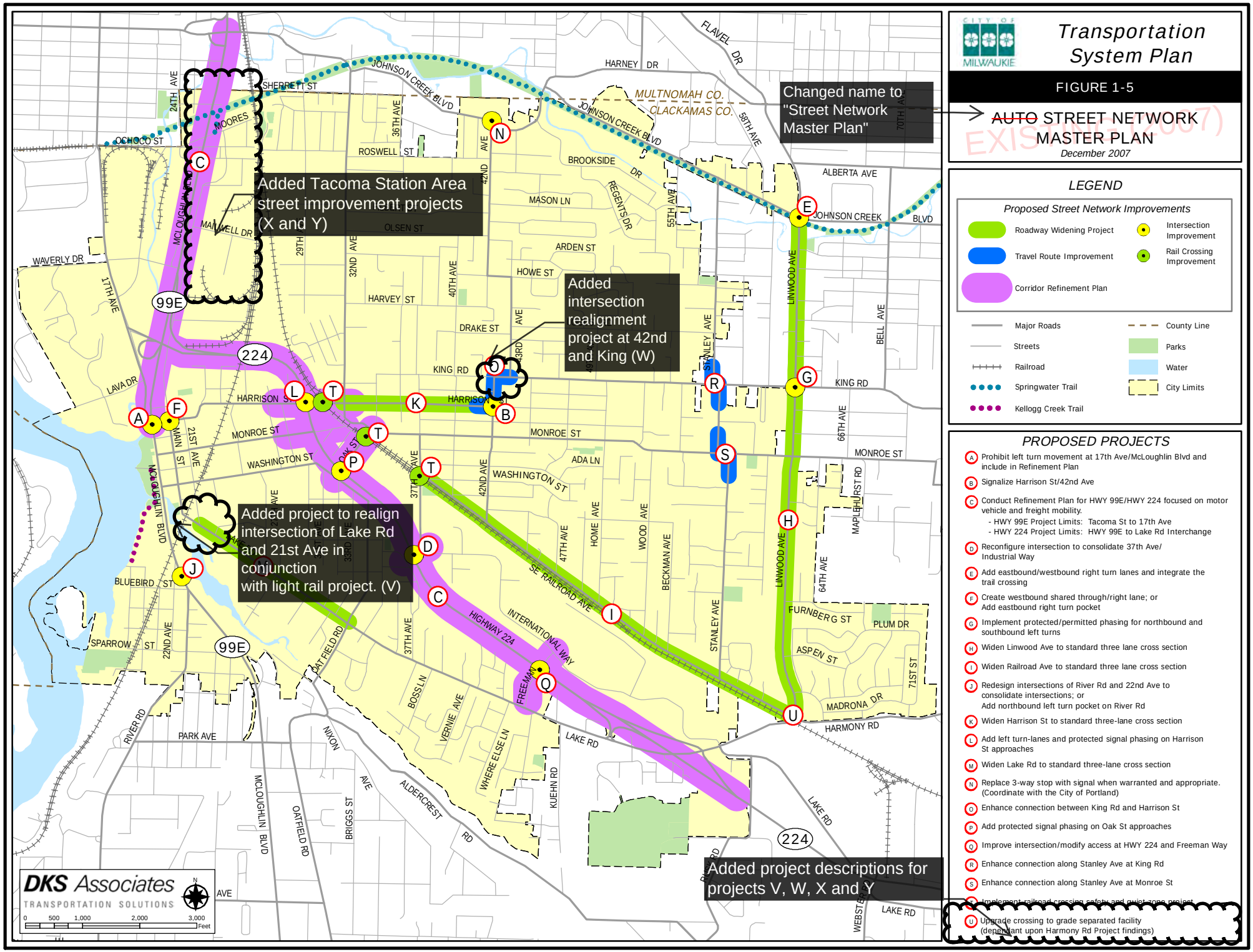
MOTOR VEHICLE FACILITIES

The ~~Auto~~ Street Network element of the TSP focuses on maintaining motor vehicle traffic flow and mobility on arterial and collector roadways, protecting residential neighborhoods from excessive through traffic and travel speeds, providing reasonable access to and from residential areas, improving safety, and promoting efficient through-street movement.

Limited connectivity between Milwaukie neighborhoods often forces motorists to travel out of direction and increases traffic volumes and miles traveled on the few connecting streets. Regional and local traffic volumes are projected to increase on many city streets and cause many intersections to operate below jurisdictional standards.

Key Recommendations

- **Use Transportation System Management** to get the most out of the existing system.
- **Improve substandard streets and intersections** to accommodate traffic and improve safety.
- **Enhance neighborhood character and livability** through well-designed street improvements.
- **Leverage Street Surface Maintenance projects** to bring roads up to standards when possible.
- **Initiate a Hwy 99E/Hwy 224 Refinement Plan** with ODOT to define the future conditions of this corridor. Assumptions to include:
  - Primary crosstown connection is Harrison St.
  - Improve freight access to North Industrial area
  - Multiple grade-separated connections between Harrison St and Freeman Way.
  - Reduce the visual and physical "barrier" effect of the highway for nonmotorized modes of travel.
- **Implement capacity improvement projects on key corridors** as needed:
  - Harrison St/Main St
  - Harrison St/42nd Ave/King Rd
  - Johnson Creek Blvd/Linwood Ave
  - King Rd/Linwood Ave
  - Monroe St


Transportation System Plan
FIGURE 1-5
~~AUTO~~ STREET NETWORK MASTER PLAN
December 2007
EXISTING (2007)
Changed name to "Street Network Master Plan"
Added Tacoma Station Area street improvement projects (X and Y)
Added intersection realignment project at 42nd and King (W)
Added project to realign intersection of Lake Rd and 21st Ave in conjunction with light rail project. (V)
Added project descriptions for projects V, W, X and Y
LEGEND
Proposed Street Network Improvements
Roadway Widening Project
Travel Route Improvement
Corridor Refinement Plan
Intersection Improvement
Rail Crossing Improvement
Major Roads
Streets
Railroad
Springwater Trail
Kellogg Creek Trail
County Line
Parks
Water
City Limits
PROPOSED PROJECTS
A Prohibit left turn movement at 17th Ave/McLoughlin Blvd and include in Refinement Plan
B Signalize Harrison St/42nd Ave
C Conduct Refinement Plan for HWY 99E/HWY 224 focused on motor vehicle and freight mobility.
- HWY 99E Project Limits: Tacoma St to 17th Ave
- HWY 224 Project Limits: HWY 99E to Lake Rd Interchange
D Reconfigure intersection to consolidate 37th Ave/ Industrial Way
E Add eastbound/westbound right turn lanes and integrate the trail crossing
F Create westbound shared through/right lane; or Add eastbound right turn pocket
G Implement protected/permitted phasing for northbound and southbound left turns
H Widen Linwood Ave to standard three lane cross section
I Widen Railroad Ave to standard three lane cross section
J Redesign intersections of River Rd and 22nd Ave to consolidate intersections; or Add northbound left turn pocket on River Rd
K Widen Harrison St to standard three-lane cross section
L Add left turn-lanes and protected signal phasing on Harrison St approaches
M Widen Lake Rd to standard three-lane cross section
N Replace 3-way stop with signal when warranted and appropriate. (Coordinate with the City of Portland)
O Enhance connection between King Rd and Harrison St
P Add protected signal phasing on Oak St approaches
Q Improve intersection/modify access at HWY 224 and Freeman Way
R Enhance connection along Stanley Ave at King Rd
S Enhance connection along Stanley Ave at Monroe St
T Implement railroad crossing safety and quiet zone project
U Upgrade crossing to grade separated facility (dependant upon Harmony Rd Project findings)
DKS Associates TRANSPORTATION SOLUTIONS
0 500 1,000 2,000 3,000 Feet
99E
224
JOHNSON CREEK BLVD
MONROE ST
WASHINGTON ST
HARRISON ST
KING RD
HARVEY ST
DRAKE ST
HOWE ST
ARDEN ST
OLSEN ST
MASON LN
ROSWELL ST
OCHOCO ST
SHERRETT ST
MAXWELL DR
WAVERLY DR
LAVA DR
BLUEBIRD ST
SPARROW ST
PARK AVE
RIVER RD
LAKE RD
HARMONY RD
MADRONA DR
ASPEN ST
FURNBERG ST
PLUM DR
ALBERTA AVE
BROOKSIDE DR
HARNEY DR
FLAVEL DR
MULTNOMAH CO.
CLACKAMAS CO.
JOHNSON CREEK BLVD
SE RAILROAD AVE
INTERNATIONAL WAY
HIGHWAY 224
FREEMAN
ADA LN
MAPLEHURST RD
ALDERCREST RD
WEBSTER RD
KUEHN RD
WHERE ELSE LN
VERNIE AVE
BOSS LN
BRIGGS ST
OATFIELD RD
MCLOUGHLIN BLVD
NIXON AVE
17TH AVE
21ST AVE
22ND AVE
24TH AVE
29TH AVE
32ND AVE
33RD AVE
36TH AVE
37TH AVE
40TH AVE
42ND AVE
43RD AVE
47TH AVE
55TH AVE
58TH AVE
64TH AVE
66TH AVE
70TH AVE
71ST ST
BECKMAN AVE
HOME AVE
WOOD AVE
STANLEY AVE
LINWOOD AVE
BELL AVE
REGENTS DR
MAIN ST
OAK ST

FREIGHT PLAN

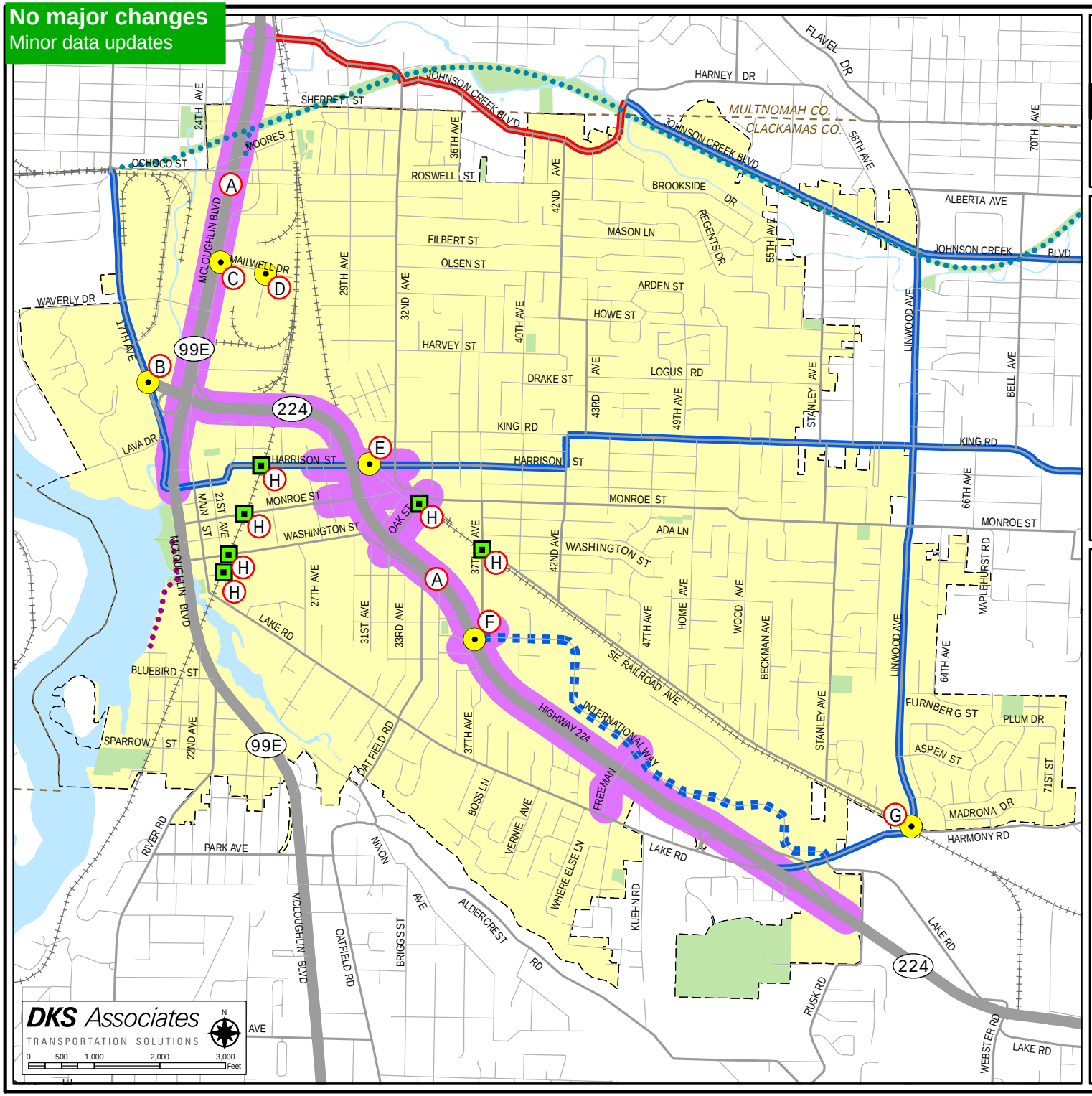
A quality local freight network facilitates movement of bulk goods and materials, and is essential to the economic health of the city. While all cities have some need for local delivery of goods to retailers and similar activities, in Milwaukie a majority of employment is in the heavy manufacturing, warehousing, and distribution sectors, which are dependent on efficient movements of large quantities of both raw materials and finished products. A well-functioning and reliable system for the movement of freight into and out of the city contributes significantly to the City's ability to attract and retain industrial investment—and the jobs and tax proceeds that come with that investment.

The city's freight network faces a few specific challenges. Access to the North Industrial area from McLoughlin Blvd is limited due to turn restrictions at Milport Rd and Ochoco St. Most rail crossings exhibit deterioration due to wear and tear and frequent train crossings, resulting in increased delay for the general public and freight haulers. The number of routes available to trucks is limited by weight limitations on certain freight routes and narrow intersections.

Key Recommendations

- **North Industrial Access:** Improve access to the area, potentially with an overpass of Hwy 99E at Ochoco St. This and other solutions should be evaluated through a Hwy 99E/224 Refinement Plan (described in the previous section).
    - ~~Light rail, if built on the 2003 "LPA" alignment (running along Main St or McLoughlin Blvd between Tacoma and Milport Rd), almost inevitably degrades access in and out of the east side.~~
- **Rail Crossings:** Improve the quality of the materials at at-grade crossings and pursue the grade separation of key crossings.
- **Street Reclassification:** Designate International Way as a freight route.

No major changes
Minor data updates



DKS Associates
TRANSPORTATION SOLUTIONS
N
0 500 1,000 2,000 3,000 Feet

CITY OF MILWAUKIE

Transportation System Plan

FIGURE 1-6

FREIGHT MASTER PLAN

December 2007

EXISTING (2007)

LEGEND

Existing Freight Routes
- Major Regional
- Minor Preferred (Local)
- Weight Restricted Minor Preferred (Local)

Proposed Improvements
- Intersection Improvement
- Intersection Material Upgrade
- Corridor Refinement Plan
- Minor Preferred Freight Route (Local)*

- Major Roads
- Streets
- Railroad
- Springwater Trail
- Kellogg Creek Trail
- County Line
- Parks
- Water
- City Limits

**Upon adoption of this document, the functional classification for SE International Way will be upgraded to Minor Preferred Freight Route (Local).*

PROPOSED PROJECTS

Improve Corridor

(A) Conduct Refinement Plan for HWY 99E/HWY 224 focused on motor vehicle and freight mobility.
- HWY 99E Project Limits: Tacoma St to 17th Ave
- HWY 224 Project Limits: HWY 99E to Lake Rd Interchange

Improve Intersection

(B) *17th Ave/HWY 224*
Upgrade intersection turning radii to better accommodate freight movements

(C) *Main St/Mailwell Dr*
Upgrade intersection turning radii to better accommodate freight movements

(D) *Mailwell Dr/Omark Dr*
Upgrade intersection turning radii to better accommodate freight movements

(E) *Harrison St/Union Pacific Railroad Crossing*
Upgrade crossing to grade separated facility (outcome of crossing dependant upon 99E/224 Refinement Plan findings)

(F) *HWY 224/37th Ave*
Consolidate two northern legs of 37th Ave and Industrial Way into one leg at HWY 224.

(G) *Harmony Rd/Union Pacific Railroad Crossing*
Upgrade crossing to grade separated facility (outcome of crossing dependant upon Harmony Rd Project findings)

(H) *At-grade Railroad Crossing Material Upgrades*
Upgrade crossing paving material to concrete or rubberized material for longevity of crossing at: Harrison St, Monroe St, Washington St, Adams St, Oak St, and 37th Ave

STREET DESIGN

A street's design determines how it will look and function. How a street looks and functions ultimately depends upon which elements are included, their dimensions, and how they relate to each other. Well-designed streets can contribute to the identity and character of a neighborhood and increase property values. They can also speed or slow traffic, reduce environmental impacts, and allow for safe multimodal use.

Problems

Milwaukie is a developed city with a largely incomplete street network. Though the community supports the completion of its streets through construction of safe pedestrian and bicycle facilities, most neighborhoods also want to maintain neighborhood character by saving existing trees and maintaining the slower traffic speeds that often accompany substandard roads. The City's current design standards limit the City's ability to sensitively improve existing streets by only allowing a few street design options. Allowing for more flexibility when determining the design of a street would allow for the City to respond to the character of the surrounding natural and built environments.

Possible Solutions

The City should update its standards and policies to allow for implementation of context-sensitive street design. The use of innovative designs, such as green streets, skinny streets, and flexible pedestrian designs are some examples of street design options that the City could incorporate into its street design standards.

Key Recommendations

- **Standards:** Develop a baseline cross section for each street functional classification and a street design prioritization approach for when the baseline design elements do not fit.
- **Flexibility:** Build more flexibility into street design standards to:
  - Allow for local design preferences.
  - Increase bicycle and pedestrian safety.
  - Avoid costly and time-consuming variance process requirements.
- **Alternative Designs:** Develop street design standards for green streets, skinny streets, and alternative pedestrian facilities.
- **Balance:** Balance the larger community's needs, local design preferences, and best practices when developing street design standards.
- **Landscaping:** Provide for landscaping (including street trees) wherever feasible.
- **Maintenance:** Consider maintenance costs and issues when developing design standards and design alternatives.

NEIGHBORHOOD TRAFFIC MANAGEMENT

The City recognizes that the vitality and feel of a neighborhood can be greatly influenced by the speed and volume of traffic traveling to and through it. Neighborhood traffic management is a way for the City and its citizens to create a dialogue about traffic concerns on a neighborhood level.

Problems

Milwaukie consists mostly of residential neighborhoods, and has a relatively small population compared to the surrounding Portland metropolitan area. Because of its proximity to the city of Portland, its many employment opportunities, and the two major regional routes that traverse the city (McLoughlin Blvd and Hwy 224), cut-through traffic is an ongoing concern for Milwaukie residents. As traffic volumes increase and congestion occurs on regional routes and major streets, there is potential for traffic to spill over onto neighborhood routes and local streets in search of less congested or more direct routes. Neighborhood traffic management is a means to address the negative impacts of unchecked speed and volume on neighborhood and local streets.

Possible Solutions

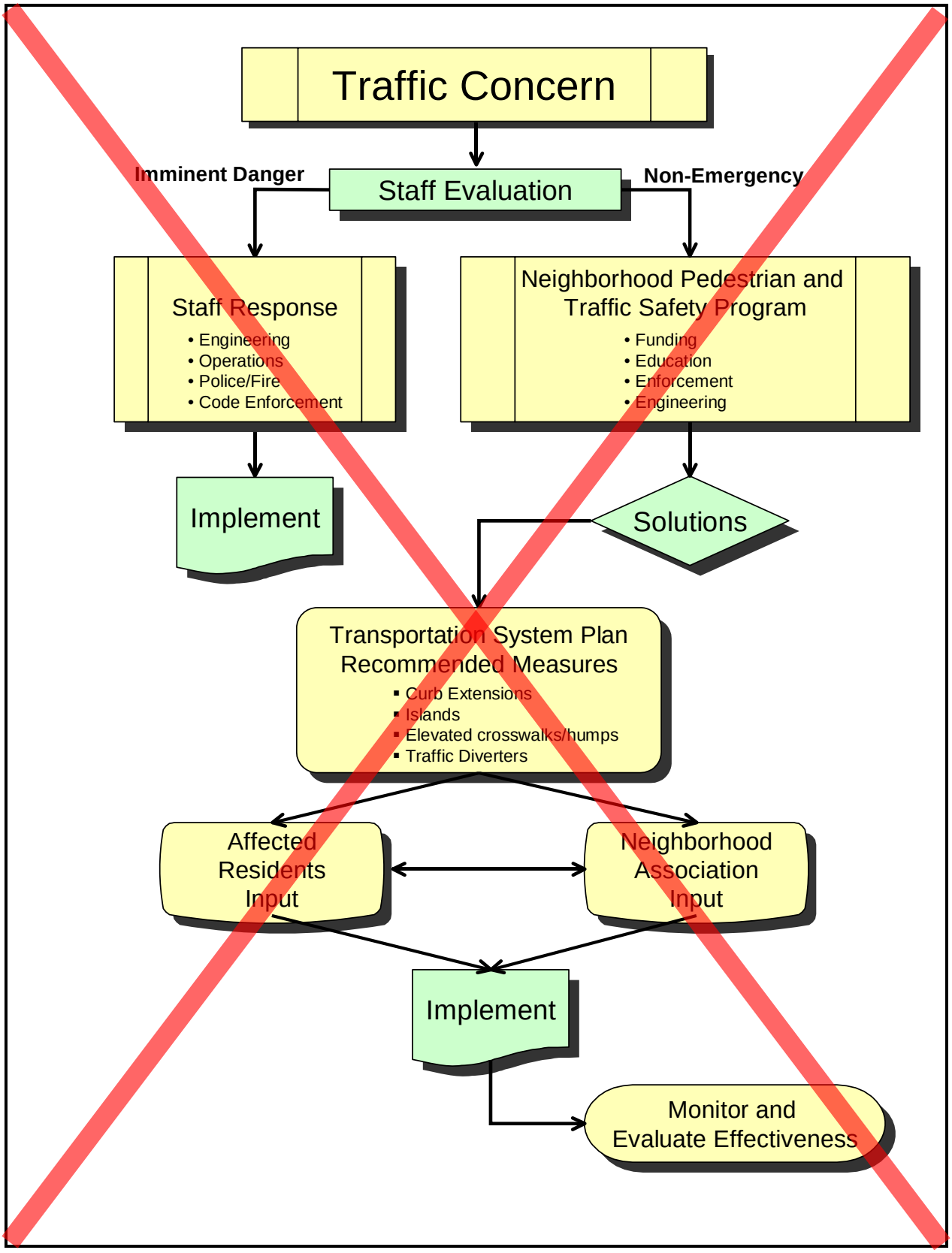
There are many different options available in the neighborhood traffic management 'tool box,' but not all of these options are appropriate for all streets. Traffic management options need to be based on the functional classification of the road, surrounding land uses, the design of the street, as well as input from emergency services and residents. Effective use of neighborhood traffic management in Milwaukie can address community needs and concerns, including, but not limited to, the following:

- Speeding
- Cut-through traffic
- Pedestrian safety
- Student safety around school zones

Key Recommendations

- **Funding:** It is recommended that the City annually fund the ~~Neighborhood Pedestrian and Traffic Safety~~ Walk Safely Milwaukie Program so that prioritized needs are implemented over time. The Neighborhood Traffic Management Action Plan (see Table 11-2) does not identify specific projects, but it does show the level of funding the City ~~proposes~~ aspires to commit to the ~~Neighborhood Pedestrian and Traffic Safety~~ Walk Safely Milwaukie Program for the duration of this plan. With regard to this funding, it is recommended that the City develop a process that ensures neighborhood traffic management funding is equitably distributed throughout the city.
- **Investment:** Allocate a certain amount of money per year to install selected neighborhood traffic management projects. The number of projects would be limited but coordinated with citizen involvement. Encourage implementation of neighborhood traffic management projects by private development.
- **Variety:** Allow for a wide variety of traffic management measures.
- **Effectiveness:** Ensure that the chosen measure addresses the identified problem.
- **Neighborhood Input:** Involve affected neighborhoods when designing neighborhood traffic management measures.
- **Landscaping:** Neighborhood traffic management solutions need to provide for landscaping wherever feasible.
- **Maintenance:** Consider maintenance needs and issues (including landscaping) when designing traffic management measures and ensure that the long-term maintenance needs can be met.

Figure 1-7 Neighborhood Traffic Management Process



[Delete duplicate Figure 1-7: Neighborhood Traffic Management Process. Already included in Chapter 11 as Figure 11-1.]

DOWNTOWN PARKING

Properly managed downtown parking is vital for implementing and maintaining the City's 2001 *Downtown and Riverfront Land Use Framework Plan*. This plan envisions a lively downtown area with a clear sense of place and identity, comprised of an attractive mix of uses and amenities. The city's downtown area will grow as an important employment center and therefore parking must be built and managed to serve the retail core as downtown transitions to a multimodal environment.

Problems

Currently, downtown Milwaukie is vulnerable to serving as an impromptu park-and-ride for people traveling to downtown Portland. Downtown residents and employees are parking in ~~stalls~~ spaces that should serve visitors, which causes parking to spill over into neighborhoods. The parking lots that are available, and some downtown streets, are not well lit and do not feel safe. Downtown employees are often not aware of their parking and transportation options and the current parking permit system does not work as well as it could. As the downtown area evolves, the existing parking lots will be developed and other parking options will need to be considered.

Possible Solutions

There are two viable solutions Milwaukie can use to improve the downtown parking situation: parking management and parking supply. Parking must be managed to assure that priority land uses are supported with an effective and efficient system of access that caters to the needs of priority users. The City and the private sector can also invest in new parking supply to support downtown development.

Key Recommendations

- **Manage parking to support downtown revitalization**, according to the vision in the Downtown and Riverfront Plan. Manage on-street parking to serve adjacent ground-floor uses.
- **Keep an updated parking inventory** and conduct periodic parking use studies to understand how parking areas are used.
- **When parking areas are over 85% full**, adjust parking management practices to make the best use of available parking (adjust parking zones, increase prices, install parking meters, etc.).
- **Require the private sector to identify sufficient parking** for residential and commercial uses, but do not ask developers to "over-build" parking. Encourage shared parking arrangements.
- **Provide public off-street parking for downtown employees** as funds and property availability allows. First priority will be given to buildings and businesses existing in 2007.
- **Work with property and business owners** to decrease employees' need for auto parking as downtown transitions to a multimodal environment.
- **Develop a plan to ~~finance and~~ locate a public parking structure** to support downtown, but only in collaboration with the downtown business community and only after a viable funding strategy is identified.