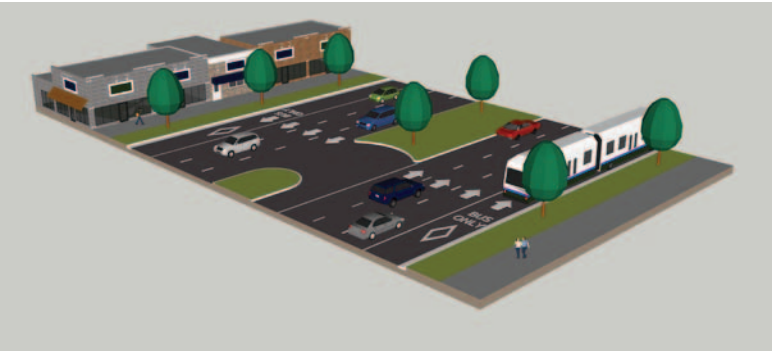
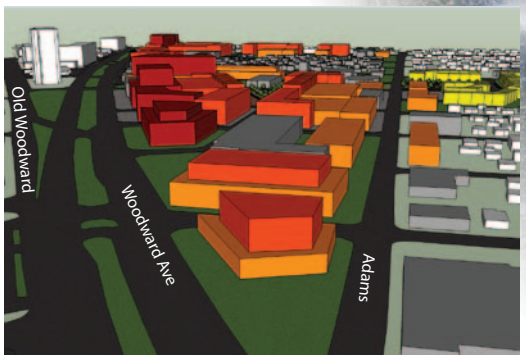
Woodward Avenue

Transit-Oriented Development Corridor Study for South Oakland County

January 1, 2012





LSL Planning, Inc.
Community Planning Consultants

EXECUTIVE SUMMARY

WOODWARD AVENUE TOD CORRIDOR STUDY FOR SOUTH OAKLAND COUNTY

WHAT IS THE PURPOSE OF THE STUDY?

The purpose of this study is to improve planning along the Woodward corridor utilizing Complete Streets methodology and to maximize development associated with potential future transit.

WHAT DOES THE STUDY RECOMMEND?

SAFETY:

- Consistent speed limit of 35 mph along Woodward
- Elimination of unnecessary driveways and improved driveway design
- Adopt multi-modal traffic impact study requirements
- Consider a road diet to create dedicated bus lanes

ZONING OVERLAY DISTRICT:

- Zero lot lines
- Development centered around transit stops
- Building design and placement regulations that will improve walkability

PARKING:

- Implement parking restrictions and/or incentives to encourage more walking/biking and transit use
- Consider city-driven parking programs

TRANSIT FRAMEWORK:

- Locate transit stops each ½ to 1 mile
- Key stop locations at Maple Road, 13 Mile Road, I-696, and 8 Mile
- Improve non-motorized crossings so the pedestrian is more visible and comfortable

FUTURE COORDINATION:

- Consider a Corridor Improvement Authority to leverage funds
- Refine zoning regulations and maps at the city level

WHAT WILL HAPPEN NEXT?

The Woodward Avenue Action Association was awarded a Complete Streets grant from the Federal Highway Administration (FHWA), and has assisted cities secure additional New Starts funding from the Federal Transit Administration (FTA). WA3 will be presenting this document and their goals for the future to the public, City Councils and commissions, and planning staff, and will pursue continued funding to encourage a consistent strategy for the Woodward Corridor that will invigorate businesses, encourage walking, biking and transit use, and improve the quality of life in South Oakland County.

Birmingham

Royal Oak

Berkley

Huntington Woods

Ferndale

Contents

Acknowledgements

Woodward Avenue Action Association

In October 2010, the WA3 convened a task force to create a consensus and plan for advancing transit-oriented development (TOD) along Woodward Avenue in Southern Oakland County prompted by the planning then underway for Woodward Light Rail Transit project from downtown to the State Fairgrounds (near 8 Mile) in Detroit/Wayne County. After a draft of this study was distributed, an announcement was made that federal funding for that light rail will be re-evaluated for regional bus rapid transit. Some light rail transit advocates continue to pursue a shorter rail line along Woodward from downtown to the New Center area.

Key members of the group involved in this study include elected officials from the cities of Berkley, Birmingham, Ferndale, Huntington Woods, and Royal Oak, as well as institutional and business partners, including the Michigan Department of Transportation, the Suburban Mobility Authority for Regional Transportation, the Southeast Michigan Council of Governments, Michigan Suburbs Alliance, the Detroit Zoo and Beaumont Health System. The primary task force mission for this "pre-planning" stage was to identify the land use, zoning, and master plan changes needed to support transit-oriented development in the future.

The Transportation-Oriented Development Corridor Study for South Oakland County was prepared by LSL Planning, Inc. with direction from the Woodward Avenue Action Association Transit Task Force, which includes representatives from the following partners:

Municipal Partners:

- City of Berkley
- City of Birmingham
- City of Ferndale
- City of Huntington Woods
- City of Royal Oak

Private Partners:

- Beaumont Health System
- Detroit Zoological Society

Agency Partners:

- Michigan Suburbs Alliance
- Michigan Department of Transportation
- Suburban Mobility Authority for Regional Transportation
- Southeast Michigan Council of Governments

This Plan was paid for in part by a Michigan Department of Transportation, 2010-11 State Planning and Research Grant.

Introduction

What is Transit-Oriented Development?

Transit-oriented development (TOD) uses land use to encourage use of public transportation sytems through directing certain types of development to transit corridors or nodes and compact site design. It involves pedestrian-friendly development that includes mixed-use land forms and increased accessibility for pedestrians, bicyclists, and transit users. TOD is an attempt to provide compact, walkable communities with a heightened sense of place. TODs typically involve uses that best support transit, transit-friendly site/building design, a mixture of uses clustered around a transit stop or transit corridor, and a walkable environment.

DENSITIES REQUIRED TO SUPPORT TRANSIT

Supports:	Residential (units)	Business (employees)
▸ High Capacity Service ▸ Rail Service	15 to 24+	150+
▸ Local Bus Service	7+	40+
▸ Cars ▸ Carpools ▸ Vanpools	1 to 6	2+

Source: Planning for Transit-Friendly Land Use, USDOT & FTA

TRANSIT OPTIONS

While this project is not evaluating transit alternatives, an understanding of possible future transit options can help recognize why TOD is important for Woodward Avenue. The right mix and design of land uses can help make different types of "premium" transit more feasible. The following are the key transit types being studied to serve South Oakland County's Woodward Avenue communities in the future:

ENHANCED LOCAL BUS SERVICE

SMART currently operates buses along Woodward as part of its regional transit system. This effort will help identify how to improve pedestrian connections to stops and crossing Woodward. Future improvement could include more frequent buses, express buses, park and ride lots and additional bus stop amenities.

BUS RAPID TRANSIT (BRT)

Depending on what occurs south of 8 Mile, a possible mode of transit in Oakland County could be BRT with dedicated bus lanes and express buses with fewer stops. BRT has similar characteristics of light rail transit, including stations, pre-boarding ticketing and level loading. But because BRT does not require rails, routes are more flexible, which typically costs about 50% less than light rail. BRT however, may not generate the same level of economic development as rail.

LIGHT RAIL TRANSIT (LRT)

Light rail service was recently explored south of 8 Mile. At the time this study was being completed, the light rail option was being converted to bus rapid transit, primarily for cost reasons. BRT could later be converted to light rail since the station planning is similar. If light rail were introduced in Detroit, extending the line into Oakland County is one possibility.

History of Woodward Avenue

Woodward Avenue is a main artery in the regional transportation system, and was once designated as the US 10 highway. As one of the five "spokes" planned in Augustus Woodward's 1805 plan for Detroit, Woodward Avenue is a key north/south connector within the region, connecting the City of Detroit at the south end with the City of Pontiac in the north, where Woodward becomes "The Loop."

In 1909, the stretch of Woodward Avenue between Six Mile and Seven Mile Roads became the first mile of road in the world to be paved with concrete. In 1932, the right-of-way was widened from 66 feet to 120 feet, and in 1939, the downtown bypass of Birmingham was opened.

Today, Woodward Avenue is celebrated annually during the Dream Cruise, where thousands of classic car owners from all over the country and the world bring their vehicles for display and enjoyment. The Cruise celebrates the region's automobile history, when youngsters were known to cruise the corridor in the 1950's and 1960's.

For a variety of reasons, including the need to maintain efficient travel operations, provide safe transportation options, reduce fuel emissions, and to serve those who rely on the public system as their primary mode of transport, the corridor is being reviewed for transit service. While Suburban Mobility Authority for Regional Transportation (SMART) busses currently serve communities along the corridor, there is potential to improve the environment in a way that can increase transit ridership and reduce dependency on the automobile. Such is the purpose of this study: to review existing conditions, current regulations and planning documents, and identify ways that each community within the study area can better support transit and TOD design. This may include modifications to local plans, ordinances, and policies, which will be further explored during future project phases.

HISTORIC WOODWARD AVENUE

The world's first mile of paved concrete road was on Woodward Avenue between 6 Mile and 7 Mile Roads in 1909. The entire 27-mile long corridor was paved in 1916.

By 1935, the corridor was alreay carrying traffic from Detroit to Pontiac.

View to north, circa 1935, from downtown Detroit.

Photos: The Detroit News

Why are We Planning for TOD?

TOD development can improve the local economy along Woodward Avenue in South Oakland County and increase transit ridership by making the environment, especially around transit stops, attractive to pedestrians and bicyclists. This typically involves inviting building design, careful interface between public and private land, and thoughtful placement of vehicular parking lots. It often results in more pleasing aesthetic environments and reduced auto-dependency, which then can lead to a host of secondary benefits:

- Safer pedestrian and bicycle environments
- Improved accessibility for those less able
- Increased walk-by traffic for local businesses
- More convenient access to businesses for local residents
- Less congestion and associated fuel emissions
- Creation of a "sense of place" for the community

Woodward Avenue TOD Goals

The Woodward Avenue Action Association (WA3) is a not-for-profit collaboration of public, private, local and regional partners working to enhance and promote Michigan's iconic 27-mile Woodward Avenuel All American Road®, one of the most significant roadways in the country.

The WA3 represents 27 miles from the Detroit River north through the Woodward Loop in Pontiac. The WA3 works closely with the communities of Berkley, Birmingham, Bloomfield Township, Detroit, Ferndale, Highland Park, Huntington Woods, Pontiac, Royal Oak, and Oakland and Wayne counties.

The WA3 works to bring business people, residents, community leaders, elected officials and stakeholders together to identify opportunities to strengthen and enhance Woodward's economic and historic potential.

WA3's VISION FOR WOODWARD:

Woodward Avenue is one of the world's premier business, recreational, entertainment and cultural destinations. This All-American Road is a vital connector among communities, were people identify with its heritage and aspire to maintain its importance into the future. It is globally recognized as 'the place' to experience and enjoy automobile heritage and as a magnet for innovative businesses and creative talent. A vibrant, sustainable and livable corridor, Woodward links thriving downtowns and urban districts which are alive with activity and excitement and serves as a gateway for vibrant neighborhoods.

WA3's Vision will be achieved by:

- A walkable, "complete street" harmoniously shared by transit, bicycles and automobiles.
- Inspiring great architecture, quality streetscaping and beautiful, clean, safe, welcoming public spaces.
- A variety of robust retail and residential uses.
- Increased patronage of businesses, cultural attractions, sporting and entertainment events.
- Recognition as a national model of public/private collaborations and strategic alliances.

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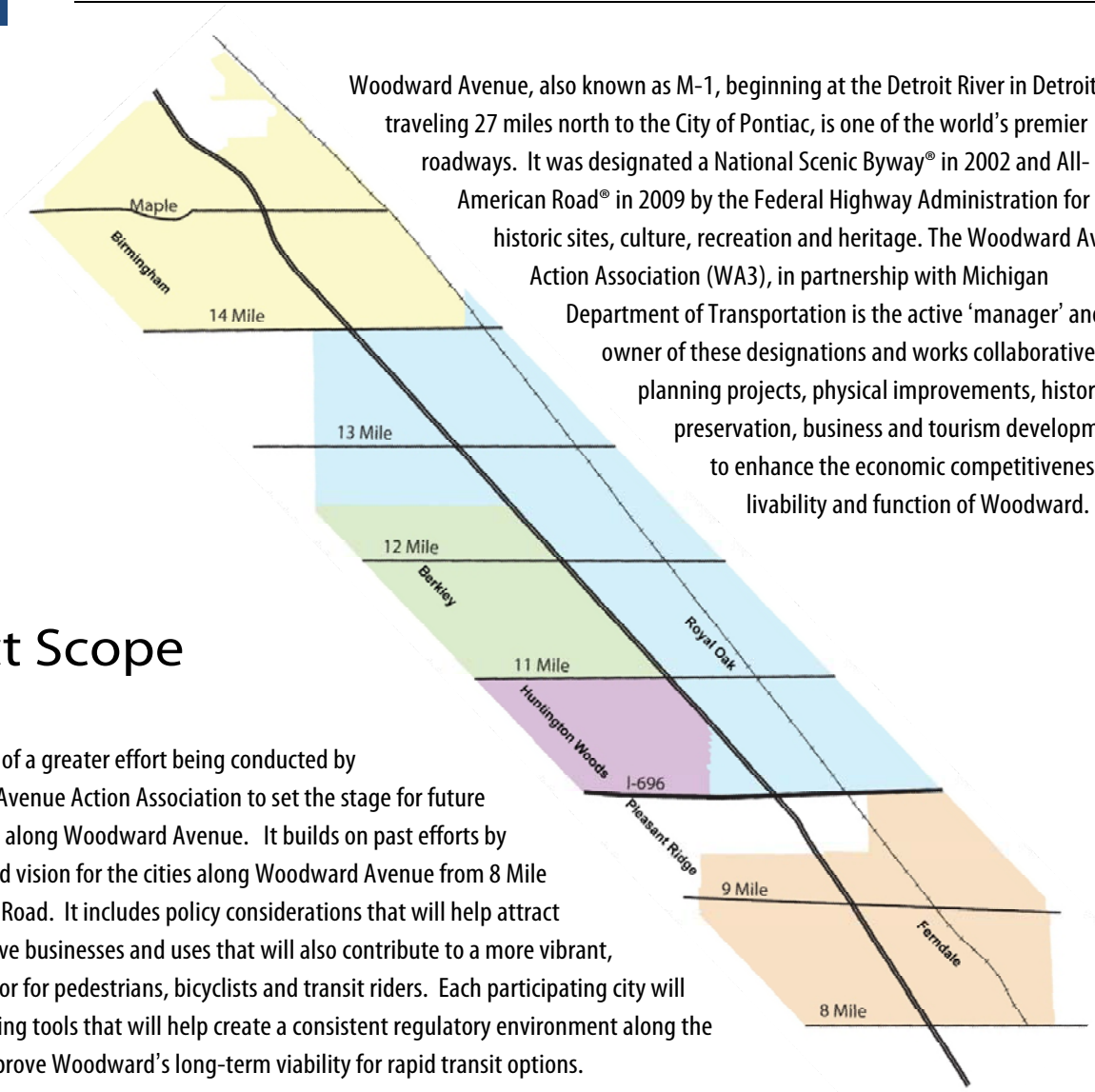
Project Overview



Woodward Avenue, also known as M-1, beginning at the Detroit River in Detroit traveling 27 miles north to the City of Pontiac, is one of the world's premier roadways. It was designated a National Scenic Byway® in 2002 and All-American Road® in 2009 by the Federal Highway Administration for its historic sites, culture, recreation and heritage. The Woodward Avenue Action Association (WA3), in partnership with Michigan Department of Transportation is the active 'manager' and owner of these designations and works collaboratively on planning projects, physical improvements, historic preservation, business and tourism development to enhance the economic competitiveness, livability and function of Woodward.

Project Scope

This plan is part of a greater effort being conducted by the Woodward Avenue Action Association to set the stage for future transit planning along Woodward Avenue. It builds on past efforts by creating a shared vision for the cities along Woodward Avenue from 8 Mile Road to 15 Mile Road. It includes policy considerations that will help attract transit-supportive businesses and uses that will also contribute to a more vibrant, attractive corridor for pedestrians, bicyclists and transit riders. Each participating city will also receive zoning tools that will help create a consistent regulatory environment along the corridor and improve Woodward's long-term viability for rapid transit options.

PATH TO SUCCESS The following suggests the tasks needed to implement the vision for transit:

RESEARCH
- I.D. needed studies
- Build-out analysis
- Transit alternatives analysis

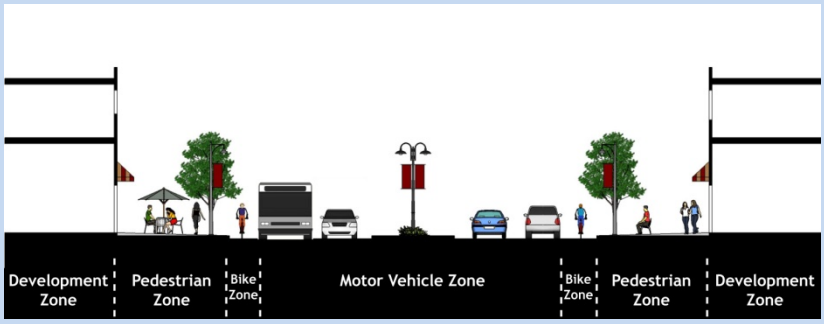
BUILD MOMENTUM
- Build on current efforts
- Educate officials and constituents
- Continue to seek funding

TRANSIT VISIONING
- Transit Framework Plan
- Consistent regulatory framework
- Road Design

IMPLEMENT
- Public/private partnerships
- Regional / Multi-jurisdictional cooperation

Complete Streets

Transportation practices in the past 50 years or so tended to focus on the efficiency and safety of automobile travel. And, while design applications and engineering have made our roadways much safer to travel by vehicle, it has also resulted in designs that increase vehicle speeds while discouraging walking, biking and transit use.



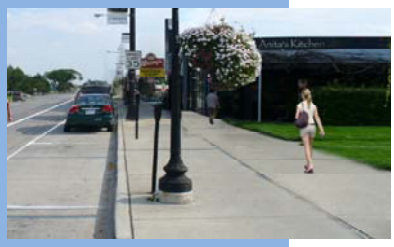
Typical "Complete Streets" include safe, convenient travel options for *all* users

Complete Streets presents a shift in attitude about transportation planning that focuses more on equality for all users of the roadway. Recent legislative changes (the Michigan Planning Enabling Act and Michigan Transportation Fund Act) now lend more weight to road design that considers motorists, pedestrians, bicyclists, transit riders, and users of all ages and ability. Not surprisingly, increasing fuel costs, desires to improve air quality, concerns about community health, coupled with campaigns to end obesity, especially among children and teens, have all contributed to a demand for travel alternatives to the single-occupant vehicle. Complete Streets seeks to meet that demand through policy and regulatory changes at the local, regional, state and federal levels.

The following key principles of Complete Streets should be applied to the Woodward corridor to enhance the road's functionality for all users, and to create an active and dynamic corridor that will support transit:

MAKING WOODWARD A COMPLETE STREET

Wider Sidewalks



Bike Lanes

Crossings

From: Woodward Avenue Non-Motorized Transportaion Master Plan

1. Accommodate all roadway travelers, which includes pedestrians, bicyclists and transit passengers of all ages and abilities, as well as trucks, public transit and automobiles.
2. Emphasize interconnected road and sidewalk networks to create a comprehensive, integrated, connected network for all modes. Such networks are needed to provide shorter, more direct routes that will reduce walking time (including across Woodward). A typical citizen will walk up to five minutes, or a quarter-mile before seeking other travel alternatives.
3. Integrate into all project types, including planning, road and development design, maintenance, traffic signals, and operations for the entire right of way.
4. Integrate best practices for design while recognizing the need for flexibility in balancing user needs.
5. Select designs that will complement the character of the Woodward Avenue district and the context of each different community.
6. Create plans that seek to link transportation and land use planning.
7. Develop realistic expectations for walking and biking, and apply design tools where appropriate along Woodward. This does not mean that every tool must be applied to every block. It may involve creation of alternate bike routes or improvements on side streets to ensure bicycle safety.
8. Develop an implementation plan that includes specific next steps.

TOD Principles

This Plan focuses on incorporating the following key principles in the future development of the Woodward Avenue corridor:

Plan around Transit Stations

- Allow the highest commercial intensity in areas within ¼ mile of locations that seem most suitable for transit stations. Expand maximum building heights, encourage high floor-to-area ratios, or minimize lot coverage limitations to provide greater development potential.
- Consider increased residential densities within ½ mile area from station locations (see page 4 for density suggestions).
- Allow for intensification of uses over time, such as increased building heights or allowing surface parking lots to be gradually replaced by buildings and parking structures.
- Consider revisions to the master plan and zoning map to allow deepening of commercial lots along Woodward Avenue, especially at TOD nodes and where taller buildings are allowed. This may involve rezoning of some residential lots to accommodate redevelopment or additional parking needs. Where such changes will advance the goals of this Plan, they should be carefully considered by each city to ensure proper transitions to the residential areas, screening and other site design elements are included to protect the integrity of nearby neighborhoods.

Birmingham's Triangle District Urban Design Plan is an example of a transit-oriented subarea plan that, when realized, will result in added activity along Woodward, and better transitions into neighborhoods. Elements of the Plan:

- Create a Sense of Enclosure. Use landscaping in the median and along the street edge with taller building heights along Woodward that gradually step down in height closer to neighborhoods.
- Access Management. Eliminate driveways and intersecting streets along Woodward that create conflict points.
- Road Design. Revisions to median crossover locations, right-turn lanes, and travel lanes were recommended to provide safer traffic interactions between motorists, non-motorized and transit systems.
- Road Crossings. Signalization, timing, signage, and pavement treatments are intended to improve the visual character of the area and make pedestrian zones more visible. Recommended shelters and other pedestrian amenities will also improve the transit environment.

Use Regulations

- Encourage transit-supporting uses, especially within ¼ to ½ mile of transit stops. This includes commercial and mixed uses that provide activity throughout the day and into the evening, such as retail, restaurants, personal and business services, high-density residential (including senior housing), universities, civic centers, and upper-story office and residential.
- Discourage uses that will either dilute the concentration of residents or employees, or those which, by nature of the business will create activity likely to disrupt the pedestrian and transit-friendly environment. These include uses such as drive-through facilities, automobile dealerships, regional "big box" retailers, and other uses with large front yard surface parking lots.

Bulk, Setback and Area Controls

- Encourage land to be used for buildings rather than surface parking or expansive yards. This includes reducing the amount of parking allowed or required, and increasing the amount of building that may or must be built.
- Locate buildings close to the street and sidewalk so those on foot, bike or transit can easily reach building entrances.
- Remove maximum lot coverage requirements in core TOD areas.
- Encourage building design that will engage passersby. First floor uses should include active storefronts that attract customers, pedestrian-scale design, with the primary operable pedestrian entrance oriented to Woodward Avenue.

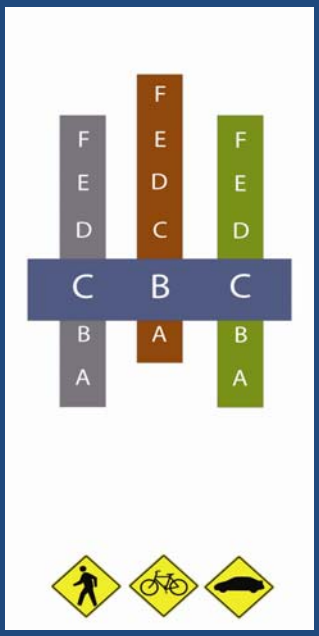
Impact Studies

- Require study of potential development impacts on the entire transportation system. Where already required, modify *Traffic Impact Study* standards into *Transportation Impact Studies* that evaluate development impacts to all modes of travel.
- Shift transportation planning priorities in core and transitional areas from improving the speed and efficiency of automobile travel, to one that emphasizes safety for pedestrians, bikers and transit users.
- Apply access management to minimize the number of driveways that pedestrians must cross using access management techniques.

TRANSPORTATION IMPACT STUDIES

Former Traffic Impact Studies are being expanded to include consideration for all modes of travel (i.e. walking, biking, transit). They key is to match the road design with the desired Levels of Service for all users.

In core TOD areas, Levels of Service for non-motorized modes should be given equal or higher consideration as vehicular modes.



PARKING FUNDS

To support transit, parking programs require a careful balance of supply and demand. Cities should ensure their parking requirements are not excessive, and may also consider the following options to help maintain control over future parking location and design:

- Municipal Programs. Cities can collect one-time cash payments from developers in an amount equal to the cost to construct on-site parking. These funds can then be used to develop Park and Ride and shared municipal parking facilities in the most ideal locations. The cities of Birmingham and Ferndale currently use programs for this purpose, administered through cash payments or special assessment districts.
- Corridor Improvement Authorities. A CIA can use tax increment financing captured from increases in property values over time. Funds collected may be used for any capital improvements located within the district created by the CIA.

Parking Management

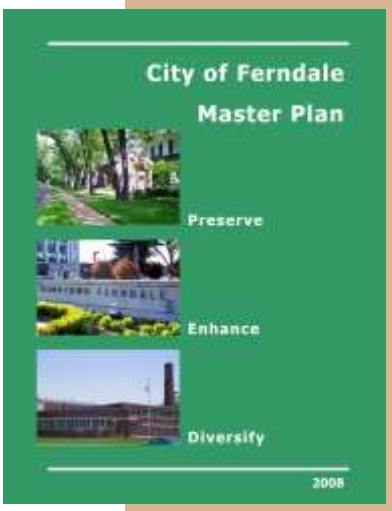
- Implement standards to limit parking in core TOD areas. Regulations like maximum parking standards, parking space reductions, shared parking, payment-in-lieu of parking programs, floor-to-area ratios (or requiring them where they do not exist) can be applied for this purpose.
- Provide incentives in core TOD areas to reduce parking, or encourage structured lots over surface lots.
- Include amenities for bicyclists, pedestrians and transit riders, including wider sidewalks, bike storage facilities, bus shelters, lighting and landscaping in the standards for site plan review.
- Arrange parking in the rear yard (or side only if necessary) to provide safer pedestrian access to store fronts. The Woodward Avenu profile also lends itself to other options, such as on-street or median parking, if allowed by MDOT.
- Recognize the variables contributing to parking demand, and match local policies to individual geographic factors such as density, transit access, income, and household size.

Building on Past Efforts

Local Efforts: Comprehensive Plan Reviews

Ferndale (2008)

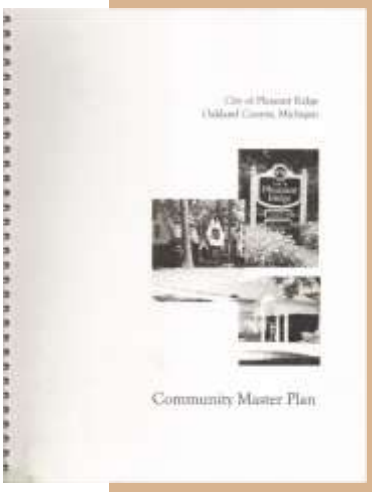
Land use along Woodward in Ferndale is primarily commercial in nature, with traditional downtown-style buildings in the Central Business District at 9 Mile Road. The downtown designation promotes storefronts on the first floor with second-story residential or offices. The commercial future land use description recommends reducing auto-related uses for the areas north of downtown along Woodward. South of downtown, commercial uses predominate with the exception of a cemetery between 8 and 9 Mile Roads on Woodward's west side.



The plan vision calls for a diversification of transportation alternatives and land uses, both of which support transit-oriented development in the city. Specific goals for the downtown area, which straddles Woodward Avenue at 9 Mile Road, include improved pedestrian safety, barrier- free access, alleys converted to walkways, increased density of buildings, zero lot line setbacks, and adequate parking facilities. A long-term action from the plan is the investigation into a form-based code for downtown Ferndale to help accomplish some of these goals. The master plan highlights specific transportation goals such as a diverse, multi-modal system, improved public transit, access management, and cooperation among neighbors and Wayne and Oakland counties to develop a regional transit system. The transportation implementation section of the plan strongly endorses regional cooperation towards a multi-modal transportation system. It calls specifically for pedestrian and transit-friendly design standards, a non-motorized system, flexible parking standards, future parking structure, improved transit routes and shelters.

Pleasant Ridge (1999)

While not part of the scope of this study, a review of the Pleasant Ridge Master Plan reveals their planned land uses along Woodward Avenue are also conducive to future transit. Primarily designated as a commercial corridor, Woodward in Pleasant Ridge also has green space buffering adjacent neighborhoods from the busy corridor. The plan also mentions linking the east and west sides of the city across Woodward Avenue through design features such as signage, lighting, and appropriate pedestrian crossings. The commercial buildings currently lining the corridor are suggested in the long-term to convert into more traditional, urban-scale commercial development. The future land use map indicates a blending of residential into commercial at the northernmost section of the city, just south of I-696. This area is identified as having high redevelopment potential for multi-level storefronts with upper level residential.



Huntington Woods (2007)

The Huntington Woods Master Plan strongly endorses transit-oriented development along Woodward Avenue. The city envisions Woodward serving as a "front door" to the community, with redevelopment mixing townhomes/condominiums, green space, offices, and small-scale retail uses. As the city lacks sufficient senior housing, the master plan particularly calls out townhouses/condominiums or second/third story residential above storefronts along Woodward as a proposed solution to that deficiency. While retail and office uses currently front Woodward in Huntington Woods, the plan calls for high quality buildings that fit with the character of the community and are sensitive to the adjacent residential neighborhoods. Another goal of the plan is to incorporate green space along the Woodward frontage as part of mixed-use redevelopment. Notably, the plan calls out the creation of a form-based code as a specific action item for Huntington Woods' Woodward Avenue frontage.

In addition to supporting TOD through land uses, Huntington Woods' plan emphasizes non-motorized connections, especially pedestrian crossings at 11 Mile Road and Lincoln Avenue. A resident survey indicated support for providing pedestrian connections to nearby downtown Royal Oak. Its support of TOD is further emphasized through increased walkability and pedestrian-scale street treatments. Several action items specifically endorse the actions of WA3 and related plans along the corridor and call for cooperation and coordination with neighboring communities.

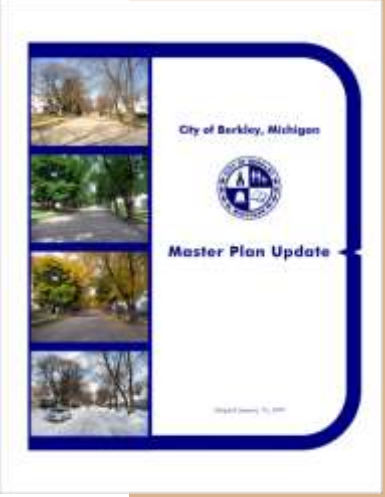
Royal Oak (1999, updates in progress)

Royal Oak is currently updating its master plan and is working with WA3 to ensure that it incorporates TOD principles. Draft documents suggest that the updated plan will support many of the principles suggested for Woodward, including transit-oriented design, pedestrian-friendly building design, non-motorized linkages, parking strategies, context sensitive road design and complete streets principles. It is also in the process of finalizing its non-motorized plan. The plan contains recommendations on various facilities including: road diets; sidewalks and pedestrian paths; bicycle lanes and routes; signed-shared roadways for bicycles; bicycle parking; barrier-free access; and other non-motorized facilities.

Berkley (2007)

In its Master Plan discussion about transit, Berkley strongly endorses TOD strategies. Recommendations to support transit along Woodward are thorough and include detailed land use strategies and efforts toward a multi-modal transportation system. The plan calls for access management and retrofitting frontage roads to accommodate parallel parking and a landscaped buffer. The intersection of Woodward and 12 Mile is identified as a gateway to the city, and the recent intersection improvements made in the summer of 2011 are a first step to strengthen the connection between Berkley, Woodward, and Royal Oak.

Berkley's Woodward frontage is primarily commercial, with the exception of a cemetery on the west side between 12 and 13 Mile Roads. Although Berkley's "downtown" is planned on 12 Mile Road west of Woodward, the plan also includes strategies to strengthen Berkley's commercial presence near Catalpa. The Future Land Use map shows additional land dedicated for commercial to create greater lot depths, better accommodate expanded commercial redevelopment and complement the stronger businesses in Royal Oak on the east side. The frontage north of this strengthened commercial core is indicated as office/medical uses, intended to complement the Beaumont Health System campus at 13 Mile Road. Berkley's plan discusses the need to buffer between these intensified commercial uses and the abutting residential neighborhoods.



Birmingham
(Triangle District Plan 2007)

Where the Downtown Birmingham Plan (summarized below) gives some recommendations for the Triangle District, the City developed a more recent, updated plan for the district located on the east side of Woodward Avenue bounded by Woodward, Maple, and Adams. The Triangle District Plan and Triangle District Overlay zoning regulations include strategies to improve the physical appearance of the district, encourage mixed-use development, improve the pedestrian environment, link the district with Downtown Birmingham on the west side of the Woodward corridor, and improve access, circulation, and parking, all while preserving existing residential neighborhoods. A detailed development plan includes thorough design guidelines, building height recommendations, wayfinding, parking structures, and public spaces all appropriate for TOD.

The Triangle District Plan calls for specific improvements to the stretch of Woodward between Maple and Adams to facilitate pedestrian movement, improve the character of the corridor, and better relate to the adjacent downtown area. It recommends a slower speed limit (35 mph), access management, improved crosswalks, and a sense of enclosure from taller buildings along Woodward that help contain the large scale of the road. A long-term goal is to reduce the number of lanes on Woodward to three in each direction (there are currently four in each direction) and use the remaining right-of-way for local access to streets, on-street parking, and wider sidewalks.

(Downtown Birmingham Plan 1998)

Birmingham developed a Master Plan for the city in the late 1990s that embody the type of development envisioned in this Plan. It focuses less on detailed data collection and more on visioning and creating places. The Plan challenges many of the then widely-endorsed suburban policies for more urban-oriented development. At the time, Birmingham struggled with identity issues and the dichotomy of a desire to create a beautiful place while protecting individual property rights.

The Downtown Plan gives recommendations for streetscaping, parking, circulation, retail, buildings, processes and special projects in the City. The Downtown Plan suggests strong leadership and an enduring commitment to the established core principles of the plan is needed to create the type of place the City wants to become. The sentiment of the Downtown Plan

can be summarized in a single quote from it: *"Every decision should lead to the creation of sophisticated mixed-use public spaces uncontaminated by suburban standards for parking and traffic."*

Regional Efforts: Corridor-Wide Studies

Woodward Avenue Non-motorized Transportation Master Plan (January 2010)

This document is considered a "working document" of ideas to improve walking and biking conditions along Woodward Avenue from Eight Mile Road to Maple Road. It does not address the interaction with transit along the corridor. Still, the non-motorized recommendations in the Plan were reviewed to avoid duplicative efforts. Major Planning Goals from the document include:

- Enhance/introduce pedestrian and bicycle facilities
- Provide options and a phased approach to implementation
- Identify linkages to Woodward

Specific Recommendations from that Non-Motorized Plan include:

- **Pedestrian Enhancements.** More than simple compliance with minimum standards, 8-10 foot wide sidewalks, improved curb ramps, streetscape scaled to human-size with amenities such as art, transit shelters, and pedestrian lighting, and high quality treatments to surface crossings.
- **Bicycle Enhancements.** Introduce a multi-tiered bicycle route system to include one way bike lanes where it is possible to eliminate one lane per direction, and additional two-way bike paths adjacent to the sidewalks on each side of the street and barrier separated from the roadway. Recommend asphalt for the bike lane surface, and installation of inverted "U", "A", or post and loop racks at destination locations.
- **I-696 Interchange.** Construct 2 way 14' wide bicycle bridges at the outside edges of the auto bridge.
- **Non-motorized Rest Stops.** Utilize the bus drop-off area at the Detroit Zoo for bicycle racks, lockers, and way-finding kiosks. Similar though smaller stops constructed along the corridor at key locations.
- **Road Crossings.** Keep crossing markings consistent in design for bicycle and pedestrian crossing, ADA compliant audible and visual signs and signals, and traffic compliance signage for bicycles.
- **Lanes and Speed.** The Plan suggests a traffic analysis to examine the elimination of the outer most nouthbound and southbound lanes. If reasonable traffic operations could be sustained, the next step proposed is a reduction of the speed limit from 45 mph to 35 mph along the entire corridor.

Woodward Avenue Corridor Management Plan (2006)

The Corridor Management Plan was developed in part to satisfy funding requirements for the Michigan Heritage Route and National Scenic Byway programs. Therefore, the Plan included:

- Identification of the intrinsic resources and attributes on Woodward Avenue that warrant a Heritage Route or America's Byways designation.

- The suggested process and programs to preserve these resources.
- Identification of needed improvements and how they are proposed for implementation.
- Provisions for long-term management and sustainability of the byway for generations to come.

Public Spaces Design Framework Plan (2008)

This document was developed as an amendment to the Corridor Management Plan, and established the Woodward Avenue Action Association as the Heritage Team for Woodward Avenue. As such, WA3 is the group responsible for coordinating and managing the resources along Woodward Avenue. It also included a suggested policy for acceptance by all parties involved in the planning and presrvation of Woodward Avenue resources (see inset for a list of suggested Local Municipality Responsibilities). The Design Framework Plan identified important non-motorized crossings along the corridor, and the various design elements that should be included. These crossing locations are noted in the Transit Framework Map provided later in this Plan.

City Responsibilities:

- Work with the Woodward Avenue Action Association, MDOT, transit agencies, counties and private businesses and property owners along the byway.
- Recognize their contribution to the byway, which serves a purpose beyond local boundaries.
- Implement elements which tie the byway together while establishing distinct character and attributes.
- Inform the Heritage Team of plans, uses, projects, grants and improvements proposed along the byway and seek their recommendation.
- Recognize and commit to higher standards and attention to detail for the byway which will require additional resources.

National Examples: Best Practices for Rapid Transit

Transit in Michigan is likely to evolve into its own character, based on our own cultural, demographic, and social history. Review of other successful transit examples in other similar areas helps to develop ideas and concepts that can be applied to the local system.

- Charlotte, North Carolina

  Bus ridership continues to grow (66% since 1998) as a result of corridor transit planning, pedestrian overlay districts, and transit service improvements, which have created an example of retro-fitting premium transit into an established auto-oriented community.

  The Charlotte Area Transit System (CATS) is the agency responsible for operating mass transit in Charlotte, and Mecklenburg County. CATS operates light rail transit, historical trolleys, express shuttles, and bus service serving Charlotte and its immediate suburbs. The LYNX light rail system comprises a 9.6-mile line north-south line known as the Blue Line. TOD developments along this corridor include a mixed use development at the south end, $1.87 billion in TOD related investment along the South Corridor, and an sharp increase in tax revenue generated along the corridor.

Source: LSL Planning, Inc.

- Grand Rapids, Michigan

The Rapid, Grand Rapid's transit system, serves the cities of E. Grand Rapids, Grandville, Grand Rapids, Kentwood, Walker and Wyoming. The system experienced dynamic growth in ridership, providing over 5.8 million trips in 2003, the highest number in the history of public transportation in the greater Grand Rapids metro area. A significant contribution to the ridership increase came from services provided to Grand Valley State University, as ridership grew 80 percent from March 2003 to March 2004.

Source: http://www.ridetherapid.org/ride

Elements included in the planning guidelines for the BRT system included careful consideration of TOD supportive planning efforts. Density and mix of land uses, design heights, setbacks, lot coverage, connection to the transit network, bicycle and pedestrian access to destination locations, and planned economic development in TOD nodes played a key role in the success of the BRT service.

- Cleveland, Ohio

Cleveland has a bus and rail mass transit system operated by the Greater Cleveland Regional Transit Authority (RTA). The RTA serves an steadily increasing ridership (approximately 200,000 customers on a typical weekday) and a service area covering 1.3 million people in 59 municipalities over 460 square miles. RTA offers four modes of transportation – the heavy-rail Red Line to Cleveland Hopkins International Airport; the light-rail system of Blue, Green and Waterfront lines from downtown to the eastern suburbs; 730 buses, trolleys and Community Circulator vehicles on 90 routes, and Paratransit service-on-demand for the disabled.

Source: LSL Planning, Inc.

In 2007, the American Public Transportation Association named Cleveland's mass transit system the best in North America. RTA improved its service quality and image, broke ground on a premium "New-Starts" BRT Euclid Corridor Project. The BRT runs along the main artery connecting downtown Cleveland with its eastern suburbs. The project rebuilt more than 5.5 miles of Euclid Avenue between Public Square and University Circle and more than 3 miles of additional downtown streets to accommodate bus operations in the center lanes. The redesigned corridor includes well-designed bus stations and shelters in the new center median featuring seating, route information, fare vending, and safety barriers to separate bus riders. Ridership on the route has increased substantially, and in addition to the extensive infrastructure improvements included in the project, more than $4 billion of new outside funding has been invested in the corridor.

- Norfolk, Virginia

The Tide light rail service began operations in August 2011. The light rail is a starter route running along the southern portion of Norfolk, commencing at Newtown Road and passing through stations serving areas such as Norfolk State University and Harbor Park before going through the heart of downtown Norfolk and terminating at Sentara Norfolk General Hospital.

TOD investments and enhancements are occuring at each of these destination locations. Ridership is currently at 4300 trips per day and growing. There are many requests from the public and local businesses along the route to extend and expand service. The Tide has so far created a greater than expected burst of activity along the corridor.

Source: http://www.gohrt.com/services/the-tide/stations/nsu-station/

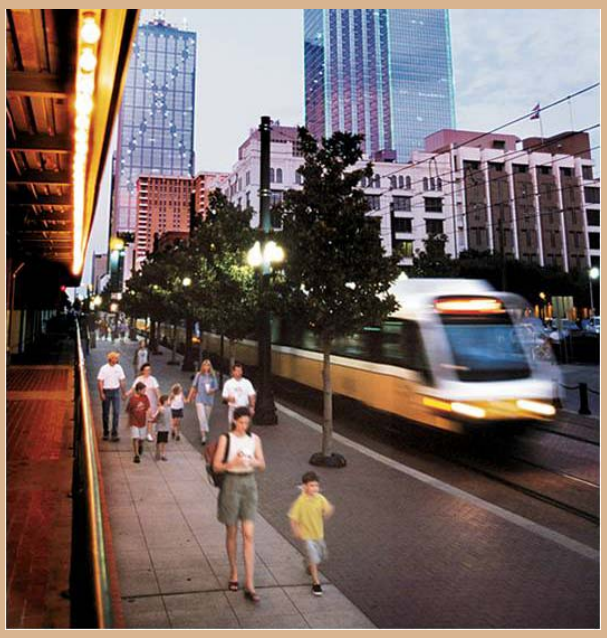
- Dallas, Texas

Opened in 1996, the DART light rail system now encompasses 45 miles of transit and 35 light rail transit (LRT) stations. Several TOD projects have been constructed locally and continue to increase in property value over time.

Local TODs are successful by embodying the principles of good transit-oriented design, complementing the station area and the surrounding neighborhood, enriching the transit experience for DART riders and the pedestrian experience of those who visit or live in the area, and adding to the municipal tax base.

As development interest in TOD increases over time, existing rail corridors and future rail expansion offer exciting new opportunities for a variety of TOD projects. By 2018, DART will more than double the light rail network to 93 miles, with even more expansion identified in its 2030 Transit System Plan.

Dallas has used TOD light rail stations as a tool for revitalization and to improve property tax revenues. Property values near TOD locations increased at nearly twice the rate of comparable properties in the city that were not located in TOD locations.



Source: http://www.dart.org/about/publicart/images/westendtrainlarge.jpg

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Transit Framework

The Transit Framework Map is a simple map that illustrates potential TOD nodes, infill or redevelopment opportunities, potential transit stations, concepts of how to improve connectivity and convenience of bus stop locations and pedestrian crossings, access management, and parking. This map and the recommendations in this document are intended to be used as a schematic - something that can be built upon in future planning efforts.

The framework map began with a general assessment of the corridor; identifying signal locations, current destinations and development nodes. Next, discussion with local planners identified the following challenges and opportunities:

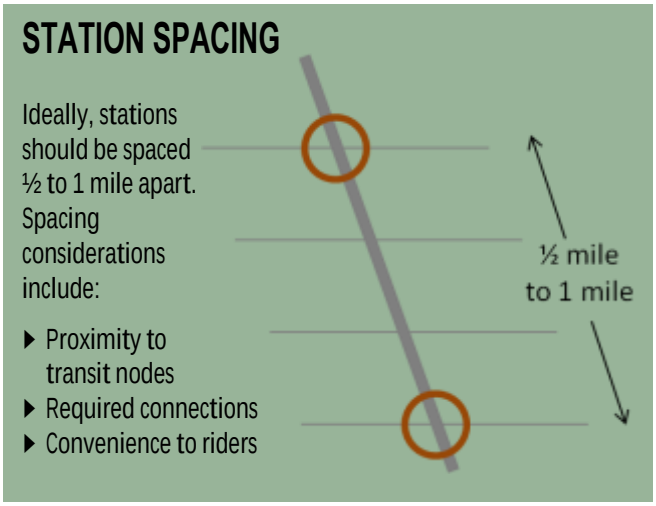
	Challenges	Opportunities
Berkley	▸ Shallow lot depths ▸ Residential concerns over encroachment of commercial into neighborhoods ▸ Berkley's downtown is somewhat detached from Woodward ▸ Deed restricted land limits height at 12 Mile corner ▸ Lack of bus service along 12 Mile between Woodward and Coolidge	▸ Use 12 Mile Road to connect Woodward with Berkley's downtown ▸ Build on the Westborn Market experience; reconfigure parking and expand ▸ Reconfigure development at Oxford intersection ▸ Potential redevelopment at Catalpa intersection
Birmingham	▸ Residential concerns over encroachment of commercial into neighborhoods ▸ SMART bus route diverts from Woodward at Old Woodward	▸ Improve east – west pedestrian and transit connectivity across Woodward to transit center ▸ Segment between 14 Mile and Lincoln is the focus of the city's next subarea plan
Ferndale	▸ Woodward right-of-way parking	▸ Ferndale's thriving downtown at 9 Mile
Huntington Woods	▸ Residential concerns over encroachment of commercial uses and building heights into neighborhoods ▸ Existing development	▸ City's Master Plan calls for new senior and multiple-family residential along Woodward
Royal Oak	▸ Shallow lot depths ▸ Residential concerns over commercial encroachment, building height, density, etc. ▸ Woodward right-of-way parking ▸ Lack of open, green spaces	▸ Primary nodes at 696 and 13 Mile ▸ Secondary nodes at 11 Mile and 12 Mile

Potential Station and Stop Nodes

The above analysis resulted in the Framework Map provided on page 24. It includes potential station locations, which consider existing development, identified opportunity locations, signalized crossing locations, typical spacing for bus rapid (ideally no less than ½ mile spacing). This spacing generally would also be appropriate for light rail if the bus rapid transit were converted to light rail at some point. The framework map also illustrates potential connections to local destinations like Amtrak stations and the Detroit Zoo, and the downtowns in Royal Oak and Berkley, which are vibrant areas that rely on the corridor for regional access, and have the potential to add riders to the system. Station locations shown on the Framework Map are described in more detail below.

Spacing Guidelines

Stop and station location should be given careful consideration for the corridor. Stops should be kept to a minimum necessary to support the land-use and accessibility needs. Stop and station structures and amenities should be developed and designed with pedestrian and bike amenities, and should consider auto access, but not so that it dominates the station design. Priority must be given to pedestrians, bicyclists and transit riders, with less emphasis on maintaining higher vehicle speeds or faster auto travel time. Generally speaking, on the Woodward corridor, stops should be between one-half (1/2) to one (1) mile apart for ideal transit service. The quality of the stop should also be designed to accommodate the expected use in the area. Stations could be used at route termini and transfer points with improved amenities at on-route major attractors, and stops with more basic facilities could be used at key TOD points between major destinations.



Connecting Nodes

Several proposed transit node locations have opportunities for connections to nearby downtowns, Amtrak stations, and the future Woodward Light Rail Transit. These are suggested at the Maple, 13 Mile/Beaumont, I-696/Detroit Zoo, and 8 Mile/Fairgrounds intersections. These intersections were identified as ideal locations for nodes due to their proximity to nearby amenities and existing or potential densities to support transit.

Stations at these locations for either bus rapid transit or light rail could be incorporated into new mixed-use buildings with indoor seating and ticketing areas. Since these stations will connect to a different form of transit, indoor facilities will allow a safe place for travelers to wait for their connection.

- **Maple Road.** With its proximity to the adjacent Downtown Birmingham and Triangle District, the Maple Road intersection is a logical location for the future enhanced transit to terminate. The elements of the Triangle District Plan and Overlay District provide ample opportunity for a mixed-use building to house a transit station. A connecting shuttle to the nearby Amtrak station is a possibility for this node.
- **13 Mile/Beaumont Health System.** One of the busiest intersections along the corridor, 13 Mile already had the activity required for a feasible transit station. A station could be located just south of 13 Mile, near Coolidge to provide connecting shuttles to the Beaumont Health System campus and Downtown Berkley. Future redevelopment of the shopping center on the southwest corner of the intersection would be an ideal catalyst to spur future TOD.
- **I-696/Detriot Zoo.** One option is for the existing parking structure at the Detroit Zoo to be used as a future station and park-and-ride lot during weekdays. As the gateway to Royal Oak from the interstate, this node could provide a circulating shuttle to the Detroit Zoo, Downtown Royal Oak or even a parallel transit route that stops at the downtown Amtrak/SMART station in Royal Oak.
- **8 Mile/Fairgrounds.** This location is the planned terminus of the Woodward Light Rail Transit project. Transit from Detroit could end here, continue on northwards, or switch to an alternate mode.

On/Off Nodes

In between the Connecting Nodes, transit will stop at outdoor platforms for boarding/alighting, which are labeled as "On/Off" nodes on the analysis map. These station/stops' platforms would be elevated to raise the travelers to the level of the transit equipment and be covered

shelters to protect users from the elements. For enhanced transit to be most efficient, stops will not be as frequent as traditional fixed-route bus service, but at key locations to collect sufficient passengers from nearby housing and businesses.

The proposed On/Off Nodes include the 14 Mile, Catalpa, and 9 Mile intersections. These On/Off Nodes were identified as being good central locations between the Connecting Nodes where existing development is conducive to TOD or where development could be further intensified to support transit.

- 14 Mile. The area between 14 Mile and Lincoln/Adams in Birmingham has been identified by the City as a future TOD. This location is halfway between the proposed Connecting Nodes at Maple and 13 Mile.
- Catalpa. A stop at Catalpa would split the difference between the 12 Mile and 11 Mile intersections, both of which have institutional uses not conducive to TOD. This area has been identified for strengthened commercial development in the Berkley Master Plan and could collect riders between 12 Mile and 11 Mile.
- Fourth Street/11 Mile. A stop somewhere along this segment could provide the second part of a connecting "loop" to downtown Royal Oak. This would also provide access for the neighborhoods in Huntington Woods on the west side of Woodward. The location of this stop should service the needs of both sides of Woodward. One route option would be to use this stop for non-express or local traffic. Another concept would be for some transit vehicles to travel off Woodward to the transit center at Fourth Street and Washington to link with the multi-modal Amtrak Station and offer more direct service to Royal Oak.
- 9 Mile. As the prime intersection in Downtown Ferndale, 9 Mile has the existing density and potential riders required to host a stop nearby. Ferndale's strong commitment to TOD principles in its master plan will help facilitate the development and amenities required to service a stop near 9 Mile.

TRANSIT AND BICYCLES

If light rail transit is implemented, additional benefits can be achieved for bicyclists because the system design, with platforms built at the same grade as the train, allows for easier and faster transport of bicycles.

Source: www.bikesbelong.org

Pedestrian Crossings

As part of the 2008 amendment to the Public Spaces Design Framework Plan, pedestrian crosswalks along Woodward Ave. were reviewed on site and categorized as one of the three types described below, based on their physical contextual attributes. Those relevant to the study area for this plan are shown on the Framework Map.

Type A: Byway Significant Crosswalks

- Type A1 Crosswalks are the most significant, providing connections between the intrinsic resources of the byway. The only A1 crossing in the study area is at12 Mile Road, improvements for which are currently in the final construction stages.
- Type A2 Crosswalks are also significant, but are more so locally than regionally. Downtown crosswalks provide important connections between buildings on opposite sides of the street, and they provide a gateway or entrance to a downtown area. The crossings at Nine Mile Road and Maple Road are designated at A2 crossings.

Type B: Community/District Connectors

- Type B pedestrian crosswalks are community/district connectors that provide connections for a specific local draw and may be historically significant in the community (and/or state), but not necessarily to the byway. Typically, they would occur at major intersections. Most of the Mile roads along the corridor are considered Type B crossings.

Type C: Remainder

- Type C pedestrian crosswalks are essentially all other crosswalks that do not meet the criteria established for Type A and Type B crosswalks. From a byway and community standpoint, they are less significant than Type A and B and do not occur at major intersections.

CROSSWALK ELEMENT	TYPE A1	TYPE A2	TYPE B	TYPE C
Pedestrian Crosswalk Signalization	**X**	**X**	**X**	**X**
Pedestrian Crosswalk Signalization w/Count Down	**X**	**X**		
Mast Arm Signalization	**X**	**X**		
Crosswalk Designation - Painted			**X**	**X**
Crosswalk Designation - Pavement/Material Change	**X**	**X**	**Optional**	
District Identity Element	**X**	**X**	**Optional**	
Woodward Heritage Identity Element	**X**			
Historical Reference Element	**X**	**X**	**Optional**	
Lighting	**X**	**X**	**X**	
Plantings	**X**	**X**	**X**	
Bump-Outs (if applicable)	**X**	**X**	**X**	
Bollards	**Optional**	**Optional**		

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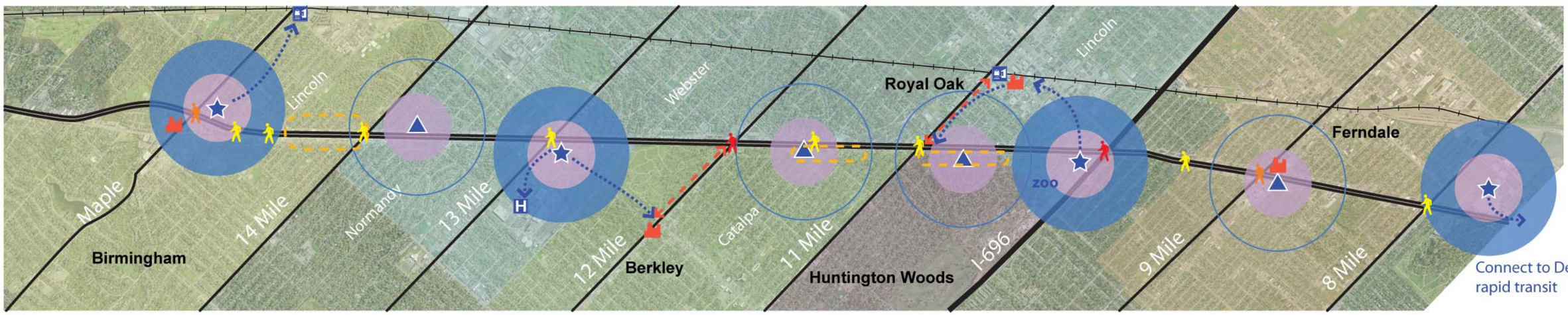
TOD Node Locations

- Downtown Birmingham
- 14 Mile
- 13 Mile/Beaumont
- Catalpa
- I-696/10 Mile
- 9 Mile
- 8 Mile/Fairgrounds

Circulator or local route to Birmingham Amtrak

Circulator or local route to downtown Royal Oak and Amtrak/SMART station



Connect to Detroit rapid transit

Shuttle to Beaumont and downtown Berkley

Woodward Corridor

Transit Framework Map

.25 .5 1 mile

LSL Planning, Inc.
Community Planning Consultants

Station and stop locations are preliminary and conceptual to illustrate one scenario of how stops might be spaced. This is not intended to suggest preferred transit stop locations or route alignments. A more detailed feasibility study, ridership projections, cost vs. funding, and analysis of other factors is required.

1/4
1/2

1/4 mile walking radius
1/2 mile collection area

Potential Station/Stop:
- Connecting
- On/off

- Crosswalk - Type A1
- Crosswalk - Type A2
- Crosswalk - Type B
- Downtown
- Existing Transit/Amtrak Station
- Transit Connections
- TOD/mixed-use opportunity
- Downtown Connections

LSL Planning

Recommendations and Implementation

This TOD study is intended to provide the framework for future planning phases that will evaluate different alternatives (i.e. types of vehicles, route options, etc.), impacts, ridership, costs and funding opportunities. While the availability of some type of "premium" transit will drive development, to some extent, the opposite is also true – development of a certain type and density can be a catalyst for transit. Therefore, a key component of this study was to identify pre-transit planning that can improve the potential for future transit enhancements. The following, more immediate steps to improve the built environment along Woodward, are discussed in further detail below.

1. Parcel and Massing Analysis
2. Economic Development Initiatives
3. Walkability and Transit Guidelines
4. Adoption of TOD Zoning Ordinance
5. Regional Coordination

Parcel and Massing Analysis

- Parcel Analysis. With few exceptions, parcels along Woodward are quite shallow for the type of businesses they attract. Small lot sizes can limit development options and deter real estate investors. One way to identify opportunities is to analyze potential development or redevelopment sites. In some locations, these sites are obviously vacant or obsolete, but in others, opportunities may not be so evident. Analysis of property ownership along the corridor will reveal parcels in common ownership that, if consolidated, could provide more viable redevelopment sites.

- Create a Massing Model. Creation of a two-dimensional or three-dimensional corridor model will help residents and stakeholders visualize how TOD might be implemented in the future. Modeling existing and future development forms will help to locate underutilized sites. When matched with a parcel analysis above, key redevelopment sites will emerge.

3-D models or sketches, such as the one prepared for the Birmingham Triangle District (see right) can help residents and stakeholders visualize how TOD might look along Woodward.

Economic Development Initiatives

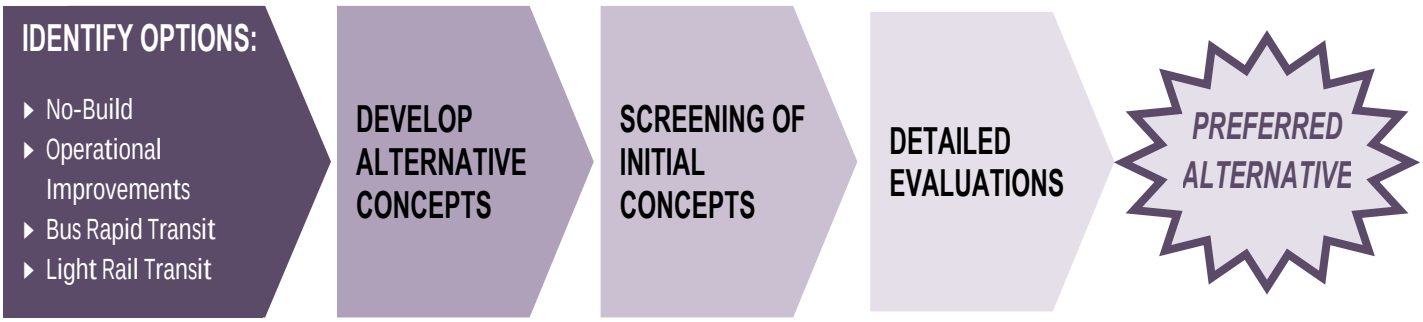
- **Establish a Corridor Improvement Authority.** Pursuant to Act 280, Public Acts of Michigan, 2005 the Corridor Improvement Authority Act, the purpose of a Corridor Improvement Authority (CIA) is to plan for, correct and prevent deterioration in business districts, to encourage historic preservation and to promote economic growth within the district. Unlike some other tax capturing authorities, a CIA may span more than one jurisdiction, and is therefore ideal for Woodward Avenue. If established, taxes from the increase in property values can be captured and re-assigned for capital improvement projects within the district. Such a mechanism could leverage future economic growth on Woodward into physical improvements that will attract even more business, visitors and investment.

  A CIA, or more than one, could be considered for the entire Woodward Avenue corridor, or to select areas which may include the cities involved in this study, or additional communities to the north and south of the study area. The City of Birmingham has developed the framework for a CIA that would include the Triangle District area, and is planning to use tax increment financing (TIF) to fund the long-term development of structured parking. The City envisions constructing a temporary surface parking lot to alleviate immediate parking needs in the district, that is planned to be converted into a parking structure when enough TIF funding is captured.

- **Secure Funding.** The collaboration facilitated by the Woodward Avenue Action Association has yielded positive results already, with grant funding secured for the 12 Mile Road crossing improvements, which were recently constructed. The association has also received a National Scenic Byway Grant, Michigan State Planning and Research Grant, and an Urban Land Institute grant for even more significant transit-planning projects, which are expected to begin in the near future. The nature of the group, which not only represents a multi-jurisdictional effort, but also a public-private partnership, poises it above many others seeking grants, as this spirit of cooperation is given increasing weight with funding groups.

  Alternative Analysis funding has already been secured through the Federal Transit Agency's New Starts program. The purpose of New Starts is to fund major new fixed guideway transit facilities such as light rail transit lines, bus rapid transit, commuter rail or heavy rail transit. It requires a strong local-level planning effort; including an alternatives analysis study. WA3 will continue to advise communities through this process.

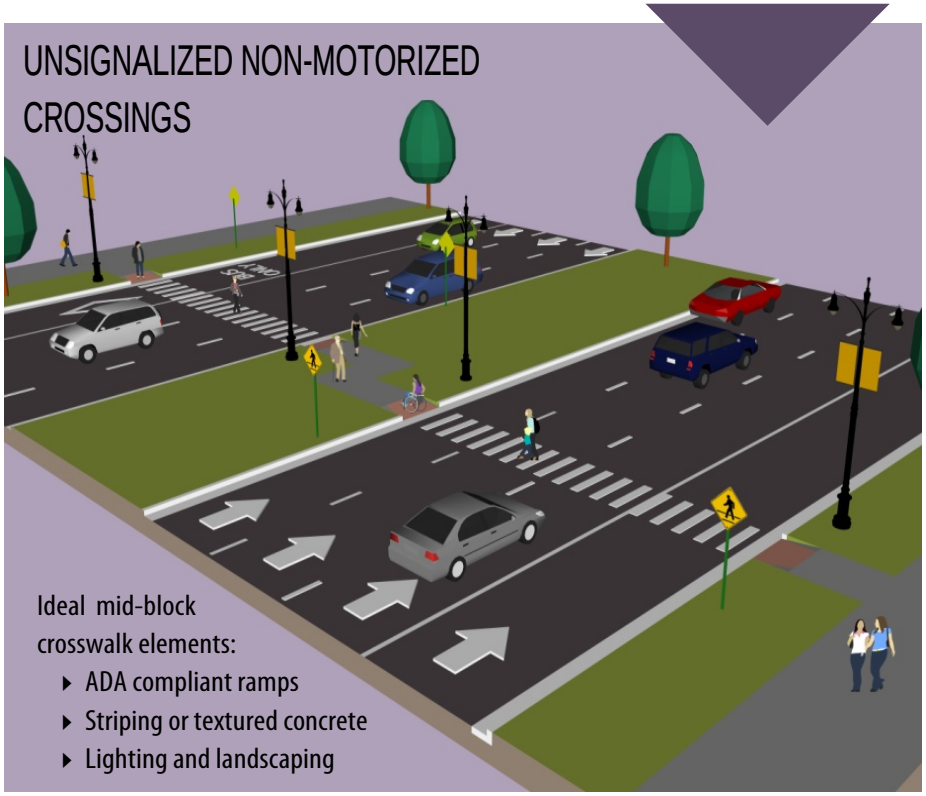
TRANSIT ALTERNATIVES ANALYSIS PROCESS:



Walkability and Transit Guidelines

In many ways, walkability and transit go hand-in-hand. Without a safe, walkable environment, people cannot reach transit facilities, and ridership rates decline. Designing any non-motorized system requires careful planning that considers safety, efficiency, convenience and costs versus benefits. It is important to provide clearly delineated pedestrian areas both along the corridor and connecting to private commercial developments. Non-motorized improvements should focus on providing safe routes for bicyclists and pedestrians, which may require alternative routes or facilities on other roads as well. There are a variety of things that contribute to a walkable environment. In general, when planning for future non-motorized systems, communities should follow the guidelines listed below.

- Unsignalized Non-Motorized Crossings. Past plans have evaluated non-motorized crossings along Woodward. Ideally, crossings will be accommodated at signalized locations, but realistically speaking, pedestrians are likely to cross where it is most convenient. Studies show that people will usually take the most direct route, not necessarily the one designated for them, and are more likely to cross at unsignalized locations when such are spaced farther than ½ mile apart, or where they are not proximate to transit stop locations.



  Where unsignalized crossings are needed, they should be designed so the pedestrian is clearly visible and feels safe, including elements such as lighting, signage, textured pavement treatments and context-sensitive crossing design. Using flashing beacons and reflective road striping can also help improve pedestrian safety.

- Speed of Travel. Currently, portions of Woodward Avenue are posted for maximum speeds of 35 and 45 miles per hour. Vehicles sometimes travel at speeds in excess of these maximums, which increases the potential severity of crashes, especially for pedestrians. Higher vehicle speeds also reduce the perceived safety and comfort for pedestrians and bicyclists, which discourages such travel. Some TOD guidelines suggest a speed limit of 30 to 35 mph provides a balance between vehicle mobility and pedestrian/bicycle safety. The City of Birmingham's Triangle District Urban Design Plan includes a suggested 35 mph for portions of the corridor near Maple Road (15 Mile), where a road diet is suggested. This speed limit is already established in parts of Ferndale. Lower speed limits along the corridor could be pursued in conjunction with other changes, but requires approval from the Michigan State Police, who set speed limits. A reduction in auto speeds could make transit more time competitive, expecially if traffic signal timing was pre-empted

for transit vehicles. Such a reduction in speeds, either alone or as part of a road diet, would require changes to signal timing, and perhaps some traffic modeling to ensure traffic operations will remain at acceptable levels.

- **Road Diet.** A road diet involves replacing travel lanes with bike lanes, exclusive transit lanes and/or wider sidewalks. On Woodward, a road diet could be implemented to provide a dedicated bus lane or bike lane. Careful consideration of the interface between bicyclists, motorists and businesses is required to ensure that these facilities remain safe and attractive to users. The inset illustrates how Woodward could look with a road diet, including fewer vehicle lanes with a dedicated bus lane, plus amenities like wide sidewalks and landscaped buffers for pedestrian comfort. Application of a road diet would require additional traffic modeling of different alternatives for the lanes, intersections, and median crossovers.

ROAD DIET

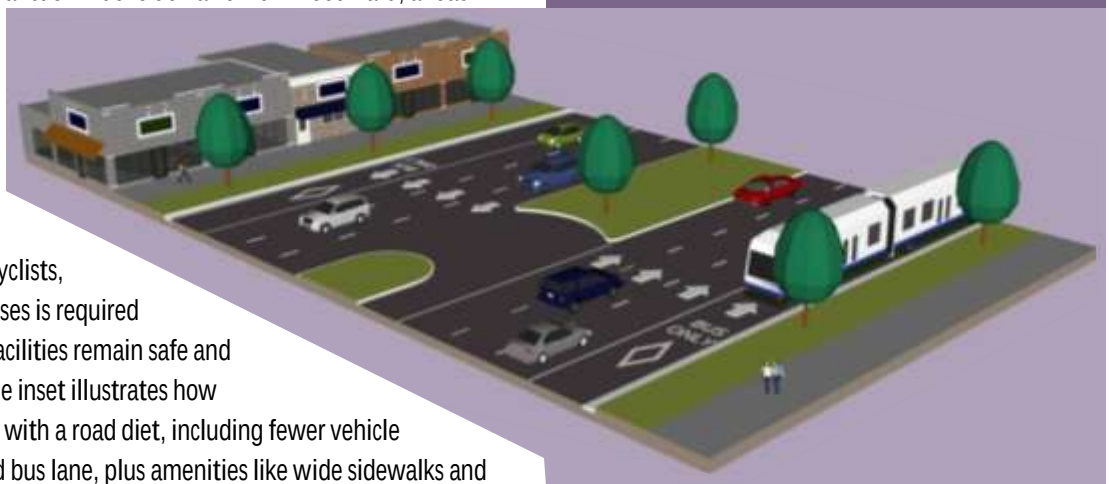
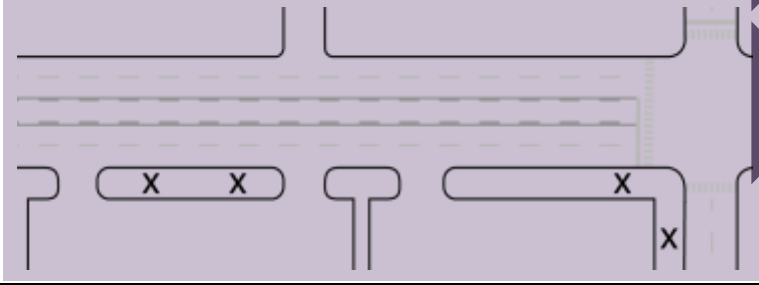


Illustration of how Woodward Avenue could look if a road diet was implemented. Travel lanes could be reduced to make room for dedicated transit lanes, or additional non-motorized facilities like wider sidewalks, bike lanes or cycle tracks.

- **Accommodate Bicyclists.** Non-motorized systems must also accommodate bicycle activity. Amenities like bicycle storage, staging areas, and rest spots should be included in community-wide non- motorized systems. In some locations along the corridor, the existing road can be re-striped to include bike lanes without widening the expanse of pavement. Such a "road diet" is recommended in areas where motorized and non-motorized traffic volumes suggest fewer travel lanes and more bicycle facilities are needed. However, in others, on-street bicycle facilities may not be safe or comfortable for riders. In these places, alternate routes, or separate pathways may be needed.

ACCESS MANAGEMENT

Access to private development should be managed to maintain safe and efficient transportation conditions. Safety is improved by limiting the number of driveways that pedestrians and bicycles must cross. In addition, providing well-planned driveway locations helps maintain efficient vehicle operations, which is also needed to maintain reliable transit service.



- **Driveway Design.** The geometric design of access points, including the width, throat, radius, and pavement type, should all include consideration of the interaction with off-street non-motorized users. Excessively wide driveways with little or no separation from off-street parking areas and broad, sweeping driveway curbs provide an unprotected non-motorized environment that lacks clear definition for turning movements and increases the amount of time a pedestrian or bicyclist is exposed to traffic. Driveways should include a clear-vision zone at the entrance, free of visual obstructions like shrubs, signs, utility boxes, or other barriers so oncoming traffic can clearly see pedestrians entering the driveway.

- **Delineate Driveway Crossings.** Sidewalk crossings of driveways should be clearly delineated. For higher volume areas (traffic or pedestrian) the crossing could be striped or constructed of durable contrasting material. Textured or colored concrete are the preferred options for Woodward Avenue since they can withstand vehicular weight and wear while attracting the attention of motorists. Maintenance of crosswalk markings on private land should be made a condition of site plans, just like maintenance of parking lot striping.

Example of how driveway design can draw attention to pedestrians in the crosswalk using color and texture within the pavement surfaces.

Transit-Friendly Zoning

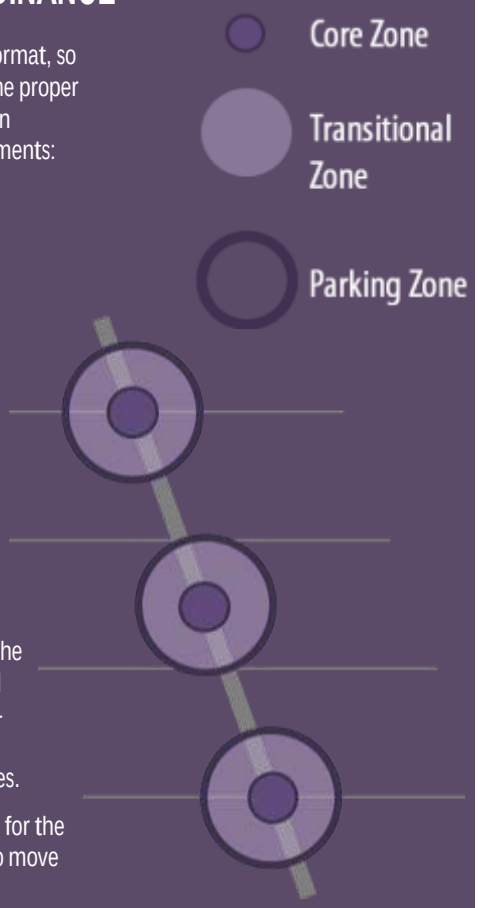
- **Adopt the Corridor TOD Zoning Overlay Zoning Model.** Zoning is an effective way to transform the form of development. Along Woodward, a model TOD overlay zoning district is recommended (see right). The overlay is a "modular" ordinance that includes a basic set of uniform regulations for the entire corridor, along with a set of regulations to apply in core TOD node areas, and another set for the transitional areas around them. The model also includes strategies to assemble land in the core aeras, or where additional depth is needed to accommodate redevelopment or shared parking facilities. The approach presented respects the fact that, while transit-friendly development is desired by most communities, it may take some refining at the local level in order to achieve support.

  The basic standards for development include sidewalk requirements, parking standards, use restrictions, etc. that should apply everwhere in order to promote walking and biking along the corridor. The

TOD OVERLAY ZONING ORDINANCE

Regulations are provided in a "modular" format, so appropriate requirements are applied to the proper locations. The model ordinance provided in Appendix B includes the following key elements:

- **Core Zones** apply to the TOD nodes shown on the Framework Map. Requirements for core zones encourages taller buildings, less parking, and higher pedestrian-oriented building design.
- **Transitional Zones** are expected to surround the Core Zones, and will include similar requirements, but to a less intense standard, in order to facilitate better transitions into the surrounding residential neighborhoods.
- **Parking Zones** are provided for areas at the periphery of the Transitional Zones, and are intended to allow conversion of pre-selected residential sites into TOD developments or shared parking facilities.
- **General Requirements** are recommended for the entire corridor, and include strategies to move parking to the side and rear yards, and encourage sidewalk connectivity.



core TOD node standards are more form-based and focused on creating desirable places for pedestrians, bicyclists and transit riders. The transitional standards will involve some form-based elements, but requires less intense development as a way to slowly step down building intensities and scale as they get farther from the core and closer to residential areas. Standards for areas not designated as Core or Transitional zones could also include incentives to replace commercial uses that should be relocated to the core, with supportive residential or office uses. Such policies will depend on local desires and attitudes, but may provide opportunities for redevelopment of some of the existing underutilized commercial areas for multiple-family or other uses that could be accommodated on some of the shallower development sites not located in the core aeras.

- **Define District Zone Boundaries.** The TOD zoning model provided in Appendix B is intended to apply to all parcels with frontage along Woodward Avenue in South Oakland County. It suggests three additional zones be established: A Core Zone, a Transitional Zone and a Parking Zone. This Plan does not suggest specific boundaries for each zone; however, it is assumed that Core Zones will generally occupy areas within ¼ mile of the center, while Transitional Zones will extend out ½ mile. The Parking Zones are expected to be applied at the periphery of Transitional Zones, as determined necessary to create redevelopment sites of a viable size and shape.

  Two to three story buildings, such as those suggested in the core areas typically require sites with depths of 140 to 160 feet, but that does not account for parking needs. Ideally, parking programs will be implemented at the city or corridor-wide level using one of the approaches discussed in the project overview section, however, in the short-term, some on-site surface parking may be needed. Therefore, cities should plan for parcel depths of up to 250 feet for sites where on-site parking is needed, and to up to 350 feet for areas where parking structures are planned, such as in the core TOD nodes. More specific analysis may be needed to identify the specific property depths needed to achieve the desired building form. Elements such as building height, lot coverage, parking lot location, front yard setbacks, and required buffers from residential areas will all impact the amount of land that is needed for development.

- **Take a Phased Approach.** As discussed in the Analysis section, each local zoning ordinance was reviewed to determine needed changes to promote additional development and growth that will encourage transit ridership. These models should be adopted to help direct future development to desired areas.

PLANNING FOR TRANSIT

PHASE I:

- Establish TOD district boundaries
- Identify sites for the Core, Transitional and Parking Zones
- Parcel and Massing Analysis
- Adopt interim regulations for land use, parking, setbacks, basic building design that set the stage for density, intensity and infill.

PHASE II:

- Develop specific plans for core TOD nodes (at the city level).
- Conduct housing affordability analysis and feasibility reviews to identify ways to provide housing for a variety of income levels.
- Develop specific regulations based on progress achieved. Additional Transitional or Parking Zones may be added, more aggressive parking strategies implemented, and greater municipal involvement with redevelopment.

Once some success is achieved, cities may choose to take their TOD efforts a step further, by initiating redevelopment projects, increasing densities, and planning for municipal parking.

- Redevelopment of sites along Woodward Avenue may require acquision of additional land to accommodate larger buildings or parking needs. Communities may consider parking zones within the proposed TOD overlay district that would allow certain residential sites to be converted to temporary surface parking lots to support core areas, that can eventually transition into parking structures or mixed-use infill sites.
- Plan parking in areas away from the TOD core to maximize building potential, but consider reasonable replacement locations, or take a phased approach so businesses are still served in the short-term. Consider adoption of local parking programs (see page 11).
- Consider higher residential densities within proximity (1/2 to 1 mile) of Woodward that consider local community conditions.

Regional Coordination

WA3 itself represents a public-private partnership between the communities along Woodward, regional transit and planning agencies, the Detroit Zoo, and Beaumont Health System. The spirit of this public-private collaboration should be expanded to include additional transit-minded businesses, or even residential groups interested in advancing transit. Engaging dynamic, growing or leading businesses, such as the new restaurant at the Vinsetta Garage site, Westborn Market, Northpointe Medical, and Oakland Community College, can further the goals for transit.

The following steps are recommended by the Regional Transit Coordination Council (RTCC) for the evolution of the regional transit organization in Southeast Michigan:

- Build organizational structure and capacity
- Commence implementation planning for Arterial Rapid Transit (ART). ART is intended to facilitate faster transit along key corridors by providing bus stops with more protection and route information; marketing and branding strategies; traffic signal priority for buses; and hybrid low floor buses with bike racks.
- Determine best way to coordinate existing providers
  - Continuity of service
  - Funding streams
  - Accelerate enhancements with regional consistency
- Full implementation
  - Unified agency
  - Coordinated operations under regional guidance

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City of Berkley

N: Means either a) the use is not permitted in the district or b) the principle is not addressed in the ordinance
P: Means the use is Permitted by Right
S: Means the use is Permitted as a Special or Conditional Land Use

TOD Principle	Ref.	Applicable Regulations			
Land Use and Density					
Promotes transit supportive uses	138-472	***LB***	***WB***	***O-1***	***P-1***
▸ Health related and care uses		P	P	P	N
▸ Senior housing		N	N	N	N
▸ Retail, restaurants, personal service		P	P	N	N
▸ Medium to high density residential		P (upper only)	P (upper only)	N	N
▸ Offices/employment uses		P	P	P	N
▸ Colleges, universities		N	N	P	N
▸ Civic uses		N	N	P	N
Limits less transit supportive uses	138-473. Special uses	***LB***	***WB***	***O-1***	***P-1***
▸ Wholesale stores			N	N	N
▸ Car dealerships & service centers			P (no outdoor)	N	N
▸ Drive-through uses		S	S	N	S
Density and transitions	138-527				
▸ Directs highest density allowed within ¼ mile of transit route		R-1D – Single family (4,400 s.f. lots; 9+/ac.) RM – multiple-family (max rooms = site s.f./500)			
▸ Promotes transitions to adjacent neighborhoods (use, density or building height, setbacks)		N			
Site Design					
Building Design					
▸ Direct sidewalk connections to entrances	138-477	Y - front entrance required			
▸ Building design standards encourage "activation" of first floor, through limited office & residential uses on ground level, minimum window area, limited front parking, etc.	138-392	Y - 40-80% window area required; buildings required to be at street edge, but front yard parking can be approved by PC			
Size of Surface Parking Lots					
▸ Sets both minimum and maximum parking standards; or	138-222(c)	N - but allows use of municipal lots within 500 feet			
▸ Allows reduced parking near transit		N			
▸ Allows shared parking	138-218	Y			
▸ Bicycle parking addressed		N			

▸ Lots required to include landscaped walkways		N
▸ PILOT		N
Parking Location		
▸ Required at the periphery and to the rear or sides of buildings		Y - While not a specific requirement, setback requirement for buildings 0 to 10 feet essentially eliminates the possibility of front yard parking
▸ Where necessary, drive-through facilities are designed away from non-motorized activity areas		N
Access Management		
▸ Standards minimize the number of driveways that pedestrians must cross	106-47	Limits width to max 45% of first 200' of frontage + 20 for additional frontage over 200'
▸ Includes standards for driveways that help limit width and provide tight radii	106-47	Y - streets, sidewalks and public places Ordinance requires: ▸ Width: 10' minimum, 25' maximum. ▸ Separation from crosswalks: 5' from any curb cut and crosswalk ▸ Driveway spacing: 25' between non-residential driveways
▸ Includes standards for minimum driveway spacing from signalized intersections		N
Comfort and convenience		
▸ Well-lit – illumination of transit stops, bicycle parking required	138-223	Lighting of parking lot required
▸ Landscaping & shade – street trees required		N
Administration		
Procedures		
▸ Considers impacts to pedestrians during site plan review and traffic impact studies	138-679	Y
▸ Includes standards to gradually improve non-conforming conditions that do not adhere to TOD principles		N
▸ Administrative Reviews	138-678	Y - Façade changes only

Summary of Zoning in the City of Berkley:

Most of the Woodward Avenue frontage in the City of Berkley is zoned commercial or office. Some areas are designated as a Woodward Avenue business district, which gives special consideration to the traffic volumes and special needs along Woodward. The City has rezoned some land behind the frontage parcels for multiple-family and office uses, which provides a nice transition of uses from those more intense along Woodward and the surrounding neighborhoods. Neighborhoods near Woodward at the southern end of the city are relatively high density, with 9+ units per acre permitted in the R-1 D, Single-Family district. Neighborhoods farther north, however, are zoned for larger lots that yield less than 4 units per acre.

City of Birmingham

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P: Means the use is Permitted by Right
S: Means the use is Permitted as a Special or Conditional Land Use

TOD Principle	Ref.	Applicable Regulations				
Land Use and Density						
Promotes transit supportive uses		***O-1***	***O-2***	***B2B***	***B-3***	***B-4***
▸ Health related and care uses		P	P	P		
▸ Senior housing			P	P	P	P
▸ Retail		P – smaller w/ restrictions	P	P	P	P
▸ Restaurants		S	S	P	P	P
▸ Personal service		P	P	P	P	P
▸ Medium to high density residential		P	P	P	P	P
▸ Offices/employment uses		P	P	P	P	P
▸ Colleges, universities		P	P	P	P	P
▸ Civic uses		P	P	P	Bus station	P
Limits less transit supportive uses		***O-1***	***O-2***	***B2B***	***B-3***	***B-4***
▸ Car dealerships & service centers		N	N	P	P	S
▸ Drive-through uses		N	S	S	N	N
Density and transitions						
▸ Directs highest density allowed within ¼ mile of transit route		Y – R7 & R8 (mf districts) surround CBD; R3 (SF) along Woodward				
▸ Promotes transitions to adjacent neighborhoods (use, density or building height, setbacks)		Requires setbacks from residential; zones outside downtown core gradually step building heights and intensity of uses down				
Site Design						
Building Design						
▸ Direct sidewalk connections to entrances		Y – in Downtown and Triangle Overlay Districts				
▸ Building design standards encourage "activation" of first floor, through limited office & residential uses on ground level, minimum window area, limited front parking, etc.		Y – in Downtown and Triangle Overlay Districts				
Size of Surface Parking Lots	4.45					
▸ Sets both minimum and maximum parking standards; or		N				
▸ Allows reduced parking near transit		N				
▸ Allows shared parking	4.45.G.4	Y – allows reduction of up to 50% if parking demand warrants				
▸ Bicycle parking addressed		Y – in Triangle Overlay District				

▸ Lots required to include landscaped walkways		N
▸ PILOT	4.45.G.5	Y – allows exemption for SAD's toward municipal structure
Parking Location		
▸ Required at the periphery and to the rear or sides of buildings		Y – in Downtown and Triangle Overlay Districts
▸ Where necessary, drive-through facilities are designed away from non-motorized activity areas		Y – in Downtown and Triangle Overlay Districts
Access Management		
▸ Standards minimize the number of driveways that pedestrians must cross		N
▸ Includes standards for driveways that help limit width and provide tight radii		Y – in Downtown Overlay District
▸ Includes standards for minimum driveway spacing from signalized intersections		Y – in Downtown and Triangle Overlay Districts
Comfort and convenience		
▸ Well-lit – illumination of transit stops, bicycle parking required	4.21.F	Parking lot lighting required; allows security lighting; bike lighting required in Triangle Overlay District
▸ Landscaping & shade – street trees required		Y – in Downtown and Triangle Overlay Districts
Administration		
Procedures		
▸ Considers impacts to pedestrians during site plan review and traffic impact studies	7.27.B	Y – site plan review
▸ Includes standards to gradually improve non-conforming conditions that do not adhere to TOD principles		Y – in Downtown and Triangle Overlay Districts
▸ Administrative Reviews		Y

Summary of zoning in the City of Birmingham:

The City of Birmingham allows general business and downtown commercial uses along most of its Woodward frontage. Form-based zoning codes have been adopted for both the downtown area and Triangle District, which encompass most of the land at the city's northern end. The city has significant multiple-family and high density residential zoning in areas around the downtown. Neighborhoods are relatively high density, with 9+ units per acre permitted in the R-3, Single-Family district.

City of Ferndale

N: Means either a) the use is not permitted in the district or b) the principle is not addressed in the ordinance
P: Means the use is Permitted by Right
S: Means the use is Permitted as a Special or Conditional Land Use

TOD Principle	Ref.	Applicable Regulations		
Land Use and Density				
Promotes transit supportive uses		***C-2***	***C-3***	***CBD***
▸ Health related and care uses		P - no overnite stay	P - no overnite stay	P - no overnite stay
▸ Senior housing		N	N	N
▸ Retail, restaurants, personal service		P	P (outdoor seating S)	P
▸ Medium to high density residential		Upper-level res.	Upper-level res.	Upper-level res.
▸ Offices/employment uses		P	P	P
▸ Colleges, universities		P - Tech. Schools only	P - Tech Schools only	P - Tech Schools only
▸ Civic uses		N	N	P
Limits less transit supportive uses		***C-2***	***C-3***	***CBD***
▸ Wholesale stores		S	S	N
▸ Car dealerships & service centers		S	S	N
▸ Drive-through uses		S	N	N
Density and transitions				
▸ Directs higher densities to within ¼ mile of transit route		R-2 is predominant (6,000sf lots; 7 du/ac), but is one of the lower density single-family districts (allows duplex units)		
▸ Promotes transitions to adjacent neighborhoods (use, density or building height, setbacks)	4.03b.	Y - Building height step-backs		
Site Design				
Building Design				
▸ Direct sidewalk connections to entrances	4.03g.2.	Y		
▸ Building design standards encourage "activation" of first floor, through limited office & residential uses on ground level, minimum window area, limited front parking, etc.	9.04D.2.	No standards to keep office to 2nd floor only; building design standards require articulation, 50% first floor window area		
Size of Surface Parking Lots				
▸ Sets both minimum and maximum parking standards; or	10.03H.	Y - Max 10% over standard		
▸ Number of spaces required is transit-oriented		N - but CBD is exempt from parking requirement		
▸ Allows reduced parking near transit	10.03G.	Y		
▸ Allows shared parking	10.03F.	Y		

▸ Bicycle parking addressed		N
▸ Lots required to include landscaped walkways		Landscaped islands required but not ped connections
▸ PILOT	10.03K.	Y in CBD
Parking Location		
▸ Required at the periphery and to the rear or sides of buildings		N
▸ Where necessary, drive-through facilities are designed away from non-motorized activity areas	8.06	Not allowed in public streets, walks or alleys
Access Management		
▸ Standards minimize the number of driveways that pedestrians must cross		Maximum 2 driveways allowed
▸ Includes standards for driveways that help limit width and provide tight radii		Width limited to 25 feet
▸ Includes standards for minimum driveway spacing from signalized intersections		N
Comfort and convenience		
▸ Well-lit – illumination of transit stops, bicycle parking required		Required per Environmental Performance Standards Ordinance
▸ Landscaping & shade – street trees required	9.11	Greenbelt trees required
Administration		
Procedures		
▸ Considers impacts to pedestrians during site plan review and traffic impact studies	10.04B; 11.03	Basic standards only; no pedestrian-oriented access standards
▸ Includes standards to gradually improve non-conforming conditions that do not adhere to TOD principles	Article 16	Basic nonconforming only
▸ Administrative Reviews		

Summary of zoning in the City of Ferndale:

Ferndale's Central Business District encompasses land on all four corners of the Woodward and Nine Mile Road intersection. While the focus of the downtown is along Nine Mile, the CBD designation does extend approximately 1/8 of a mile north and south of Nine Mile along Woodward. Outside of the downtown, zoning allows general business and commercial uses. The neighborhoods most proximate to Woodward are generally zoned R-2, which is one of the city's lower density single-family districts, yet it still allows a density of over 7 units per acre.

City of Huntington Woods

N: Means either a) the use is not permitted in the district or b) the principle is not addressed in the ordinance
P: Means the use is Permitted by Right
S: Means the use is Permitted as a Special or Conditional Land Use

TOD Principle	Ref.	Applicable Regulations	
Land Use and Density			
Promotes transit supportive uses	DIV 3 & 4	***2-A Transitional Office***	***3 Business***
▸ Health related and care uses		N	N
▸ Senior housing		P	N
▸ Retail, restaurants, personal service		P	P
▸ Medium to high density residential		P	N
▸ Offices/employment uses		P	P
▸ Colleges, universities		N	N
▸ Civic uses		N	P
Limits less transit supportive uses		***2-A Transitional Office***	***3 Business***
▸ Wholesale stores		N	N
▸ Car dealerships & service centers	40-221	N	S (gas stations only w/ restrictions)
▸ Drive-through uses		N	Y
Density and transitions			
▸ Directs highest density allowed within ¼ mile of transit route		Y – R-1C adjoins rear of frontage sites (7,000; 6.2 du/ac.)	
▸ Promotes transitions to adjacent neighborhoods (use, density or building height, setbacks)	40-179 40-184/218 40-186/393	Requires landscaping in Zone 2-A Setbacks based on building height in 2-A Requires wall between parking lots and residential property	
Site Design			
Building Design			
▸ Direct sidewalk connections to entrances	40-180(2)b	Front of building must face street	
▸ Building design standards encourage "activation" of first floor, through limited office & residential uses on ground level, minimum window area, limited front parking, etc.	40-180(2)	50% window area & defined entryways required; long walls (300+) prohibited	
Size of Surface Parking Lots			
▸ Sets both minimum and maximum parking standards; or		N	
▸ Allows reduced parking near transit		N	
▸ Allows shared parking	40-391 & 40-179(12)	Y	
▸ Bicycle parking addressed	40-180(5)	Y - required in Zone 2-A	

▸ Lots required to include landscaped walkways	40-179(10)	Islands required, but not walkways
Parking Location		
▸ Required at the periphery and to the rear or sides of buildings	40-179(9)	1 row of parking allowed in front yard
▸ Where necessary, drive-through facilities are designed away from non-motorized activity areas		N
Access Management		
▸ Standards minimize the number of driveways that pedestrians must cross		N
▸ Includes standards for driveways that help limit width and provide tight radii		N
▸ Includes standards for minimum driveway spacing from signalized intersections		N
Comfort and convenience		
▸ Well-lit – illumination of transit stops, bicycle parking required	40-179(5) 40-180(5)	Parking lot lighting required in 2-A ornamental streetlights required in 2-A
▸ Landscaping & shade – street trees required	40-180(3)	Street trees & parking islands required in 2-A
Administration		
Procedures		
▸ Considers impacts to pedestrians during site plan review and traffic impact studies		N
▸ Includes standards to gradually improve non-conforming conditions that do not adhere to TOD principles		N
▸ Administrative Reviews		N

Summary of zoning in the City of Huntington Woods:

All of the Woodward frontage in Huntington Woods is zoned for Transitional Office. The Huntington Woods Master Plan envisions multiple-family and senior apartments along Woodward, so this designation could change in the future. However, the current zoning will not create as vibrant a commercial location as some of the zoning in other communities, but the office district does have the potential to contribute employee transit riders to the corridor. Residential neighborhoods behind the office district are moderate in density, allowing over 6 units per acre.

City of Royal Oak

N: Means either a) the use is not permitted in the district or b) the principle is not addressed in the ordinance
P: Means the use is Permitted by Right
S: Means the use is Permitted as a Special or Conditional Land Use

TOD Principle	Ref.	Applicable Regulations			
Land Use and Density					
Promotes transit supportive uses		***Office Service***	***Gen. Business***	***Reg. Business***	***Mixed Use 2***
▶ Health related and care uses		S		S	
▶ Senior housing		N	N	N	P
▶ Retail, restaurants, personal service		P	P	N	P
▶ Medium to high density residential		N	(upper residential)	P	P
▶ Offices/employment uses		P	P	P	P
▶ Colleges, universities		P	P		P
▶ Civic uses		P	P		P
Limits less transit supportive uses		***Office Service***	***Gen. Business***	***Reg. Business***	***Mixed Use 2***
▶ Wholesale stores		N	S	N	
▶ Car dealerships & service centers		N	S	S	
▶ Drive-through uses		S	S	N	
Density and transitions					
▶ Directs highest density allowed within ¼ mile of transit route		N – R-2 single family residential is located along Woodward (6,000 s.f. lots)			
▶ Promotes transitions to adjacent neighborhoods (use, density or building height, setbacks)		Setbacks with buffers required from residential			
Site Design					
Building Design					
▶ Direct sidewalk connections to entrances	770-30	Y			
▶ Building design standards encourage "activation" of first floor, through limited office & residential uses on ground level, minimum window area, limited front parking, etc.		Y			
Size of Surface Parking Lots					
▶ Sets both minimum and maximum parking standards; or		N			
▶ Allows reduced parking near transit	770-106.D	PC can waive up to 10% of requirement based on use			
▶ Allows shared parking	770-106.C	Y			
▶ Bicycle parking addressed		N			
▶ Lots required to include landscaped walkways	770-90				

▸ PILOT		
Parking Location		
▸ Required at the periphery and to the rear or sides of buildings	770-105	Not allowed in front greenbelt, except as allowed by PC
▸ Where necessary, drive-through facilities are designed away from non-motorized activity areas		
Access Management		
▸ Standards minimize the number of driveways that pedestrians must cross		
▸ Includes standards for driveways that help limit width and provide tight radii		
▸ Includes standards for minimum driveway spacing from signalized intersections		
Comfort and convenience		
▸ Well-lit – illumination of transit stops, bicycle parking required	770-109	Y – parking lot lighting required
▸ Landscaping & shade – street trees required	770-90.E	Y – landscaped islands required
Administration		
Procedures		
▸ Considers impacts to pedestrians during site plan review and traffic impact studies		N
▸ Includes standards to gradually improve non-conforming conditions that do not adhere to TOD principles		
▸ Administrative Reviews		Y - for expansions of up to 500 s.f. or 10%

Summary of zoning in the City of Royal Oak:

Land along Woodward is zoned for a variety of commercial, office and mixed uses. The city's downtown is located along Main Street, just east of Woodward, so the commercial zoning along Woodward is more general in nature. Residential districts behind most of the commercial allow densities of over 7 units per acre.

TOD Overlay Zoning District

This ordinance was crafted so it can be incorporated into local ordinances, and as such, it contains several references to general zoning ordinance sections. They are highlighted to draw attention, so local staff can easily find where to insert their specific references, as applicable to their local codes.

Section 1: Purpose

The Transit-Oriented Development Overlay District ("TOD District") is intended to encourage the location of uses that will enhance the street-level experience while providing for a mix of transit-supportive uses within approximately one half-mile of a transit station. The TOD District has been divided into zones, as depicted on the official TOD Overlay District Map. The purpose of each zone is as follows:

a. The Core Zone is expected to contain a mix of employment and residential activity and urban design techniques that promote transit use and the non-motorized facilities needed to support transit, while discouraging low-intensity, auto-oriented uses.
b. The Transitional Zone is intended to facilitate the harmonious transition between the transit-oriented environment created in the Core Zone and the more conventional patterns in the General Zone.
c. The General Zone is intended to accommodate those business and commercial uses already customary to the Woodward Avenue corridor. This Zone is intended to contain uses in support of the Transitional and Core Zones, along with auto-oriented uses that should not locate within the Core and Transitional Zones, but that are still in demand by the community.
d. The Parking Zone is intended as a transition district between single-family residential districts and commercial development fronting on Woodward Avenue. It is also intended to provide a means for expansion of transit-oriented uses within Core Zones, and to a lesser degree, Transitional Zones by allowing strategic and careful conversion of single-family residential sites into commercial parking and expansion. It is intended that parking lots in the Parking Zone will transition into structured parking or additional commercial building sites; so buffering from residential neighborhoods is a key consideration.

Section 2: Applicability ❶

❶ ***THE BOUNDARIES OF EACH ZONE SHALL BE DETERMINED BY THE CITY, AS AN AMENDMENT TO THE ZONING MAP.***

a. **Areas Regulated.** This Transit-Oriented Development Overlay District shall apply over the existing zoning districts containing property with frontage on Woodward Avenue, in addition to any other areas designated on the TOD Overlay District map or the zoning map.
    1. Core Zones are intended to be applied at the key transit centers along Woodward Avenue, generally coinciding with the main nodes along the corridor. Property located within one-quarter mile of a transit station is generally considered for designation as a Core Zone.
    2. Properties located within one-half mile of a transit station shall be eligible for designation as Transitional.

3. Property with frontage on Woodward, that are not designated as Core or Transitional shall be considered a General Zone.
4. The Parking Zone shall generally be located behind the commercial sites fronting Woodward Avenue. Sites shall be classified for this designation where they are determined necessary to provide additional land area needed to create viable development sites, and where additional parking is needed to support transit-oriented uses along the corridor.

❷ ***THE "TRIGGERS" IN THIS MODEL MAY BE REVISED BY EACH CITY. DIFFERENT TRIGGERS MAY ALSO BE DEVELOPED FOR EACH ZONE.***

b. **Activities Regulated.** ❷ Use and development of land within the TOD District shall be regulated as follows:
   1. Where not permitted in this Overlay District, uses established prior to the adoption of this TOD District shall be considered non-conforming and are subject to the requirements of *ARTICLE X NONCONFORMING*.
   2. Where an existing use is proposed to be expanded to occupy an area (including buildings, outdoor areas, on-site parking, etc.) more than 50% of the existing size, the new use shall be subject to the building use standards of the TOD Overlay District to the maximum extent practical, as determined by the Planning Commission.
   3. Expansions to existing buildings of more than 40% of the existing gross floor area shall be subject the requirements of this TOD Overlay District and shall meet all requirements to the maximum extent practical, as determined by the Planning Commission.
      a) Flexibility shall only be granted when it is determined that it will not be contrary to the purpose of the TOD Overlay District, and where it will not be detrimental to the intended vision for the Core and Transitional Zones.
      b) Adherence with the parking and building design standards of this ordinance shall be the priority.
   4. Where a new building is proposed, the use and site shall be subject to the full requirements of the TOD Overlay District.

c. **Other Applicable Regulations.** In addition to the requirements of this TOD Overlay District, development applications shall be subject to the following. Where provisions conflict with requirements contained in this TOD Overlay District, the standards of this Overlay District shall apply:
   1. Site Plan Review as may be required in accordance with *ARTICLE X SITE PLAN REVIEW*.
   2. General provisions in accordance with *ARTICLE X GENERAL PROVISIONS*.
   3. Off-street parking and loading as may be required in accordance with *ARTICLE X OFF-STREET PARKING AND LOADING STANDARDS AND ACCESS DESIGN*.
   4. Landscaping and tree replacement as may be required in accordance with *ARTICLE X LANDSCAPE STANDARDS*.

Section 3: Uses ❸

Uses shall be permitted based upon the zone with each use as listed in the table below. Permitted Uses (indicated by a "P") are uses allowed by right in that zone. Such uses are subject to the general standards of the ordinance. Special Land Uses

❸ ***THE USES PERMITTED IN THIS TABLE REPRESENT THOSE IDEAL FOR TRANSIT. IT IS UNDERSTOOD THAT SOME CITIES WILL WISH TO ADD SOME AUTO-ORIENTED USES, BUT THEY SHOULD BE LIMITED IN SCOPE AND INTENSITY IF POSSIBLE.***

(indicated by an "S") are uses that may be permitted by the City after review according to *ARTICLE X SPECIAL LAND USES*.

USE P = Permitted Uses S = Special Land Uses	CORE ZONE	TRANSITIONAL ZONE	GENERAL ZONE	PARKING ZONE
RESIDENTIAL				
Congregate Housing	S	S	S	-
Dwelling Unit, Above Ground Floor Only	P	P	S	-
Group Homes for the Elderly	-	S	S	-
Multiple-Family (3—6 units)	P	P	S	-
Multiple-Family (7 or more units)	P	S	S	-
One-Family Detached	-	S	S	-
Town Houses (on lots at least 20 feet in width)	P	P	P	-
Two-Family	-	S	S	-
Adult Day Care	P	P	P	-
Permitted Uses in the adjacent Residential District(s)	-	-	-	P
Special Land Uses in the adjacent Residential District(s)	-	-	-	S
RECREATION, CULTURAL, AND ENTERTAINMENT				
Social Clubs and Membership Organizations	S	S	S	-
Art Galleries	P	P	P	-
Commercial Indoor Recreation	P	-	P	-
Commercial Recreation Center	S	S	P	-
Dance Studio	P	P	P	-
Health and Fitness Facility	P	S	P	-
Live Performance Theatres	S	-	P	-
Movie Theatre	S	-	P	-
Assembly Hall	S	S	P	-
INSTITUTIONAL				
Adult Day Care Center	P	S	S	-
Child Day Care Center	S	S	S	-
Colleges and Universities	P	-	S	-
Government Buildings	P	-	P	-
Libraries	P	P	P	-
Museums	P	S	P	-
Religious Institutions	S	S	S	-
Schools, K—12	S	S	S	-
Schools, Professional and Vocational	S	S	S	-
OFFICE				
Financial Institutions	P	P	P	-
Medical Offices	p	P	P	-
Offices	P	P	P	-
Veterinary Office (Without Outdoor	P	P	P	-

Kennels or Runs)				
RETAIL				
Eating and Drinking Establishment	P	P	S	-
Eating Establishment	P	P	P	-
Funeral Home	-	P	P	-
Hotel or Motel	P	-	S	-
Retail Sales and Services Establishments	P	P	P	-
Farmer's Market	P	-	-	-
Plant and Garden Shop (without outdoor display)	P	P	P	-
MISCELLANEOUS				
Communication Towers	S	S	S	-
Commercial Parking Structures	S	P	S	-
Surface Parking Lots	S [1]	S [1]	S	S
Expansion of existing commercial building onto adjacent lot under the same ownership	-	-	-	S

Notes:

[1] Requires documentation that parking spaces, in an amount adequate to serve all uses on the property, are ***not*** available within five hundred (500) feet by convenient, pedestrian route.

Section 4: Site Development Standards

Development standards are designed to create an urban form that results in significant pedestrian activity and increased intensity of uses that support transit ridership. Standards for the General Zone shall be as required in the underlying zoning district, and standards for the Parking Zone shall be as required in *ARTICLE X OFF-STREET PARKING AND LOADING STANDARDS AND ACCESS DESIGN*, unless otherwise specified. The following regulations apply in the Core and Transitional Zones:

Site Layout Requirements (SEE NOTES)			
		Core Zone	**Transitional Zone**
Lot Sizes		There are no minimum or maximum lot sizes.	
Lot Coverage		There are no maximum lot coverage requirements.	
Building Placement			
Façade		Must occupy at least 75% of lot width	Must occupy at least 60% of lot width
		Building must be oriented parallel to the street.	
Entrance	Primary Entrance	Must face Woodward Avenue, or a transit station if located within two hundred fifty (250) feet of the site.	Must face Woodward Avenue or a transit station.
	Usable Doors	One required for every 50 ft. of front building wall.	One required for every 100 ft. of front building wall.
Setbacks / Build-To Line			
Front Yard / Build-To Line		0 ft. or 6 ft., with the following exceptions: 1. Building entrances shall be recessed.	Build-to should be either 6 ft. or 24 ft. as needed to provide compatibility between adjacent sites.

		2. Where a public plaza, courtyard, or outdoor seating area is planned adjacent to the right-of-way, the primary building façade shall be adjacent to such courtyard, plaza, or seating area.	
Rear and Side Yard Setbacks	Adjacent to Core or Transitional Zones	0 ft.	0 ft.
	Abutting Any Other District	3 ft.	10 ft.
Driveways			
Parking		Rear yard only	At least 75% of the parking area must be in the rear yard
Access		Via rear yard or alley. Side yard access may be allowed for corner lots.	Existing front yard access may be maintained, but not expanded
Corner Lot Minimum Setbacks		30 ft. from any road right-of-way or easement	
Building Design Requirements			
Roof Design			
Flat Roofs		A minimum 42 inch tall parapet shall be installed to conceal mechanical equipment visible from the street level	
Building Height			
Maximum		60 ft.	48 ft.
		5 stories	4 stories
		Buildings adjacent to single-family residential districts shall include a fifteen (15) foot building step back a height of thirty-five (35) minimum of fifteen (15) feet at forty-five (45) feet.	
Minimum		30 ft.	20 ft.
		3 stories	2 stories
Maximum Ground Floor Height		10 ft.	10 ft.
Ground Floor Elevation		At grade	At grade
Minimum Floor Area for Residential Units			
Studio Units		400 sq. ft.	400 sq. ft.
1 Bedroom Units		600 sq. ft.	600 sq. ft.
2 Bedroom Units		800 sq. ft.	800 sq. ft.
Façades			
Building Design *(See Section 5)*		Ground floors shall be designed as storefronts with windows, doorways and sign panels that are integrally designed	
		Architectural variation through design, windows, or recesses required every 30 ft.	
Window Area Requirement	Ground Floor:	60% to 75%	Minimum 50%
	Upper Floors:	40% to 60%	Maximum 50%
NOTES: 1. Development in the Transitional Zone containing Residential Uses shall provide usable open space, as required in Section 7.			

Section 5: Building Design Standards

a. **Purpose**
   1. These guidelines are not intended to discourage creative design or individuality; rather they are intended to foster a consistent image along Woodward Avenue, especially within the transit nodes, that will distinguish them as a special place.
   2. The goal of these standards is to encourage buildings to relate to one another, building by building and site by site by incorporating traditional design principles. This term does not define a particular style or period, but is generally understood to embody architectural characteristics and elements of previous periods or styles. They are basic and transferable to all good architecture.

b. **Civic Building Design Standards**
   1. **Intent.** Civic buildings such as religious institutions, schools and municipal buildings often embody a certain character that has been shaped by our culture and experiences. Because of their unique function, character, and role as social and cultural anchors, these buildings are evaluated based on qualitative standards rather than rigid requirements. This allows the proper flexibility in site and building design required to provide for the various types and styles of buildings that fall within this category.
   2. **Standards.** Reasonable flexibility in design shall be permitted for civic buildings that achieve the following:
      a) **Setbacks.** Buildings may be setback farther than prescribed for other buildings, but shall be located to relate to adjacent public squares and the street.
      b) **Mass.** Civic buildings may be massed as required to achieve the desired character. Civic building entrances should be located where they achieve prominence, either at the terminus of a street or vista.
      c) **Height**. Civic building appurtenances may be permitted to exceed the maximum height, pursuant to *SECTION X, BUILDING DESIGN STANDARDS*.
      d) **Architecture.** Building design should embody the grandeur associated with civic buildings. Quality building materials, building relief, and ornamental elements should be incorporated to provide the type of monumental structures desired.

c. **Commercial Building Design Standards**
   1. **Form.** Buildings must be of compatible form, scale, detail, proportion, material, color and texture to the established or desired character, without any one building becoming visually prominent through flamboyance, irregular form or marked differentiation of materials.
   2. **Transitional Architectural Elements**
      a) The ground and upper floors of a two story building should be clearly distinguished from one another, which can be accomplished by a storefront cornice that also contains a consistent band for signage.
      b) The base of a building should be clearly defined by elevating storefront windows. Virtually all storefronts typically contain a base panel below the display windows, which can be constructed of various materials. The base panel provides a strong anchor for the storefront, placing the display area at an effective viewing height and also acts as a kickplate.
   3. **Building Materials.** Durable building materials that provide an attractive, quality appearance should be used on the building exterior, such as brick, decorative masonry

block, wood, cement board siding or a combination thereof. Use of EIFS (synthetic stucco), narrow plank vinyl, and metal siding shall be used only for accent details. Because of issues related to durability and damage, EIFS should only be used well above the ground plane.

Section 6: Parking Standards

a. **Bicycle Parking**
   1. Multiple-family residential uses shall provide bicycle parking at the rate of one bicycle parking space for every twenty (20) required vehicular parking spaces, provided that not more than one hundred (100) bicycle parking spaces shall be required for any single development.
   2. Nonresidential uses required to provide not less than fifteen (15) but not more than forty (40) vehicular parking spaces shall provide a minimum of two (2) bicycle parking spaces.
   3. Nonresidential uses required to provide more than forty (40) vehicular parking spaces shall provide a minimum number of bicycle parking spaces equal to ten (10) percent of the of the number of required vehicular parking spaces, provided that not more than one hundred (100) bicycle parking spaces shall be required for any single development.

b. **Required Vehicular Parking**
   1. **On-street Parking.** On-street parking within five hundred (500) feet from the building entrance may be considered toward fulfilling the parking requirement of a use.
   2. **Number of Spaces Required.** In order to reduce reliance on the personal automobile and foster greater use of public transit and non-motorized travel options, off-street parking shall be required as follows:
      a) **Core Zone.** Parking shall be provided in an amount not less than seventy-five percent (75%) of the amount required by the regulations of *ARTICLE X OFF-STREET PARKING AND LOADING*. In no case may parking exceed one hundred percent (100%) of the amount required.
      b) **Transitional Zone.** Parking shall be provided in an amount not less than ninety percent (90%) of the amount required by the regulations of *ARTICLE X OFF-STREET PARKING AND LOADING*. In no case may parking exceed one hundred ten percent (110%) of the amount required.
      c) **General Zone.** Parking shall be provided as required in *ARTICLE X OFF-STREET PARKING AND LOADING*.
   3. **Reductions for Shared Parking.** Where day/night or weekday/holiday schedules allow parking spaces to be used by more than one building and/or use, parking requirements may be reduced by ten percent (10%) in the Transitional Zone and up to fifty percent (50%) in the Core Zone. The amount of reduction shall be based on a parking analysis provided by the applicant and approved by the Planning Commission.
   4. **Reductions for Contributions to Public Parking.** The City may allow a reduction in open space for sites located within 250 feet of a public parking facility, or for those who contribute to the City's public parking fund, pursuant to Section 8.c.

c. **Surface Parking Lot Design**
   1. **Access Management.** Access to sites along Woodward shall adhere to the following. Where existing conditions prevent compliance, the Planning Commission may grant a modification according to Section 8.d.3.
      a) Adjacent parking lots shall interconnect and curb cuts shall be shared when feasible.

b) New access points shall utilize rear alleys, side streets or shared access where feasible. Direct access to Woodward Avenue shall only be permitted where no other reasonable alternative exists.
c) Access points shall be located outside of the functional area of signalized intersections. Because the functional area can vary by intersection, a separation of one-hundred fifty (150) feet is preferred.
d) Driveway widths shall be the minimum required to provide safe access, as determined by the City Engineer. Width shall consider angle of entry, adjacent parking locations and layout, known pedestrian or bicycle activity, and surrounding road conditions.

2. **Pedestrian Walks.**
a) Dedicated pedestrian walkways shall be provided for parking lots that exceed any of the following:
1) Lots with more than two (2) driveway aisles
2) Lots with an outside dimension (either length or width, as measured by the outermost points of the pavement) of over seventy (70) feet.
3) Lots containing more than thirty (35) parking spaces.
b) Walks shall be at least five (5) feet in width and shall be distinct from driveways, maneuvering lanes and loading zones either through pavement markings, curbing, textured pavement, landscaping or other treatments as approved by the Planning Commission. Design of such walkways shall consider the intensity of use, frequency of traffic, and walking distances.

2. **Location**
a) New surface parking lots shall be located in the rear yard, except where required for access.
b) Side yard parking may be permitted where existing parking currently exists and where the rear yard area cannot accommodate parking behind buildings.
c) In no case may parking be installed, expanded or improved between a building and the right-of-way.

3. **Screening**
a) Surface parking lots, or portions thereof, adjacent to the front yard shall be screened by a minimum thirty-six inch (36") and a maximum fifty-four inch (54") tall street wall or hedge that matches the principal structure.
b) Surface parking lots shall be screened along all streets by a masonry wall or fence four (4) feet in height in order to maintain consistent along the street.
c) Structured parking on sites that abut a street shall have at least fifty (50) percent of the ground floor fronting on any street shall be developed with office, retail, or other pedestrian-oriented uses.

4. **Buffers.** All parking lots abutting residential uses not located in the Core or Transitional Zones shall be buffered by a six (6) foot high masonry wall or by an eight (8) foot wide buffer meeting the following:
a) A buffer shall consist of a solid planting strip of evergreen trees or shrubs which are at least five (5) feet tall at the time of planting or will achieve that height within one (1) full growing season after planting. They shall be planted and maintained in a healthy growing condition.
b) Buffer plantings may include the following:
1) Norway Spruce, Austrian Pine or Scotch Pine.

2) Shrubs may be Arborvitae or upright Junipers that are maintained as a clipped hedge.

d. **Off-street Loading.** For all buildings located within two hundred fifty (250) feet of a transit station, off-street loading is not permitted in any location visible from the right-of-way along which the primary building façade is located.

e. **Required Lighting.**
   1. Off-street parking and bicycle parking areas shall be illuminated in accordance with the following table.
   2. Pedestrian areas of the site shall be illuminated to the minimum required levels.
   3. Lighting levels shall be measured in foot-candles (fc) at two (2) feet above pavement level.

Required Lighting Levels			
Use	Minimum level	Maximum After Dusk	Maximum at Residential property Lines
Low activity *Includes uses listed as "Residential" or "Institutional" in Section 3: Uses*	0.2 fc	5 fc	1.5 fc
Medium activity *Includes uses listed as "Office" or "Recreation, Cultural and Entertainment" in Section 3: Uses*	0.6 fc	5 fc	1.5 fc
High activity *Includes uses listed as "Retail" in Section 3: Uses*	0.9 fc	5 fc	1.5 fc

Section 7: Required Landscaping and Open Space

a. **Street Trees.** In order to provide a safe and comfortable pedestrian environment, the frontage of Woodward Avenue shall be planted with deciduous street trees, either planted within a curbed median island or within a tree grate installed in the public sidewalk, as follows:
   1. Trees shall be planted within ten (10) feet of the front property line.
   2. Trees shall be at least two and a half inches (2.5") caliper in size.
   3. One street tree shall be planted an average spacing of thirty-five (35) feet on-center. Clustering of trees, and spacing adjustments may be allowed by the city if necessary.

b. **Parking Lots.** Parking lots shall provide landscaped buffers as required in Section 6.c.4.

c. **Required Residential Open Space.** ❹ Developments containing residential uses shall provide open space in the amount of ten (10) square feet per dwelling unit. The City may allow a reduction in open space for sites located within two-hundred fifty (250) feet of a public park, or for those who contribute to the City's public parking fund, pursuant to Section 8.c.

❹ ***ITEM c. IS PROVIDED AS OPTIONAL CONSIDERATION FOR COMMUNITIES WHO WISH TO REQUIRE OPEN SPACE FOR RESIDENTIAL DEVELOPMENT. SEE ALSO SECTION 7.d.4***

Section 8: Application Requirements

All applications for a TOD development certificate shall be processed according to the City's regular

process, with the following exceptions:

a. **Preapplication Conference.** Prior to formal application submission, the applicant may request a meeting with City staff to discuss the nature of the project, compliance with ordinance standards, and any additional submission requirements for the specific project.
b. **Content of Application.** In addition to the general application requirements listed in *ARTICLE X, SITE PLAN REVIEW*, applications in the Core and Transitional Zones shall contain the following information:
    1. Detailed site plans, schematic architectural designs, including elevations and sections, and maps or plans indicating the following:
        a) Physical and architectural relationships to surrounding development.
        b) Pedestrian circulation on and near the site, including pedestrian connections between the designated parking, transit stations, and the principal use(s).
        c) Location, amount, character and continuity of any open space and landscaping on the site.
        d) Such other matters as are appropriate to determinations in the specific case.
    2. Projects expected to generate more than 100 additional directional trips during the peak hour of the traffic generator or the peak hour, or over 750 total trips in an average day, shall submit a Transportation Impact Study, as outlined below.
    3. Such other and further information or documentation as deemed necessary or appropriate to a full and proper consideration and disposition of the particular application.
c. **Transportation Impact Studies**
    1. **Purpose.** The purpose of a Transportation Impact Study (TIS) is to determine the potential development impact on local vehicular, pedestrian, bicycle and transit environments. Therefore, review not only of a development's impact on the level of service along Woodward Avenue and intersecting streets, but also the impact on the quality of service provided for pedestrians, bicyclists and transit riders in the community.
    2. **Required Information.** If required, a TIS shall include the following:
        a) Roadway alignment, including any problems with sight distance, number of lanes, lane width and lane configurations;
        b) Existing pedestrian, bicycle and transit facilities, including the presence of bike lanes, sidewalks, multi-use pathways, paved road shoulders exceeding 4 feet in width, bus routes, and other amenities within proximity of the site;
        c) Existing peak-hour weekday traffic volumes (and daily volumes or peak period counts (7-9 a.m. and 4-6 p.m.) to support the selection of the evaluated peak hour (if applicable) on street(s) adjacent to the site. For uses with weekend peak characteristics, the City may require new counts be taken on typical weekend days during the anticipated peak hours of the proposed use. All counts shall be collected using accepted practices and shall not be over two (2) years old;
        d) Existing pedestrian, bicycle or transit activity observed at nearby intersections within 500 feet of the site, or within an area determined during the scoping meeting. As a general guide, activity surpassing more than 15 pedestrians per hour at these locations should be noted, as well as common bicycle movements/routes, transit ridership patterns, and transit fixed-route service within study area.
        e) Established land uses within one quarter mile (1/4) of the subject site.
    3. **Transportation Forecast.** Forecasted trip generation of the proposed use for the a.m. peak hour, the p.m. peak hour and average day shall be provided for the overall project

and each phase. The forecasts shall be based on the data and procedures outlined in the most recent edition of Trip Generation published by the Institute of Transportation Engineers (ITE). The applicant may use other commonly accepted and published sources of data or supplement the standard data with data from at least three (3) similar projects in Michigan, as agreed to by the City.

4. **Trip Reductions.** As an incentive to encourage development, the following trip reductions may be allowed only in the Core Zone. The City may elect to revise the trip reduction rates based on specific knowledge of the subject area or past trends that indicate a different rate should be used.

Trip Reduction Available to Residential and Business Land Uses	
Pedestrian	
Pedestrian facilities on more than 95% of roadways	4%
Pedestrian facilities on 91 to 95% of roadways	3%
Pedestrian facilities on 80 to 90% of roadways	2%
Bicycle	
Bicycle accommodation on 50% or greater of roadways	1%
Transit	
Route has frequency of more than 6 buses per hour, and operates 19-24 hours per day	3%
Route has frequency of 5 to 6 buses per hour, and operates 17-18 hours per day	2%
Route has frequency of 3 to 4 buses per hour, and operates 14-16 hours per day	1%
Trip Reduction Available to Business Land Uses Only	
Transportation Demand Management	
TDM plan includes at least 4 strategies	2%
TDM plan includes at least 3 strategies	1%

Notes:

- To qualify for the trip reduction, the land use must also meet all of the conditions specified in the text.
- The "roadway network" refers only to the portion of the roadway network within the ½ mile radius that is adjacent to developed land uses.
- Bicycle Accommodation is defined as one of the following:
  a. street with a design speed of 25 MPH or less that carries 3,000 vehicles per day or less;
  b. on-street bike lanes;
  c. paved shoulders of roadways that are at least four feet wide;
  d. or exclusive and shared off-street bicycle paths.
- Transit routes considered include those within ¼ mile of the land use.
- TDM strategies may include one of the following:
  a. Parking pricing (employees must pay share of parking expense)
  b. Telecommuting
  c. Compressed/ Flexible Work Schedule
  d. Guaranteed Ride Home
  e. Locker and showers, and place to store bikes
  f. Car-sharing or car-matching services
  g. Free transit pass

Source: PennDOT Policies and Procedures for Transportation Impact Studies

5. **Required Quality of Service**
   a) A multimodal and roadway level of service or "capacity" analysis is required at the proposed access points using the procedures outlined in the most recent edition of the Highway Capacity Manual published by the Transportation Research Board. The capacity analysis should be provided in the appendix of the report.

b) As established using the most recent Highway Capacity Manual guidelines, all modes must operate at a projected Level of Service D or better.
c) Mitigation shall be provided in order to meet the City's required Levels of Service for each mode. Any alternatives or suggested phasing of improvements should be described and illustrated. The mitigation measures may include items such as, but not limited to, roadway widening, change to road intersection alignment or grades, need for bypass lanes or deceleration tapers/lanes, changes to signalization, relocation change in design, or reduction in number of access points, or a reduction in the proposed density of intensity of use.

d. **Review Process**

1. **Staff Review.** City staff shall review the application for compliance with the applicable standards. Staff may consult with other communities, agencies and organizations as deemed necessary to ensure consistent application of the standards or where required to advance the purposes of this ordinance.
2. **Planning Commission Action.** After receiving comments from staff, the Planning Commission shall either approve, approve subject to modification, or deny the TOD development, including the requested waivers. In its disposition, the Planning Commission shall consider all of the following:
   a) Compliance with the intent of officially adopted plans or ordinances of the city;
   b) Intent of the Core or Transitional Zone and the extent to which the application satisfies the purposes and requirements of the Zone;
   c) Use characteristics of the proposed development, including the types of ground-floor active uses and continuity of activity along the street front;
   d) Location and size of off-street parking and loading;
   e) Architectural relationships, both formal and functional, of the proposed development. to both surrounding buildings and the public right-of-way, including building siting, massing, proportion, and scale; and
   f) Suitability of signs, landscape, lighting, and other site or building features in relation to the existing or planned public improvements in the Zone.
3. **Allowed Modifications.** Modifications to the standards in these overlay districts may be granted by the Planning Commission, upon finding that the following are met:
   a) Waivers from the build-to line or building orientation requirements may be granted if the building was already in existence at the time this district was first applied to the property upon which it is located;
   b) The application, while not strictly in accordance with certain development standards, meets public purposes, is not contrary to planning principles contained in the city's Master Plan or other adopted plans, especially as they relate to transit-oriented development, and provides public protection to an equivalent or greater degree;
   c) Given the particular circumstances of the site, strict application of the development standard or standards is not necessary for the accomplishment of public purposes or the provision of public protection.
   d) Reductions to the on-site parking or open space requirements where contributions are made to a Payment-in-Lieu-of program, pursuant to subsection 4 below.

4. **Payments in Lieu of Parking or Open Space❺**
   a) In lieu of physically providing the parking required in Section 6.b., *Required Vehicular Parking*, or the open space required in Section 7.c. *Required Residential Open Space*, the City Council may permit an applicant to pay a one-time fee into the city's parking fund or open space fund.
   b) In implementing such policy, City Council shall assure that the future needs for parking or open space can be adequately met by such payments in lieu of the physical improvement.
   c) The City shall consider the following factors when determining whether to accept such payments:
      1) The current inventory of public parking or parks
      2) Future parking needs near transit nodes
      3) The specific use, location and design of the subject site, and the applicant's ability to reasonably provide on-site parking.
      4) Proximity of the subject site to existing and planned municipal parking lots.
      5) The amount of cash that will be contributed in lieu of parking, considering the actual cost to construct such parking on the subject site.
      6) Where existing parking spaces are proposed for elimination, the payment shall be calculated using the existing number of parking spaces proposed for removal regardless of the spaces' actual configuration, dimensions or compliance with the parking regulations of the Zoning Ordinance.
      7) The overall benefit to the public and to private owners from the provision of shared municipal parking
   d) The City Council may approve, deny, or approve in part an application to provide payment in lieu of off-street parking or open space.
   e) The City Council shall set the one-time fee, adjusting it from time to time, as needed to reflect the actual cost to provide open space or construct a new parking space, including such factors as land, engineering, financing, and construction of the facility with associated amenities like drainage, landscaping, etc.
   f) Payments and fees collected, plus any accrued interest, shall be used for acquisition, development and maintenance of municipally owned or leased off-street parking facilities intended to further the purposes of the TOD Overlay District.
   g) The city may choose to operate the program through a fund maintained to collect lump sum fees, or through a special assessment district where payments are levied over time as part of the tax bill for the site.

❺ ***PARKING PROGRAMS:***
- ***PAYMENT-IN-LIEU OF PARKING PROGRAMS ARE SUGGESTED BECAUSE THEY GIVE CITIES MORE CONTROL OVER WHERE PARKING LOTS ARE LOCATED.***
- ***HOWEVER, THEY REQUIRE SOME ADMINISTRATIVE WORK; SO EACH CITY MUST FEEL CONFIDENT THAT THEY CAN ADMINISTER SUCH A PROGRAM. SOMETIMES, A SPECIAL ASSESSMENT DISTRICT CAN BE USED MORE EASILY.***
- ***ALTERNATIVELY, A REGIONAL PARKING AUTHORITY, OR CORRIDOR IMPROVEMENT AUTHORITY, COULD BE CREATED TO MANAGE THE FUND.***
- ***CROSS REF: SECTIONS 6.b. AND 7.c.***

Definitions. The following definitions have been developed for this ordinance:

- *Primary building façade*. That portion of the principle building facing the street abutting the front of the property including all walls, doors, windows eaves and foundation elements but not including any front porch or any portions of the building face which are recessed more than two (2) feet from the majority of the building face.
- *Transit Station*. Definition needs to explain this is not a sign in the ground stop, but a special facility constructed for transit purposes.

List of Compiled Data

Community	Master Plan / Area Plan	Zoning Ordinance	Development Agency Plans	Transportation Plans
Ferndale	*City of Ferndale Master Plan:* PDF 2008	Text: PDF, 2010 Map: PDF, 2005		Complete Streets Ordinance, 2010
Pleasant Ridge	*City of Pleasant Ridge Community Master Plan:* scanned PDF, 1999 *Composite FLU Map:* PDF by Oakland County, 2010		*City of Pleasant Ridge Development and TIF Plan:* scanned PDF, 2008	
Royal Oak	*City of Royal Oak Master Plan:* text-only cut/paste from website to PDF, 1999 *Future Land Use Plan Map:* scanned PDF, 1999	Text: PDF municode export, 2011 Map: PDF, 2001	*Royal Oak DDA Development and TIF Plan:* 2-part PDF, 2004	*DRAFT Royal Oak Non-Motorized Transportation Plan:* PDF, 8-31-2011
Huntington Woods	*Huntington Woods Master Plan:* PDF, 2008	Text: PDF municode export, 2011 Map: PDF, 2011		
Berkley	*City of Berkley Master Plan Update:* PDF, 2007	Text: PDF municode export, 2011 Map: scanned PDF, 2007	*Berkley DDA Development and TIF Plan:* PDF, 1999	Complete Streets Resolution, 2010
Birmingham	*Downtown Birmingham 2016:* PDF scan, 1996 *Birmingham Urban Design Plan:* scanned PDF, 1993 *Triangle District Urban Design Plan:* PDF, 2007 Triangle Urban Design presentation: PDF, undated	Text: PDF, 2006 Map: PDF, 2008		Complete Streets Resolution, 2010