City of Pleasant Ridge
23925 Woodward Avenue
Pleasant Ridge, Michigan 48069

Regular Planning Commission Meeting
Monday, January 28, 2019

Members of the Planning Commission, and Residents: This shall serve as your official notification of the Regular Meeting of the Planning Commission to be held Monday, January 28, 2019, 7:00 P.M., in the City Commission Chambers, 23925 Woodward Avenue, Pleasant Ridge, Michigan 48069. The following items are on the Agenda for your consideration:

REGULAR PLANNING COMMISSION MEETING-7:00 P.M.

1. Meeting Called to Order.

2. Roll Call.

3. Minutes:
   a. Regular Planning Commission Meeting held Monday, October 22, 2018.
   b. Public Hearing and Special Planning Commission Meeting held Monday, December 10, 2018.

4. **PUBLIC DISCUSSION** – Items not on the Agenda.

5. Introduction of new member.

6. 2019 Appointment of the following for Planning Commission/DDA:
   a. Chair.
   b. Vice Chair.
   c. Secretary.

7. Traffic Calming Manual.

8. City Manager's Report.

9. Other Business.

10. Adjournment.

In the spirit of compliance with the Americans with Disabilities Act, individuals with a disability should feel free to contact the City at least seventy-two (72) hours in advance of the meeting, if requesting accommodations.

City of Pleasant Ridge
23925 Woodward Avenue
Pleasant Ridge, Michigan 48069

Planning Commission Meeting
October 22, 2018

Having been duly publicized, Chairman Treuter called the meeting to order at 7:00 p.m.

Present:	Commissioners Martin-Campbell, McAuliffe (7:16p), Stiffman, Treuter, Corrigan, Wilkinson, McCoy, Schlesinger.
Also Present:	City Manager Breuckman, City Commission liaison Perry.
Absent:	Commissioner McCutcheon.

Minutes

PC-2018-1553

Motion by Commissioner Corrigan, second by Commissioner McCoy to approve the minutes of the Regular Planning Commission meeting held Monday, July 23, 2018, be approved, as amended.

Adopted:	Yeas:	Commissioner Corrigan, McCoy, Martin-Campbell, Wilkinson, Schlesinger, Stiffman, Treuter.
	Nays:	None.

Request by owner of 23701 Woodward Avenue, Pleasant Ridge, to extend the hours for packaged beer and wine sales.

Mr. Jeffery Sherbow on behalf of Mr. Sunny Singh, owner Sunoco Gas Station, 23701 Woodward Avenue, Pleasant Ridge, Michigan. Mr. Singh has presented a formal proposal to extend his hours for packaged beer and wine sales at his location. Mr. Sherbow understands there have been no adverse effects to the community by the approval of packaged beer and wine sales earlier this year. Mr. Singh has proposed the hours be extended from 8am to midnight, from 9am to 10pm. Commissioner McCoy commented that he feels the area in front of the pumps, between the pumps and the front door is usually obstructed. Wondered if there could be signage placed in the front of the building to prohibit people from parking there and running into the station. Also, the music playing at the Sunoco station is usually loud. He would like the music to be turned down or a different channel played over the speakers, however this is his preference. Commissioner Corrigan questioned the hours of the convenience store. Mr. Sherbow responded his understanding is the convenience store and gas station is open 24 hours/day. The only restriction on sales that Mr. Singh has is the hours of allowable packaged liquor sales. Commissioner Martin-Campbell requested for clarification regarding the ordinance amendment from earlier in the year. Does this business fall under neighborhood specialty food store or automobile service station. City Manager Breuckman stated this establishment is considered both, Mr. Singh obtained a special land use as the neighborhood specialty food store to allow for the sale of packaged beer and wine. The ordinance amendment at the beginning of this year allowed for Mr. Singh to apply for the special land use as the ordinance previously prohibited him from all liquor sales, refer to use table.

PC-2018-1554

Motion by Commissioner Wilkinson, second by Commissioner Martin-Campbell that the Planning Commission schedule a public hearing on Monday, December 10, 2018 at 7pm to consider a proposed ordinance to amend Section 82-197(b)(9)(c) Automobile Service Stations and Oil Change Establishments – Hours of Operation.

Adopted: Yeas: Commissioner Martin-Campbell, Wilkinson, Corrigan, McCoy, Schlesinger, Stiffman, McAuliffe, Treuter.
Nays: None.

City Manager's Report

Grant submission to MDEQ regarding Woodward Avenue streetscape improvements. The match required is $400,000. Total grant request is $600,000. Long schedule, federally funded grant. Winners will be notified in spring. 2020 or 2021 construction possible. No update on banner project. Planter project was success. Plan to send letter that planters will be left in place over the winter. Can be decorated for winter if owner choose. If owner does not wish to plant next year, the business owner needs to contact City Hall and we will pick them up.

Other Business

Stiffman commented the No Turn on Red at Sylvan and Oakland Park/ Woodward Avenue seems to be working. Breuckman stated City has received positive feedback Stiffman requested update on Chariot Program. Breuckman commented ridership was approximately 180 in the first month. Most popular stop has been Hessel Park. Corrigan questioned when the test period would be ending for Chariot. Breuckman commented period runs through March of 2019 to coincide with the City of Ferndale parking deck construction. Program will be reviewed and assessed for continuance. Treuter questioned if the DDA should be looking at other entities to help with the $400,000 match. Breuckman responded City may look to other entities such as SEMOG. The City will look closer to the construction timing to apply for other grants. Martin-Campbell commented about stop sign issues on Woodward Heights. Breuckman stated the City is waiting for the study, but he does have the traffic counts. Traffic Calming Town Hall will be held Tuesday, January 22, 2019, at 6:30pm at the Community Center. Stiffman commented regarding the recent DTE power outage, that was halted by the Mayor. Breuckman stated take the normal precautions during power outages. DTE has some planned power upgrades causing the need for the outage, to implement the infrastructure upgrade. Homeowner will be notified if they will be affected.

With no further business or discussion, Chairman Treuter adjourned the meeting at 7:28pm.

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Chairman Treuter

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Martha Schlesinger, Secretary

City of Pleasant Ridge
23925 Woodward Avenue
Pleasant Ridge, Michigan 48069

Planning Commission Meeting
December 10, 2018

Having been duly publicized, Chairman Treuter called the Public Hearing and Special Planning Commission meeting to order at 7:00pm.

Present:	Commissioners Martin-Campbell, McCutcheon, Stiffman, Treuter, Corrigan, Wilkinson, McCoy, Schlesinger.
Also Present:	City Manager Breuckman, City Commission liaison Perry.
Absent:	Commissioner McAuliffe.

Zoning Ordinance recommendation to amend Section 82-197(b)(9)(c) Automobile Service Stations and Oil Change Establishments – Hours of Operation.

City Manager Breuckman gave a brief presentation regarding this item. The City Commission approved the Zoning Ordinance amendment that allows the owner of the Sunoco Station to request a special land use permit for SDM package liquor sales. He has applied for a special land use permit, which has been noticed accordingly. Currently, the owner has to comply with the operational requirement of Section 82-197(b)(9) that limits the sale of package liquor to the hours of 9:00 am to 10:00 pm. At this time, Mr. Singh is requesting the Zoning Ordinance be amended to allow sales from 8 am until midnight. The Planning Commission must hold a public hearing on this item and make a recommendation to the City Commission, for the proposed ordinance to go forward to adoption.

Chairman Treuter opened the public hearing at 7:03pm.

Ms. Nancy Karpus, 7 Oxford, questioned if packaged liquor sales means just beer and wine or other hard liquor. Is the owner requesting to sell hard liquor from this location? Breuckman commented the request is just for beer and wine, the owner has an SDM license to sell packaged beer and wine. Further the request by the owner is not to allow hard liquor sales. The owner is requesting to increase the time for packaged beer and wine sales at his location.

Mr. Rob Sakat, 8 Fairwood, is in support of the proposed ordinance amendment. Does not feel increasing the hours will not be a problem. The establishment is clean and there has been no problems that he is aware of.

Schlesinger asked how long the police department been keeping track of incidents at this location. Breuckman responded that the police have not been specifically keeping track for this location. Data was collected regarding calls for service to this location. All calls for service are entered into the system for any daily police activity. There has not been an uptick in calls for service to the location since the initial packaged liquor sales approval.

With no further comments or discussion, Chairman Treuter closed the public hearing at 7:05pm.

McCoy reiterated his questions from the last meeting regarding parking and the music. Mr. Singh commented that he has painted the area in front of the building as no parking. He cannot control other peoples driving habits. His staff does mention to violators that they will need to move their cars. As far at the music, he has not heard any complaints. An additional sign regarding parking will not deter people from parking in that area.

PC-2018-1555

Motion by Commissioner Schlesinger, second by Commissioner Martin-Campbell that the Pleasant Ridge Planning Commission recommend approval of the proposed ordinance to amend Chapter 82, Zoning, of the Pleasant Ridge City Code Section 82-197(b)(9)(c), Automobile Service Stations and Oil Change Establishments – Hours of Operation, to the Pleasant Ridge City Commission.

Adopted: Yeas: Commissioner Schlesinger Martin-Campbell, Wilkinson, Corrigan, McCoy, McCutcheon, Stiffman, Treuter.
Nays: None.

Other Business

This is Schlesinger's last meeting as a Planning Commission/DDA member. She thanked fellow commission members and City staff.

With no further business or discussion, Chairman Treuter adjourned the meeting at 7:13pm.

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Chairman Treuter

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Martha Schlesinger, Secretary

City of Pleasant Ridge

James Breuckman, City Manager

From: Jim Breuckman, City Manager

To: Planning Commission

Date: January 24, 2019

Re: Traffic Calming Program

Overview

Complaints about traffic are a recurring issue we hear about from residents. All of our local streets are residential streets, with Ridge and Woodward Heights also serving as collector streets with regional connections. The residential nature of our streets means that residents experience the traffic issues that affect their street every day.

We have been working on a formal traffic calming program and a traffic calming manual to present a few methods by which the City or residents may initiate traffic calming measures.

Background

The goal of traffic calming is to manage vehicle speeds and to maintain them at a reasonable level to maintain safety for all users of the street (drivers, bicyclists, walkers, rollerbladers, skateboarders, etc.) and for residents of the street.

We have been collecting traffic data for a few years, starting with the streets that we know have the highest traffic volumes. The City has also been proactively working on implementing traffic calming measures on the streets where the data confirms we have the most pressing traffic issues. Based on the data, we focused first on Ridge Road, where we have effectively reduced average vehicle speeds by over 5 miles per hour and increased safety at intersections.

Next we will be focusing on Woodward Heights for city-initiated projects.

Traffic Calming Methods

The manual identifies several traffic calming methods that can be used. Each method can be used in certain instances, and not all methods will be viable in every situation.

The manual also identifies methods and actions that are not traffic calming, and that do not address the cause of volume or speed issues. These include stop signs, police enforcement, and street closures.

Project Initiation and Funding Process

The manual also includes a policy by which residents in a street or a block can petition the City to implement traffic calming measures. As written, citizen-initiated petitions would require the residents on the street to pay for those improvements via special assessment.

This process is one that the City Commission will have to review and consider. The reason for the process being proposed this way is because we have 4 streets[1] that have more pronounced speeding or volume issues because they receive a high volume of cut-through traffic from both Pleasant Ridge and regional traffic. Therefore, the traffic issues are generated primarily by through drivers, and not residents of the street. Given that the traffic issues generated on those streets is created collectively, the solutions should be initiated and funded by the City using our collective tax dollars.

The remainder of streets in the City have very similar speed and traffic volumes. These streets carry mostly local traffic, traffic volumes are lower than on the 6 previously discussed streets, and generally there is not a pronounced speeding problem based on the 25-mph speed limit. The premise is that it is fair for the residents of those streets to fully or at least partially fund the direct cost of traffic calming improvements if they want them implemented because the traffic on those streets is primarily created by the residents of those streets.

Process

The manual and program have been introduced to the City Commission at their January 15 meeting, and to the general public at a town hall meeting on January 22. We will be interested in receiving feedback from the Planning Commission at your January 28 meeting.

We will then revise the manual based on all of the input we receive and take it back to the City Commission for consideration and eventually, adoption.

Requested Action

Planning Commission discussion and input on the proposed traffic calming manual.

[1] To wit: Oxford, Oakland Park, Ridge, and Woodward Heights.

City of Pleasant Ridge
Traffic Calming Manual

Public Comment Draft
January 9, 2019

City of Pleasant Ridge
Traffic Calming Manual

Adopted by the City Commission _____, 2019

Table of Contents

1. Introduction

1.1 A City of Beautiful Streets

The City of Pleasant Ridge is blessed with some of the most beautiful residential streets in metro Detroit. Tree-lined corridors with beautiful homes create an ambiance that makes Pleasant Ridge one of the most sought after addresses for people in the know in the area. Streets have become a significant placemaking aspect of the identity of Pleasant Ridge. The City has created a policy and has been investing in renewing our street tree canopy to ensure that our leafy character will persist for decades to come.

This manual seeks to address the commonly-cited issue of too-high vehicle speeds in the City.

1.2 Problem Statement

Pleasant Ridge is a first-ring suburb that was developed largely between 1920 and 1930. As the region has grown around Pleasant Ridge, we have seen changes in the regional transportation network. Now, Woodward and I-696 carry hundreds of thousands of cars through our City each day. Crossing Woodward is but one issue for anyone on foot or on bike. Many of our local streets – Ridge, Oakland Park, and Woodward Heights most notably - carry higher traffic volumes generated by residents of Pleasant Ridge and other adjacent cities. Finally, while our residential streets generally have lower traffic volumes and most drivers travel at reasonable speeds, some local or cut-through drivers do travel at excessive rates of speed.

This manual is intended to examine the facts of existing traffic volumes and speed to provide a baseline for decision making, and to identify a range of proven traffic calming measures that can be implemented on our local streets.

1.3 Passive vs. Proactive Design

Passive Design assumes and tries to account for the worst-case scenario for user behavior. It overdesigns streets to build in a design cushion for speeding drivers. Wider travel lanes, larger curve radii, clear zones, and even building setbacks create a condition where unsafe vehicle speeds are accounted for. However, this passive design philosophy that seeks to accommodate speeding cars ends up encouraging more speeding.

Proactive Design is based on the understanding that human behavior is adaptable and responds to external conditions. Street design is an external condition that influences driver behavior. Instead of designing for the fastest and worst driver, which creates conditions that encourages normal drivers to travel at faster speeds, proactive design uses street design to create the desired outcomes, guiding user behavior through physical and environmental cues.

1.4 Vehicle Speed and Safety

Vehicle speed is a key risk factor in traffic injuries, influencing both the risk of a crash and the severity of injuries that result. Controlling vehicle speed can prevent crashes from happening and lessens the severity of injuries sustained by the victims.

Being a primarily residential community and given that Pleasant Ridge streets are all residential in nature, our primary concern is the safety of pedestrians walking along and across our streets, and bicyclists riding in or across our streets.

Impact Speed. The human body is designed to withstand impacts up to a certain speed. A person falling 12 feet to the ground will impact the ground at about 19 miles per hour. Almost all people would survive this fall with varying levels of injury based on their age, overall health, and other factors such as how they stuck the ground. Similarly, almost all people survive being hit by a car traveling at 20 mph.

However, Newton's laws dictate that a doubling in vehicle speed results as four times as much kinetic energy being absorbed during and impact. Small increases in vehicle speed results in a disproportionately large increase in pedestrian fatalities.

The following table summarizes two established and often cited sources of research for the relationship between vehicle speed and pedestrian fatalities. The key takeaway from the table is that almost all persons will survive a crash at 20 mph. Fatalities become much more likely at 30 mph, and become highly likely at 40 mph.

The goal of Pleasant Ridge's traffic calming program is to limit speeds to 25 mph or below in accordance with traffic control laws, but also to ensure that any vehicle-pedestrian crashes that do occur are not fatal. A further goal of the traffic calming program is to make it extremely difficult to travel at speeds of greater than 30 mph along our residential streets.

Vehicle Speed	Source 1	Source 2
20 mph	5%	5%
30 mph	45%	37%
40 mph	85%	83%

Source 1: Killing Speed and Saving Lives, UK Dept. of Transportation, London, England. See also Limpert, Rudolph. Motor Vehicle Accident Reconstruction and Cause Analysis. Fourth Edition. Charlottesville, VA. The Michie Company, 1994, p. 663

Source 2: Vehicle Speeds and the Incidence of Fatal Pedestrian Collisions prepared by the Austrailian Federal Office of Road Safety, Report CR 146, October 1994, by McLean AJ,Anderson RW, Farmer MJB, Lee BH, Brooks CG

1.5 Basis for Recommendations

The basis for recommendations made in this document are established and accepted engineering manuals and studies. Examples of these include the AASHTO Green Book, the Institute of Transportation Engineers Traffic Engineering Handbook, the NACTO Urban Street Design Guide[1], and studies published by the FHWA, universities, and other respected sources. Citations are offered where appropriate.

[1] The NACTO urban street design guide provides a more in-depth examination of traffic safety, street design, and traffic calming. It is available for review online at: https://nacto.org/publication/urban-street-design-guide/

2. Physical Factors that Influence Vehicle Speed

2.1 Target Speed, Design Speed, Posted Speed, and Operating Speed[2]

2.1.1. Design Speed. The physical configuration of streets plays an important role in providing cues to motorists of what constitutes a safe speed. The design speed of a street refers to the speed at which motorists are expected to drive based on their perception of safety. Drivers will generally go the maximum speed at which they feel safe. The design speed is therefore the product of a series of design choices for the street.

Many street design manuals suggest that the design speed should be 5 to 10 mph above the posted speed limit. This general premise draws upon the principle that a higher design speed provides a safety cushion for drivers who speed. However, this practice results in drivers feeling comfortable driving at speeds that are faster than the posted speed limit.

Glossary of Terms:

Target Speed. The desired speed at which the City would like traffic to travel on a street.

Posted Speed. The posted speed limit for a street. The posted speed is usually, but not always, the same as target speed.

Design Speed. The speed at which traffic is expected to travel on a street based on geometric design factors.

Operating Speed. The observed speed at which most traffic travels on a street. It is often defined as the 85th percentile vehicle speed.

2.1.2. Posted Speed. The posted speed is determined by local and state laws. Posted speeds that do not correspond with the design speed of a street are frequently ignored. Police enforcement can help limit speeds, but it is an artificial and short-term practice because enforcement of posted speed limits that are lower than the design speed of the street is in effect forcing drivers to go slower than they feel safe doing.

2.1.3. Resulting Operating Speed. Most of the streets in Pleasant Ridge and throughout the region are designed based on the conventional highway design process which takes the target speed (25 mph for Pleasant Ridge local streets), adds a 5 mph "safety cushion," and then designs a street with a design speed of 30 mph. Therefore the 85th percentile speed observed on many Pleasant Ridge streets is close to 30 mph.

Operating speed usually equals design speed, even if the posted speed is lower. The design speed on most Pleasant Ridge streets is 30 mph, even though the speed limit is 25 mph, and this is reflected in the data which shows that the 85th percentile operating speed on most of our residential streets is very near 30 mph.

2.1.4. **A better practice is to align the design speed of the street with the target speed.** By first setting a target speed at which the City wishes drivers to travel, we can make design choices that cause drivers to feel comfortable driving at the target speed, and not higher.

However, lowering speeds on our streets requires increasing the friction that drivers feel. This will require implementing measures to retrofit the design of our streets that are unpopular

[2] For more information on this topic, see: https://nacto.org/publication/urban-street-design-guide/design-controls/design-speed/

with some or many. But, if the desire is truly to lower vehicle speeds on our streets, this is something that we as a community must accept and implement.

2.2 Geometric Factors that Influence Design Speed

Geometric factors that influence the design speed of a street include:

- Lane Width – wider travel lanes encourage higher speeds
- Number of lanes – more lanes encourage higher speeds
- Curb radii – larger curb radii encourage higher speeds
- Straight street segments – straight street segments without any kind of horizontal deflection encourage higher speeds.

2.3 Geometric Calming Factors Which Limit Vehicle Speed

Vehicle speed can be limited by either introducing vertical (i.e. speed bumps, humps, and the like), or horizontal elements to constrict the width of the street.

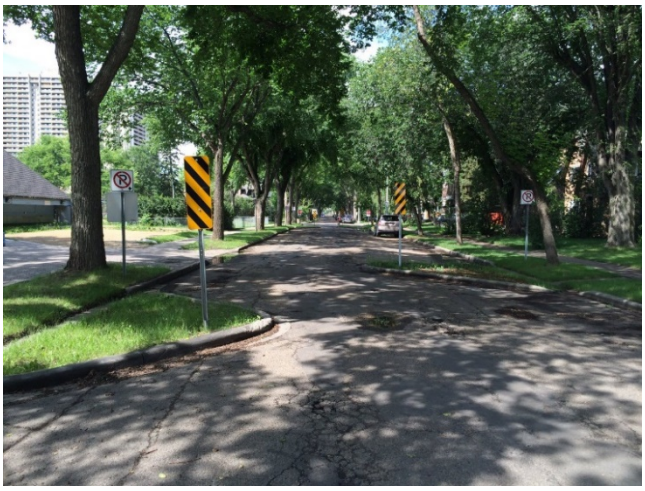
Vertical speed control elements only influence vehicle speeds in a limited area surrounding the speed bump. For this reason, they must be installed in series along a street to limit speeds along a street segment, or they are appropriately used at specific points along a street where lower speeds are important, such as crosswalks.

Horizontal speed control elements can be targeted to specific points along a street to lower travel speeds in a specific area, or they can be implemented along an entire street to lower vehicle speeds along the entire segment.

Vertical and horizontal speed control measures are discussed in detail in Section 4 of this manual.

3. Traffic Calming Options

3.1 Chicane



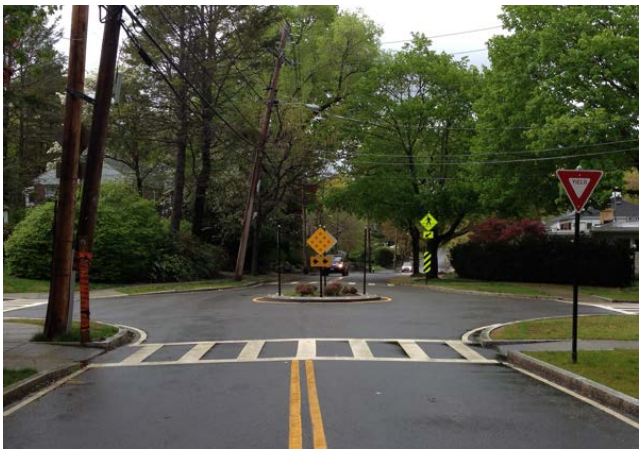
3.1.1. Overview. Chicanes are barriers placed in the street that require drivers to slow down and drive around them. The barriers can be in the form of landscaping, curb extensions, street furniture, parked cars, or other devices.

3.1.2. Location. Chicanes can be used in any location along a residential street where there is space to accommodate the barriers or curb extensions necessary to create the calming measure.

3.1.3. Negatives. There are no major negatives created by chicanes.

3.1.4. Cost. Costs are dependent on the specific conditions on the street and the design choices made for the chicane, but generally it will cost between $10,000 and $20,000 to implement.

3.2 Traffic Circle/Mini-Roundabout



3.2.1. *Overview.* A traffic circle is a small area that is painted or raised with curbs in the middle of an intersection. The traffic circle requires vehicles to slow down to traverse through the intersection. They also eliminate left turn conflicts in intersections, resulting in safer turning movements. Traffic circles provide some traffic calming, but also intersection control benefits.

3.2.2. *Location.* Traffic circles can be in the middle of intersections.

3.2.3. *Negatives.* There are no major negatives created by traffic islands, however, they only slow down traffic by a few miles per hour on average. They are best used as a complement to and in conjunction with other traffic calming measures along the street.

3.2.4. *Cost.* Cost is highly dependent on design choices and the size of the circle and will vary widely. Traffic circles can be installed for anywhere from $5,000 to $75,000, depending on the context.

3.3 Choker/Pinchpoint

3.3.1. *Overview.* This element is created with curb extensions to narrow the roadway. These elements can be used to slow traffic speeds, and to create a mid-block crosswalk. Trees may also be planted in the extended curb area to further visually narrow the street and reduce travel speeds. Pedestrians have a reduced crossing distance, which improves safety.

Chokers can be used to create either one or two travel lanes. The traffic calming effect of narrowing down to one lane is greater, but if two vehicles arrive at the choke point at the same time, it requires one driver to yield to the other. The traffic calming effect of two lanes is less, as two cars can pass by each other without stopping.

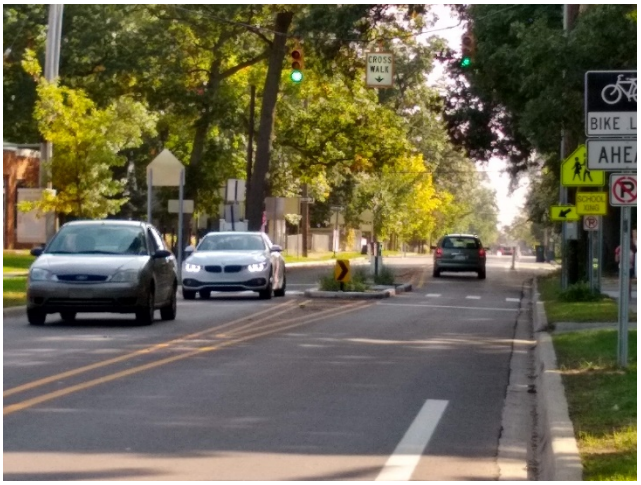
3.3.2. *Location.* Chokers can be used anywhere along a street. Practically, they will have to be at a location where the curb extensions will not impact driveways or utilities.

3.3.3. *Negatives.* Chokers will reduce the available on-street parking supply. They can also create an uncomfortable environment for bicyclists. One way around this is to maintain a passage for bicyclists next to the curb.

Chokers also have a limited area of influence on travel speeds, as vehicles will return to the pre-traffic calming speed once they are away from the choke point.

3.3.4. *Cost.* Costs are dependent on the specific conditions on the street and the design choices made for the choker, but generally one choker will cost between $10,000 and $20,000 to implement.

3.4 Center Median



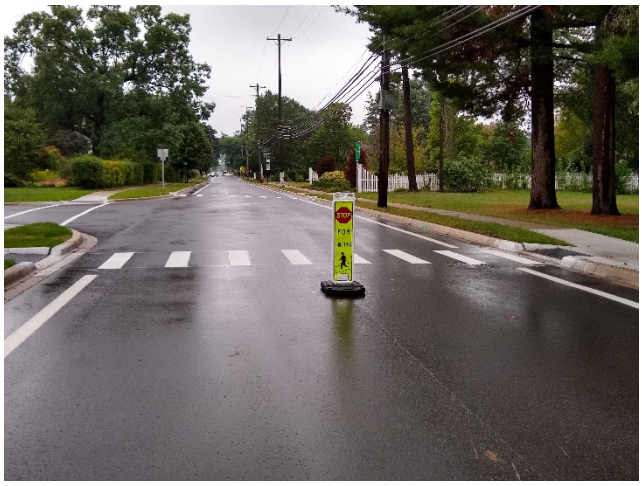
3.4.1. *Overview.* This element is created by adding a median in the middle of the street to narrow the roadway. This element can be used to slow traffic speeds, and to create a mid-block crosswalk. The center median can be planted with landscaping or can be all concrete. The median must have raised curbs.

3.4.2. *Location.* Medians can only be used where they will not impact access into and out of driveways. In Pleasant Ridge, this limits the number of locations that they can be located.

3.4.3. *Negatives.* Center medians can limit on-street parking supply. They can also create a locally uncomfortable environment for bicyclists due to the narrowing of the street. Medians also have a limited area of influence on travel speeds.

3.4.4. *Cost.* Generally, a center median will cost between $10,000 and $25,000 to implement.

3.5 Bike Lanes/Paint



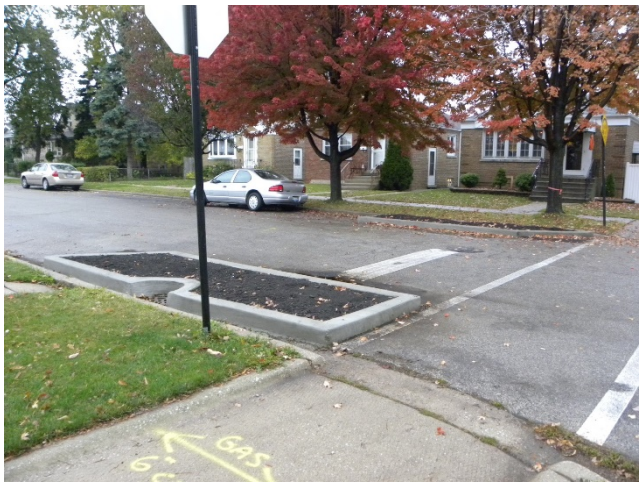
3.5.1. *Overview.* Overly-wide streets can be narrowed by adding bike lanes, or by striping in edge lines to narrow travel lanes. Narrower travel lanes are shown to reduce travel speeds.

3.5.2. *Location.* This technique can be used to create 9.5 to 11-foot-wide travel lanes and assigning some road space to a bike lane.

3.5.3. *Negatives.* There are no major negative impacts of narrowing travel lanes with paint, including creating bike lanes where space permits.

3.5.4. *Cost.* Cost will depend on the length of the roadway and the type of paint used, but generally, the cost will not exceed $7,500 per mile of street.

3.6 Corner Bump-Outs

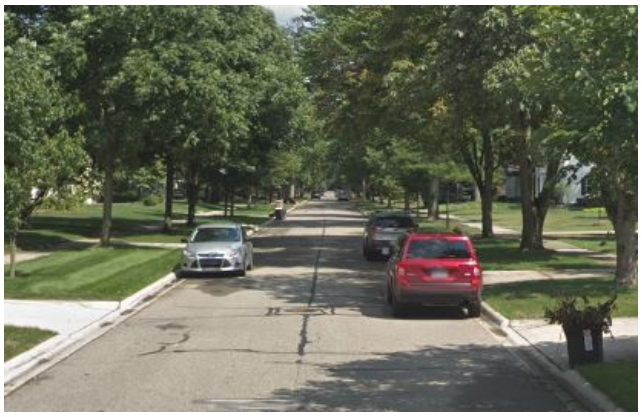


3.6.1. *Overview.* Corner bump outs are curb extensions at intersections that are used to narrow the street and shorten crossing distances for pedestrians. The primary purpose of corner bump outs is to increase pedestrian safety at intersections, and to slow down vehicle turning speeds.

3.6.2. *Negatives.* Corner bump outs can make it difficult for large vehicles to navigate corners without swinging into the opposing travel lane. It is important to carefully select an appropriate design vehicle for the intersection.

3.6.3. *Cost.* Costs are dependent on the specific conditions on the street and the design choices made for the corner bump outs, but generally it will cost between $10,000 and $20,000 to implement bump outs on one street at a corner.

3.7 On-Street Parking/Yield Street



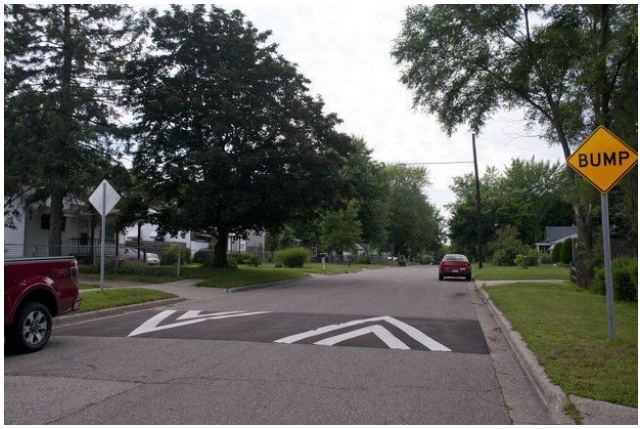
3.7.1. *Overview.* Allowing for on-street parking on both sides of a street naturally introduces nearly all the preceding horizontal traffic calming methods at no cost. Parked cars along the street will create natural choke points and chicanes that slow travel speeds.

A variation on allowing on-street parking on both sides of the street is to create alternating "checkerboard" parking zones on both sides of the street. This naturally creates chicanes on the street, while still maintaining two travel lanes. This type of alternating-side parking arrangement is a compromise that offers more of a traffic calming benefit than the standard one side only on-street parking arrangement while maintaining two travel lanes.

3.7.2. *Negatives.* Many drivers do not like yield streets because it requires them to slow down, and occasionally stop to allow oncoming traffic to pass. However, this is the purpose of traffic calming. For residents of the street, the biggest negative is that drivers or rear-seat passengers getting out of parked vehicles on the street side can exit vehicles into a narrow roadway space, which can be uncomfortable.

3.7.3. *Cost.* There is no significant cost to implementing parking on both sides of the street to create a yield street. There may be some cost for street markings or to remove signs, but these are negligible.

3.8 Speed Humps



3.8.1. *Overview*. Speed humps influence traffic speeds for 200 to 300 feet on either side of the hump. This means that a series of humps are required to reinforce a consistent speed on a street.

Studies show that, when properly deployed, speed humps result in 85th percentile speeds of 25.6 mph for 14-foot humps, or 27.3 mph for 12-foot humps.[3]

Speed humps are only recommended for use on streets with an 85th percentile speed of 30 mph or higher. Implementing speed humps on streets with an 85th percentile speed lower than 30 mph will only result in a small speed reduction, if any.

[3] Ewing, R. *Traffic Calming State of the Practice*, Institute of Transportation Engineers/Federal Highway Administration, 1999, p. 104

3.8.2. *Location*. The first hump in a series must be in a position where it cannot be approached at a high speed from either direction. To achieve this objective, the first hump in a series is typically installed within 100 to 200 feet of a small-radius curve or stop sign. Care should be taken so that humps are not proposed in areas which would conflict with existing infrastructure

3.8.3. *Spacing*. Research indicates that spacing humps between 300 and 500 feet apart is most effective at lowering the 85th percentile speed to the targeted range.

3.8.4. *Negatives*. Speed humps increase air and noise pollution at and near the hump itself as vehicles slow, and then accelerate once clear of the hump. This is reinforced by the City of Ferndale's recent pilot projects to install speed humps on some residential streets. Their survey results show that residents who live at or near the humps complain about increased vehicle noise, among relatively mixed results overall.[4]

The humps reduce the availability of on street parking for residents who live at a hump.

Finally, the humps have an aesthetic impact. In Pleasant Ridge, we would have asphalt humps on concrete streets.

3.8.5. *Cost*. Cost estimates for speed humps range from $3,000 to $5,000 per hump.

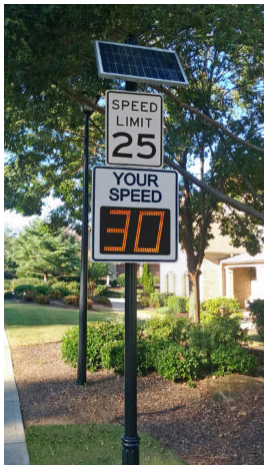
3.9 Signs

3.9.1. *Radar Speed Signs*

a. Overview. Radar speed signs offer education and feedback to drivers by highlighting the speed limit on a street and showing the current travel speed of the vehicle approaching the sign. Radar speed signs have been shown to reduce travel speeds by about 10% from the baseline condition before they were installed.

b. Location. Radar speed signs are best suited for higher volume streets.

c. Cost. Each radar speed sign costs about $5,000 - $7,500 for the equipment and installation. Solar technology eliminates the need for electrical service to the sign but can lead to periods where the sign is not functional due to a loss of battery charge.



3.10 Raised Intersections.

3.10.1. *Overview.* Raised intersections bring the level of the street up to match that of the sidewalk. This creates a large speed table within an intersection that requires drivers to slow down when traversing the intersection. Bollards are often used to keep vehicles from leaving the vehicle travel way and crossing into pedestrian space.

3.10.2. *Location.* This traffic calming method is often used in more densely populated areas, or in places that have non-residential or a mixture of uses. Their applicability in Pleasant Ridge will

[4] City of Ferndale Neighborhood Traffic Calming Post-Project Survey Findings, January 17, 2018

likely be limited, but they could be used in certain instances. For example, where a bike path or multi-use path crosses a street.

3.10.3. *Negatives.* There are no intrinsic negatives to a raised intersection, but they do often require alterations to storm water infrastructure because they change grade and drainage patterns on a street. They are also costly because they require significant concrete work to raise the street level up to the sidewalk and require reconstruction of an intersection from sidewalk to sidewalk rather than from curb to curb.

3.10.4. *Cost.* It is difficult to estimate a cost because the specific conditions at each intersection are different. Creating a raised intersection where an alley crosses a residential street may cost about $20,000, while creating a raised intersection at two residential streets could cost upwards of $60,000. The costs and planning involved in implementing this type of traffic calming measure will most likely mean that it will only be used as part of a larger infrastructure project being done by the City or another road agency.

4. Traffic Control Methods that are NOT Traffic Calming

Some traffic control devices and practices are intended to improve safety and street function at intersections or specific points along the street, but do not provide a traffic calming benefit and should not be used for traffic calming purposes.

4.1 Stop Signs.[5]

4.1.1. Overview. Stop signs are used to assign right-of-way at busy intersections. National standards have been established to determine when stop signs are warranted, taking into consideration traffic volume, sight distance, and accident history.

4.1.2. Location and Impact. Engineering studies across the nation have shown that stop signs are relatively ineffective as a speed control measure, except within 150 feet of the intersection. While speeds decrease in the immediate vicinity of unwarranted stop signs, speeds often increase between stop signs as drivers "make up for lost time," thus any effect that they have on speeds is limited to the small area surrounding the stop sign itself.

4.1.3. Negatives. Stop signs also increase air pollution, waste fuel, and create more traffic noise as vehicle accelerate away from the stop sign. The City receives such complaints from residents who live near the stop signs on Woodward Heights at Bermuda.

Most drivers are reasonable and prudent. When confronted with unreasonable and unnecessary restrictions, motorists are more likely to violate them, which often leads to contempt for other traffic signs.

For the above reasons, the City will not install stop signs for speed control. The City only implements stop signs when they are warranted for intersection control, as determined by an engineering study.

4.2 Street Closures

Street closures are not traffic calming. Traffic calming seeks to slow and manage existing traffic on a street. Street closures eliminate through traffic on one street and redistribute it to other nearby streets. Street closures are a system-level decision that benefits one street to the detriment of other streets. As such, the City will not consider requests for permanent street closures.

4.3 Enforcement

Enforcement of traffic rules and traffic control such as speed limits and stop signs address the symptoms of the problem, not the cause. When discussing traffic issues in the City, there is a perception that the police simply need to enforce the existing rules and traffic signs. However, we have 26 local streets, and many areas in town where there are traffic issues. Speeding on Oakland Park and Oxford, the prohibited

[5] *Speed Control in Residential Areas*, Institute of Transportation Engineers & Michigan Office of Highway Safety Planning, p. 12
https://mutcd.fhwa.dot.gov/htm/2009r1r2/part2/part2b.htm#section2B05
https://safety.fhwa.dot.gov/intersection/other_topics/fhwasa09027/resources/Iowa%20Traffic%20and%20Safety%20FS-%20Unsignalized%20Intersections.pdf
https://www.fcgov.com/traffic/pdf/ntsp-stop.pdf

turn on Millington, the stop sign at Bermuda and Woodward Heights, the daily backups at Roosevelt School, etc. The police cannot sit on all of these problems all of the time.

Enforcement does not address the root cause of these problems. While enforcement can cause drivers to obey the rules while enforcement is occurring, once enforcement stops drivers will return to their previous behavior. It is the conditions on and around the street that allow drivers to be comfortable speeding, or running stop signs, or making prohibited turns.

The purpose of traffic calming is to change the conditions on the street so that drivers do not feel comfortable engaging in the problem behavior. The purpose of traffic calming is to change driver behavior all of the time, not just the fraction of the time that the police can spend enforcing the various issues that exist around town.

5. Vehicle Speed and Volume Data

The City has been gathering speed and volume data for local streets since late 2014. The data is gathered by the City based on our own knowledge of which streets carry higher volumes or see higher speeds, and based on resident requests to examine traffic issues on a particular street.

Table 1. Traffic Data Inventory by Street (sorted by Average Vehicle Speed)

Street	Date	Location	Average Weekday Volume	Average Weekend Volume	Average Vehicle Speed	85th Percentile Speed
Ridge	2015.10	100 ft. S of Cambridge	4,724	3,778	29.5	32.9
Ridge	2014.12	100 ft. S of Oakland Park	3,549	3,257	28.5	32.3
Oakland Park	2015.09	800 ft. E of Ridge	2,624	2,156	28.4	32.1
Oakland Park	2015.08	800 ft. E of Ridge	2,827	2,286	27.9	32.1
Oxford	2015.10	850 ft. W of Woodward	913	951	27.6	32.1
Ridge	2015.11	100 ft. S of Cambridge	4,735	4,064	26.8	30.8
Ridge	2018.09	100 ft. S of Oakland Park	3,601	3,115	26.8	30.4
Ridge	2018.10	100 ft. S of Oakland Park	--	--	26.6	29.8
Woodward Heights	2015.04	400 ft. E of Indiana	2,854	2,068	26.2	29.9
Oxford	2015.05	850 ft. W of Woodward	1,152	888	26.2	30.3
Cambridge W	2014.12	300 ft. E of Oakdale	525	227	26.2	30.7
Sylvan	2015.08	250 ft. E of Woodward	1,256	867	25.7	29.8
Millington	2015.08	400 ft. E of Ridge	1,159	1,170	24.9	28.9
Elm Park Ave	2018.03	500 ft. W of Ridge	278	258	23.9	28.0
Maplefield	2015.05	150 ft. N of Cambridge	424	--	23.4	30.2
Hanover	2016.09	500 ft. W of Ridge	338	292	22.9	27.2
Indiana	2015.07	150 ft. N of Sylvan	892	730	21.4	26.0
Cambridge E	2017.07	250 ft. W of Woodward	891	--	20.9	24.8
Wellesley	2017.06	600 ft. E of Indiana	170	152	20.8	24.8
Woodward Alley	2018.07	Bet. D'shire & Kens'ton	284	215	18.0	20.6
Gainsboro	2015.07	150 ft. S of Wellesley	90	79	18.0	21.8

6. Implementation Methods

There are two methods for implementing traffic calming projects: 1) City led implementation, and 2) resident petition led implementation.

6.1 City Initiated Projects

The City will initiate and fund projects where conditions warrant an active intervention. The City's policy is to evaluate streets which have an average weekday traffic volume higher than 2,500 vehicles, OR where the 85th percentile speed is 32 mph or higher (7 mph over the 25-mph speed limit).[6]

The City will also implement traffic calming measures on streets that do not meet either of the above criteria if there are specific areas that present a significant safety hazard for bicyclists or pedestrians, or when traffic calming improvements can be implemented as part of a larger project.

The City has implemented traffic control measures on Ridge Road and is planning an improvement to the Oakland Park/Sylvan crossing at Woodward. Woodward Heights will be the next target street that the City will be implementing traffic calming measures.

6.2 Street Petition Process

The City supports a neighborhood-driven approach to residential speed control on streets that do not meeting the criteria for City-led projects. The City will also consider a resident-led process on a street that qualifies for city-initiated projects. To be effective, speed control measures need to be supported by the residents along a street.

The City will explore traffic calming measures when petitioned by the residents of a street using the following process:

6.2.1. If at least 66% of the households on a street sign on in favor of implementing traffic calming measures on their street, the City will convene a meeting and explore traffic calming measures that can be implemented, along with the cost of implementation.

6.2.2. The City will present the traffic calming options and costs and allow the residents of the street to determine their desired course of action. The cost to implement traffic calming measures through the petition process will be assessed equally to all residents on the block through a special assessment district. The purpose of the initial meeting is to present options and an estimate of their cost to the residents on the block.

6.2.3. If appropriate, the City can field-test some or all the traffic calming measures and collect speed data to determine the impact of the measures before the residents of the block decide upon their desired course of action.

Once the desired course of action is determined by the residents of the block, the proposed improvement and (if necessary) special assessment petition will be forwarded to the City Commission for a public hearing and decision.

[6] The 32 mph 85th percentile speed was established as the cut-off because our streets have a 30mph design speed. The 85th percentile speed on most of our residential streets is around 30mph. It is not possible to retrofit all of our residential streets to have lower 85th percentile speeds without reconstructing them. Also, studies show that speed humps will result in 25-27mph 85th percentile speeds.