

Central East and West Linden Areas Traffic Calming Recommendations

A Companion Report to *Comprehensive Strategies for Traffic Management*



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Linden Area Traffic Management Plan



Sponsored by the City of Columbus

Introduction

This report contains recommendations for implementing traffic calming treatments in the central area of Linden. These recommendations are made in conjunction with area-wide traffic management recommendations in the *Comprehensive Strategies for Traffic Management* report. Taken together, these sets of recommendations lay out a program for improving neighborhood livability by better controlling vehicular speeds, improving walking facilities, and involving the community in every step of the process.

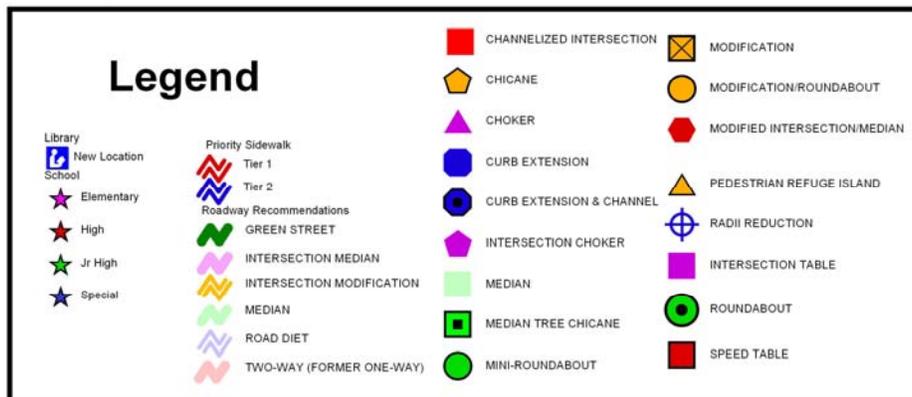
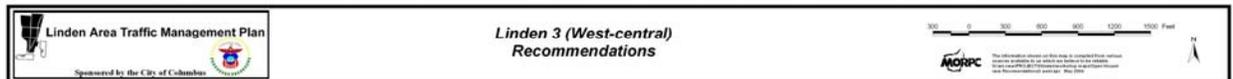
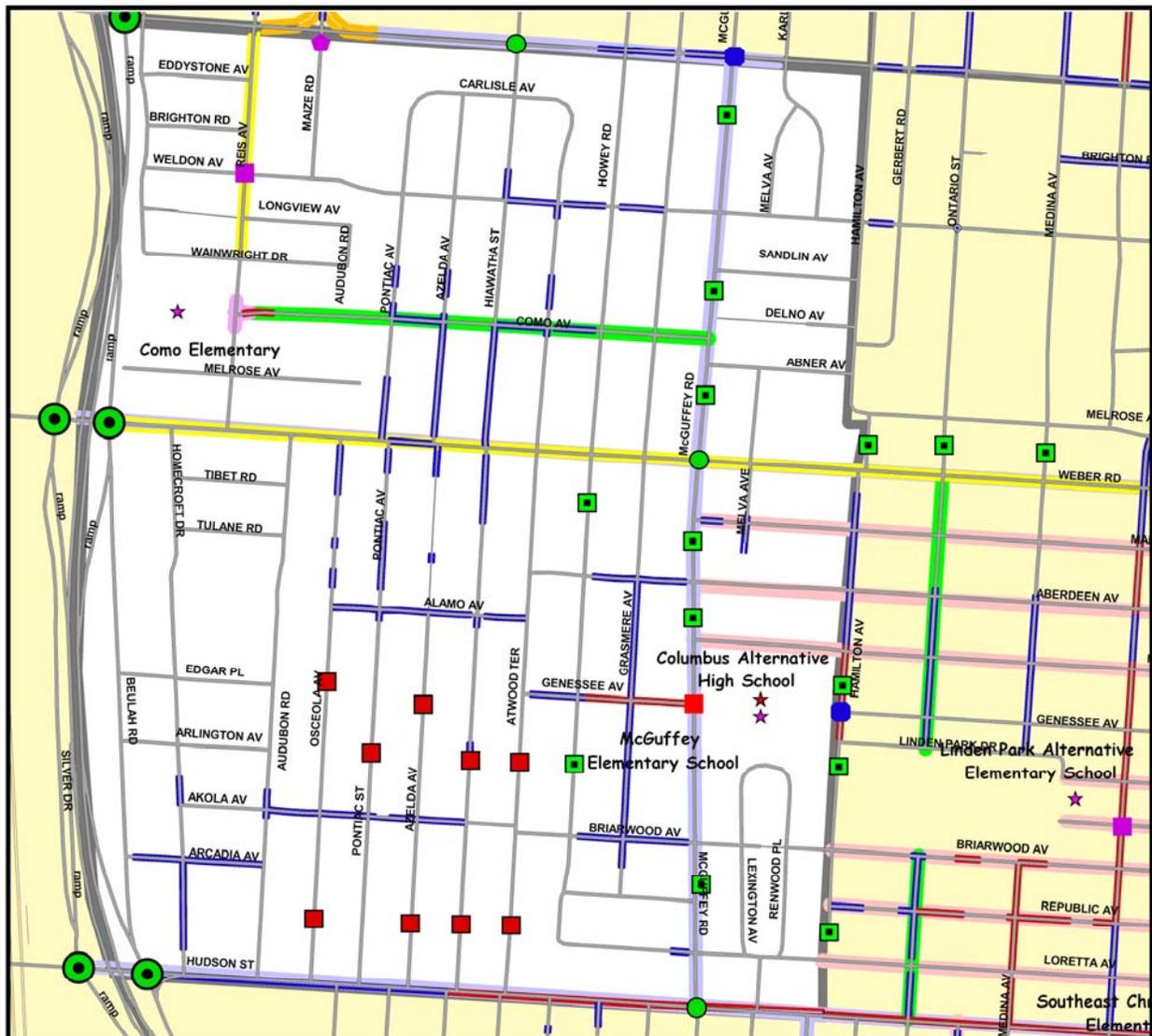


Summary of Concerns

Residents are concerned with (1) Truck traffic on N. Broadway, (2) Speed on McGuffey, (3) Pedestrian crossings are challenging at Genessee, (4) The safety and appearance of Hudson and McGuffey, an important commercial center, (5) Speeding on Atwood, Hiawatha, Azelda, Pontiac and Osceola, (6) School crossings at Hamilton and Genessee, (7) Speed and overall appearance of Weber, (8) Cleveland at Westerville and Cleveland at Myrtle are two areas where pedestrians are challenged, (9) Speed is excessive on many local streets, (10) Speed on Dresden near the traffic circles is high.

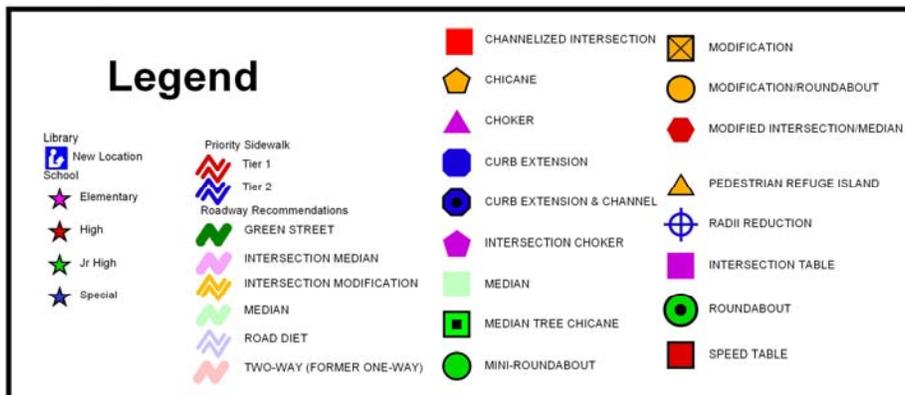
MAP OF WEST CENTRAL LINDEN RECOMMENDATIONS

NOTE: This map shows a complete build-out of all phases of the recommendations. Some treatments may not be necessary if early phases are effective.



MAP OF EAST CENTRAL LINDEN RECOMMENDATIONS

NOTE: This map shows a complete build-out of all phases of the recommendations. Some treatments may not be necessary if early phases are effective.



Central Linden Recommendations

SIDEWALKS

About half of the streets in this area are without sidewalks. Missing sidewalks tend to be concentrated in the northeast and southwest. All north-south streets east of Hamilton Avenue (except Cleveland) and a pocket of the northwest area are also missing sidewalks. Tier 1 priority sidewalks are needed along Dresden Street, Bremen Street, Medina Avenue, Hudson Street and other streets near elementary schools. Tier 2 priority sidewalks are concentrated primarily along neighborhood through streets and to fill in gaps in the existing sidewalk network.

STREET TREATMENTS: MAJOR ROADS

McGuffey Road

McGuffey Road north of Weber Road is carrying 5,000 vehicles per day in a 36-foot curb-to-curb section, with on-street parking on both sides. In the Weber Road to Hudson Street portion, McGuffey Road is carrying 6,000 with a 36-foot curb-to-curb section. The entire length is a COTA bus route. The road has an 85th percentile speed of 48 mph south of Genessee.

RECOMMENDATION: Road Diet, Median Tree Chicanes, Curb Extensions and Mini-Roundabouts (2 phases)

Phase One: Create two well-defined ten-foot travel lanes and eight-foot parking lanes. The road diet will not impact parking on McGuffey Road. Predicted results include a minimum speed reduction of 2-3 mph, and improved turning/entering/exiting movements. Parking is dropped in sections where left turn lanes are provided. The effects of these changes should be evaluated to determine if phase two will be necessary.

Phase Two: Install medians with trees south of North Broadway, Sandlin Avenue, Abner Avenue, Manchester Avenue, Genessee Avenue, and Briarwood Avenue. Channelize the intersection at Genessee Avenue by adding curb extensions and two pedestrian refuges to slow traffic and help students cross McGuffey Road. The placement of curb extensions at the North Broadway intersection will further enhance pedestrian crossing safety and comfort.

A mini-roundabout is recommended to replace signals at Weber Road to improve flow, to create a gateway and to slow traffic on both roads. Another mini-roundabout is recommended at the intersection with Hudson Street. This is an important roundabout location because cars, trucks and especially buses have a very difficult time making turns.



Weber Road at its intersection with McGuffey Road.



Weber Road

Weber Road is carrying 9,000 to 17,500 vehicles per day in a 36-foot curb-to-curb section, with left turn lanes at major intersections. Sidewalks are generally set back from the street.

RECOMMENDATION: Road Diet, Mini-Roundabouts, Road Widening and Curb Extensions (3 phases)

Phase One: Create two well-defined ten-foot travel lanes and eight-foot parking lanes. The road diet will not impact parking on Weber Road. A minimum speed reduction of 2-3 mph during off-peak hours is predicted with these operational changes. Parking is dropped in sections where left turn lanes are provided.



First Phase changes west of McGuffey provide two ten-foot lanes and an edge line. Added border widths are provided through this treatment. The changes will be evaluated for a minimum speed reduction of 2-3 mph.

Phase Two: In the future, Weber Road is recommended to have short sections of raised, planted medians west of McGuffey Road where on-street parking is not well-used. This physical barrier can allow the lanes to grow to 12 feet. East of McGuffey, where abutting land use is purely residential, Weber Road will be reconfigured using two 10-foot lanes and two parking lanes.

A mini-roundabout is recommended at McGuffey Road to help calm traffic, improve traffic flow and create an environment that encourages redevelopment. Other mini-roundabouts can also be added especially as alternatives to signalized intersections. These changes will improve truck movements; beautify the street and make pedestrian crossings easier and safer.

Phase Three: Consideration should be given to widening the road by two feet when the curb and gutter is replaced so that a slightly wider parking lane can be provided. Curb extensions can be incorporated into the design to protect vehicles parked in the street. Utilities should be placed underground for aesthetic and safety reasons.



Hudson Street

Hudson Street is a wide two-lane roadway, 32 feet wide from curb-to-curb with narrow left turn lanes at many intersections. Traffic volumes vary from 22,000 near the freeway, dipping to 15,000 at McGuffey, and climbing again to 19,000 vehicles per day near Cleveland Avenue. Combined traffic volumes at McGuffey and Hudson are approximately 19,000 vehicles per day. Speeds are low during most of the day due to traffic saturation and because of the narrowness of some lanes and utility poles next to the street. This roadway becomes severely congested during many events at the Crew Stadium and state fairgrounds, especially near I-71.

Hudson Street forms the border between the North and South Linden neighborhoods. According to both neighborhood's plans, Hudson Street is proposed to be redefined as a parkway and gateway into North and South Linden. The "Linear Park Concept" would relocate commercial businesses from Hudson to Cleveland Avenue and create greenspace with pathways on both sides of the roadway providing recreational opportunities for both North and South Linden residents. The recommendation below can be used as a phase in implementing the neighborhood plans.

RECOMMENDATION: Road Diet and Mini-Roundabout (2 phases)

Phase One: Redesign Hudson Street with two well-defined 12-foot travel lanes to allow easy truck access to Cleveland Avenue, eight-foot pedestrian refuge islands and medians where feasible between existing left turn lanes. The travel lanes can narrow to 11 feet at intersections to better accommodate the left turn lanes. This treatment will improve pedestrian crossings and allow some early placement of landscaping to begin greening the corridor. The road diet will not allow parking on Hudson Street. However, this will have no impact west of McGuffey because on-street parking is already prohibited. East of McGuffey, parking would be removed from the north side of the street.

Phase Two: Widen the sidewalk to 5 feet and the road by 4 feet to allow both travel lanes and the median/left turn lanes to be 12 feet wide. Place the utilities underground and retain the refuge islands from phase one. A roundabout is recommended at McGuffey Road to calm traffic and help foster neighborhood redevelopment. Right-of-way may be required in some areas.



Hudson Street will be have added short islands in Phase One, and (below) a roundabout will be added at McGuffey Road during Phase Two.



North Broadway

A considerable number of trucks, and total traffic, use North Broadway east of Maize Road in spite of its narrow and hilly characteristics. Resident concerns were expressed about poor sight distances and high speeds along the narrow section of North Broadway. Current 85th percentile speeds are 44 mph and the speed limit is posted 35 mph.

RECOMMENDATIONS: Road Diet & Modified Intersection (3 Phases)

Phase One: Between Maize Road and Hiawatha, create two well-defined ten-foot travel lanes with parking lanes on both sides of the street. East of Hiawatha to McGuffey, North Broadway narrows to a 26-foot width. In this section, narrow the travel lanes to nine feet and limit on-street parking to the north side of the street only. Target enforcement strategies should occur concurrently.

The road diet will result in parking being removed from one side of E. North Broadway east of Hiawatha. The loss of on-street parking on one side of the street will likely have little impact because on-street parking is used infrequently on the south side of the street. After designating the travel and parking lanes, the remaining roadway width between Maize and Hiawatha can be used as a painted median or left turn lanes. The effects of these changes should be evaluated to determine if phase two will be necessary.

Phase Two: Modify the intersections of Maize Road with Oakland Park and North Broadway to accommodate improved turning for truck traffic at controlled speeds. The intersections should be re-aligned to provide a clearly defined path for trucks. This treatment should permit the redesign of North Broadway east of Maize Road to two lanes with medians and parking lanes. The realignment of traffic movements from North Broadway to Oakland Park Avenue calls for the closure of Maize Road south of North Broadway. There are no driveways in this section. Therefore, no significant impacts are anticipated. Residents on Maize Road south of the intersection will benefit from reductions in vehicle volumes and speeds. Since Maize Road is relatively short, few people will encounter longer travel distances. The effects of phases one and two should be evaluated to determine if phase three will be necessary.

Phase Three: If necessary, install a mini-roundabout at Hiawatha if desired speed reduction is not achieved with previous phases.

The North Broadway/Maize/Oakland Park realignment will improve pedestrian crossings, control roadway entry speeds and begin the process of identifying this important commercial area as an attraction.

North Broadway will see less traffic in the future. Much of the space of the current five-lane road can be converted to a boulevard.



With the closure of Maize Road south, alternate routes are: 1) an alley that is just south of and parallel to North Broadway that leads to Reis Street, and 2) Weldon Avenue also connects to Reis Street. Residents will have the benefit of a signalized intersection at Reis Street to enter North Broadway.

Cleveland Avenue

Cleveland Avenue is the primary north-south arterial in the study area running from downtown Columbus to Westerville. Traffic volumes vary from lows of 11,000 to highs of 30,000 vehicles per day in the northeast Linden area. The road has a crash record typical of a four lane undivided road with out-of-date signalized intersections.

South of Westerville Road, Cleveland Avenue is designated as State Route 3, varies in width from 40 to 52 feet, has on-street parking with peak hour parking restrictions. Pedestrians have great difficulty crossing the wider sections either at or between signal locations. Distances between signalized intersections are quite long and pedestrian crossings are limited in number and poorly designed. As a result, many people cross Cleveland randomly.

RECOMMENDATIONS: Crosswalks, Road Diet & Roundabout (3 Phases)

Phase One: In the short term minor improvements to existing crosswalks and placement of some new crosswalks at intersections or appropriate midblock locations can help improve pedestrian crossings.

The addition of pedestrian crossings along Cleveland Avenue increases pedestrian access, comfort and convenience. It is desirable to use pedestrian crossings at regular intervals, typically spaced every 300-500 feet. Crossings should be well marked and illuminated, with appropriate physical treatments such as islands or crossing lights. Highly visible crosswalks add to motorist awareness of pedestrians, their intrusion into the pedestrian crossing space, and their tendency to yield.

Phase Two: South of Westerville Road, rebuild to include two 11-foot lanes, a narrow median, indented seven-foot parking lanes, planter strips with trees, many pedestrian crossings, mini-roundabouts to replace signals where possible, and improved sidewalks set back from the road. Such a redesign provides opportunity for redevelopment, stabilizing or increasing the commercial and residential tax base for the City. The overall crash rate at both intersections and midblock should be substantially reduced. Traffic flow would be improved because of reduction in conflicts and reduced weaving due to parked vehicles at irregular intervals. Because of the relatively low traffic volumes, single lane mini-roundabouts will operate at good to excellent levels-of-service. Longer term replacement of some of the signalized intersections with mini-roundabouts would beautify the area, foster redevelopment, further improve pedestrian crossings,



reduce operating costs and slow traffic while reducing travel times.

Phase Three: Redesign the Westerville Road intersection using a roundabout. Benefits of a roundabout at this location include: Reduced size, mass and complexity of the intersection, an attractive gateway into Linden, improved operations, reduced delay, and safer and easier pedestrian crossings. The proposed roundabout is expected to operate at level-of-service A. Although a roundabout here requires substantial right-of-way, (i.e. the acquisition of the gas station at the apex of the intersection) the general area commerce would prosper with the added access, speed control and general attraction. Alternate treatments for this intersection include rotating the major axis of the roundabout to a north-south orientation or (less preferable) squaring the two roads at an angle between 75 and 90 degrees.

Because part of Cleveland Avenue is a state highway there is need to provide training and guidance to state officials and staff about the multiple benefits roundabouts can bring to Cleveland Avenue, managing traffic efficiently with reduced crashes, reduced delays, greater pedestrian access, and other benefits.

STREET TREATMENTS: MINOR ROADS

Myrtle Avenue

RECOMMENDATION: Intersection and Speed Tables

Install intersection tables at Bremen and Greenwich streets. A speed table is recommended to be placed just west of Cleveland Avenue near the commercial area. It is important to maintain slow traffic speeds just before the Cleveland Avenue signal, where motorists have a tendency to accelerate in order to make the green light.



Speed Table

Melrose Avenue

RECOMMENDATION: Modify Traffic Circles

Melrose Avenue has two old-style traffic circles operating more like parks than traffic control devices. Minor improvements are proposed to reduce some of their complexities.

Osceola Avenue

Pontiac Street

Azelda Avenue

Hiawatha Street

Atwood Terrace

RECOMMENDATION: Speed Tables

Install one or two speed tables on each street south of Alamo Avenue as indicated on the neighborhood map. The locations are influenced by the need to place these treatments in effective locations using 400 to 600-foot spacing while fitting in between driveways. Because of uneven driveway spacing, locations of speed tables vary considerably from street to street.

Ontario Street

RECOMMENDATIONS: Green Street, Mini-Circle, Chicane

Place a mini-circle at Weldon and a median tree chicane just north of Weber. Designate Ontario as a “green street” from Weber south to Hudson. A green street is a slow-speed roadway meant primarily for walking and bicycling. A “green street” in this location would serve as a connector to Linden Park, the recreation center and school east and west of the park. The road already favors this designation because it is relatively narrow with minimal traffic. To complete the conversion to a “green street” additional trees should be added, traffic operations adjusted to favor through-movement of pedestrians and bicyclists on Ontario and intersection treatments considered such as mini-roundabouts. Suggested operational changes include designating Ontario as an alley to lower the speed limit to 15 mph.



Shown above, a “green street,” also referred to as a woonerf, serves as a very narrow, two-way street. The traveled portion of this roadway is 13 feet wide. Placement of parking, mailbox locations and other street details, including lighting, is determined with advice of residents who help design the street. “Green streets” add great value to neighborhoods, improving walking, association (human interaction), and low-speed travel.

Medina Avenue

RECOMMENDATION: Chicane

Install a median tree chicane just north of Weber to discourage cut-through traffic.

Como Avenue

RECOMMENDATION: Green Street

Designate Como as a “green street” from Reis east to McGuffey. A green street is a slow-speed roadway meant primarily for walking and bicycling. A “green street” in this location would assist children to the east in reaching Como Elementary. The road already favors this designation because it is relatively narrow with a rolling grade. To complete the conversion to a “green street” additional trees should be added, traffic operations adjusted to favor through-movement of pedestrians and bicyclists on Como and intersection treatments considered such as mini-roundabouts. Suggested operational changes include designating Como as an alley to lower the speed limit to 15 mph.

Reis Avenue

RECOMMENDATIONS: Intersection Table and Intersection Median

Install an intersection table at Weldon to slow traffic on this north-south connector road. An intersection median at Como can provide significant improvements to traffic flow and pedestrian safety. The median would run down the center of Reis eliminating left turns between the two streets and providing a pedestrian refuge for children crossing the street. The addition of a bus lane on the west side of the street would allow for student drop-off without blocking south bound traffic.

Howey Road

RECOMMENDATION: Chicanes

Create two median tree chicanes to reduce speeding. Place one in the first block south of Weber and the other in the block between Genessee and Briarwood.

Hamilton Avenue

RECOMMENDATIONS: Curb Extensions and Chicanes

Add curb extensions at Genessee and median tree chicanes to the north and south to slow traffic at the school crossings. A median tree chicane just north of Weber will slow vehicles and discourage cut through traffic.

GREEN STREET

The term and concept “green streets” is applied to any special corridor where walking, bicycling and low speed travel is emphasized. Such streets become the equivalent of a freeway for walking and bicycling, and only grant low speed access to motorists.

The term “green street” is akin to a “bicycle boulevard” where the volume of motorized traffic is carefully controlled, where direct walking and bicycling routes make it easy to go places, and where significant new walking and bicycling takes place.

A green street may receive higher levels of landscaping (especially trees). At certain blocks, traffic controls are oriented to allow the green street to be the through street and intersecting streets become stop- or yield-controlled. Often mini-circles, raised intersections, chokers or other tools are used. In other cases motorists traveling on a green street are diverted to other streets at some intersections.

When a green street is remade with significant geometric changes it takes on the quality of a woonerf (living street) where no motorist can travel more than 12 mph comfortably. Many European nations are now investing heavily in woonerfs.

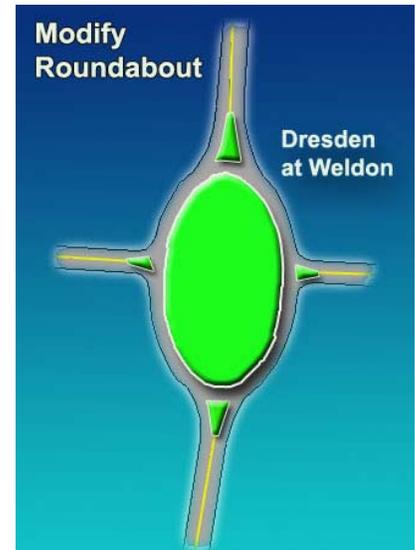
Dresden Street

RECOMMENDATIONS: Mini-Roundabout Upgrades

North Broadway: Enlarge the mini-circle to a mini-roundabout to increase deflection and provide better speed control. Additional landscaping in the center would help to increase its visibility.

Weldon Avenue: Add splitter islands to the north and south approaches of the existing mini-roundabout to slow entering and exiting vehicles. The Weldon Avenue sides of the island should have dense landscaping included similar to the landscaping that has been provided on the Dresden Street approaches to reduce the likelihood of drivers not seeing the oval park.

Milford Avenue: Add an elliptical truck apron to the existing mini-roundabout to further reduce the speeds of cars without any additional restriction on larger vehicles.



POLICY: CONVERT ONE-WAY STREETS TO TWO-WAY

One-way streets tend to increase speeding, a problem identified on many streets. All one-way streets are recommended to be converted to two-way operations. This includes **Manchester, Aberdeen** west of Cleveland Avenue, **Minnesota, Arlington, Myrtle, Briarwood, Republic** and **Loretta** avenues. Aberdeen east of Cleveland Avenue should remain one-way until it is reviewed in cooperation with the school district to refine vehicle movements in the area.

Conversion should begin with the identification of one pair of one-way streets where residents are willing to pilot the effort. A neighborhood traffic team should work to obtain local awareness and support, collecting signatures on petitions from area residents. Speeds and other factors should be evaluated before and after the conversions. Once a conversion has been determined to be successful in reducing speeds, and the residents are satisfied with the results, an outreach effort should be developed with the community to determine the level of support for conversion of the remaining streets. A series of neighborhood work sessions can help the neighborhood through the process of testing, evaluating and determining the ways to proceed on other conversions.

Summary

The primary objectives of the traffic calming and traffic management program were to: 1) identify issues and concerns, 2) determine workable solutions, and 3) most importantly, encourage residents and other stakeholders to develop a sense of ownership and commitment to solve problems that affect their safety, property values, and quality of life. This program was and continues to be a citizens' hands-on project, working with staff from the City of Columbus. Citizen input remains essential to the success of the program.

At the final workshop the Central Linden residents agreed on a prioritized list of the most important issues that they wanted to see addressed in their neighborhoods. This list included speeding, difficult turns, lack of sidewalks and truck traffic. The roads and intersections below needed the most attention, and the conceptual designs are those the community showed most interest in implementing:

PRIORITY ROADS: Hamilton Avenue, Weber Road, McGuffey Road, Westerville Road intersection with Cleveland Avenue.
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