

# Northwest Linden Area Traffic Calming Recommendations

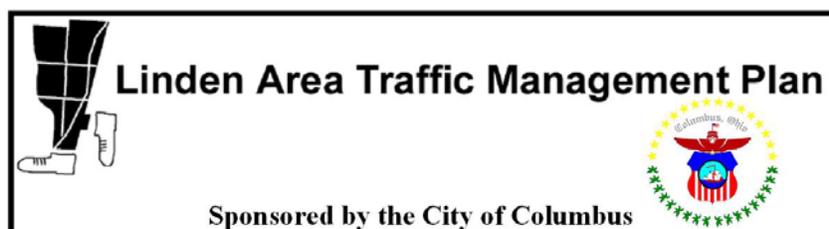
A Companion Report to *Comprehensive Strategies for Traffic Management*



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## Introduction

This report contains recommendations for implementing traffic calming treatments in the northwest 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.

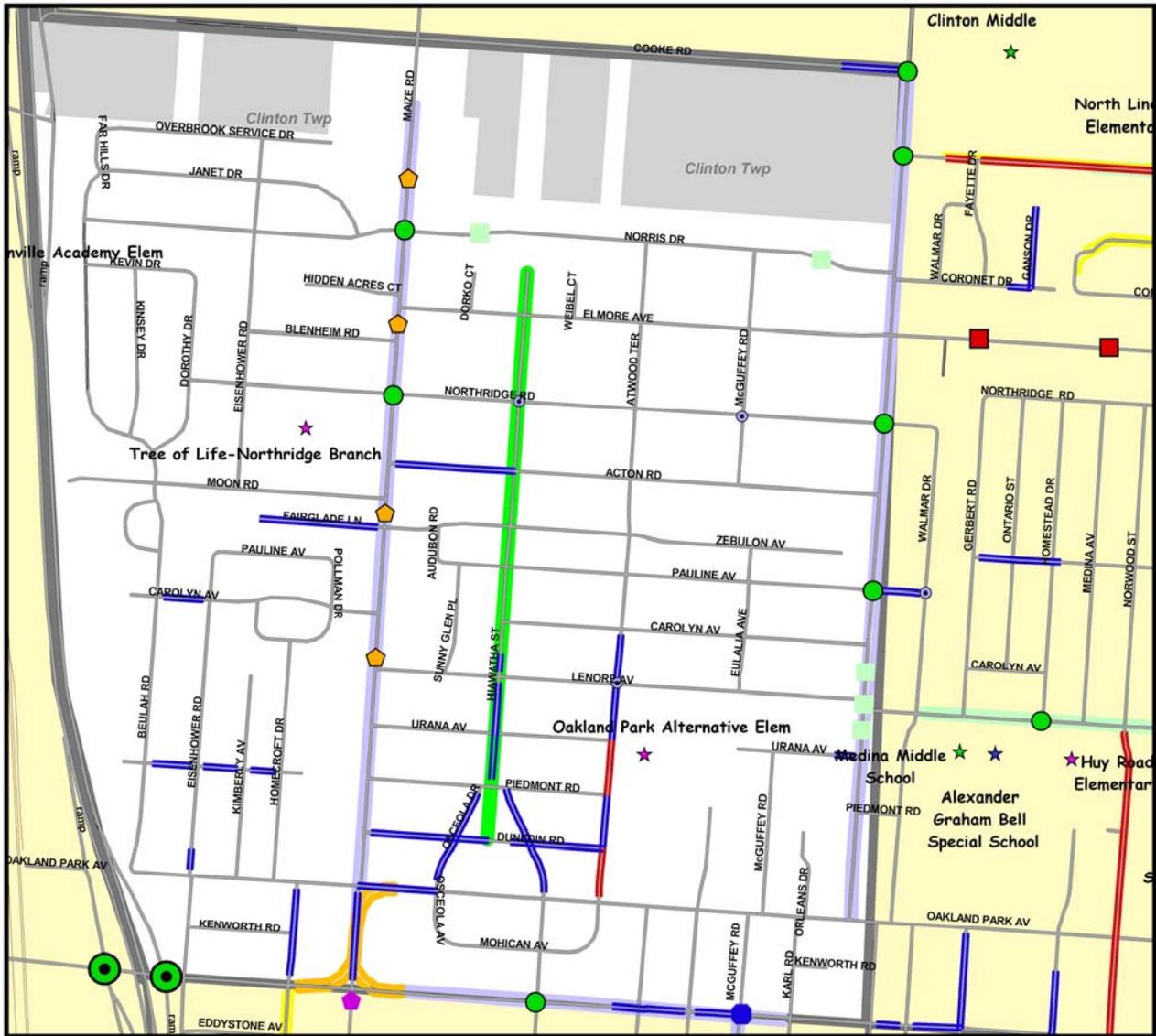


## Summary of Concerns

Residents are concerned with (1) Speeds and safety on Maize Road, (2) Turning movements on Maize at Oakland Park, (3) Too many speed humps in neighborhood, (4) Overuse of speed humps on Elmore shifted traffic to Norris, (5) Safety around schools, (6) Speeding on Karl, (7) Speeding on Lenore, Oakland Park and Reis, (8) Speed at Atwood Terrace at School, (9) Speeding on Beulah.

### MAP OF NORTHWEST 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.



Linden Area Traffic Management Plan  
 Sponsored by the City of Columbus  
**Linden 1 (Northwest) Recommendations**  
 Scale: 0 300 600 900 1200 1500 Feet  
 MORPC

## Legend

<p><b>Library</b></p> <ul style="list-style-type: none"> <li> New Location</li> </ul> <p><b>School</b></p> <ul style="list-style-type: none"> <li> Elementary</li> <li> High</li> <li> Jr High</li> <li> Special</li> </ul>	<p><b>Priority Sidewalk</b></p> <ul style="list-style-type: none"> <li> Tier 1</li> <li> Tier 2</li> </ul> <p><b>Roadway Recommendations</b></p> <ul style="list-style-type: none"> <li> GREEN STREET</li> <li> INTERSECTION MEDIAN</li> <li> INTERSECTION MODIFICATION</li> <li> MEDIAN</li> <li> ROAD DIET</li> <li> TWO-WAY (FORMER ONE-WAY)</li> </ul>	<ul style="list-style-type: none"> <li> CHANNELIZED INTERSECTION</li> <li> CHICANE</li> <li> CHOKER</li> <li> CURB EXTENSION</li> <li> CURB EXTENSION &amp; CHANNEL</li> <li> INTERSECTION CHOKER</li> <li> MEDIAN TREE CHICANE</li> <li> MINI-ROUNDABOUT</li> </ul>	<ul style="list-style-type: none"> <li> MODIFICATION</li> <li> MODIFICATION/ROUNDABOUT</li> <li> MODIFIED INTERSECTION/MEDIAN</li> <li> PEDESTRIAN REFUGE ISLAND</li> <li> RADII REDUCTION</li> <li> INTERSECTION TABLE</li> <li> ROUNDABOUT</li> <li> SPEED TABLE</li> </ul>
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## Northwest Linden Recommendations

### SIDEWALKS

About half of the streets in this area are without sidewalks. Missing sidewalks tend to be concentrated in the north near Cooke Road and along north-south streets east of Maize Road. Tier 1 priority sidewalks are needed along Atwood Terrace near Oakland Park Alternative Elementary. Tier 2 priority sidewalks are concentrated around the Tier 1 sidewalks with additional scattered locations to fill in gaps in the existing sidewalk network.

### STREET TREATMENTS: MAJOR ROADS

#### **Maize Road**

Maize Road operates as a wide, ill-defined two lane roadway, 32 feet wide. Speeds are very high, with 85th percentile speeds measured at 54 mph (in an area with a posted speed limit of 35 mph). A 1996 childhood traffic fatality marks this road as an important candidate for change. High speeds not only reduce the safety of all roadway users, they make entry to the street challenging.

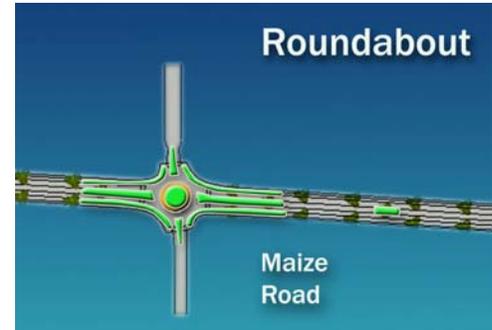
*RECOMMENDATION: Road Diet (2 phases)*

*Phase One:* Create two well-defined ten-foot travel lanes and a parking lane on one side of the street. Use high emphasis markings for crosswalks at East North Broadway, Oakland Park and any designated school crossings. Target enforcement strategies should occur concurrently.

The road diet will result in parking being removed from one side of Maize Road. The loss of on-street parking on one side of the street will likely have little impact because on-street parking is used infrequently. After designating the travel and parking lanes, the remaining roadway width can be used as a median or a restricted shoulder on the side of the street opposite the parking.

This is the lowest cost approach to roadway narrowing. This change will effectively reduce pedestrian crossing distances and may reduce speeds sufficiently to achieve the desired safety improvement and access to the street. The effects of these changes should be evaluated to determine if phase two will be necessary.

*Phase Two:* If needed, install additional horizontal deflection tools, including two mini-roundabouts at Norris and Northridge, up to four chicanes and a modified intersection at Oakland Park. Treatments can be phased. The chicanes can be built either to the curb or away from it, so as not to affect drainage.



Maize Road can benefit from geometric controls such as roundabouts (above) and chicanes (below). Speeds in these locations will be slowed to 15-25 mph.



## Karl Road

Karl Road at Cooke Road is carrying 12,000 vehicles per day in a street width of 46 feet from the northern study area boundary to Cooke Road, then 32 feet wide to the south. This volume can easily be handled by two lanes, yet the road operates as a wide four-lane roadway in the northern area. Multi-lane roads allow imprudent drivers to set higher speeds. Clinton Middle School is located at the northern intersection of Cooke and Karl roads. Speeds are very high, with 85<sup>th</sup> percentile speeds at 50 mph.

### *RECOMMENDATION: Road Diet (3 phases)*

*Phase One:* Create two well-defined ten-foot travel lanes with on-street parking; the parking would be restricted to one side of the street in the narrower section. Target enforcement strategies should occur concurrently. Use high emphasis markings for crosswalks at any designated school crossings.

The road diet will not result in the loss of any parking on Karl Road. On-street parking south of Elmore is currently restricted to the west side of Karl. After designating the travel and parking lanes, the remaining roadway width can be used as a median or a restricted shoulder on the side of the street opposite the parking. The effects of these changes should be evaluated to determine if phase two will be necessary.

*Phase Two:* If needed, install additional horizontal deflection tools, including two mini-roundabouts to slow traffic along Karl and channelization using medians at Huy and Lenore to improve pedestrian crossings. The mini-roundabouts are proposed for both intersections with Cooke Road. Vehicle volumes are so low that these mini-roundabouts will operate at Level-of-Service A at all hours, reducing travel time and overall delay at the intersections. Treatments can be phased. These are the highest priority treatments due to their proximity to schools.

*Phase Three:* If needed, install additional mini-roundabouts at Northridge and Pauline. The effects of previous phases should be evaluated to determine if phase three will be necessary.



The medians and crosswalks shown here improve the safety of motorists and pedestrians crossing Karl Road. These treatments assist motorists in gaining access to the street or moving up and down Karl Road at safe and prudent speeds. They are also designed to avoid any new problems, such as limiting access to driveways, impeding transit operations or delaying emergency response.



## Oakland Park

Oakland Park is a designated truck route and the location of several businesses. However, the truck route follows a jog from North Broadway to Oakland Park on Maize Road that includes two difficult turns for large vehicles.

### *RECOMMENDATION: Modified Intersection*

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. No turning movements are restricted at Oakland Park and Maize Road. This treatment should help discourage trucks from using North Broadway east of Maize thereby reducing the speed and overall volume of traffic on North Broadway.

A mini-roundabout at Maize and Oakland Park is also a possibility and probably a cheaper option, especially in the long term, as it could also encourage redevelopment of the area by providing a visual focal point and attractive landscaping.



## 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*

*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.



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.

*Phase Two:* The intersection modifications described above permit the redesign of North Broadway between Maize Road and Hiawatha to two lanes with planted medians and parking lanes. 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 redesign of North Broadway should reduce vehicle speeds significantly. North Broadway/Oakland Park intersection treatments should be constructed at the same time. Simultaneous construction will aid turning movements and allow significant reductions in traffic on North Broadway east of Maize Road.

## STREET TREATMENTS: MINOR ROADS

### **Hiawatha Street**

Hiawatha Street is a long north-south street spanning most of the neighborhood from just south of Norris to north of Oakland Park near an elementary school. The road is already used by pedestrians and cyclists due to a lack of sidewalks along most of its length.

#### *RECOMMENDATION: Green Street*

Designate Hiawatha as a “green street”: a slow-speed roadway meant primarily for walking and bicycling. “Green streets” serve as slow ways for motorists. A “green street” in this location would assist children to the north in reaching schools and parks to the south. The road already favors this designation because it is relatively narrow with many mature trees and parking on both sides. 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 Hiawatha and intersection treatments considered such as mini-roundabouts. Suggested operational changes include designating Hiawatha 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.

### **Norris Drive**

Norris Drive is a long, straight roadway, void of street trees. Homes are set back far from the street.

#### *RECOMMENDATION: Medians*

Install up to three medians to help control speeds by preventing vehicles from crossing the center line at both the west and east bends in the street.



Median installed in the bend of a residential street.

### **Northridge Road and Lenore Avenue**

Northridge and Lenore are long, straight residential streets connecting Maize and Karl roads.

#### *RECOMMENDATION: Mini-Circles*

Install three mini-circles at the following intersections to slow east-west traffic: Northridge at Hiawatha, Northridge at McGuffey, Lenore at Atwood Terrace.

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.

## Summary

The primary objectives of the traffic calming and traffic management program are 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 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 northwest Linden residents agreed on a prioritized list of the most important issues that they wanted to see addressed in their neighborhood. This list included speeding, traffic volume, identification of higher-volume streets, and designated truck routes. The roads and intersections below needed the most attention, and the conceptual designs are those the community showed most interest in implementing:

PRIORITY ROADS: Maize Road, Karl Road, Oakland Park and North Broadway.
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