

# COMPREHENSIVE STRATEGIES For Traffic Management



## Linden Area Traffic Management Plan



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## Comprehensive Strategies

The purpose of this report is to complement the recommended traffic-calming treatments for the entire Linden area with additional policy and implementation recommendations. When combined with other project deliverables this report forms the core of a comprehensive approach to traffic management for Linden that is well-coordinated and creates an ongoing learning opportunity for both the community and city officials.

## Current Efforts and Conditions

### CONDITIONS IN THE STUDY AREA

During the data collection and public involvement process the MORPC team identified a number of key issues and concerns currently facing the study area.

A paramount concern expressed by the community was that the existing transportation network invites speeding and other dangerous driving behaviors and contains a fragmented network of sidewalks leaving many homes, businesses, and even schools disconnected for pedestrians. Data collected validates the lack of connectivity for the pedestrian network. Furthermore, the data showed a significant number of pedestrian crashes occurring throughout the study area: 95 pedestrians were involved in 90 reported crashes resulting in 86 injuries and three deaths for the area during the years 2000 to 2002. The absence of complete pedestrian facilities also creates hazards for users of transit. Daily transit boardings in the study area number 5,983 at 226 transit stops. In short, missing facilities and a lack of designated street crossing locations diminish the level of safe mobility for many Linden residents.

Key issues associated with the decline of portions of Linden are the lack of both parking and pedestrian amenities for many businesses. Recommendations for improvements to the street network are viewed by the community as a key component of redevelopment for the business district along Cleveland Avenue. This is especially noted in the North and South Linden Neighborhood Plans.

An additional concern was the perception that motorists traveling within the neighborhood have a disregard for public safety (speeds frequently range in the mid 40s for streets like McGuffey and Karl roads and well over 50 mph on Maize Rd). An important component of these recommendations will be directed to strategies that



Study Area Conditions



encourage appropriate driving behavior, including enforcement, education and alterations to existing street operations.

### ONGOING AND NEW EFFORTS

A number of strategies and efforts have been directed to the study area usually in response to localized complaints concerning specific issues or incidents. Past traffic calming activities, including the installation of speed humps, mini circles and reconstructed sidewalks, have been done on a complaint-driven basis. Many issues and complaints also have been identified in both North and South Linden Neighborhood Plans. Information in the North Linden and South Linden area plans has been reviewed and considered during the development of the Linden Area Traffic Management Plan. The recommendations made in this report are consistent with those plans except where specifically noted. In the case of an exception, an explanation is provided as to how the recommendation meets the area plan objectives.

Additionally the Columbus Health Department along with MORPC, the Columbus Police Department and the Ohio Department of Public Safety has been awarded a grant from the National Highway Traffic Safety Administration (NHTSA) to direct a target enforcement and education campaign in Linden and downtown. This effort, which commenced in February 2004, increased the level of enforcement for pedestrian violations and promote a high profile awareness of pedestrian issues and responsibilities for pedestrians and motorists alike.

The campaign lasted through September 2004 and benefited this study's outcome by drawing community-wide attention to walkability concerns in the area. Forums hosted by the Health Department were conducted to identify perceptions of ongoing hazards; the forums were valuable in obtaining feedback concerning the perceived effectiveness of recommended measures by local residents.

### EXISTING TRAFFIC CALMING

The Linden project has proceeded on the basis of determining where treatments or policies are warranted based on existing conditions. Traffic calming treatments that already exist throughout the study area were considered as part of the existing conditions and are incorporated into the overall monitoring plan for the area. Modifications to the form of existing treatments can follow the recommendations for similar treatments made in this report. However, speed humps currently used for traffic



Speed Table on Elmwood Avenue

calming should be replaced by tools described in this report once the initial phases of this plan have been implemented and the results analyzed.

## Coordination Issues

### INTERJURISDICTIONAL COOPERATION

Several governmental jurisdictions other than the City of Columbus make decisions directly impacting traffic in the Linden study area. These include the State of Ohio, Franklin County, Clinton Township, the Central Ohio Transit Authority (COTA) and the Columbus Public Schools (CPS). It is important that the City coordinate its efforts to improve Linden area traffic with these entities to ensure the most effective results.

**State of Ohio.** Several state agencies have jurisdiction in and around the study area. The Ohio Department of Transportation (ODOT) has primary jurisdiction over State Route 3 (Cleveland Ave. / Westerville Rd.) and I-71. The Ohio Expositions Commission controls the state fairgrounds across the freeway from Linden. In addition, the Ohio Historical Society and Ohio Highway Patrol both have facilities next to the fairgrounds. All of these locations are accessed by means of 17<sup>th</sup> Avenue. Any recommendations to alter Cleveland Avenue or the freeway interchange at 17<sup>th</sup> Avenue would benefit from consultation with these state agencies. The Ohio State University lies farther to the west; but, because the university is creating a gateway area along 11<sup>th</sup> Avenue it should be included in any discussion to adjust the 11<sup>th</sup> Avenue interchange at I-71.



Ohio Historical Society

**County and Township.** Franklin County maintains county roads in the northern portion of the study area (Cleveland Ave., Cooke Rd., Ferris Rd., Innis Rd.) and also handles land use regulation in the unincorporated area. Clinton Township maintains the remaining streets outside of the Columbus city limits, and its administrative offices and police and fire facilities are located in the northeast corner of the study area.



**Transit Authority.** COTA operates numerous routes throughout the Linden area including a high-frequency bus line on Cleveland Avenue (Route #1). Alterations to streets with bus routes need to be done cooperatively so as to avoid negative impacts to transit service especially in the highly transit-dependent portions of the community.



**Schools.** There are 22 schools within the study area including both public and private schools. Traffic around

schools is a particular concern for both safety and traffic operations and is composed of staff, parents, students and school district buses.

This report makes recommendations for the entire study area based on neighborhoods and functional traffic areas. As a result, local jurisdictional borders are ignored to make sure the traffic management program is comprehensive and addresses the transportation network as a whole. This means the City will need to work with Franklin County and Clinton Township in the northeastern Linden area to incorporate traffic calming treatments and policies in a systematic, comprehensive fashion.

While counties, townships and municipalities have different powers under state law, all have some authority over streets and drivers within their jurisdiction. Counties and municipalities in particular have wide-ranging authority under Ohio Revised Code §4511.07 to control the operation of motor vehicles. Difficulties resulting from differences in statutory authority, or its interpretation, should be discussed with local legal counsel and state legislators so as to provide the ability to conduct traffic calming across local boundaries.

#### CITY AGENCY COORDINATION

The effects of this traffic management plan will extend beyond the realm of the City's Transportation Division. Although the plans and policy recommendations have been through at least one review by various city agencies including city divisions of Transportation, Police, Fire and Planning, additional and ongoing feedback from these and other agencies (such as divisions of Refuse Collection, Water, and Sewerage) will be necessary as policies and traffic calming treatments are designed. Their involvement will help ensure that operations by the various departments are not restricted or seriously hampered. If a treatment is likely to result in a serious impediments, then it can be changed to another type of device or moved to other locations.

#### LOCAL INFRASTRUCTURE PROJECTS

A variety of public works are constructed within the public right-of-way by various agencies. It is important for the planning and construction of traffic calming treatments to be coordinated with local capital projects of the city, county, township and special purpose agencies. Doing so saves both money and public frustration by tearing up streets and sidewalks only once to accomplish a variety of tasks.

### ADJACENT INFLUENCES

Because some of the study area boundary is formed by roadways, there are significant traffic impacts on Linden from areas across these roadways. Most significantly, the I-71 interchanges at Hudson St. and 17<sup>th</sup> Avenue are the major access points for a variety of destinations to the west of the freeway. In addition to the state facilities mentioned above, the Columbus Crew stadium and a shopping center also greatly impact traffic around the freeway. These major traffic generators must be considered in any change to traffic flow at the interchanges.

## Traffic Management Recommendations

### POLICY & GENERAL RECOMMENDATIONS

Traffic is affected by a complex combination of infrastructure, development, traffic regulations and human behavior. The infrastructure aspect of traffic management (and traffic calming) is described in later sections. This section makes recommendations for traffic and development policy to support the infrastructure recommendations and create an environment which modifies behavior so that extensive infrastructure changes may not be needed. Most of these items can be implemented early in the traffic calming program while a few (e.g., roundabouts to replace Interstate 71 diamond interchanges) should wait until other treatments and policies have been implemented and results considered.

Many recommendations made in this report are new to Columbus. The implementation of recommendations in this plan can be billed as a pilot until some results have been determined (see Monitoring Plan). The information and experience gathered can then be applied to other areas of the city in the future.

The Ohio Manual of Uniform Traffic Control Devices (OMUTCD) was created to help standardize traffic signage and markings to avoid driver confusion and enhance traffic operations. It must be noted that the manual itself states that common sense must be applied in all situations to verify that the standards and recommendations in the Manual are applicable. Professional engineering judgment must be used in applying the Manual. As Section 2B.01 of the 2003 OMUTCD states: “Regulatory signs shall clearly indicate the requirements imposed by the regulations and *shall be designed and installed...in order to obtain compliance.*” [Emphasis added]

### **Pedestrian Facilities and Multimodal Planning**

Improved walkability in the Linden area is essential. The area’s sidewalk system keeps pedestrians from having to walk on roadways. This increases the safety and comfort for all pedestrians especially children, seniors and people with disabilities.

Currently, sidewalk maintenance is the responsibility of the adjacent property owner. However, this responsibility is sometimes made more difficult by financial limitations as well as the results of city operations such as snow plowing and other street maintenance activities. It should be noted that it is not necessary to have curb and gutter in order to install sidewalks; roadside paths have been installed by communities such as Worthington and Dublin to improve walkability without the expense of curbs and gutters.



*RECOMMENDATION 1: Modify street maintenance procedures to help maintain pedestrian accessibility.*

Cleveland Avenue is a critical commercial corridor for the neighborhood and is a destination for many trips within the study area. Other community destinations such as schools

and the library are also frequented by pedestrians. It is recommended that the city re-examine its street maintenance procedures, including pavement maintenance and construction, sweeping and snow clearing, to make sure sidewalk and bus stop access around pedestrian destinations is maintained at all times. Successful changes can be applied to city-wide operations to enhance sidewalk access throughout the city.

*RECOMMENDATION 2: Add or repair missing and broken sidewalks.*

The Linden area sidewalk system should be completed, with priority given to areas around schools, libraries, senior centers, shopping centers and other major pedestrian destinations. The City of Columbus' Urban Infrastructure Recovery Fund and Sidewalk Installation Program are examples of funding sources that are being utilized to complete the sidewalk system. Minimum sidewalk widths should be 5 feet in residential areas and 8-10 feet in commercial areas. A 5- to 6-foot buffer between the sidewalk and roadway is desirable. Sidewalks need to be barrier free, or additional width added to provide access around barriers such as trees, fire hydrants, utility poles, and the like.



Missing and broken sidewalks should be prioritized for repair and completion.

*RECOMMENDATION 3: Plan transportation networks for all modes of travel.*

The Columbus Thoroughfare Plan details the hierarchy of streets within the study area, ensures an interconnected network of roadways and prescribes standards for street design and access. Non-motorized modes operate at a disadvantage without this type of network planning. AASHTO standards designate sidewalks to be a part of the transportation network and recommends they be constructed on both sides of all streets and highways. However, the sidewalk network in Linden is fragmented and disconnected from major destinations, even within the older, more urban portion of the study area.

It is recommended that the city create thoroughfare plans for all travel modes within the study area including sidewalks, trails and bus routes (in conjunction with COTA). These may be done as separate plans or one comprehensive document. If done separately, the existing street thoroughfare plan should be updated to reflect the interface of the street network with the other modes.

**Street Crossings**

A typical pedestrian will desire to cross streets without going more than 150 feet out of the way. When adequate numbers of marked crossings are lacking, pedestrians



begin crossing streets spontaneously and sporadically. The combination of unexpected street crossings and high speed traffic can have deadly results.

This plan calls for increased high visibility (“emphasis”) crosswalk markings, especially on principal streets. Emphasis markings make it easier for motorists to see, know and respond to fully sanctioned pedestrian crossings. Emphasis markings also send messages to motorists that they are driving in an important commercial, school or other district where pedestrians are anticipated and appropriate yielding behaviors apply. Emphasis markings make it easier for law officers to write tickets to motorists failing to yield.

*RECOMMENDATION 4: Provide convenient crossings with appropriate safety considerations on busy streets and where significant pedestrian destinations exist.*

Crosswalks are routinely marked in modern pedestrian-friendly communities in locations providing significant connectivity. As noted above, pedestrians generally will walk up to 150 feet out of the way before attempting to cross a street. Placing crossings where streets intersect or where some other strong desire-line for walking exists, such as at a parking lot directly across from a library, will often satisfy the 150-foot limit of pedestrian convenience. It is not necessary to mark crossings on all side street intersections, or even all side street intersections with principal corridors, such as Maize Road or Cleveland Avenue. However, Columbus would want to mark any significant street crossings that are direct travel routes to key pedestrian attractions, are overly wide, or have fast turning radii. Investigation of new crossings should be based on Columbus' current standards and procedures.

Crosswalks should have appropriate signs, markings, and illumination especially on streets with higher speeds and larger volumes of traffic. Additional physical treatments and highly visible “emphasis” markings, such as longitudinal-style markings, increase motorist awareness of pedestrians, their intrusion into the pedestrian crossing space, and their tendency to yield. Emphasis markings should be used at school crosswalks, mid-block crosswalks, uncontrolled crosswalks, and other locations where increased awareness is needed.

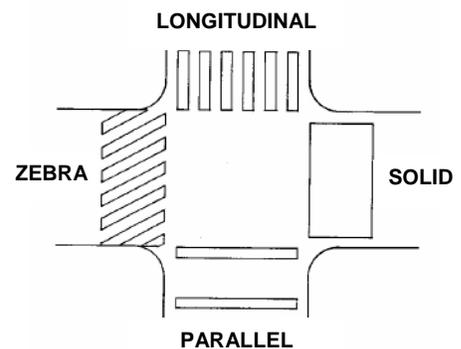


Implementation of the recommendations will result in vastly improved markings, islands and other devices to emphasize to motorists their duty to yield to pedestrians. Additional and enhanced crossings, improved marking materials and lighting are critical.



“When convenient and manageable crossing points are not identified, most pedestrians cross at random, unpredictable locations. In making random crossings, they create confusion and they add risk to themselves and drivers.”

[FHWA Course on Bicycle and Pedestrian Transportation]



**RECOMMENDATION 5: Locate crossings where appropriate traffic controls are in place.**

As a general rule, a pedestrian refuge along with signs and pavement markings are needed for crossings at uncontrolled intersections and at mid-block locations. Whenever practicable, pedestrian should not have to cross more than two moving lanes of traffic without protection. Reducing the number of lanes or lane widths can be helpful. Crossing distances on higher speed areas can also be minimized using crossing islands, splitter islands or other features. All such areas should be well illuminated at night. All mid-block crossings, or crossings away from signals should be signed and marked in compliance with the OMUTCD. Each existing and planned pedestrian crossing should be designed to ensure approach speeds are under control (preferably at 30 mph or less).



“Standardization of [signage] designs does not preclude further improvement by minor changes in the proportion or orientation of symbols, width of borders, or layout of word messages, but all shapes and colors shall be as indicated.”  
[2003 OMUTCD §2A.06]

**Speed Limits and Controls**

On some residential arterial and collector streets, 15 percent (or more) of motorists regularly drive over 50 mph. Such speeds are far too high for safety, walkability and living conditions. Speed limits are established based on prevailing speeds and the roadway conditions that lead to those speeds, as specified in the Columbus Speed Limit Manual. Therefore, the best way to achieve desired speed reductions is to design new streets, and redesign existing streets, in such a way that drivers are encouraged to travel at desired speed limits. Every recommendation in this report that relates to the physical environment can be used in designing streets for desired speeds.

**RECOMMENDATION 6: Reduce speeds on some identified local streets.**

Post all local streets at 25 mph speeds. Alleys should be posted at 15 mph. Most area streets in Linden will fall under this recommendation.

**RECOMMENDATION 7: Implement design features on some arterials to reduce speeds.**

Post residential and neighborhood commercial arterials for speeds reflecting the design intent of the roadway, including traffic calming treatments, and road user expectations. (Road users include pedestrians, motorists, cyclists and transit operators.) This recommendation applies to streets such as Maize, Cleveland (south of Weber), Hudson, 17<sup>th</sup> and 11<sup>th</sup>. Current posted speeds of 35 mph and higher are not consistent with neighborhood commercial areas and streets with a residential character.



Consider adopting practices permitting special enforcement and increased penalties in targeted areas.

**RECOMMENDATION 8: Enhance traffic control signs and street markings.**

Special speed signs and pavement markings can give greater emphasis to safe maximum speeds. Seattle and many Pacific Northwest communities now use high emphasis speed limit signs on which larger, bolder font sizes are used. Pavement markings may be imbedded in the lanes at or near the signs to give them increased visibility. These signs and markings are particularly useful in areas where compliance with speed limits and traffic controls is a problem. In addition, it is recommended that these signs and markings be used to reinforce new traffic controls or where traffic calming or roadway changes have been implemented.

**RECOMMENDATION 9: Increase penalties for speeding.**

Just as Ohio has doubled traffic fines in work zones, local governments should consider higher penalties for speeding. Using Columbus's recent experience with school zone enforcement, consideration should be given to increased fines or a mandatory court appearance for speed violations on streets with particularly high or persistent speeding (e.g., Maize Road). Signing should be added to speed limit signs alerting drivers of the additional penalties. Additional fines collected in these areas could be earmarked to help fund the increased enforcement and educational program.

**Education and Enforcement**

**RECOMMENDATION 10: Implement an education campaign.**

Speed controls and compliance should be marketed heavily, with billboards, flyers, special signing and other campaigns provided before and during the starting month for speed control transition. The education campaign would ideally be a cooperative effort among the Linden area commissions, the police division and the transportation division. Linden should be known as the first area in Columbus that is working together in support of maximum levels of ticketing, with the closest levels of speed tolerance.

**RECOMMENDATION 11: Increase enforcement.**

Today speeds on Maize (posted speed limit 35 mph) and a few other roads commonly exceed 50 mph. Motorists have learned that speeding on many streets is frequently unpunished, therefore increased monitoring and a low speeding tolerance are critical for changing driver behavior in conjunction with other traffic calming treatments.



**Above:** During Phase One selected Linden streets may receive special pavement markings to emphasize to motorists that speeding is not to be tolerated.

**Below:** Lanes may be visually narrowed to 10 feet width on selected principal streets (see individual reports). Education and Selective Enforcement principles and practices are recommended.



**RECOMMENDATION 12: Conduct a Special Pedestrian Law Enforcement Audit and Course**

Columbus, MORPC and other central Ohio jurisdictions should co-sponsor pedestrian safety audits and a two-day pedestrian law enforcement/safety course (estimated cost of \$14,000). The audits and course allow 25 or more law enforcement administrators, police officers, safety officials and others to learn how to enhance walkability, school and pedestrian safety. One phase of the two-day course includes awareness education and training officers in state of the art enforcement techniques. Cleveland Avenue is a perfect location for this featured safety/education program. This effort can be used to expand upon the on-going NHTSA funded pedestrian safety campaign to help mitigate a portion of the cost.



**One-way Street Conversion**

**RECOMMENDATION 13: Convert one-way residential streets to two-way streets.**

One-way streets are usually favored for reducing the number of conflict points at intersections and avoiding the need for vehicles to pass each other on narrow streets. However, there is also evidence that one-way streets have higher vehicular speeds than two-way streets because of the elimination of these conflicts. They may also increase the difficulty of accessing properties and promote “around the block” driving.



**Above:** Converting one-way streets to two-way operation will reduce the tendency to speed on local streets. One or several streets should be converted with strong neighborhood backing, with a full evaluation.

Some members of the community expressed concern about the ability for two-way traffic to pass on parking-congested streets. Most current one-way streets are 26 feet wide which allows for parking on both sides and one 10- to 12-foot traffic lane. A visual assessment of several streets on weekdays in the early evening found most streets to have a small amount of available on-street parking and much more off-street parking. Some parking space was taken up by objects in the roadway and several derelict automobiles.

**Below:** Numerous on-street parking spaces are occupied by illegally parked vehicles, derelict vehicles and objects in the road.

Street conversions should be implemented in phases with the results of each phase monitored. In areas where residents are particularly concerned about the ability of opposing traffic to pass, the conversion process can include the identification of no-parking zones or expansion of existing ones such as fire hydrants and driveways. Use of signage along with some targeted parking enforcement will help keep the no-parking zones clear.



This recommendation is consistent with the South Linden Neighborhood Plan and responds to members of the Linden community who have repeatedly identified

speeding as a major problem in their neighborhoods. It should be noted that, due to the special characteristics of some intersections, special examinations may be needed prior to conversion of some streets to two-way operation. Suggestions on how to approach the conversion process are provided in the plans for Central Linden and South Linden.

In areas where residents prefer to keep streets one-way, several traffic calming treatments will help control speeds with the existing street operation. Useful treatments include speed tables, chicanes and alternating on-street parking from one side of a street to the other.

### Stop Controls and Interchanges

*RECOMMENDATION 14: Re-examine stop controls throughout Linden.*

A number of unwarranted stop controls may exist in the greater Linden neighborhood, resulting in significant stop and go driving. On roads with many stop signs, speed spiking between the stop signs becomes common. In order to ensure the best integration of traffic calming treatments into the street network, stop controls should be evaluated wherever feasible as the traffic management plan is put in place. In addition, four-way stops not examined in this study should, if not warranted, be replaced with mini-circles or two-way stop controls.

These actions may be made either during the first or second phase of traffic management. City engineering staff will work in close coordination with the neighborhood traffic teams to determine when such signing will be altered.

The South Linden Neighborhood Plan suggested that a study of neighborhood traffic determine where four-way stops are needed. This may be appropriate if the reason for adding four-way stops is other than to control speed. However, the use of stop signs for traffic calming is not recommended. This is supported by OMUTCD guidance that stop signs should not be used for speed control.

*RECOMMENDATION 15: Improve warranted stop controls.*

Stop controls should be redundantly marked. Human factors research demonstrates that when redundant messages are provided to motorists about a control they are more likely to correctly respond. Generally, stop bars should be considered at all locations where stop controls are used. Where a compliance problem exists or a stop control has been added, pavement markings consisting of "STOP" text in addition to a stop bar are recommended.



Linden has many 4-way stop controls. Inappropriate stop controls induce speed spiking and delay emergency responders.



**Below:** Appropriate stop controls can be enhanced with improved sight triangles, use of stop lines and pavement signing.



Maintenance of current signs is needed as a few have lost their reflectivity, have been damaged or otherwise need to be replaced. Some require greater illumination, and others require tree or landscape trimming.

*RECOMMENDATION 16: Prohibit turns on red at selected locations.*

The ability to turn right at a red light is a convenience for motorists, but often a hazard for pedestrians. Prohibiting turns on red at busy intersections during times of high pedestrian volumes will reduce the number of potential conflicts between pedestrians and vehicles. The restriction would generally apply during school or business hours (e.g., 7 a.m. to 6 p.m.) and should be considered for Cleveland Avenue, intersections with neighborhood commercial nodes, schools, the library and other pedestrian destinations. Alternatively, a “Yield to Pedestrians in Crosswalk” or similar sign can be placed next to curb lane traffic signals at intersections with frequent pedestrian traffic as a reminder to drivers to be aware of pedestrians.

*RECOMMENDATION 17: Include Roundabouts in Future Interchange Redesign.*

A number of specific sites surrounding the diamond interchanges at North Broadway, Hudson, 17<sup>th</sup>, and 11<sup>th</sup> can be improved for better access and speed control by eliminating many event-related and other traffic delays. Roundabouts can often improve level of service and reduce queuing at constrained urban interchanges without the need to acquire additional right-of-way. Traffic simulations show that two roundabouts at the I-71 / Hudson Street interchange improves traffic flow over existing conditions. Rebuilt intersections with roundabouts can also serve as visual gateways and improve the experience of entering Linden and surrounding neighborhoods. This recommendation should be undertaken only after implementing other recommendations and gaining support from the neighborhood and ODOT.

### Neighborhood Vitality and Visual Considerations

There is clear and growing evidence that motorists tend to drive faster through areas that are stark, seedy, poorly maintained, or otherwise show a lack of pride, investment and community ownership. In the same way that many people will not walk in an area they feel is unsafe, many motorists will drive faster in areas where they do not feel it is safe to stop, or linger. Thus, transportation approaches to bringing back the life and vitality of a neighborhood need



R10-15

“Allowing right turns at red lights has been shown to increase pedestrian collisions at intersections, especially in urban areas.”

[Insurance Institute for Highway Safety website: [www.hwysafety.org](http://www.hwysafety.org)]



Interchange Roundabouts in Millington, MD at US 301 & MD 291



to be reinforced by many community actions, including reinvestment, especially on critical corners and in certain commercial corridors. The following steps are recommended:

*RECOMMENDATION 18: Implement the suggestions and recommendations in the neighborhood plans.*

The neighborhood plans spell out the community's needs and demonstrate ownership of the planned outcomes. With the few modifications recommended in this report, implementation of the neighborhood plans will begin the process of revitalizing portions of the Linden area and improving traffic problems.

*RECOMMENDATION 19: Remove trash and locate refuse containers in appropriate places.*

Today a number of streets are unsightly due to accumulation of trash, debris, dumpsters or other visual pollution. The neighborhoods and City should design and implement a practical method for orderly short-term storage and timely removal of trash, especially from key commercial streets and areas near schools and parks.

*RECOMMENDATION 20: Sponsor neighborhood cleanup activities.*

The Greater Linden Development Corporation (GLDC) currently sponsors neighborhood clean-up days. Additional jointly sponsored City/Linden neighborhood cleanup days events may need to be scheduled on a regular basis; spring and fall are often good times for this activity. A group of residents working with GLDC and Keep Columbus Beautiful can organize events involving school children, special work forces, weekend neighborhood teams and other approaches. Once an area has been spruced up, it should be targeted for special maintenance. Residents should be invited to carry litter bags with them on area walks and to pick up trash on those blocks they walk on a regular or periodic basis.

*RECOMMENDATION 21: Remove derelict cars from streets.*

Removal of abandoned and derelict cars from streets both increases parking and improves street appearance. Columbus should aggressively utilize existing programs to remove illegal vehicles from streets, or develop a program of posting official notices, impounding vehicles not attended after a reasonable period, and selling vehicles that are not claimed once impounded. Early implementation of this recommendation would be a



positive sign to neighbors that the city is committed to a good visual environment.

*RECOMMENDATION 22: Prohibit parking on tree lawns.*

Non-curbed streets in some areas of Linden invite residents to park their cars off of the road. Removing parked cars from roads has the effect of widening the road and encouraging faster driving. It also damages tree lawns and the neighborhood's overall appearance. A neighborhood door-to-door education program organized by residents working with the local police liaison should be considered where this problem is common. Similar to other target enforcement programs in Columbus, warning or courtesy tickets can be applied initially by police, and, if supported by the neighborhood at large, parking enforcement laws can be fully applied. Construction of curbs should be considered if education and enforcement are not effective.



Non-curbed and low curb areas encourage motorists to park off the pavement, thereby widening the roadway and increasing the ability to speed.

*RECOMMENDATION 23: Plant and maintain street trees and other landscaping.*

Appropriate landscaping is essential to maximize the effectiveness of many traffic calming strategies. Orderly rows of street trees give streets a sense of enclosure and allow motorists to quickly assess their speeds. Trees and other landscaping can also be used to create barriers and improve the visual appearance of neighborhoods and the economic value of homes.



Proper planting and trimming, maintenance of trees and landscaping enhances ownership, pride, self-respect and creates a sense of place – all are important ingredients of a safe and secure neighborhood where motorists behave.

Because Columbus currently cannot commit funds to maintain landscaping, it is likely that area commissions will be required to arrange for the upkeep of any landscaping. Schools, garden clubs, churches, service clubs, businesses and individual blocks can work through the local area commission to identify priority areas for planting, sponsor tree planting days, and assist with maintenance of trees. The Columbus Recreation and Parks Department Comprehensive Tree Planting Program may provide a starting point for developing a street tree and landscaping master plan for the greater Linden area.

*RECOMMENDATION 24: Cut overhanging vegetation.*

Today significant amounts of landscaping, including trees, need pruning and periodic maintenance. A vegetation maintenance plan should be developed by a neighborhood task force involving the Transportation Division, City Forester and Keep Columbus Beautiful. To the greatest extent possible this plan should be embraced by citizen groups, guided by professional services, and implemented by jointly sponsored planting and management activities



possibly in conjunction with neighborhood cleanup days (see Recommendation 20).

*RECOMMENDATION 25: Build Nothing Ugly, Not Even Temporarily*

Columbus must pay close attention to constructing only traffic calming features that will be attractive to area neighbors and cared for. Any temporary features that reduce the visual quality of streets should not be installed. Perceived “ugly” treatments can prompt a negative reaction from the neighborhood. Perhaps more significantly, because these recommendations will serve as models for the entire city “ugly” treatments may be rejected by other neighborhoods as well and undermine the entire pilot effort.

NEIGHBORHOOD TRAFFIC CALMING PLANS AND COST ESTIMATES

Recommendations and suggestions provided in this report and the accompanying neighborhood traffic calming plans were prepared from a variety of data sources: residents who attended the traffic calming meetings, data collection by the MORPC team, issues identified in the North and South Linden Neighborhood Plans, and others. The final treatments are the result of an iterative process in which treatment recommendations were added and deleted after feedback from various stakeholders.

The conceptual layout for each treatment in the neighborhood plans is approximate in size. It is only intended to provide an idea of the size and shape of each treatment so that the feasibility and impacts can be reviewed. Because the designs are still conceptual in nature and prepared on an aerial photograph, their accuracy is limited. Based on these constraints, estimates of any right-of-way that may be required is shown on the aerial photos. Also costs of designs and likely right-of-way purchases can be estimated for future budgeting needs. Review of these plans must be made by all city departments to determine if any changes are needed to suit certain vehicle types.

In some cases individual treatment plans may need to be removed because of physical or operational constraints. In other cases the treatment may be modified to maintain their calming effectiveness but decrease their impact on particular road users (for example, with the use of truck aprons or other geometric or size specifications to accommodate larger vehicles).

During the detailed review process, it may become evident that it will be necessary to restrict certain vehicle



These temporary treatments created the desired slowing effects, but in the long run these treatments backfired. Residents in the treated areas, and in other areas of town objected to the “uglification” of their neighborhood.

movements to ensure that the treatments stay in place. In other cases the treatment may be especially designed to permit turning movements by some vehicles but only through movements by others. Some treatments can remain in place with larger vehicles such as garbage trucks or emergency vehicles passing to the left of the treatment. All treatments must be carefully evaluated by knowledgeable city staff to make certain all impacts are taken into consideration.

In summary, traffic calming treatments should be designed to permit certain vehicle movements and to discourage or prevent other movements by different vehicles. This design work is a standard part of traffic calming planning and must be carefully evaluated and understood by all concerned, prior to building the treatments.



### NEXT STEPS

The traffic management plans have been completed. What happens now? The public process used for this project produced consensus building, workable solutions, and an effective partnership between the City and the Linden community . This working relationship should continue to ensure that issues are properly addressed, costs are minimized, and results will provide maximum benefit. If ownership of problems is weak or lacking, stay on track. The following steps are recommended and vital to success:

- 1. Communicate.** Foster communication between the Area Commissions and City government. The Area Commissions should work with the City to select recommendations for implementation. The City should update the Area Commissions on the status of the implementation.
- 2. Share Information.** The Area Commissions should develop traffic teams of area residents and businesses to communicate specifics of the plan to the Linden community and gain added insight and support. Other effective means of building community consensus and support might be to conduct a Traffic Calming Open House at an area residence, to hold a block party or other event at which all the details of proposed changes are presented and discussed.
- 3. Determine and Gather Support.** After the information sharing phase, the traffic teams should collect signatures from as many of their neighbors as possible on a petition describing and endorsing the traffic calming measures to be constructed. When requesting action by the City, the Area Commissions will indicate the support obtained from

the residents and businesses for the recommendations. This project also ensures that every resident understands the changes that will be taking place and hopefully endorses them.

**4. Personal Action.** To see significant and visible changes immediately, residents should begin by being more cautious with their own driving habits.

**5. Budgeting and Implementation.** Once an implementation budget is allocated, the plans should be shared with the residents by the Area Commissions to ensure expectations would be met.

**6. Maintenance of Landscaping.** Several of the report recommendations include landscaping features, which can be critical to the success of the traffic calming treatments. At the final workshop meeting, residents indicated that they would like medium to high levels of landscaping. The Area Commissions will be responsible for the maintenance of landscaping in traffic calming treatments and are encouraged to be creative in fulfilling this responsibility. For example, traffic teams and local sponsors may be enlisted to support the effort with labor and funding. Landscape maintenance work will require the Area Commission to obtain a right-of-way permit from the City on a yearly basis. The standard permit fee will be waived for Commissions doing this type of work.



## General Notes

### COMPLIANCE OF TRAFFIC CALMING WITH THE ADA

Many questions are often raised about the accessibility of traffic calming treatments by people with disabilities, especially those with visual impairments. Recent studies have shown that when traffic volumes are high in conventional streets and intersections it is difficult for visually impaired people to find gaps in traffic. According to the ACCESS Board, stop-controlled and signalized intersections are serious problems for visually impaired people because of right turn on red drivers, left turners who fail to yield and drivers who run stop signs and red lights. The worst intersection for a visually impaired person to navigate is the all-way stop intersection where there is no cue as to which vehicle will move next therefore helping to time crossing the street. The treatments proposed in this plan improve the walkability for all people with disabilities by, for example, slowing vehicles and reducing crossing widths. The addition of special facilities in many of the traffic calming treatments can greatly enhance the crossing experience for visually impaired people.

Roundabouts in particular are an improvement for vision-impaired pedestrians, especially when crossing at an intersection with under 15,000 vehicles per day. Instead of trying to find a gap in two way traffic that is traveling at high speed on a normal road or intersection, a roundabout reduces the way finding for a visually-impaired person to a single direction of traffic at a time and forces that traffic to travel at speeds less than half the speed on the road without the roundabout. Many examples exist of roundabouts being used without difficulty by the people with disabilities. There is ongoing work with the visually impaired community to develop and test new suggestions that, if successful, can be applied to further improve the crossing experience.

By adding sidewalks everywhere, the mobility of all people, including those with disabilities, is greatly improved. Visually impaired people cannot find their way along grassy strips because there is no directional information; wheelchairs and walkers are difficult to use on grass and dangerous to operate in the street. Therefore, sidewalk construction should be an extremely high priority to assist both seniors and people with disabilities move around their own neighborhood.

#### PROFESSIONAL STANDARDS AND TRAFFIC CALMING

Most sources of professional engineering standards now include guidance on traffic calming. Additionally, there is considerable freedom within the standards for engineers to be innovative. For instance, the Ohio Manual of Uniform Traffic Control Devices (OMUCTD) has signing and marking standards for speed humps, speed tables, medians and other treatments. Publications by the American Association of State Highway and Transportation Officials (AASHTO) allow just about every traffic calming device to be designed using their standards or slightly differently from "normal" engineering methods. These sources and the Federal Highway Administration even have guidelines for roundabouts.

Effective traffic calming and traffic management typically require innovation to deal with unique circumstances and issues. Comprehensive policy development, creative engineering solutions and neighborhood involvement, when combined, will result in innovative solutions to the traffic and livability problems faced by Linden and other Columbus neighborhoods. By implementing these recommendations – and using them as a platform for developing others – the City will begin to set the standards for developing solutions to issues of speeding, walkability, access and neighborhood quality of life.

#### Ohio Traffic Law:

While the state prescribes certain standards for traffic operations and sets statutory maximum speed limits, the following are among the activities state law specifically authorizes local authorities (municipalities and counties) to carry out with regard to streets and highways under their jurisdiction:

- Regulating the stopping, standing, or parking of vehicles.
- Regulating traffic by means of police officers or traffic control devices.
- Regulating the speed of vehicles.
- Regulating the use of certain streets by vehicles.

[From Ohio Revised Code §4511.07]