

BUILDING LIVABLE COMMUNITIES

A Newsletter of Transportation Improvements as Tools for Livability

Capitol Region Council of Governments

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Welcome to CRCOG's first quarterly issue of "Building Livable Communities" a newsletter dedicated to transportation improvements as tools for livability. The purpose of this newsletter is to share information on how to create livable communities through transportation improvements. Some of the areas focused on include traffic calming, bike and pedestrian safety, new urbanism and smart growth. The content is designed to introduce

new ideas and to provide resources to delve more deeply into the ideas. We are always open to suggestions for articles, so send us your thoughts (sfry@crcog.org or jcarrier@crcog.org). Please pass along the names of other individuals who might be interested in receiving this newsletter.

IS IT GRIDLOCK IF THERE ISN'T A GRID??

Gridlock is a term that we seem to hear on a daily basis – "suburban sprawl leads to gridlock," "survey respondents indicate that they spend more time in traffic due to gridlock," "gridlock has become a common feature of American suburbs." But this terminology is often a misnomer. In many cases when we refer to gridlock, the problem is lack of a grid. While many people experience severe traffic congestion, gridlock is not the real problem.

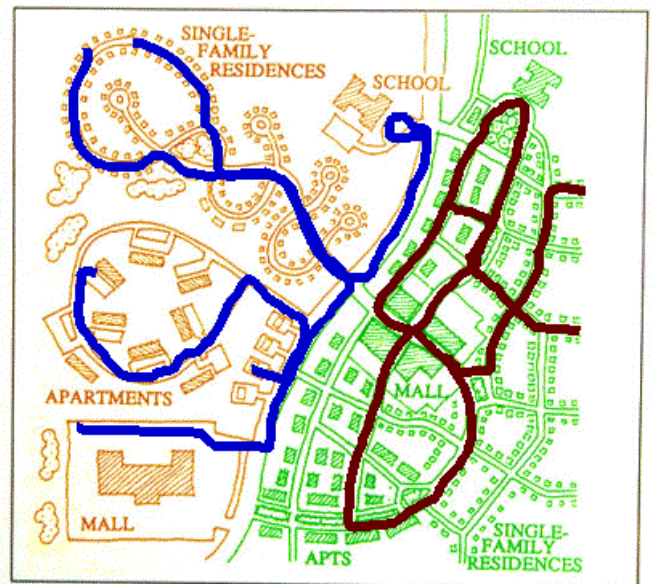
The diagram on the right illustrates the problem of not having a network of streets.

The development shown on the left side of the diagram has numerous cul-de-sac streets. The majority of traffic must make use of a single arterial to get to any destinations within the community. By contrast, the development pattern on the right, where streets are interconnected in a network, enables traffic to be dispersed throughout the community. This grid network also permits more trips to be made by foot, because walking distances are much reduced.

Think about your own community. Those areas that suffer severe congestion are probably locations where there are only one or two ways to get to a large traffic generator such as a shopping center or an employment center.

Consider whether there are ways that you can fill in the grid as new development comes on line or as part of the town's Plan of Conservation and Development. And in those communities that already have healthy grid systems, consider the need to maintain the grid. When older industrial sites are redeveloped, access might be enhanced with new streets within the site.

For more information on street connectivity, check the APA Planning Advisory Service Report Number 515, *Planning for Street Connectivity: Getting from Here to There*, May 2003. A copy of this report is available for review at the CRCOG office.



A connected network of streets (right side of drawing) with sidewalks cuts walking distances between housing, shopping, work and school.

(Source: A. Duany/E. Plater-Zyberk)

Did you know that town planning commissions are empowered by State statute to create road plans for their towns as part of the Plan of Conservation and Development? A road plan can delineate the general location of roads by functional type and with an adopted road plan, the planning commission's mandated review of proposed municipal improvements and subdivisions can be much more proactive and rational. This is a tool that can help a Town to insure that it has a healthy grid street system.

BIKE FACILITIES AND BIKE LANES

Over the past two years, the City of Hartford and the Town of Windsor have made a commitment to improving bicycle safety as a part of their ongoing repaving program. In each community, engineers evaluate each street slated to be repaved to determine if bike lanes or other improvements can be made to enhance bicycle safety. Bike lanes have been striped on Day Hill Road in Windsor and on several streets in Hartford. This article provides guidance to towns considering the installation of bike lanes and provides information on design resources. While such bike lanes are not always an option, towns can use other strategies to improve bike safety. Those alternate strategies will be covered in our next newsletter.

Bike lane on Sisson Avenue in Hartford.



Why Consider a Bike Lane? According to FHWA policy, every roadway project is an opportunity to improve bicycle and pedestrian safety. In most towns in the region, it is likely that a bicyclist might use any of the roads in town with the exception of limited access highways. Bike lanes are useful safety features for bicyclists because they provide road space for the bicyclist, where conflicts with motor vehicles are not a concern. In addition, bike lanes provide important benefits to other road users: greater effective turning radius at corners, a buffer for parked cars, improved sight distances for vehicles exiting from driveways, a traffic calming effect, better definition of travel lanes, and an improved buffer to trees.

But whenever a bike lane is developed, careful attention needs to be paid to design, to insure that the lane does, in fact, enhance safety. Important considerations are lane width and how to mark the lane at intersections.

Design Resources. In 2000, CRCOG provided each town engineer with a copy of the AASHTO Guide for the Development of Bicycle Facilities (1999). This



Bike Lane on Day Hill Road in Windsor.

document describes various bike facilities (shared roadways, bike lanes, and shared use paths) and gives guidance for their design and implementation. The guidance for bike lanes is fairly general, addressing width requirements, design through intersections, design issues relative to turning lanes, and bike lane symbol design and placement. Bike lanes should never be less than 4 feet in width and when adjacent to a parking lane or a curb, should be a minimum of 5 feet in width. The AASHTO Guide is available online at the State of Washington DOT web site at www.wsdot.wa.gov/bike/PDF/Bikebook.pdf.

The Pedestrian and Bicycle Information Center (www.bicyclinginfo.org) has many bicycle facility planning and engineering resources, including the City of Chicago Bike Lane Design Guide (available on line at <http://www.bicyclinginfo.org/de/bikelaneguide.htm>).

The City of Chicago has a number of years of experience with bike lane design and this guide presents their standards. The Chicago design guide is more detailed than the AASHTO guide with respect to treatment of bike lanes at intersections. It illustrates bike lane design for many different roadway cross sections, and many different intersection layouts. In Chicago, the minimum street width that is considered suitable for bike lanes and parking on both sides is 44 feet. This would be striped with 2-7 foot parking lanes, 2-5 foot bike lanes and 2-10 foot travel lanes.

Valley Transportation Authority in Santa Clara County in California has also developed a thorough Bike Facility Design Guideline (available at

<http://www.vta.org/news/vtacmp/Bikes/Bike%20Tech%20Guidelines.pdf>). This guideline, while designed specifically for Santa Clara County, has a lot of useful information for engineers considering how to design a bike lane. It includes a table that suggests minimum bike lane widths based upon roadway speed.

Any town engineers or planners who wish to discuss bike lane design issues can contact: Sandy Fry, by telephone at 860-522-2217, extension 20, or email at sfry@crcog.org.

MODERN ROUNDABOUTS: AN INTRODUCTION

Modern Roundabouts are circular intersections with specific design and traffic control features. These are not to be confused with the old style traffic circles and rotaries that have sometimes given circular intersections a bad reputation with the motoring public. Modern roundabouts have been used extensively in the United Kingdom and continental Europe and are becoming more widely accepted throughout the US. So what is a roundabout, and why might a Town consider installing a roundabout?

Definition of a Roundabout. All modern roundabouts, regardless of size, share certain common characteristics. All roundabouts have a central island, though the island may vary in shape and size. Roundabouts also have splitter islands on the approaches and traffic circulates in one direction. The splitter island is a triangular shape, insuring that the traffic enters the circle in the proper direction and that the traffic slows down. The splitter island also provides a refuge for pedestrians.

The design of the splitter islands and central island will determine what the maximum travel speeds will be on the circular roadway – about 25 mph for a rural roundabout, 15 to 20 mph for urban roundabouts. With these design speeds, a roundabout is compact, with the diameter of the entire circle generally varying from about 80 to 130 feet. Roundabouts can have one or more lanes in the circulating roadway and one or more lanes on approaches. In terms of operations, all traffic yields upon entering, that is, the traffic in the circle has the right of way.

Circular intersections lacking any of these features should not be considered roundabouts. In several communities such as Seattle, Washington mini traffic circles have been installed in residential neighborhoods. The mini circles generally fit within the existing intersection and they may have a fully mountable center island or they may permit large vehicles to turn left in front of the center island. In Seattle these mini circles have been quite successful in slowing traffic through neighborhoods, but they are not true modern roundabouts. And their suitability is limited to low volume local roads.



Photo: Dan Burden, Walkable Communities, Inc.

Why Consider a Modern Roundabout? A modern roundabout provides an additional means of intersection control that the designer might consider along with traffic signals, two-way stops, and four-way stops. The main reasons that a roundabout might be considered include:

- To reduce accidents
- To reduce speeds
- To improve traffic capacity
- To reduce pollution and fuel cost
- To save on operational and maintenance costs
- To accommodate intersections with more than four legs
- To provide for community enhancement

Modern roundabouts can handle significant volumes of traffic. A one-lane roundabout can handle a total of 20 to 27 thousand vehicles per day, depending upon percent lefts, percent major vs. minor approach traffic, and number of legs. In some cases, a roundabout may not have greater capacity than a signal, but it might provide for less delay and queuing than a signal. Modern roundabouts are generally safer than other forms of intersection control because they eliminate or alter conflict types and reduce drive speeds into and through the intersection, resulting in reduced crashes and reduced crash severity.

The cost of installing a roundabout can be very competitive with the installation of a traffic signal.

This does depend, however, upon whether the intersection is already built and will vary depending on right of way costs.

As Michael Wallwork of Alternate Street Design, P.A., a recognized expert on roundabout design says, "Modern roundabouts are the safest and prettiest form of traffic control in the world that can also achieve many other community objectives such as traffic calming, cost savings, act as gateways and town centers. All in all they are the most versatile and fastest growing form of traffic control in this country." (See www.roundabouts.net/roundabouts.html.)

The Town of Windsor has been successful in bringing the roundabout concept to reality. We will discuss their installations in a subsequent edition of this newsletter.

More detailed, design-related information on roundabouts can be found in the Federal Highway Administration's publication titled, "Roundabouts: An Informational Guide" (June 2000) which can be viewed on-line at <http://www.tfhrc.gov/safety/00-0671.pdf>. The State of Florida has an informative Roundabout Guide that can be downloaded at http://www.dot.state.fl.us/trafficoperations/pdf/Florida_Roundabout_guide.pdf.

*A Newsletter of Transportation
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33 planners and engineers attended a seminar held September 14th on *Pedestrian Crossings: Alternative Treatments*. The instructor, Nazir Lalani, focused on the new ITE document of the same name. This was an American Society of Civil Engineers "webinar" and the Town of Windsor hosted the seminar and workshop. We will keep you informed of future educational opportunities through this newsletter

Questions or Comments?

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