Edwards Rd and Wasson Rd

Wasson Rd is a connector street that links Rookwood Commons and Hyde Park Plaza. Vehicles attempting to make the left hand turn from Southbound Edwards Rd. to Wasson Rd often back up onto Madison Rd, disrupting signal timing and creating a dangerous situation for cars stranded in the intersection. Creating a median and eliminating the left turn while still allowing full turning movement from Wasson Rd will eliminate this backup and increase traffic flow on Edwards Rd and on Madison Rd.

This diagram shows the location of the proposed improvement, as well as possible alternatives to reach Hyde Park Plaza from the North. Improvements to Markbreit Ave in accordance with the City’s plan for Oakley Square could be one alternative to reach this retail destination.

Restricting left hand turns from Edwards Rd to Wasson Rd would alleviate the backups onto Madison Rd. This example shows a landscaped island in place of the turn lane, which also makes the existing crosswalk more pedestrian friendly.

Oakley Square

The City of Cincinnati recently came up with a plan to redesign Oakley Square. Improvements include widening the square and improving pedestrian and auto oriented movement. It also squares up intersections along Madison Rd.

Eastern Corridor Improvements

The City of Cincinnati has also proposed improvements to the Eastern section of Madison Rd. The road is widened to allow for a bump out for bus passengers to enter and exit safely. The bump outs also allow for motorists to have an increased view of traffic while pulling out of side streets, increasing safety.

Hopple Street Interchange

The City of Cincinnati and ODOT realized the existing Hopple Street Interchange needed to be changed. After coming up with a variety of options, they chose the option below. This option creates a variety of improvements:

(1) It eliminates merging on the exit ramp
(2) It creates a right hand exit on I-75 N
(3) It creates better access to I-74
(4) The jug handle at MLK and Central Parkway eliminates the hairpin turn and facilitates movement towards the Uptown Neighborhood.

**Madison Rd and Red Bank Expressway**

The intersection of Madison Rd and the Red Bank Expressway is very busy. In 1997, a traffic count revealed 40,200 cars from the Expressway crossing Madison Rd. A 1994 traffic count shows 19,400 cars on Madison Rd crossing the Expressway. With a large amount of redevelopment opportunities near the intersection, as well as the proposed plan to extend Red Bank Expressway to Newtown on SR 32, traffic is expected to increase dramatically. One high density development, Madison Circle is already under construction on the SW corner of Madison Rd and the Red Bank Expressway. Midtown Crossing, another high density development is planned for the NuTone site on the SE corner of Madison Rd and Red Bank Expressway. The table below shows this intersection is already over capacity.

According to a 2007 turn count for Madison Rd and Red Bank Expressway, the intersection received a failing rating for level of service both in the morning and evening peak travel times (6-8 AM and 4-6 PM). By 2013, the intersection is expected to have a much higher volume than capacity and still face heavy traffic, even with signal improvements and additional lanes.

The City of Cincinnati would like to look into the option of grade separation to face additional traffic concerns. This jug handle concept interchange is one option to accommodate the additional trips estimated to take place at this intersection.

**Wayfinding**

There is a lack of unity along the corridor. Wayfinding can help motorists by giving direction and helping reduce confusion of where to go. Street banners show motorists they are in a certain neighborhood, giving the corridor and each individual neighborhood an identity.

**Non-Auto Improvements**

Bus shelters and pedestrian safety measures are recommended to increase all forms of movement. Bus shelters are a nice amenity for riders. Since Madison Rd. has six lanes of travel traveling upwards of 35 miles an hour less than two feet from the sidewalk, it is recommended to create traffic calming elements to buffer the sidewalk from the street, such as bike lanes, street trees, bushes, or bollards, shown below.

**MLK Improvements (Hopple to Clifton Ave)**

According to the Uptown Transportation Plan, over 35,000 cars travel on this stretch of MLK every day. The plan calls for total elimination of street parking in this area and considers a landscaped median to restrict left hand turns. However, it does not go into specifics as to how wide the median should be. Due to right of way constraints, such as a retaining wall on much of the south side of MLK, adding a
median is possible, but it would have to remain small. The proposed median in this plan is six feet to minimize buying right of way and eating into the front yards of the houses and apartments on the north side of MLK.

**Access Management**

Access management can reduce congestion and the need to widen the street. Cross access easements, shared driveways and reverse frontage roads are three ways to help reduce congestion. It is recommended for all new developments along the corridor. Shared driveways and cross access easements can be implemented in areas that have higher density and many curb cuts. Reverse Frontage Roads can be used in the areas around the Madison Rd and Red Bank Expressway intersection where there is open land for new large scale development. This type of access management could also be used for large scale development in the future if large areas of land are available.

**Shared Driveways**

Shared driveways are recommended for all parcels with a street frontage of 60 feet or less. The BP station on the corner of Madison Rd and Edwards Rd has three access points, with two full access points on Madison Rd. This creates backups caused by three access points within 200 feet, including the drive to Rookwood Commons. Eliminating the two Madison Rd. access points and sharing the existing drive to Rookwood Commons. This will help alleviate congestion in an already crowded intersection that can only expect to see more traffic in the future.

**Cross Access Easements**

Cross access easements allow traffic to travel across property lines without the need to travel on the main thoroughfare. The McDonalds and Dunkin Donuts on the corner of MLK and Vernon Pl have entrance and exit points within 30 feet of each other on both roads. Allowing traffic to legally drive over property lines will reduce the curb cuts around Madison Rd at an area that supports major institutions in the University of Cincinnati, University Hospital, Children’s Hospital. This should be looked into for all land uses that generate a high volume of traffic throughout the corridor. It is a must for new development, and businesses are encouraged to look at the feasibility of this while renovating existing parking drive access points and surface lots.

**Reverse Frontage Roads**

Reverse frontage roads are desired on larger parcels that have the possibility of outlots. Access to outlots is from the reverse frontage road. There are current opportunities for large scale development along Red Bank Expressway and Madison Rd. The image on the left is the site plan for Midtown Crossing on the Nutone site. Their site plan is a model for access management for large scale development. Other opportunities may arise along Ridge Rd or in other areas in the future, making this an important issue.
Reflection

I selected this project because it continues a theme I wanted to continue my theme from the rest of the quarter. I also have an interest in transportation and movement because I have worked closely with the transportation team while on co-op. I chose my study areas based off of intersection grades from government and private consulting traffic counts and capacity analysis, and personal experience of dealing with traffic congestion.

My plan was to try and reduce congestion through alternative means besides widening the roads and creating a wide corridor that may disrupt neighborhood business districts. It is important to balance auto oriented movement while still creating a safe place for pedestrians. I believe that certain areas of congestion create a ripple effect through the corridor.

I derived my approach by consulting with fifth year civil engineers as well as the transportation engineering team from where I work. Some of this theory is derived from them, and some of the theory is derived from various transportation plans from the area, such as the Uptown Transpiration Plan and various meetings with City of Cincinnati transportation engineers. My access management theory comes from the assistant City Manager and Development Director of Monroe, Ohio from 1996-2006. I felt access management was important because I do not agree with the Uptown Transportation Plan to add additional lanes on Martin Luther King and Madison Rd to solve the congestion problem. Adding additional lanes creates more development and more traffic, making things just as bad as they were before.

Looking at proposed site plans for the area helped me to decide on what improvements to make, specifically the proposed interchange to Madison Rd and Red Bank Expressway. The additional traffic said to be generated from two large scale developments and the expansion of Red Bank Expressway help give precedent to creating a grade separation at this intersection. The City of Cincinnati engineers would also like to see a concept of a grade change.

The engineers advised me on a variety of topics. First of all, they advised against the I-71 interchange, citing it as too close to the existing William Howard Taft Intersection. I made sure auto movement ideas were approved by the engineers, such as the access management ideas and the grade separation. I also received positive feedback on restricting the left hand turn from Edwards Rd to Wasson Rd. The only negative feedback I received from the engineers was the initial design of my grade separation at Madison Rd and Red Bank Expressway. With their help, I designed what I believe to be a working interchange.

I think my design was successful in showing both generic movement improvements as well as specific examples that could be implemented quickly and relatively inexpensive, and others that would require a large cost, such as a grade separation. I think it is important to show before and after birds eye photos of how improvements can be made. However, some of these improvements would require a study period of more than five weeks. For example, the Edwards/Wasson Rd intersection is not a quick fix or something would have been done already. It would take a larger, more extensive study to analyze traffic patterns, turn movements, and the best course of action to alleviate congestion. I also felt limited in some aspects because there were approved transportation plans for about half of the corridor already.