A regular meeting of the Troy Traffic Committee was held Wednesday, November 15, 2006 in the Lower Level Conference Room at Troy City Hall. Pete Ziegenfelder called the meeting to order at 7:33 p.m.

#### Roll Call

PRESENT: Sara Binkowski

John Diefenbaker

Ted Halsey Jan Hubbell

Pete Ziegenfelder

Prithvi Murthy, Student Rep.

ABSENT:

Richard Kilmer

Gordon Schepke

Ted Hwang, Student Rep.

Also present:

John Rogers, William Beaumont Hospital

Jim Lemire, Harley Ellis James Grix, 2508 Coral Richard Ewing, 2078 Garry Mike Agnetti, 2977 Lovington John Yee, 4371 Devonshire

and:

John Abraham, Traffic Engineer

Lt. Scott McWilliams, Traffic Safety Division, Troy Police Dept.

Lt. Robert Matlick, Troy Fire Dept.

### Resolution to Excuse Absent Members

RESOLUTION #2006-11-73

Moved by Binkowski Seconded by Hubbell

To excuse Kilmer and Schepke.

YES:

All-5

NO:

None

ABSENT:

2 (Kilmer, Schepke)

MOTION CARRIED

#### Minutes – October 18, 2006

RESOLUTION #2006-11-74

Moved by Hubbell

Seconded by Diefenbaker

To approve the October 18, 2006 minutes as printed.

YES:

All-5

NO:

None

ABSENT:

2 (Kilmer, Schepke)

MOTION CARRIED

#### PUBLIC HEARINGS

Mr. Ziegenfelder recommended that the following requests for sidewalk waivers be denied because:

- 1. In a recent survey by the National Association of Realtors and the National Association of Realtors and the National Association of Home Builders found that the third most important item that people are looking for in a community is sidewalks on both sides of the street.
- 2. The Troy Futures Committee found that one of the items to improve mobility in Troy was sidewalks on both sides of the street.
- 3. At some point in time, sidewalks that lead nowhere and connect to nothing will start connecting to other sidewalks and leading somewhere.
- 4. The Traffic Committee can grant a temporary waiver that is good for two years and at the end of those two years, a sidewalk may still be required to be installed.
- 5. The City of Troy Public Works Department recommends the denial of the waiver.
- 6. The petitioner signed an Agreement for Irrevocable Petition for Sidewalks.

# 3. Request for Sidewalk Waiver – 2059 Garry

Michael Agnetti requests a waiver for the sidewalk at 2059 Garry. The sidewalk ordinance requires that sidewalk be installed in conjunction with the construction with the development of this parcel due to a recent lot split, combined and replatted. The Public Works Department recommends denial of this waiver request. Petitioner has signed an "Agreement for Irrevocable Petition for Sidewalks."

Petitioner states that the neighborhood is already developed with no sidewalks existing, and a sidewalk would lead nowhere and connect to nothing.

Richard Ewing, 2078 Garry, phoned Dr. Abraham and visited City Hall to express his opposition to construction of the sidewalks.

Mr. Agnetti pointed out that there are no sidewalks on Garry, and there are ditches on both sides of the street.

Richard Ewing lives across the street from the property in question. He told the committee that he does not want any sidewalks in the neighborhood. He said this is an old neighborhood and he wants the new homes to blend in. He is also apprehensive

that if these two new homes have sidewalks, the City might someday require all the homes to have sidewalks.

The Traffic Engineer also received a letter (copy attached) from Mr. & Mrs. Larry Luther, 2073 Garry, who support the waiver. They said they like the street the way it is, and have never wanted sidewalks.

Mr. Halsey asked Mr. Agnetti if he owns any other properties on Garry besides the two in question. Mr. Agnetti replied in the negative.

### **RESOLUTION #2006-11-75**

Moved by Halsey Seconded by Hubbell

1. WHEREAS, City of Troy Ordinances, Chapter 34, Section 8(D) allows the Traffic Committee to grant temporary waivers of the City of Troy Design Standards for Sidewalks upon a demonstration of necessity; and

WHEREAS, Michael Agnetti has requested a temporary waiver of the requirement to construct sidewalk on the property because there are no other sidewalks in the area; and

WHEREAS, the Traffic Committee has determined the following:

- a. A variance will not impair the public health, safety or general welfare of the inhabitants of the City and will not unreasonably diminish or impair established property values within the surrounding area, and
- b. A strict application of the requirements to construct a sidewalk would result in practical difficulties to, or undue hardship upon, the owners, and
- c. The construction of a new sidewalk would lead nowhere and connect to no other walk, and thus will not serve the purpose of a pedestrian travel-way.

NOW THEREFORE, BE IT RESOLVED that the Traffic Committee grants a twoyear waiver of the sidewalk requirement for the property at 2059 Garry, which is owned by Michael Agnetti.

YES:

All-5

NO:

None

ABSENT:

2 (Kilmer, Schepke)

MOTION CARRIED

## 4. Request for Sidewalk Waiver – 2065 Garry

Michael Agnetti requests a waiver for the sidewalk at 2065 Garry. The sidewalk ordinance requires that sidewalk be installed in conjunction with the development of this parcel due to a recent lot split, combined and replatted. The Public Works Department recommends denial of this waiver request. Petitioner has signed an "Agreement for Irrevocable Petition for Sidewalks."

Petitioner states that the neighborhood is already developed with no sidewalks existing, and a sidewalk would lead nowhere and connect to nothing.

Richard Ewing, 2078 Garry, phoned Dr. Abraham and visited City Hall to express his opposition to construction of the sidewalks.

Mr. Agnetti pointed out that there are no sidewalks on Garry, and there are ditches on both sides of the street.

Richard Ewing lives across the street from the property in question. He told the committee that he does not want any sidewalks in the neighborhood. He said this is an old neighborhood and he wants the new homes to blend in. He is also apprehensive that if these two new homes have sidewalks, the City might someday require all the homes to have sidewalks.

The Traffic Engineer also received a letter (copy attached) from Mr. & Mrs. Larry Luther, 2073 Garry, who support the waiver. They said they like the street the way it is, and have never wanted sidewalks.

Mr. Halsey asked Mr. Agnetti if he owns any other properties on Garry besides the two in question. Mr. Agnetti replied in the negative.

# RESOLUTION #2006-11-76 Moved by Hubbell

Seconded by Diefenbaker

1. WHEREAS, City of Troy Ordinances, Chapter 34, Section 8(D) allows the Traffic Committee to grant temporary waivers of the City of Troy Design Standards for Sidewalks upon a demonstration of necessity; and

WHEREAS, Michael Agnetti has requested a temporary waiver of the requirement to construct sidewalk on the property because there are no other sidewalks in the area; and

WHEREAS, the Traffic Committee has determined the following:

- a. A variance will not impair the public health, safety or general welfare of the inhabitants of the City and will not unreasonably diminish or impair established property values within the surrounding area, and
- b. A strict application of the requirements to construct a sidewalk would result in practical difficulties to, or undue hardship upon, the owners, and
- c. The construction of a new sidewalk would lead nowhere and connect to no other walk, and thus will not serve the purpose of a pedestrian travel-way.

NOW THEREFORE, BE IT RESOLVED that the Traffic Committee grants a twoyear waiver of the sidewalk requirement for the property at 2065 Garry, which is owned by Michael Agnetti. YES:

All-5

NO:

None

ABSENT:

2 (Kilmer, Schepke)

MOTION CARRIED

### **REGULAR BUSINESS**

5. Request for Removal of STOP Signs on Northfield Parkway at Durand/Wintergreen.

This item has been withdrawn at the request of the petitioner.

6. Study Item: Review of Traffic Impact Study for Beaumont Hospital.

This item is placed on the agenda as a study item to review traffic analysis for the hospital expansion plan. Conclusions from the Traffic Impact Study for the expansion of Beaumont Hospital on Dequindre Road are attached. City staff is reviewing their site plan and the traffic impact study. Following are some comments from staff.

- a. The site is currently served by two traffic signals, and ultimately, after expansion, there will be two signals, one at their emergency center and one at the main intersection south of the building.
- b. The study assumes roadway widening to be completed by the City/County by 2010. The current schedule shows that the project may be funded for construction only by 2014.

### c. <u>Pedestrian Issues</u>:

Sidewalks along Dequindre will be installed as a part of this phase. In the past there have been a number of pedestrian safety concerns from Beaumont employees, officials and the general public. One of the major concerns is safe crossing of pedestrians between the buildings, across Dequindre. The Beaumont master plan recognizes this concern and includes a pedestrian overpass/skywalk connecting the two buildings by 2015. However, in the interim there is no plan that would address pedestrian safety concerns between 2007-2015 (or when the skywalk is complete). By closing the main entrance drive and removing the traffic signal, there is no designated "crosswalk" in proximity to the buildings; therefore, it can be expected that pedestrians may cross at different points along Dequindre, between the proposed signalized intersections. Development of a pedestrian circulation plan including designated crosswalks and sidewalk connections to buildings is suggested.

To discourage pedestrians from crossing Dequindre at several points, a physical barrier is recommended along the border of the sidewalk with openings only at the designated crosswalk(s). This could be landscape shrubs or decorative fence or any such treatment that would match the building and surrounding areas. The frequency and number of shuttle buses running between the campuses may also

need to be reviewed so that employees and other potential pedestrians can be better served instead of walking.

### d. <u>Improvements on Dequindre</u>:

The major traffic-carrying driveway is proposed to be moved to the south, and following are recommendations for improvements to Dequindre Road.

- 1. Five-lane cross-section should be continued through the proposed south driveway. As discussed in the study, a majority of the traffic will be from the north, so there is a need for at least two lanes in each direction until the main drive. The roadway can then taper back to three lanes south of the intersection, to match with the 36' wide pavement just north of the residential streets Ranieri and Burning Bush.
- 2. Driveways onto Dequindre from the west and east should have a minimum of three lanes exiting to facilitate exclusive right, left, and through movements at the signalized intersection.

This is a study item, and if the committee wishes to pass any resolutions recommending improvement beyond staff recommendations, it can be done. A complete copy of the Traffic Impact Study is available at the City Engineering Office for review, if required.

Jim Lemire, of Harley Ellis, and John Rogers, representing Beaumont, discussed the hospital expansion plans. 800 parking spaces have been added on the south side of the main campus, and there will be a new critical care tower, and space added to the emergency room. The power plant will be expanded, as well as the shipping and receiving docks. The project will start in 2007 and will take 1 to 3 years to finish. Plans also include an overhead pedestrian bridge similar to the one at the Somerset Collection, which hopefully will be done in 2009. More buildings will be constructed on the Sterling Heights side of Dequindre. The new parking lot is not open yet, and it is expected to cut down on the number of pedestrian crossings.

James Grix is president of the homeowners' association in his subdivision (334 homes). He said there are five traffic signals between Square Lake Road and M-59. He said signals are supposed to be for safety, but they cause too many (rear-end) crashes, and too many stops and starts increase pollution. He also mentioned that a few years ago the traffic signal was not operating and there were no traffic backups. He wants to try the signal in the blinking mode instead of cycling.

Ms. Binkowski asked when the new signal would be installed. The one in front of the hospital will be put in next summer, and moved to the south to improve traffic flow. Both signals will be connected to the SCATS system.

There will be two full through lanes. Mr. Lemire said they have requested permission from RCOC to add a left-turn arrow. The request was denied, but they will try again. There is also a plan to "enhance the ditch" to discourage pedestrian crossing in undesignated locations. There will also be a new building on the east side that, in itself, will be a barrier to pedestrian crossing. The driveways on the east side and west side of Dequindre will be aligned.

Mr. Grix suggested a boulevard on Dequindre for turnarounds. He also wants language to prohibit the hospital from charging a fee for parking. He also wants a walking path through the hospital's nature area.

Dr. Abraham said the Road Commission for Oakland County has already approved the plans, and various signal modes could be tried after construction is completed.

The City and the hospital have a land-use agreement through properties owned by Detroit Water and Sewer and Flynn Park to South Boulevard for trucks and staff traffic. The hospital will build a 36" roadway.

Mr. Halsey asked if there would be a traffic signal on South Blvd. at the entrance to the access road. Answer: No, because the road will not be for public use, and there will be a gate where the road enters hospital property.

Mr. Grix wants the road through Flynn Park to be a full-access road, and only one signal on Dequindre. Mr. Halsey recommended the same thing. Dr. Abraham explained that it will be a shared drive, with major use times at different times of the day for the park and the hospital. Trucks will be delivering supplies to the hospital mostly at night.

Mr. Grix said the sidewalk stops at the hospital and he wants walkability. He said they should have the sidewalk now, as it is too difficult to walk on Dequindre. Harley Ellis will be submitting final plans in December. The hospital will build an 8 ft. wide sidewalk, which must be approved by RCOC as it would be in their right of way. They also would like it to be done now even if the sidewalk has to be torn out later.

Representatives from the hospital assured that the pedestrian concerns and the suggested road improvements will be seriously considered as a part of the project.

### 9. <u>Visitors' Time</u>

Mr. Ewing discussed driver message boards. He finds them very distracting and feels drivers should keep their eyes on the road. Recently he saw red flashing lights and thought it was a patrol car, only to realize that it was a flashing red neon sign in front of a church. Mr. Diefenbaker referred him to the Building Department, as they regulate signs.

No one else wished to address the committee.

#### 10. Other Business

Mr. Diefenbaker said he would not be able to attend the January or February meetings. There was discussion about cancellation of the December meeting.

Mr. Diefenbaker said he is extremely pleased with the new decel lane in front of Walsh College. He also asked about the barrier at Birchdale and Wardlow. He said the subdivision is 80% built out. Dr. Abraham responded that normally the Building Department determines the 80% build-out threshold and advises DPW to remove the barrier.

### RESOLUTION #2006-11-77

Moved by Hubbell Seconded by Binkowski

To cancel the December meeting. The next meeting is scheduled for January 17, 2007.

YES:

All-5

NO:

None

ABSENT:

2 (Kilmer, Schepke)

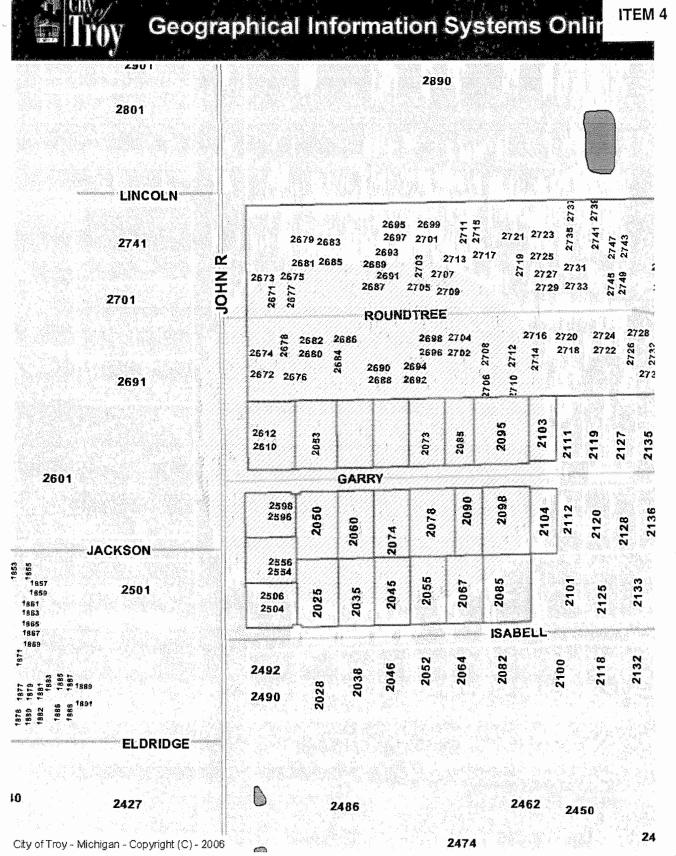
MOTION CARRIED

## 11. Adjourn

The meeting adjourned at 8:35 p.m.

Pete Ziegenfelder, Chairman

Laurel Nottage, Recording Secretary



Note: The information provided by this application has been compiled from recorded deeds, plats, tax maps, surveys, and other public records and data. It is not a legally

2013 Harryhlr Troy, Mi. 48083 Nov, 3, 2006

John abraham, Traffic Engineer.

ITEM 3

ITEM 4

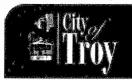
We support the woiver of sidewalks at 2065 and 2059 Garry Hr. We don't want Sidewalks never have. Our section of Garry Mr. has always been like this, we like it this way. To us it would look out of place to have sidewalk at 2065 and 2059 and the other homes in this section without. Without the Sidewalk this is going to blend in with the essisting homes in this section of Darry Ur. Oach home in this section has its own personality and complemence The other homes in this section of Garry Dr. 2065 and 2059 will do the same if they have no sidewalks. We stand with the Contractor no sidewalks. We stand firm on our decession for our section of Larry Mr. Hope you take our openion in to consideration.

RECEIVED

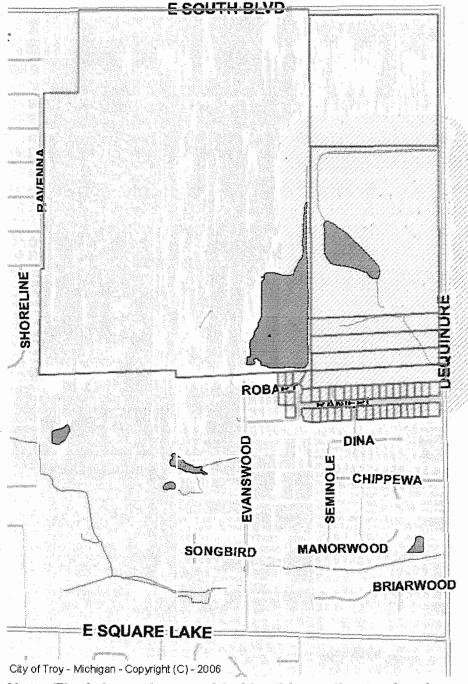
NOV 9 2006

ENGINSERING

Mr. + Mrs. Larry Luther 2073 Larry Dr. Troy, Mie 48083 248-689-6009

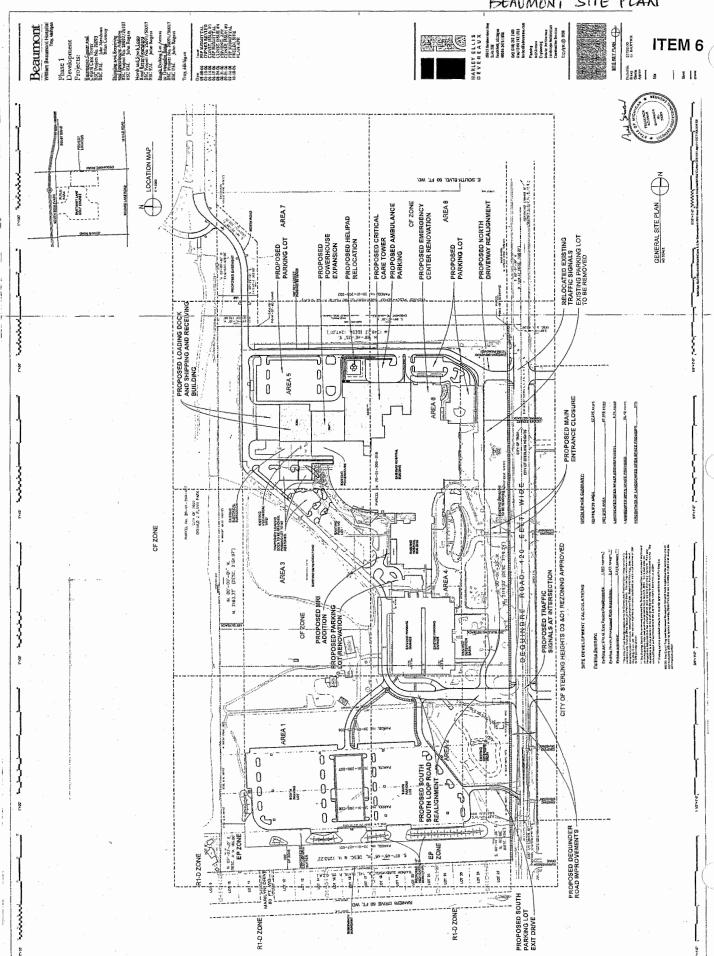


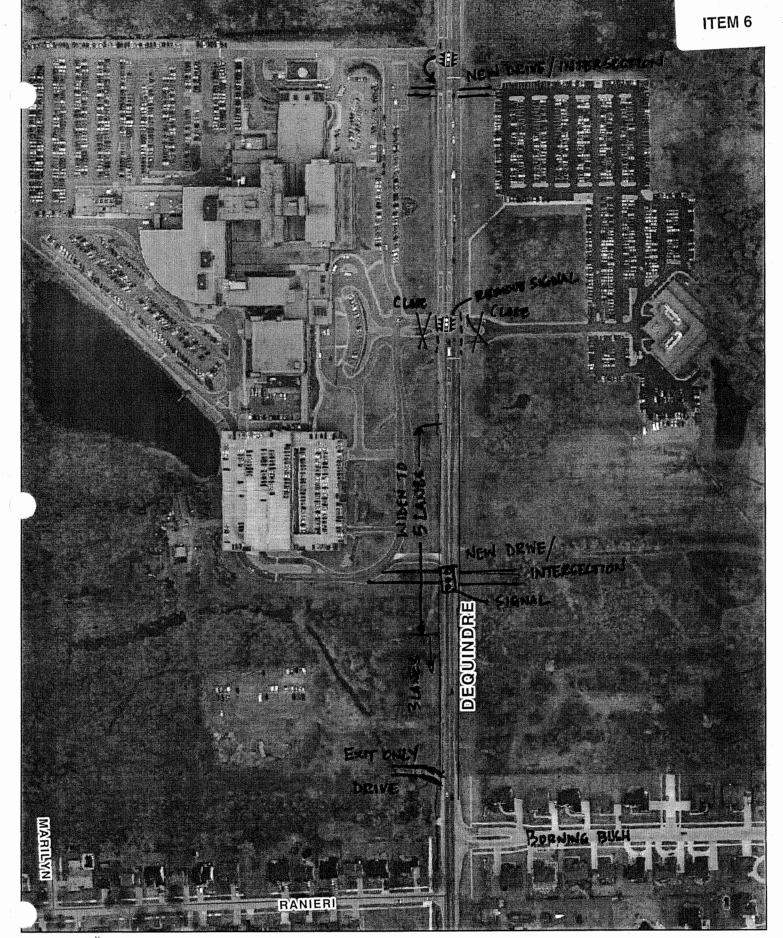
# Geographical Information Systems Online



Note: The information provided by this application has been compiled from recorded deeds, plats, tax maps, surveys, and other public records and data. It is not a legally

http://gis/servlet/com.esri.esrimap?ServiceName=TROY&ClientVersion=4.0&Fo... 11/7/2006







Beaumont Hospital



#### HARLEY ELLIS DEVEREAUX

26913 Northwestern Highway Suite 200 Southfield, Michigan 48033-3476 | USA tel 248.262.1500 | fax 248.262.1515 harleyellisdevereaux.com

# **Contact Report**

Date:

November 3, 2006

Project:

William Beaumont Hospital Troy Campus

Project No:

Owner Project No:

26091, 26092 and 26093

From:

Jim Lemire

Subject:

Phase 1 development Projects Preliminary Site Plan Approval

Participants:

City of Troy - Traffic

Harley Ellis Devereaux

Department

Jim Lemire

John Abraham

Distribution:

BSC

BM/Skanska Jennifer Macks Harley Ellis Devereaux R.. Browski

Jake Meadows John Rogers Jason Bell

Dan Balow Sharon Crispin

G. Baxter T. VanDerworp

John Krolicki

Dave Reese

P. Ramin

City of Troy Mark Miller

Parsons | Joe Marson J. Page J. Block T. Platz

Brent Savidant

C. McEwen

F. Schwar D. Jaeger

A telephone conversation took place between the above mentioned participants; the following is a record of that discussion.

- At the end of the Phase 1 Development Projects there will be two traffic lights on Dequindre Rd. Each light will be in a different location from their current location. Traffic Lights are owned by the Road Commission of Oakland County (RCOC).
- 2. The existing main entrance to the west campus will be closed as part of the Phase 1 Development Projects.
- The Bridge over Dequindre is still in the project, it is not indicated as part of this submittal because it is still being designed and being approved. It is anticipated that a submittal for the reconfigured East Entrance and the Bridge over Dequindre will be submitted for Preliminary Site Plan Approval in February for the March or April agenda. The most recent conversations have the steel for the bridge being erected in January of 2008.
- 4. John indicated that his office receives calls from employees who complain about pedestrian safety while crossing Dequindre. John requested that the hospital prepare some documentation to indicate a plan to improve pedestrian safety. (It is noted that there are a number of employees who currently

The above documentation is believed to be an accurate record of what has transpired. If significant items have been omitted or misunderstood, please contact the writer and corrected notes will be issued.



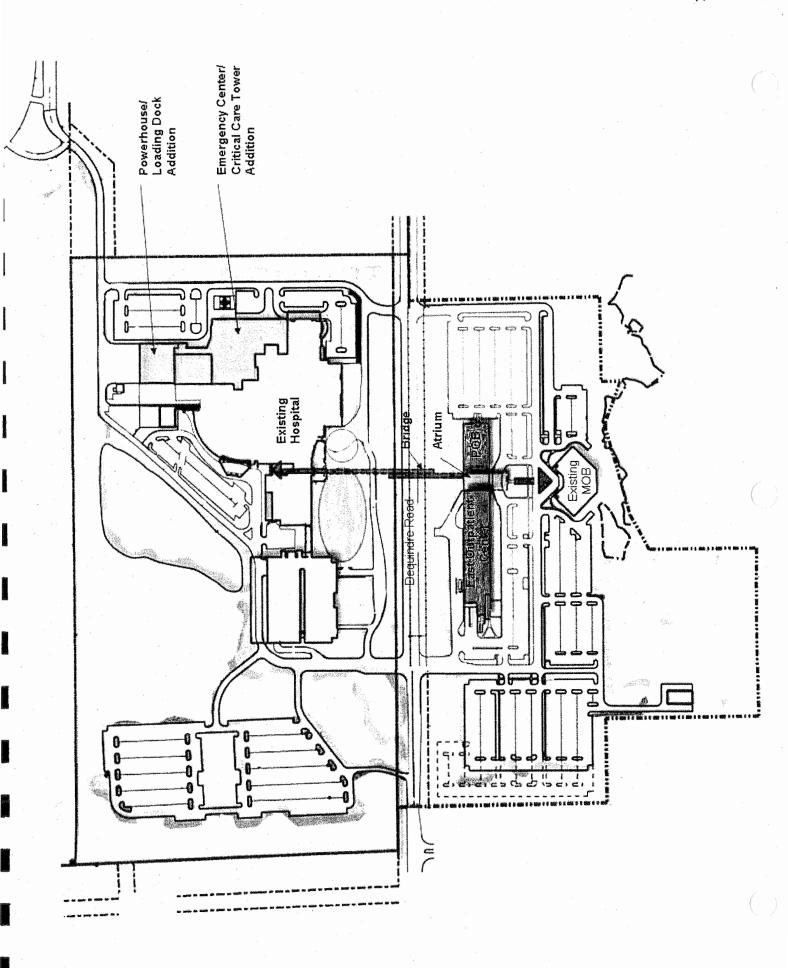
#### HARLEY ELLIS DEVEREAUX

# **Contact Report**

park on the east campus and work on the west campus. This should be slightly alleviated upon the completion of the new Employee South Parking Lot.

- 5. John requested that a pedestrian circulation plan be developed and provided to his office for review. The plan would detail pedestrian travel from parking lots to buildings and form building to building.
- 6. There will be Traffic Committee Meeting on Wednesday evening, November 15th at 7:30.
  Discussion to include a review of the Traffic Impact Study (October 2006). Members form BSC and Harley Ellis Devereaux as well as Joe Marson from Parsons are invited. City of Troy, Lower Level Conference Room.
- 7. John requested clarification of Construction Documents from Harley Ellis Devereaux that do not indicate the approach width decreasing at the Flyn Park connector road at South Boulevard. John indicated that a draft use agreement submitted by the hospital includes an exhibit indicating the narrow approach that the City is looking for. Fred Schwar to contact John to discuss.

End of Report



# 1.

# **Summary of Findings and Recommendations**

# **Summary of Findings**

This section summarizes the results of a traffic impact study conducted by Parsons for the proposed expansion of the east and west campuses of William Beaumont Hospital in the Cities of Troy and Sterling Heights, Michigan. The west side (Troy) contains the existing hospital with inpatient services while the east side (Sterling Heights) campus contains the professional office building providing a variety of outpatient services.

- 1. The master plan for both campuses considers the needs for the year 2015. Phase 1 and 2 programs call for construction of various facilities between now and 2010 including added employee and visitor parking, a medical office building, and a new emergency center. Although further development may occur beyond 2010, there are too many variables to reasonably predict the conditions for which a traffic study can be completed. This traffic study is intended to identify the traffic impacts of the site at the 2010 horizon year and any interim improvements that may be needed. A site location map is illustrated on Figure 1 of this report and a site plan is contained in Appendix A.
- 2. Currently, site access is via three driveways on Dequindre Road: the North "T" driveway (signal controlled), that serves the west (Hospital) campus; the Middle (Main, signal controlled) driveway that serves both the west and east (Professional Office Building) campuses, and the South driveway that serves the west campus. The latter driveway is a one-way outbound right-turn only driveway controlled by a stop sign.
- 3. The site development plans to the year 2010 include a loop road system that will result in two full-movement signal-controlled access drives and one outbound right-turn only stop-controlled access drive on Dequindre. The existing Middle (Main) signal-controlled driveway would be permanently removed. Further access is proposed via a connecting roadway from the northwest corner of the site to South Boulevard.
- 4. The peak traffic periods for the hospital were determined based on a review of employee shift times and historic driveway count data. It was determined the critical peak periods for the campus traffic would occur between 6:00 to 8:00 A.M. and 3:00 to 5:00 P.M. Summaries of the turning movement counts indicate that the weekday morning peak hour of traffic occurs from 7:00 A.M. to 8:00 A.M. and the afternoon peak-hour occurs from 3:15 P.M. to 4:15 P.M.

PARSONS

- 5. An analysis of existing traffic volume counts at the driveways to both campuses indicated that about 60% of existing traffic comes from and goes to the north on Dequindre and 40% is to/from the south. It also showed the site currently generates about 1,017 morning and 1,200 afternoon trips.
- 6. Employment as a result of the expansion is expected to increase by about 26% between 2006 and 2010. The expansion will generate by the year 2010 an additional 266 morning peak hour trips and 314 afternoon peak hour trips on the local street system.
- 7. Currently, there are pedestrian movements across the north leg of Dequindre at the Main Site Driveway, due to hospital employees parking on the east campus, as well as other activity between the two campuses. There are pedestrian signals and push buttons to provide adequate crossing time for the pedestrians. However, because the pedestrian crossing is on the higher-volume side of the exiting site traffic, this movement creates considerable interference with outbound traffic, particularly during the afternoon peak hour. In addition, it has created concern about the safe movement of pedestrians between the campuses.
- 8. An enclosed pedestrian bridge is proposed to be built between the two campuses. The bridge would be located between the existing north and middle drives and connect directly to buildings between both campuses.
- 9. The following intersections were identified in discussions with the local agencies as being potentially impacted by the proposed expansion, and therefore were analyzed in this study:
  - a. Dequindre Road and South Boulevard
  - b. Dequindre Road and the North Hospital (Emergency) Driveway
  - c. Dequindre Road and the Middle Hospital (Main) Driveway
  - d. Dequindre Road and the South Hospital (eastbound one-way) Driveway
  - e. Dequindre Road and Square Lake Road
  - f. South Boulevard and John R Road
  - g. South Boulevard and the eastbound M-59 off ramp
- 10. There are two programmed road improvement plans that would influence traffic conditions in the study area. The first is a safety improvement project by the City of Troy that would add right turn lanes for the eastbound and southbound approaches to the Dequindre Road/Square Lake Road intersection; this project is scheduled to be completed in 2006. The second project is the widening of Dequindre Road from Long Lake Road to Auburn Road from its primarily two lanes to the proposed five lanes that is anticipated to occur in 2010. Beyond 2010
- 11. A review of historical traffic volumes on the surrounding area roadways revealed declining traffic volumes over the past several years based on daily traffic counts available from the Southeast Michigan Council of Governments (SEMCOG). To be conservative, a growth rate of two percent per year was used to predict traffic to the 2010 horizon year.
- 12. Capacity analyses were conducted for existing, background (2010 without added

development of the site), mitigated background (2010 without added development of the site and intersection improvements needed), future (2010 with development of the site and with the background mitigation), and mitigated future (2010) conditions. Based on the results of this analysis, under *background conditions*, it was determined that the following improvements will be necessary to enable the study intersections to operate at acceptable levels of service (improvements unrelated to the impact of the expansion of the site):

John R Road and South Boulevard: Construction of a southbound right turn lane and adjustment of traffic signal timing.

- 13. Under *future conditions* it was determined that the improvements made to accommodate the background traffic will accommodate the future added Beaumont-generated traffic with minor additional mitigation. The intersections of South Boulevard/Dequindre Road and Square Lake Road/Dequindre Road will require retiming to maintain an adequate level of service for all approaches.
- 14. Based upon the analysis of the site access drives under interim and 2010 conditions, improvements will be necessary at the site driveways to enable the driveways to operate efficiently and safely. These improvements are contained in the Summary of Recommendations.
- 15. An access road is proposed that would connect the northwest internal roadway in the west campus to South Boulevard via an existing roadway serving the City of Troy's Donald J. Flynn Park. The traffic analysis indicates this would not significantly reduce traffic impacts of the campus along Dequindre Road. Consequently, this access road is not critical from the standpoint of improved traffic flow, but may be beneficial for unrelated reasons, such as serving emergency vehicles or truck deliveries, convenience to hospital employees or patrons, etc.

# **Summary of Recommendations**

Based upon this traffic impact analysis, the following recommendations are made:

- 1. At the North Driveway on Dequindre, align the driveways to allow for head-up left turns. Design the east approach to provide for an outbound left turn lane and a shared through/right turn lane. Properly stripe and sign both driveways to current standards.
- 2. Since the South Driveway as a four-leg intersection will exist prior to the widening of Dequindre Road to five lanes, improvements will be needed during Phase 1 construction. These improvements should be coordinated with Road Commission for Oakland County (RCOC) such that the future construction of the five lane cross section can incorporate these improvements to the maximum extent possible. The improvements needed are as follows:
  - Widen Dequindre Road to three lanes to create a north- and southbound left turn lane;
     this third lane should extend from the existing left turn lane at the existing Middle Drive

south through the South Drive and designed to RCOC standards. This will require the northbound left turn lane to be 110 feet and the taper to be 300 feet.

- Install a traffic actuated signal.
- Construct north- and southbound right turn lanes on Dequindre at this drive.
- Design the east and west drive approaches to provide for a left turn lane and a shared through/right turn lane.
- 3. If it is determined through future planning of the site that at-grade pedestrian crossings will be needed, the crossing should be at one of the two signalized intersections.

The above improvements will allow the hospital campus access and nearby intersections to adequately accommodate the planned expansion.