# Golf Road Traffic Improvement Feasibility Study

## STH 83 to Eastern City Limits

City of Delafield, Wisconsin

August 15, 2011

GRAEF

City of Delafield

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**City of Delafield, Wisconsin**

**Submitted: August 15, 2011**

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## INTRODUCTION

The City of Delafield plans to resurface or reconstruct the section of Golf Road between STH 83 and the eastern city limits due to the deteriorating pavement condition. In planning for the future of this roadway, the City of Delafield retained GRAEF to conduct a traffic improvement feasibility study to identify and evaluate potential alternatives for this project. The scope of the feasibility study includes data collection, safety assessment, access management, traffic forecasts, traffic operational analysis, conceptual roadway design, cost estimates, funding options and public involvement. This report documents the procedures, findings and recommendations of this traffic improvement feasibility study.

## STUDY AREA

The project limits for this feasibility study include the 0.45 mile section of Golf Road from the east approach of the intersection with STH 83 to the eastern city limits, as shown on Exhibit 1. Golf Road is primarily an east-west roadway with four travel lanes provided on the western section that narrows to a two-lane roadway with a two-way left-turn lane (TWLTL) on the east portion of the project. The posted speed limit along this section of Golf Road is 30 miles per hour (mph). According to the Wisconsin Department of Transportation (WisDOT), the Year 2009 annual average daily traffic (AADT) for Golf Road was 18,200 vehicles per day (vpd) east of STH 83.

Golf Road provides access to the Nagawaukee Shopping Center and the Shoppes at Nagawaukee with a total of 360,000 square feet of commercial uses including numerous large-box retailers, a grocery store, a pharmacy, a bank, several restaurants, a hotel and various specialty service providers. Sidewalk is provided throughout the project along the south side of Golf Road. For the western portion of the project, there is also sidewalk on the north side of Golf Road connecting STH 83 to the Kohl's west access. Waukesha County's Naga-Waukee Golf Course is located north of the Nagawaukee Shopping Center. The County's Lake Country Trail runs along the south side of the Nagawaukee Golf Course. The Lake Country Trail is an 8 mile east-west recreational trail connecting the Landsberg Center Trailhead (Golf Road between CTH G & and CTH T) and Cushing Park in the City of Delafield.

### STH 83 Project

In 2010, the Wisconsin Department of Transportation (WisDOT) plans to resurface the section of STH 83 from Glacier Pass to Golf Road. As part of the WisDOT's project, signal improvements and island modifications are planned for the STH 83 intersection with Golf Road to eliminate the existing split phasing and allow the eastbound and westbound left-turn movements to operate concurrently. Additionally, the Lake Country Recreational Trail crossing of STH 83 will be relocated to the crosswalk on the north approach of the STH 83 intersection with Golf Road.

## SAFETY ASSESSMENT

### Crash History

The City provided crash reports for Golf Road for the most recent three year period (October 1, 2006 through September 30, 2009). A crash diagram illustrating the 20 crashes reported over the three year period is included in Appendix 1. As shown on the crash diagram, 14 crashes occurred in the section of Golf Road between the Walgreen's access and Kohl's West Access with 5 of the crashes (25 percent) related to the Sports Authority access. Injuries were reported in 4 of the 20 crashes, which accounts for 20 percent of the crashes. It should be noted that property damage crashes with less than $1,000 of damage do not need to be reported in Wisconsin.

The crash rates for roadway segments are calculated in units of crashes per 100 million vehicle miles (HMVM). Due to the significant difference in traffic volumes along the project, the Marshall's Access was established as a location to divide Golf Road into two sections for the purpose of crash rates. Table 1 shows the crash rates for Golf Road.

**Table 1**
**Golf Road Crash Rates**

| Segment | Average Annual Crashes | Length (in Miles) | Crash Rate (Crashes per 100 million vehicle miles) |
|---|---|---|---|
| West Segment (East of STH 83 to Marshall's Access) | 5 | 0.20 | 352 |
| East Segment (Marshall's Access to Eastern City Limits) | 2 | 0.25 | 274 |

As shown in Table 1, the crash rate for the west segment of Golf Road is 352 crashes per 100 million vehicle miles (HMVM). The east segment has a lower crash rate of 274 crashes per HMVM. The Year 2008 statewide average crash rate for an urban street was 257 crashes per HMVM (excluding deer crashes). It should be noted that the urban street category includes both urban state trunk highways and city streets. Therefore, the crash rates for both sections of Golf Road exceed the statewide average.

Of the 20 crashes reported within the study area, 16 crashes occurred at intersections. Intersection crash rates were calculated for the study area intersections with more than two crashes during the three year period. For comparison purposes, intersection crash rates are expressed as crashes per million entering vehicles (MEV) to account for the traffic volumes. The intersection crash rates are shown in Table 2.

**Table 2**
**Golf Road Intersection Crash Rates**

| Golf Road Intersection | Crash Severity | | | | Crash Rate (Crashes per million entering vehicles) |
|---|---|---|---|---|---|
| | Property Damage Only | Injury | Fatal | Total | |
| Sports Authority / Truck Access | 5 | 1 | 0 | 6 | 0.34 |
| Kohl's West Access | 2 | 2 | 0 | 4 | 0.19 |

As shown in Table 2, the Golf Road intersection with the Sports Authority/Truck Access has the highest crash rate of 0.34 crashes per million entering vehicles (MEV).

## Corridor Safety Concerns

As part of the safety assessment, GRAEF conducted a review of the corridor and identified design elements that are substandard or undesirable resulting in safety concerns. The corridor safety concerns are summarized in this section.

### Horizontal Curves

The posted speed limit of 30 mph on Golf Road results in a design speed of 35 mph for the project. The existing roadway alignment within the project study area includes two superelevated horizontal curves. Both horizontal curves have design speeds of 30 mph. The design speed of Golf Road is greater than the design speed of the horizontal alignment resulting in substandard horizontal curves.

### Vertical Curves

The existing Golf Road profile east of the STH 83 intersection includes two separate vertical curves. The existing grade extending to the east from the STH 83 intersection has a +3.38% grade leading into the crest vertical curve,

followed by a -5.34% grade leading into the sag vertical curve. East of the sag vertical curve, the profile remains relatively flat, with grades between +0.56% and +1.94%. The crest vertical curve has a design speed of 35 mph and the sag vertical curve has a 45 mph design speed. In each instance, the design speed is based on desirable design standards with an object height of 6 inches.

Stopping Sight Distance

The stopping sight distance along Golf Road is sufficient for the posted 30 mph speed limit. The K Value is defined as the horizontal distance needed to produce a 1% change in gradient; a higher K value indicates a flatter curve making it acceptable for higher speeds. The existing crest vertical curve has a K value of 49, which meets criteria for a 35 mph design speed. The existing sag vertical curve has a K value of 93, which meets criteria for a 45 mph design speed. In both cases, the design speed meets desirable criteria with an object height of 6 inches.

Intersection Sight Distance

There are safety concerns related to the intersection sight distance for the Sports Authority, Walgreens, and Truck Access specifically looking to the west over the crest vertical curve. The existing intersection sight distances for these locations are shown on Exhibits included in Appendix 2 and summarized in Table 3.

**Table 3**
**Existing Intersection Sight Distances**

| Access | Intersection Sight Distance for Passenger Vehicle | | |
|---|---|---|---|
| | Existing | Minimum | Desirable |
| Walgreen's Access to the right | 408'* | 460' | 585' |
| Sports Authority Access to the left | 335' | 355' | 435' |
| Truck Access to the right | 372' | 460' | 585' |

*Sight distance is limited by the Golf Road intersection with STH 83.

The intersection sight distance looking to the right at the Walgreen's access is limited to 408 feet due to the close proximity to the STH 83 intersection. As shown on the exhibit, vehicles queued in the dual left-turn lanes obstruct the sight distance for the Walgreen's access. The intersection sight distance looking to the left at the Sports Authority access is obstructed by the sidewalk, which results in sight distance of 335 feet (20 feet less than minimum). For the truck access, the intersection sight distance looking to the right is 372 feet (88 feet less than minimum). Similar to the Walgreen's access, vehicles queued in the dual left-turn lanes at the STH 83 intersection may obstruct the sight distance for the truck access.

We have heard many concerns regarding the safety of the left-out movement at the Sports Authority access throughout the public involvement process. Majority of the people at the meetings have witnessed a near miss at this location. Consider restricting the left-out movement at Sports Authority until the intersection sight distance can be improved through a reconstruction project.

The sign at the Sports Authority access obstructs the view to the west resulting in vehicles driving beyond the crosswalk to look for a gap in traffic to safely maneuver the intersection. Additionally, the trees are a sight obstruction specifically at the Kohl's west access, Kohl's east access, Qdoba access and Sentry west access. To improve safety along the corridor, it is recommended to remove any sight obstructions (signs, trees, etc.) within the vision triangle and intersection sight distance of the driveways along Golf Road.

Median Treatment

There are two main types of median treatments including a two-way left-turn lane and a raised median. The two-way left-turn lane section on Golf Road raises safety concerns due to the closely spaced access points. A raised median will reduce the number of conflict points and provide safer access.

## EXISTING TRAFFIC

The study area includes the Golf Road intersection with STH 83 and the following twelve access driveways along the project:

Walgreen's Access (#12)
Sports Authority Access (#1)
Truck Access (#11)
Kohl's West Access (#10)
Marshall's Access (#2)
Applebee's Access (#3)
Kohl's East Access (#9)
Qdoba Access (#4)
Sentry West Access (#8)
Best Buy Access (#5)
Sentry East Access (#7)
Best Buy Truck Access (#8)

In some exhibits, the access driveway is referenced by the number shown above. GRAEF utilized the WisDOT's weekday traffic count for the Golf Road intersection with STH 83 from July of 2007. In October of 2009, GRAEF conducted turning movement traffic counts at the study area intersections during the weekday evening peak period (3:00 to 6:00 pm) and the Saturday midday peak period (11:00 am to 2:00 pm). Based on the traffic counts, the weekday evening peak hour was identified to be 4:45 to 5:45 pm and the Saturday midday peak hour was identified to be 12:15 to 1:15 pm. The existing (Year 2009) traffic volumes, including the additional trips generated by a vacant 4,000 square foot retail space, are shown on Exhibit 2.

### Traffic Operational Analysis

Level of Service Definition

The study area intersections were analyzed using procedures set forth in the *2000 Highway Capacity Manual* (HCM). For analysis and design purposes, Level of Service (LOS) 'D' was used to define acceptable peak hour operating conditions. Level of Service is a quantitative measure that refers to the overall quality of flow at an intersection ranging from very good, represented by LOS 'A', to very poor, represented by LOS 'F'. Descriptions of the various levels of service are presented below:

**LOS A** is the highest level of service that can be achieved. Under this condition, intersection approaches appear quite open, turning movements are easily made, and nearly all drivers find freedom of operation. At signalized intersections, average delays are less than 10 seconds. At unsignalized intersections, average delays are less than 10 seconds.

**LOS B** represents stable operation. At signalized intersections, average vehicle delays are 10 to 20 seconds. At unsignalized intersections, average delays are 10 to 15 seconds.

**LOS C** still represents stable operation, but periodic backups of a few vehicles may develop behind turning vehicles. Most drivers begin to feel restricted, but not objectionably so. At signalized intersections, average vehicle delays are 20 to 35 seconds. At unsignalized intersections, average delays are 15 to 25 seconds.

**LOS D** represents increasing traffic restrictions as the intersection approaches instability. Delays to approaching vehicles may be substantial during short peaks within the peak period, but periodic clearance of long lines occurs, thus preventing excessive backups. At signalized intersections, average vehicle delays are 35 to 55 seconds. At unsignalized intersections, average delays are 25 to 35 seconds.

**LOS E** represents the capacity of the intersection. At signalized intersections, average vehicle delays are 55 to 80 seconds. At unsignalized intersections, average delays are 35 to 50 seconds.

**LOS F** represents jammed conditions where the intersection is over capacity and acceptable gaps for unsignalized intersections in the mainline traffic flow are minimal. At signalized intersections, average vehicle delays exceed 80 seconds. At unsignalized intersections, average delays exceed 50 seconds.

Existing (Year 2009) Traffic Analysis

The existing (Year 2009) traffic volumes were analyzed with the existing intersection geometrics and traffic control. Based on the existing traffic analysis, the following movements currently operate unacceptably with the existing intersection geometrics:

- Walgreen's Access: The left-turn movement exiting the development currently operates unacceptably at LOS E conditions during the weekday evening peak hour and LOS F conditions during the Saturday midday peak hours.
- Sports Authority Access: The left-turn movement exiting the development currently operates unacceptably at LOS F conditions during the weekday evening and Saturday midday peak hours.
- Kohl's West Access: The left-turn movement exiting the development currently operates unacceptably at LOS E conditions during the weekday evening peak hour and LOS F conditions during the Saturday midday peak hour.
- Marshall's Access: During the Saturday midday peak hour, the left-turn movement exiting the development currently operates unacceptably at LOS F conditions.

All movements at the other study area intersections currently operate acceptably (LOS D or better conditions) during the peak traffic hours. A summary of the existing traffic operations for each intersection is included in Appendix 3.

## FUTURE TRAFFIC

The future traffic for this project was developed to include two components: 1) traffic expected to be generated by the future development of parcel in the southwest corner of the Shoppes of Nagawaukee and 2) anticipated growth of the through traffic (i.e. does not stop at any of the commercial uses along the project) along the corridor.

### Future Development

An undeveloped parcel in the southwest corner of the Shoppes of Nagawaukee is planned for future development. For the purpose of this feasibility study, a 22,400 square foot high turnover sit down restaurant is anticipated for this site. The expected traffic volumes generated by this site is based on the size and type of proposed land use, and on trip data published in the Institute of Transportation Engineer's (ITE's) *Trip Generation, 8th Edition (2008).* Table 4 shows the trip generation for the future development.

**Table 4**
**Future Development Trip Generation**

| Land Use | ITE Land Use Code | Size | Daily Trips | Weekday PM Peak Hour Trips | | | Saturday Midday Peak Hour Trips | | |
|---|---|---|---|---|---|---|---|---|---|
| | | | | In | Out | Total | In | Out | Total |
| High Turnover Sit Down Restaurant | 932 | 22,400 SF | 2,850 | 150 | 100 | 250 | 165 | 150 | 315 |

As shown in Table 4, the future development is expected to generate 2,850 daily trips on a typical weekday. The development is expected to generate 250 trips (150 entering vehicles/100 exiting vehicles) during the weekday evening peak hour and 315 trips (165 entering vehicles/150 exiting vehicles) during the Saturday midday peak hour.

The Marshall's access will provide access to the future development site. The following directional distribution for the future development is based on existing and anticipated travel patterns of the adjacent roadway system:

- 40% to and from the south on STH 83
- 20% to and from the north on STH 83
- 20% to and from the west on Golf Road
- 20% to and from the east on Golf Road

The development trips were assigned to the adjacent roadway system based on the above directional distribution. The future development trips are shown on Exhibit 3.

### Traffic Forecasts

GRAEF developed daily and peak hour intersection traffic forecasts for the anticipated design year (Year 2035). The through traffic along Golf Road (i.e. does not stop at any of the commercial uses along the project) is anticipated to continue to increase in the future. Based on our data collection, the through traffic is approximately 260 vehicles during the weekday evening peak hour (125 eastbound/135 westbound) and approximately 210 vehicles during the Saturday midday peak hour (95 eastbound/115 westbound). The through volumes account for approximately 15% of the traffic during the weekday evening peak hour and 10% of the traffic during the Saturday midday peak hour.

A 0.5% annual growth rate was applied to the through traffic volumes to develop the future traffic forecasts. In addition to the increase in through traffic, the forecasts include the trips expected to be generated by the future development of the vacant parcel in the southwest corner of the Shoppes at Nagawaukee. The final phase of the Shoppes at Nagawaukee was completed in 2008 and the buildings have since been occupied. With the exception of the identified future development, the commercial traffic entering and exiting the driveways along Golf Road is not expected to increase in the future. The daily traffic forecasts are summarized in Table 5.

**Table 5**
**Year 2035 Daily Traffic Forecasts**

| Golf Road | Year 2009 Daily Traffic | Year 2035 Daily Traffic Forecast |
|---|---|---|
| East of STH 83 | 18,200 | 20,600 |
| Eastern City Limits | 5,900* | 6,800* |

* Estimated volume assuming 10% of daily traffic occurs during the weekday evening peak hour.

As shown in Table 5, the Year 2035 daily traffic forecasts range from 20,600 vehicles per day (vpd) east of STH 83 to 6,800 vpd at the east project limits. The Year 2035 peak hour traffic forecasts for the study area intersections are shown on Exhibit 4.

## ALTERNATIVES ANALYSIS

### Feasibility Considerations

GRAEF considered access management, pedestrian and bicycle accommodations and traffic control options throughout the feasibility phase of the study.

Access Management

Access management is critical component to provide safe and efficient traffic flow. Access management recommendations are based on principles identified by the Transportation Research Board's (TRB's) Access Management Manual. Two of the principles that specifically apply to this corridor include the separation of conflict points and the management of left-turn movements with a raised median. Separating conflict points is vital element to ensuring motorists have adequate time to identify and respond to each conflict point. Conflict points include intersections, turn lanes and medians. Proper spacing of intersections and driveways improves safety and operations. Raised medians provide greater flexibility in restricting or eliminating specific movements.

Intersection Control

Three intersection control options were evaluated through the alternatives analysis including maintaining the existing stop control, traffic signal and roundabout. A traffic signal will create gaps in traffic along Golf Road to improve operations at the adjacent stop controlled driveways. Roundabouts typically have less delay and shorter queues than a traffic signal. Roundabouts can also be a type of access management to safely accommodate u-turns from adjacent restricted access.

Pedestrian & Bicycle Accommodations

The following on road and off road pedestrian/bicycle facilities were considered through the feasibility phase:

**Sidewalk** is an off-road concrete walkway (minimum 5 foot width) to accommodate pedestrians and bicycles. *There is adequate sidewalk throughout the project and therefore no additional sidewalk is recommended.*

**Multi-Use Path** is an off-road asphalt path to accommodate two-way pedestrian and bicycle traffic (minimum 10 foot width). It should be noted that vehicles yield to the pedestrians and bicycles in a multi-use path. *A multi-use is not recommended along Golf Road due to safety concerns relating to the high number of access points.*

**Bicycle Accommodations** include a wider outside travel lane (minimum 14 foot width) to accommodate bicyclists on both sides of the roadway. *It is recommended to plan for bicycle accommodations as part of a reconstruction project.*

**Bicycle Lane** is a designated on-road lane (minimum 5 foot width) provided on both sides of the roadway. *Based on discussions with City staff, bicycle lanes are not desired along this project.*

For alternatives involving reconstruction of Golf Road, it is recommended to plan for bicycle accommodations (14 foot outside lane). There are currently no crosswalks to cross Golf Road along the project. Constructing an intersection to operate under roundabout or traffic signal control would provide an opportunity for a safe pedestrian crossing.

**Golf Road Alternatives**

Several alternatives considering access management, pedestrian and bicycle accommodations and intersection traffic control options were evaluated through the feasibility phase. Based on discussions with the Public Works Committee (PWC), the following three alternatives have been identified for further evaluation:

**Low Build Alternative** includes resurfacing with minor widening on the western section of the project to construct a raised median for the access management. The eastern section of the project will be resurfaced to maintain the existing two-way left-turn lane and existing curb.

**Medium Build Alternative** is a full reconstruction project including widening the roadway to provide a 24 foot raised median throughout the project.

**High Build Alternative** is a full reconstruction including improving the crest vertical curve by lowering the road approximately 1.5 feet to improve intersection sight distance. The High Build Alternative also includes widening the roadway to provide a 24 foot raised median throughout the project.

The conceptual roadway design for each of the alternatives is included in Appendix 4.

Low Build Alternative

The low build alternative includes the following specific improvements:

- Resurfacing with minor widening on the western section to construct a raised median for access management.
- Extend the westbound dual left-turn lanes and westbound right-turn lane for the intersection with STH 83.
- Restrict the left-out movement at the Sport Authority access due to the sight distance and operational deficiencies. Sports Authority access will allow left-in, right-in and right-out movements.
- *Optional Improvement:* Construct a backage road connecting the parking lot west of Sports Authority to the Marshall's access. The backage road would improve site circulation with the restricted access at Sports Authority.
- Utility impacts include fire hydrant relocations, water valve adjustments, and sanitary and storm manhole adjustments. The existing street lights will remain as part of this alternative.
- The Year 2035 traffic analysis for the low build alternative is summarized in Appendix 5. Based on the Year 2035 traffic analysis, the following movements are expected to operate unacceptably with the low build alternative:
    - Truck Access: The north approach exiting the development is expected to operate unacceptably at LOS F conditions during the weekday evening and Saturday midday peak hours.
    - Kohl's West Access: The left-turn movement exiting the development is expected to operate unacceptably at LOS F conditions during the weekday evening and Saturday midday peak hours.
    - Marshall's Access: The left-turn movement exiting the development is expected to operate unacceptably at LOS F conditions during the weekday evening and Saturday midday peak hours.

Medium Build Alternative

The medium build alternative includes the following improvements:

- Reconstruct the roadway to provide a 24 foot raised median to accommodate a two-stage turn maneuver.
- Extend the westbound dual left-turn lanes and westbound right-turn lane for the intersection with STH 83.
- Restrict the left-out movement at the Sport Authority access due to the sight distance and operational deficiencies. Sports Authority access will allow left-in, right-in and right-out movements.
- Provide a wider outside lane (14 foot width) for bicycle accommodations throughout the project.
- Identified the following two traffic control options:
    - Signal Option: Relocate the Kohl's west access to align with Marshall's access. Install a full actuated traffic signal at this intersection.
    - Roundabout Option: Relocate the Kohl's west access to align with Marshall's access. Construct a two-lane hybrid roundabout for this intersection.
- *Optional Improvements:*
    - Backage Road: Construct a backage road connecting the parking lot west of Sports Authority to the Marshall's access. The backage road would improve site circulation with the restricted access at Sports Authority.
    - Multi-Use Path

- Utility impacts include fire hydrant relocations, water valve adjustments, and sanitary and storm manhole adjustments. The removal of the existing street lights and the installation of a new street lighting system is also part of the proposed improvement. One telephone pedestal may need to be relocated depending on the sub-alternate selected.
- The results of the Year 2035 traffic operational analysis for the medium build alternative is included in the level of service tables in Appendix 5 and summarized below:
    - For the signal option, all movements at the study area intersections are expected to operate acceptably at LOS D or better conditions.
    - For the roundabout option, all movements at the study area intersection are expected to operate acceptably at LOS D or better conditions during the weekday evening peak hour. During the Saturday midday peak hour, the movements exiting the truck access are expected to operate unacceptably at LOS E conditions.

<u>High Build Alternative</u>

The high build alternative includes the reconstruction of approximately 650 feet of Golf Road to flatten the existing crest vertical curve at the west end of the study limits. The proposed crest vertical curve would be lowered approximately 1.5 feet to reduce the severity of the curve and improve sight distance at the three access points identified in the Corridor Safety Concerns section of this report.

In addition to lowering the vertical profile, the high build alternative includes the following improvements:

- Reconstruct the roadway to provide a 24 foot raised median to accommodate a two-stage turn maneuver.
- Extend the westbound dual left-turn lanes and westbound right-turn lane for the intersection with STH 83.
- Provide a wider outside lane (14 foot width) for bicycle accommodations throughout the project.
- Identified the following two traffic control options:
    - Stop Control Option: Maintain the existing stop controlled access along the project.
    - Signal Option: Relocate the Kohl's west access to align with Marshall's access. Install a full actuated traffic signal at this intersection. Restrict the left-out movement at the Sport Authority access due to the sight distance and operational deficiencies. Sports Authority access will allow left-in, right-in and right-out movements.
    - Roundabout Option: Relocate the Kohl's west access to align with Marshall's access. Construct a two-lane hybrid roundabout for this intersection. Restrict the left-out movement at the Sport Authority access due to the sight distance and operational deficiencies. Sports Authority access will allow left-in, right-in and right-out movements.
- Utility impacts include fire hydrant relocations, water valve adjustments, and sanitary and storm manhole adjustments. The removal of the existing street lights and the installation of a new street lighting system is also part of the proposed improvement. One telephone pedestal may need to be relocated depending on the sub-alternate selected.
- *Optional Improvements:*
    - Backage Road: Construct a backage road connecting the parking lot west of Sports Authority to the Marshall's access. The backage road would improve site circulation with the restricted access at Sports Authority.
    - Bicycle lanes
    - Multi-Use Path

- The results of the Year 2035 traffic operational analysis for the high build alternatives are included in the level of service tables in Appendix 5 and summarized below:
    - For the stop control option, the following movements are expected to operate unacceptably at LOS E or F conditions.
        - Sports Authority Access: The left-turn movement exiting the development is expected to operate unacceptably at LOS F conditions during the weekday evening and Saturday midday peak hours.
        - Marshall's Access: During the Saturday midday peak hour, the left-turn movement exiting the development is expected to operate unacceptably at LOS E conditions.
    - For the signal option, all movements at the study area intersections are expected to operate acceptably at LOS D or better conditions.
    - For the roundabout option, all movements at the study area intersection are expected to operate acceptably at LOS D or better conditions during the weekday evening peak hour. During the Saturday midday peak hour, the movements exiting the truck access are expected to operate unacceptably at LOS E conditions.

**Project Cost Estimates**

Pay items were identified for each of the conceptual alternatives and appropriate contingencies were applied to determine total project costs for budgeting purposes. Utility relocations and real estate impacts have been assessed and are included as a line item in the estimated cost. Real estate acquisition costs are based on an average commercial property value of $375,000 per acre. Topographic surveys were performed and facility maps reviewed to determine existing public and private utilities within the corridor. Utility impacts have been evaluated for the various options and costs associated with the adjustments have been included for each alternative. A worksheet summarizing the costs associated with each alternative is provided in Appendix 6 and summarized in Table 6.

**Table 6**
**Alternatives Cost Estimates**

| | Low Build | Medium Build | | High Build | | |
|---|---|---|---|---|---|---|
| | | Signal | Roundabout | Stop Controlled | Signal | Roundabout |
| Total Project Cost | $454k | $1,793k | $1,784k | $1,697k | $2,012k | $2,002k |

The project costs shown in Table 6 do not assume the construction and design costs for the optional elements developed for each alternative. Optional elements that may be added to the baseline alternatives are summarized as follows:

1. Low\Medium\High Build: A backage road connecting the parking lot west of Sports Authority to the Marshall's access. Construction cost estimated ≈ $260k.
2. Medium\High Build: Consolidation of two access locations for the Walgreens property. Construction savings estimated ≈ $5k.
3. Medium\High Build: Construction of a multi-use path for bicycles and pedestrians on the south side of Golf Road. Construction cost estimated ≈ $56k.
4. High Build: Construction of bike lanes within the pavement of Golf Road. Construction cost estimated ≈ $42k.

**Construction Schedule**

Conceptual construction schedules were evaluated based on preliminary quantities prepared as part of the cost estimating process. Standard production rates were used for critical path work items to estimate an approximate duration of impact to the adjacent property owners. These durations shown in Table 7 are dependent on numerous factors including construction start date, weather, ability to perform night work, utility relocations, soil conditions, staged construction, and contract requirements. A more detailed construction schedule will be prepared on the selected alternate during the preparation of construction documents.

**Table 7**
**Conceptual Project Durations**

| | | Medium Build | | High Build | | |
|---|---|---|---|---|---|---|
| | Low Build | Signal | Roundabout | Stop Controlled | Signal | Roundabout |
| Project Duration | 2 months[1] | 4 months | 4 months | 4.5 months | 4.5 months | 5 months |

[1] Project duration for the low-build/resurfacing option could potentially be performed during night-time operations minimizing disturbances to the commercial businesses located in the area.

**Alternatives Comparison**

With the competing interests along the project, it is not feasible for the alternatives to meet all of the corridor needs including the provision for safe and efficient traffic flow, maintain access to businesses, minimize cost of improvements and duration of construction. This section identifies the key advantages and disadvantages of the three alternatives.

Low Build Alternative

The low build alternative is mainly a resurfacing project and therefore does not address all of the traffic and safety concerns along the corridor. The advantages and disadvantages of the low build alternative are summarized below.

**Advantages:**

+ Safety/Traffic Operations: Restricting the left-out movement at Sports Authority eliminates the sight distance and operational concerns for this movement.
+ Parking Impacts: No parking impacts anticipated.
+ Cost: Lowest cost when compared to the medium or high build alternates.
+ Construction Schedule: Shorter duration when compared to the medium or high build alternatives.

**Disadvantages:**

- Safety:
  - Raised median on west section is not wide enough to safely allow a vehicle to make a two-stage turn movement.
  - Truck access does not meet minimum intersection sight distance.
  - Two-way left-turn lanes will remain on the east section.
- Traffic Operations: Traffic operational deficiencies are expected at the Truck access, Kohl's west access and Marshall's access.
- Pavement Life Cycle: The low build is classified as a maintenance repair and the corridor will likely be in need of another repair or a full reconstruction in approximately 10 years. Whereas, the reconstruction included in the medium and high build alternatives would not require resurfacing for approximately 20 years.

Medium Build Alternative

The medium build alternative does not address all of the concerns along the corridor. A summary of the advantages and disadvantages of the medium build is included below.

**Advantages:**

+ Safety/Traffic Operations: Restricting the left-out movement at Sports Authority eliminates the sight distance and operational concerns for this movement.
+ Traffic Operations: Raised median through project is wide enough to safely allow a vehicle to make a two-stage turn movement.
+ Cost: Lower cost when compared to the other reconstruction alternative (High Build)
+ Construction Schedule: Shorter duration of the two alternatives involving reconstruction (medium & high build).
+ Pavement Life Cycle: The medium and high build would not require resurfacing for approximately 20 years. Whereas, the low build will need to be resurfaced or reconstructed in approximately 10 years.

**Disadvantages:**

- Safety: Truck access does not meet minimum intersection sight distance.
- Parking Impacts: Loss of parking for Kohl's
- Cost: Higher cost when compared to the resurfacing alternative (Low Build)
- Construction Schedule: Due to the reconstruction, the medium and high build alternatives will have a longer duration than the low build alternative.

Signal Option Consideration

The City of Delafield currently does not maintain any traffic signals, as the existing signals within the city limits are under WisDOT's jurisdiction. Therefore, the maintenance of a traffic signal will need to be investigated further.

High Build Alternative

The high build alternative addresses majority of the deficiencies identified along the corridor. A summary of the advantages and disadvantages of the high build is included below.

High Build Stop Control Option

**Advantages:**

+ Safety: Improved intersection sight distance for the Sports Authority and Truck Access.
+ Traffic Operations: Raised median through project is wide enough to safely allow a vehicle to make a two-stage turn movement.
+ Cost: Lowest cost when compared to the other reconstruction alternatives (Medium/High Build Signal and Roundabout Options)
+ Pavement Life Cycle: The medium and high build would not require resurfacing for approximately 20 years. Whereas, the low build will need to be resurfaced or reconstructed in approximately 10 years.

**Disadvantages:**

- Traffic Operations: The left-turn movement exiting at the Sports Authority access is expected to operate unacceptably at LOS F conditions.
- Construction Schedule: Due to the reconstruction, the medium and high build alternatives will have a longer duration than the low build alternative.

High Build Signal & Roundabout Options

**Advantages:**

+ Safety:
  - Restricting the left-out movement at Sports Authority eliminates the sight distance and operational concerns for this movement.
  - Improved intersection sight distance for the Sports Authority and Truck Access.
+ Traffic Operations: Raised median through project is wide enough to safely allow a vehicle to make a two-stage turn movement.
+ Pavement Life Cycle: The medium and high build would not require resurfacing for approximately 20 years. Whereas, the low build will need to be resurfaced or reconstructed in approximately 10 years.

**Disadvantages:**

- Parking Impacts: Loss of parking for Kohl's
- Cost: Highest cost compared to the other alternatives.
- Construction Schedule: Due to the reconstruction, the medium and high build alternatives will have a longer duration than the low build alternative.

Signal Option Consideration

The City of Delafield currently does not maintain any traffic signals, as the existing signals within the city limits are under WisDOT's jurisdiction. Therefore, the maintenance of a traffic signal will need to be investigated further.

Overall Comparison

The proposed improvement should look to balance the various needs along the corridor including safety, access, traffic operations, and multi-modal accommodations. As summarized in this report, some of this information may be evaluated with hard data and thus specific alternatives clearly outperform others. For example, the high build alternative which includes modifications to the roadway profile clearly improves the site distance for specific access locations. On the other hand, some items are more subjective and need to be framed within the correct context. For example, the construction schedule for the low build has the least impact to the business owners; however, this option will require further maintenance at an earlier point in the future. Table 8 has been prepared to illustrate the favorable aspects of the various alternatives and provide a framework for comparison. A red flag indicates that the alternative does not meet the goals of the study project.

**Table 8**
**Alternatives Comparison**

| Considerations | Existing | Low Build | Medium Build | | High Build | | |
|---|---|---|---|---|---|---|---|
| | | | Signal | Roundabout | Stop Controlled | Signal | Roundabout |
| Sight Distance | Red Flag | Caution | Caution | Caution | Favorable | Favorable | Favorable |
| Safety | Red Flag | Caution | Favorable | Favorable | Favorable | Optimum | Optimum |
| Traffic Operations | Red Flag | Caution | Optimum | Optimum | Red Flag | Optimum | Optimum |
| Access | Optimum | Favorable | Favorable | Favorable | Favorable | Favorable | Favorable |
| Cost | Optimum | Favorable | Caution | Caution | Caution | Caution | Caution |
| Duration of Construction | Optimum | Favorable | Caution | Caution | Caution | Caution | Caution |

Optimum
Favorable
Caution
Red Flag

## PUBLIC INVOLVEMENT

Public involvement is critical throughout the project. The ultimate goal of the public involvement effort is to involve the area stakeholders in the planning process from the beginning. The public involvement plan developed for this study (provided in Appendix 7) includes community wide and local property owner meetings throughout the project.

*Public Information Meetings:* Two city wide public information meetings are planned as part of this project. The first meeting held on November 17, 2009 focused on listening to the citizens and business owners to gain an understanding of their concerns. The second meeting to present the alternatives for consideration and feedback is planned for April 27, 2009.

*Property Owner Meetings:* Three property owner meetings are planned as part of this project. Similar to the public information meeting, the first property owner meeting held on January 20, 2010 focused on listening to their concerns. The property owner meeting on April 20, 2010 included a presentation of the alternatives and listening to their comments and concerns. An additional meeting with the property owners is planned to discuss the recommended alternative.

The education of the public will be critical to the success of building consensus on the project. Public involvement summaries are included in Appendix 7.

## PROJECT FINANCING

### Funding Opportunities

The study team has identified three funding opportunities for the Golf Road improvement project. These options include city funding, public/private funding, and programs for local governments sponsored by federal and state highway departments.

Municipal Funding

The City of Delafield typically resurfaces 2 to 3 miles of roadway per year with an annual budget allocation expected to be approximately $620k for FY 2010-2014. This budget includes dollars for engineering and inspection, which typically range from 7% to 8% of the budget. As the need arises, the city may also budget for reconstruction projects separately from the annual resurfacing budget. Currently

there is a place holder item in the Capital Improvement Program for 2010-2014 for the Golf Road Construction project with a dollar amount to be determined.

One option for funding the Golf Road improvement project is to evaluate the six year program and prioritize this roadway in relation to other city infrastructure projects. The low-build "resurfacing" option without the backage road is currently estimated to be ≈ $454k which would include both engineering and construction inspection. This estimate includes the extension of the left and right turn lanes for the west approach to STH 83 which explains the above average cost in comparison to typical resurfacing per lane mile. Additional funds could be requested from the city for the turn lane work so as not to unfairly reduce the funds for other resurfacing projects within the City.

The medium and high-build alternatives range in cost from $1.7 – $2.4 million. If the city were to fund 100% of either of these project concepts, additional funding would need to be approved by elected officials and added to the Capital Improvement Program in the separate line item mentioned above.

Private\Public Partnering

The Golf Road corridor carries an Average Daily Traffic of 18,200 vehicles (2009). Data collection performed in the fall of 2009 indicates that approximately 85% of the traffic along Golf Road is generated by the commercial properties located within the study limits. The city limits are currently located at the east end of the project. It could be argued that improvements to this corridor will primarily benefit the businesses in the area and should not unfairly impact the overall street budget for the municipality. In line with this thinking, the city could approve to assess a portion of the improvements to the property owners located within the project corridor. The determination of and appropriate assessment value could be based on one or a number of factors including: traffic generated per parcel, property values, taxes, and\or land use.

An example of the reduction of city costs that would result from a potential cost share assessed to property owners based on a single factor such as traffic generated by the commercial properties vs. through traffic is summarized in Table 9.

**Table 9**
**Summary of Project Cost Share[1]**
**Private\Public Partnering Based on Traffic Volumes**

| | Low Build | Medium Build | | High Build | | |
|---|---|---|---|---|---|---|
| | | Signal | Roundabout | Stop Controlled | Signal | Roundabout |
| Total Project Cost[1] | $454k | $1,793k | $1,784k | $1,697k | $2,012k | $2,002k |
| City Costs[2] | $68k | $269k | $268k | $255k | $302k | $300k |
| Private Owner Costs[2] | $386k | $1,524k | $1,516k | $1,442k | $1,710k | $1,702k |

[1] Planning\Budgeting project costs do not assume the construction and design costs for the optional elements developed for each alternative.

[2]Cost share split assumes a direct ratio of project costs to traffic generated by each property (85%) within the area vs. through traffic (15%) along the roadway.

The costs shown in Table 9 would suggest an unfair allocation to the property owners based on the fact that current taxes paid by the owners should cover a portion of the required infrastructure improvements. If the city would like to pursue this option further, it is recommended that a planning committee be formed to determine an appropriate methodology to determine individual assessments based on the balance of

benefit realized by the motoring public as well as the benefit to the businesses located within the study area.

WisDOT Programs

In partnership with local governments and other groups, WisDOT administers a variety of state and federal programs to complete projects that enhance our comprehensive transportation network. There are two programs that could facilitate the reconstruction of the Golf Road Corridor.

**Surface Transportation Program - Urban (STP-U) -** The objective of STP-U is to improve federal aid eligible highways within urban areas. Projects must meet federal and state requirements. STP-Urban projects are typically financed by a cost share of 80% federal and 20% local funds. Communities are eligible for funding on roads functionally classified as a major collector or higher. According to functional classification maps prepared by WisDOT, Golf Road is classified as a minor arterial and qualifies for the program.

WisDOT is currently soliciting STP-Urban projects for the 2011-2014 Program Cycle. Applicants are required to complete a WisDOT 2011-2014 STP-Urban Program application form for each eligible project. The application deadline is July 30, 2010. WisDOT will review program applications in September 2010 and award projects on October 18, 2010. FY 2011 is already overscheduled in the 5-20K and 20-50K statewide population categories, new projects will be added to FY's 2012, 2013, and 2014 only. If the Golf Road project was approved for this program, construction would be programmed for the 2013 construction season at the earliest.

One factor that is considered by WisDOT in the evaluation process is the city's funding balance within the program. As of today, the City of Delafield funding balance is -$316,378.98. A negative balance does not work in the City's favor and may prevent the approval of the project into the statewide program. The estimated project costs associated with the STP-U funding is summarized in Table 10. An additional allocation of shares will occur in September 2010 and will likely reduce the current deficit by $175,000 based on historical data.

**Table 10**
**Summary of Project Cost Share[1]**
**Estimated Project Costs Associated with STP-U Funding**

| | Low Build | Medium Build | | High Build | | |
|---|---|---|---|---|---|---|
| | | Signal | Roundabout | Stop Controlled | Signal | Roundabout |
| Total Project Cost[1] | $454k | $1,793k | $1,784k | $1,697k | $2,012k | $2,002k |
| City funding | $91k | $359k | $357k | $339k | $402k | $400k |
| Federal funding | $363k | $1,434k | $1,427k | $1,358k | $1,610k | $1,602k |

[1] Planning\Budgeting project costs do not assume the construction and design costs for the optional elements developed for each alternative.

**Highway Safety Improvement Program (HSIP) -** The Highway Safety Improvement Program (HSIP) funds highway safety projects at sites that have experienced a high crash history. Emphasis is on low-cost options that can be implemented quickly. Projects should reduce the number and severity of crashes and decrease the potential for crashes on all public roads. The crash rate along Golf Road is above the statewide average which will fare favorably in the evaluation process; however, many of the recommended alternatives are larger in scope then is typically approved for HSIP projects.

FHWA looks for projects that contain the following elements when selecting projects.

- Intersection safety improvements (including installing/modifying traffic signals, roundabouts and channelization/turning radii improvements[1]
- Straightening isolated curves or hills[1]
- Improving sight distance[1]
- Access modifications[1]
- Constructing turning, bypass or other auxiliary lanes
- Eliminating a roadside obstacle
- Installing guardrails, barriers and crash attenuators
- Installing signs, delineators, flashing warning lights (including fluorescent, yellow-green signs) at pedestrian-bicycle crossings, in school zones and other problem areas
- Installing countdown pedestrian signals

[1]Various elements studied as part of the medium and high build alternatives for the Golf Road Feasibility Study include these elements.

Projects with local funding are capped at $1.5 million and will require a 10% match by the City of Delafield. (90% Federal HSIP funds). WisDOT is currently soliciting HSIP projects for the 2011-2014 Program Cycle. The deadline for 2011-2012 HSIP submittals is May 15, 2010 and the deadline for 2013-2014 HSIP submittals is August 15, 2010. The low build alternative would not likely qualify for HSIP funding because it does not include enough of the elements required by FHWA in project selection. The estimated project costs associated with the HSIP funding is summarized in Table 11.

**Table 11**
**Summary of Project Cost Share[1]**
**Estimated Project Costs Associated with HSIP Funding**

| | Low Build | Medium Build | | High Build | | |
|---|---|---|---|---|---|---|
| | | Signal | Roundabout | Stop Controlled | Signal | Roundabout |
| Total Project Cost[1] | N/A | $1,793k | $1,784k | $1,697k | $2,012k | $2,002k |
| City funding | N/A | $179k | $178k | $170k | $201k | $200k |
| Federal funding[2] | N/A | $1,614k | $1,606k | $1,527k | $1,811k | $1,802k |

[1] Planning\Budgeting project costs do not assume the construction and design costs for the optional elements developed for each alternative.

[2] HSIP projects are capped at $1.5M for construction costs, elements will need to be eliminated or scaled back to fit within the budget allocations.

Funding Recommendations

The most beneficial funding option to the City of Delafield would be to try to qualify for funding assistance from one of the various programs available through WisDOT. Due to the uncertainty of obtaining these funds, it is recommended that the city prepare applications for both STP-U and HSIP programs in accordance with the

deadlines outlined in this report. Funding selections will be made for these programs in the fall of 2010. Depending on the availability of funds that the city may approve for this corridor, a final decision on a chosen alternative may need to be postponed until these funding decisions have been made. Independent of the receipt of funding from WisDOT for construction, it is recommended that the city fund the design, utility, and real estate portion of the project to enhance the likelihood of selection by the state.

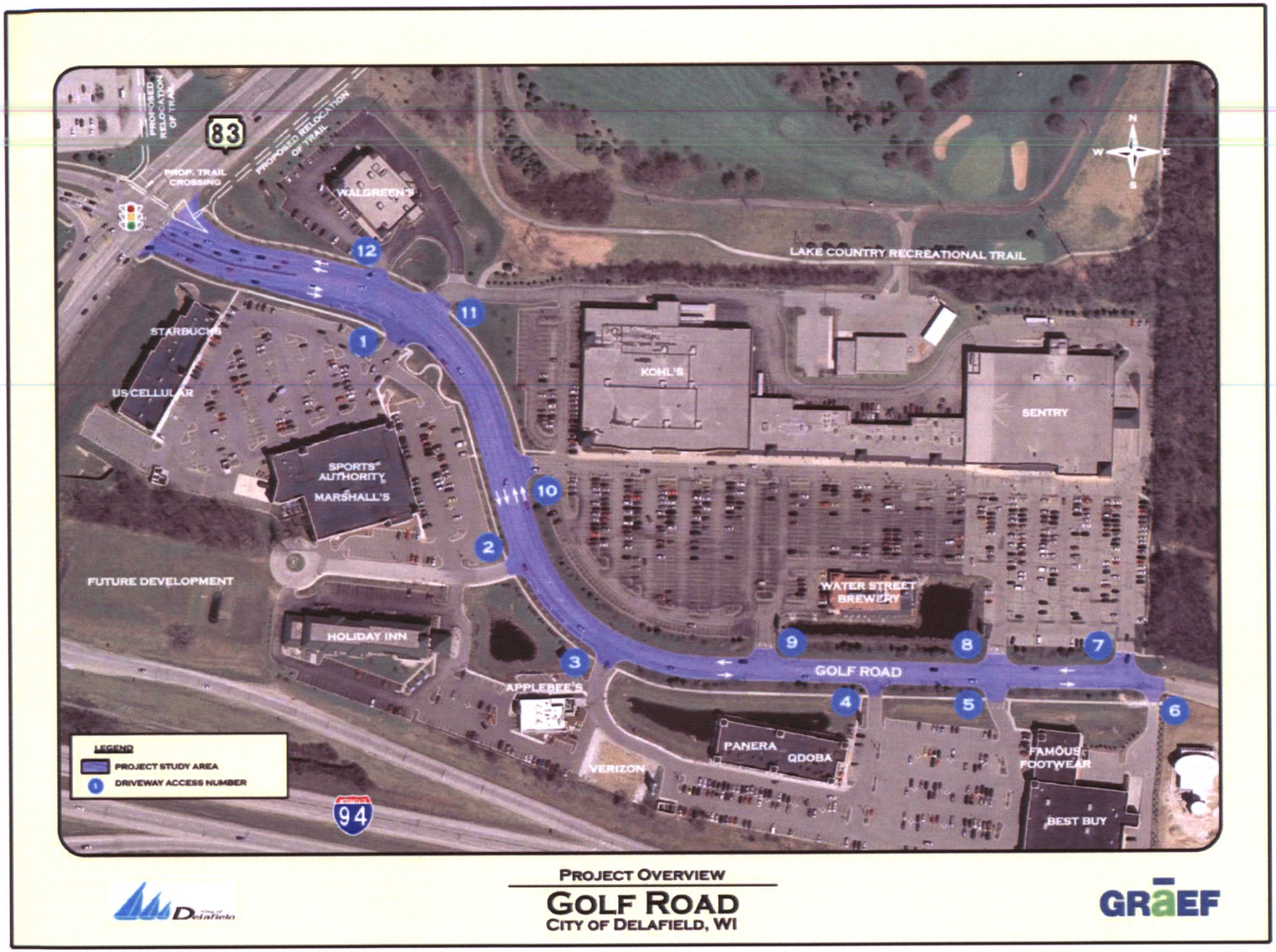
## CONCLUSIONS

The main goal of this study was to improve the safety and operations for the access along the corridor. For the high build stop control option, the left-turn movement exiting at Sports Authority is expected to continue to operate unacceptably (LOS F) during the weekday evening and Saturday midday peak hours. Therefore, the left-turn movement exiting at Sports Authority is recommended to be restricted. It is also recommended to close the median opening at the Kohl's west access to eliminate the unsafe u-turn condition expected to result from the restriction at the Sports Authority access.

The low build alternative does not meet the needs of the study. It is mainly a resurfacing project and does not address the safety and operational concerns along the corridor. The key difference between the medium build and high build alternatives is the high build alternative includes lowering the vertical profile to improve intersection sight distance. In our opinion, lowering the vertical profile may not alleviate all the safety concerns and does not justify the costs and impacts associated with this improvement. GRAEF recommends the medium build signal option with the backage road. The backage road will connect the parking lot west of Sports Authority to the Marshall's access to improve internal site circulation and provide an alternate access to Golf Road. The need for a traffic signal at the Marshall's access is dependent on the future development. The project should plan for a future signal at this location and the potential for Kohl's to align an access with the signalized intersection. A traffic signal at Marshall's access will create gaps in traffic along Golf Road to improve operations at the adjacent stop controlled driveways.

The City's Public Works Committee (PWC) does not support the backage road as part of the improvement project. If the backage road is not feasible, we concur with the PWC's recommendation of the medium build roundabout alternative. A roundabout at the Marshall's access will safely and efficiently accommodate future traffic including the u-turns movements. The eastbound lane drop at the roundabout should be further evaluated through the design process to avoid creating an unsafe merging condition.

It is recommended that the city apply for WisDOT funding through the STP-U and HSIP programs.




GRAEF

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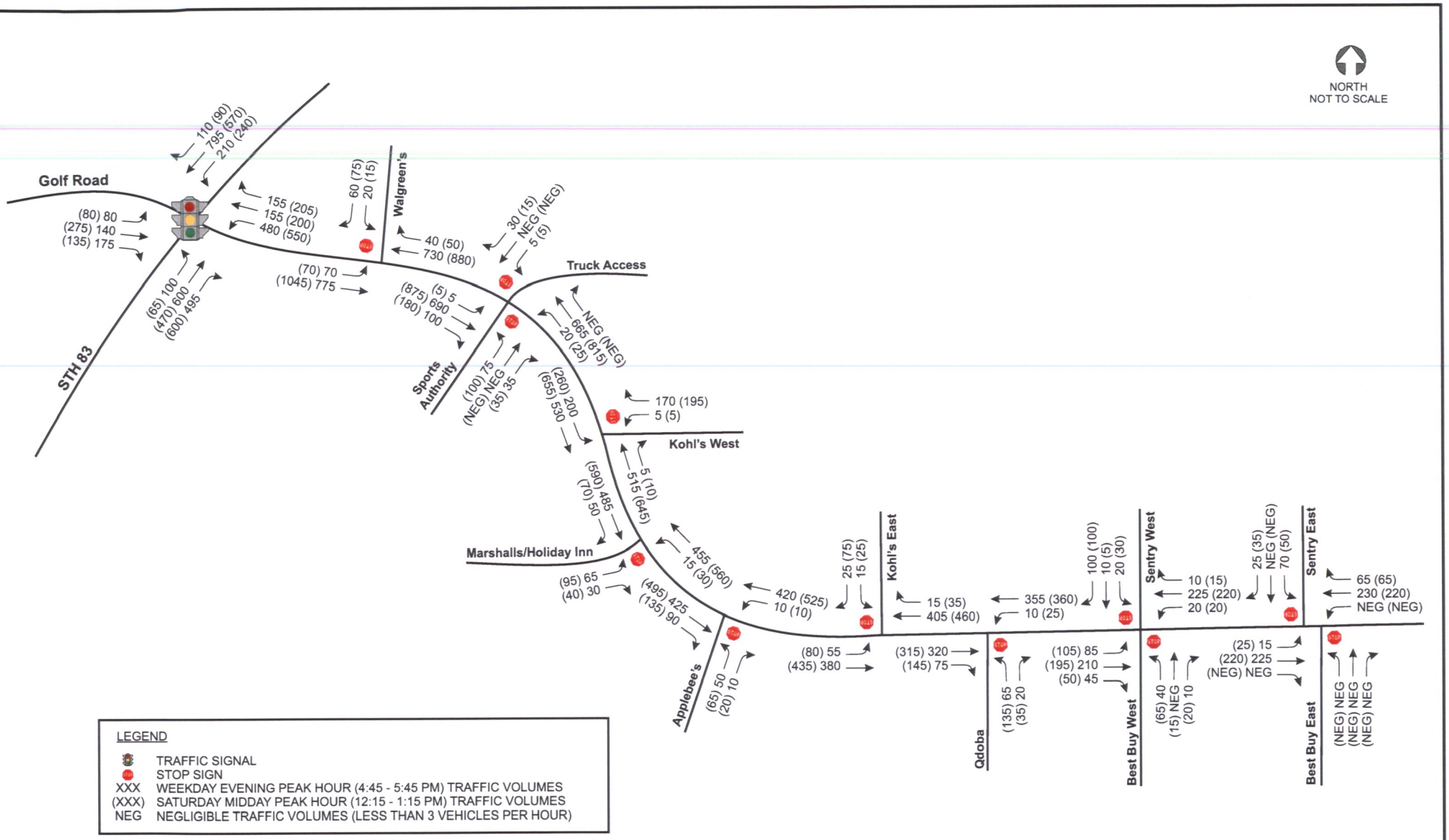
**EXHIBIT 1**
**PROJECT OVERVIEW**
**GOLF ROAD (STH 83 TO EASTERN CITY LIMITS)**
**DELAFIELD, WISCONSIN**




LEGEND

- TRAFFIC SIGNAL
- STOP SIGN
- XXX WEEKDAY EVENING PEAK HOUR (4:45 - 5:45 PM) TRAFFIC VOLUMES
- (XXX) SATURDAY MIDDAY PEAK HOUR (12:15 - 1:15 PM) TRAFFIC VOLUMES
- NEG NEGLIGIBLE TRAFFIC VOLUMES (LESS THAN 3 VEHICLES PER HOUR)

GRAEF

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**EXHIBIT 2**
**EXISTING (YEAR 2009) PEAK HOUR TRAFFIC VOLUMES**
**GOLF ROAD (STH 83 TO EASTERN CITY LIMITS)**
**DELAFIELD, WISCONSIN**

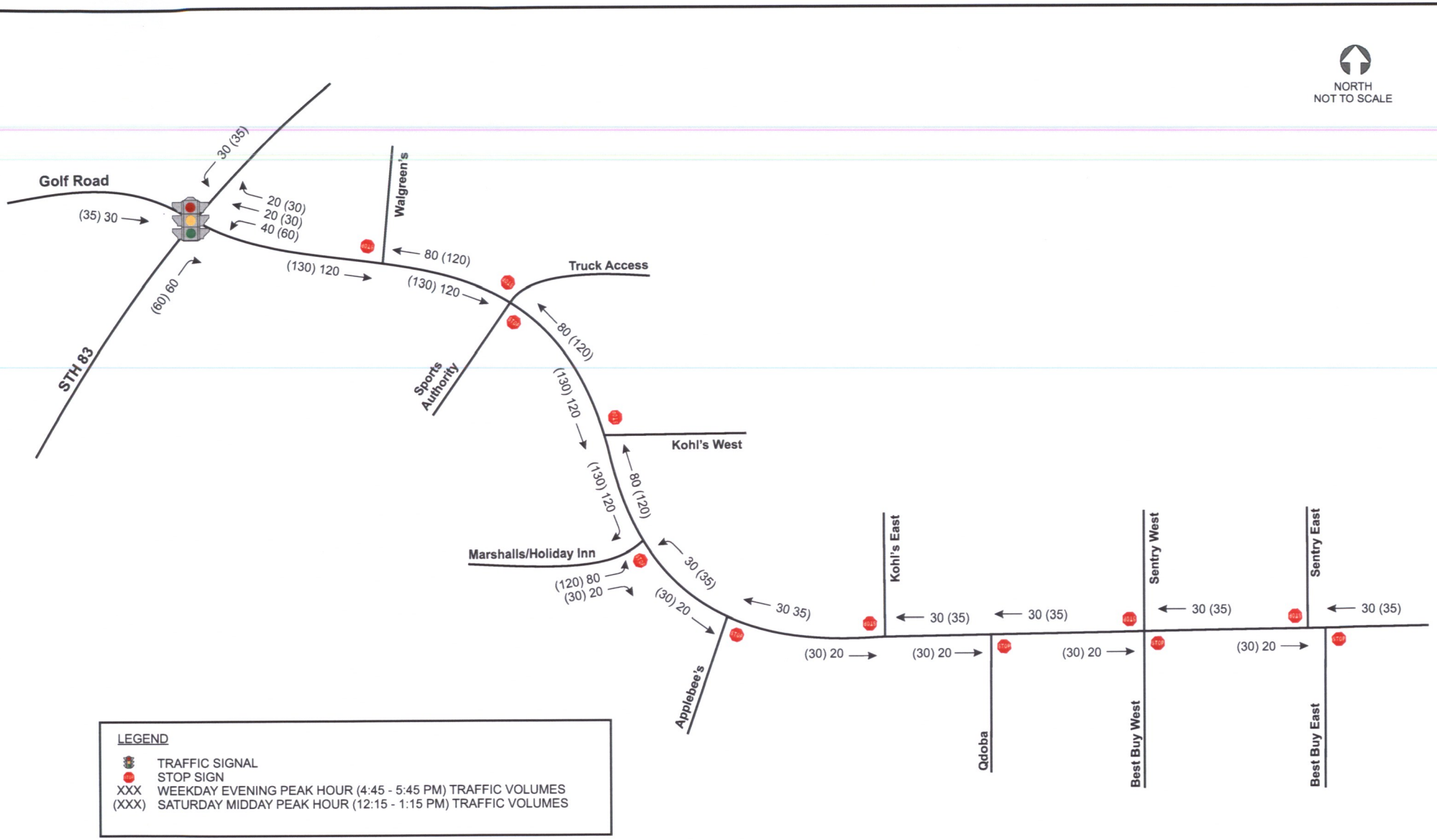


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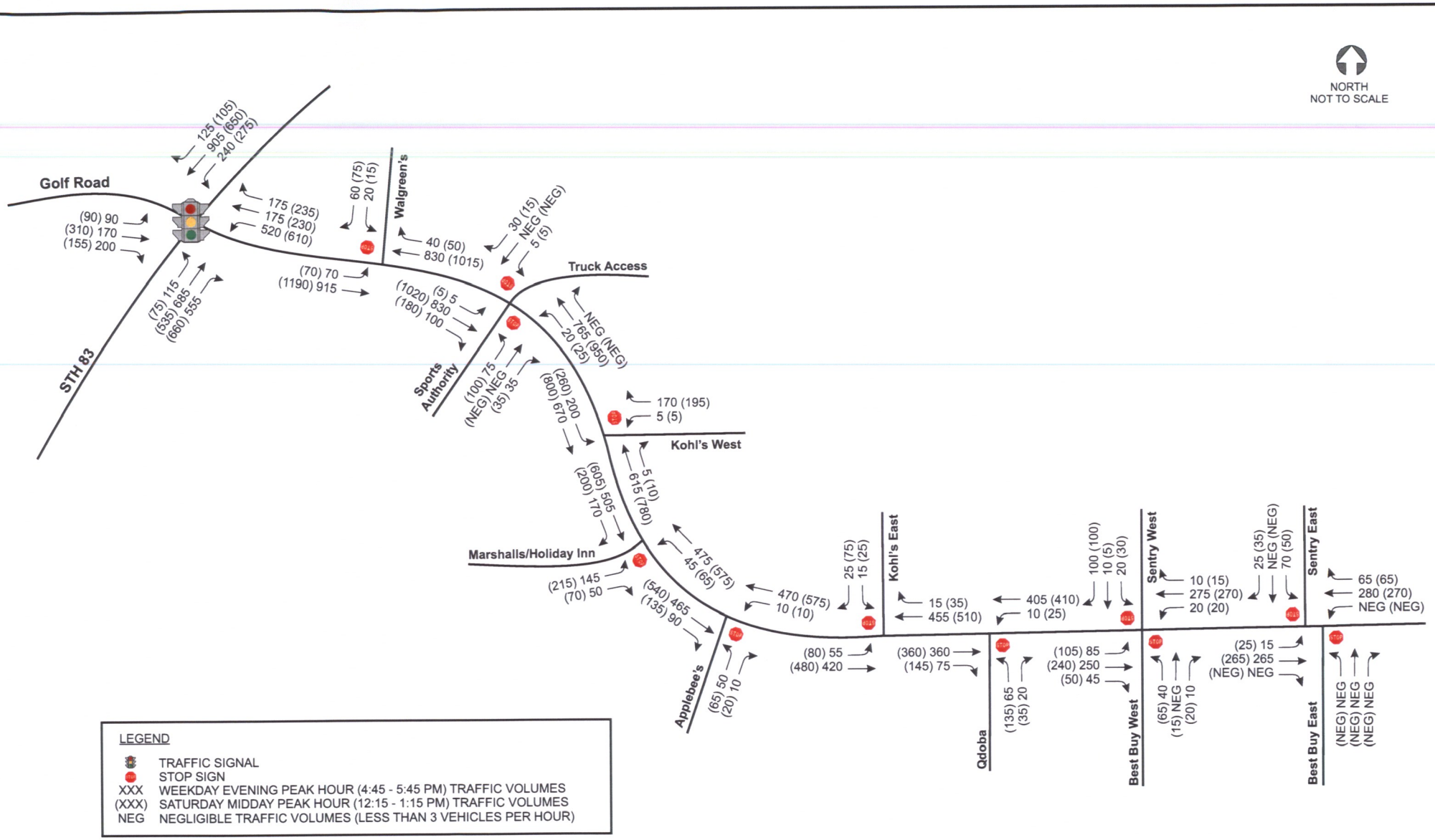
**EXHIBIT 3**
**FUTURE RESTAURANT TRIPS**
**GOLF ROAD (STH 83 TO EASTERN CITY LIMITS)**
**DELAFIELD, WISCONSIN**




LEGEND

- TRAFFIC SIGNAL
- STOP SIGN
- XXX WEEKDAY EVENING PEAK HOUR (4:45 - 5:45 PM) TRAFFIC VOLUMES
- (XXX) SATURDAY MIDDAY PEAK HOUR (12:15 - 1:15 PM) TRAFFIC VOLUMES
- NEG NEGLIGIBLE TRAFFIC VOLUMES (LESS THAN 3 VEHICLES PER HOUR)

GRAEF

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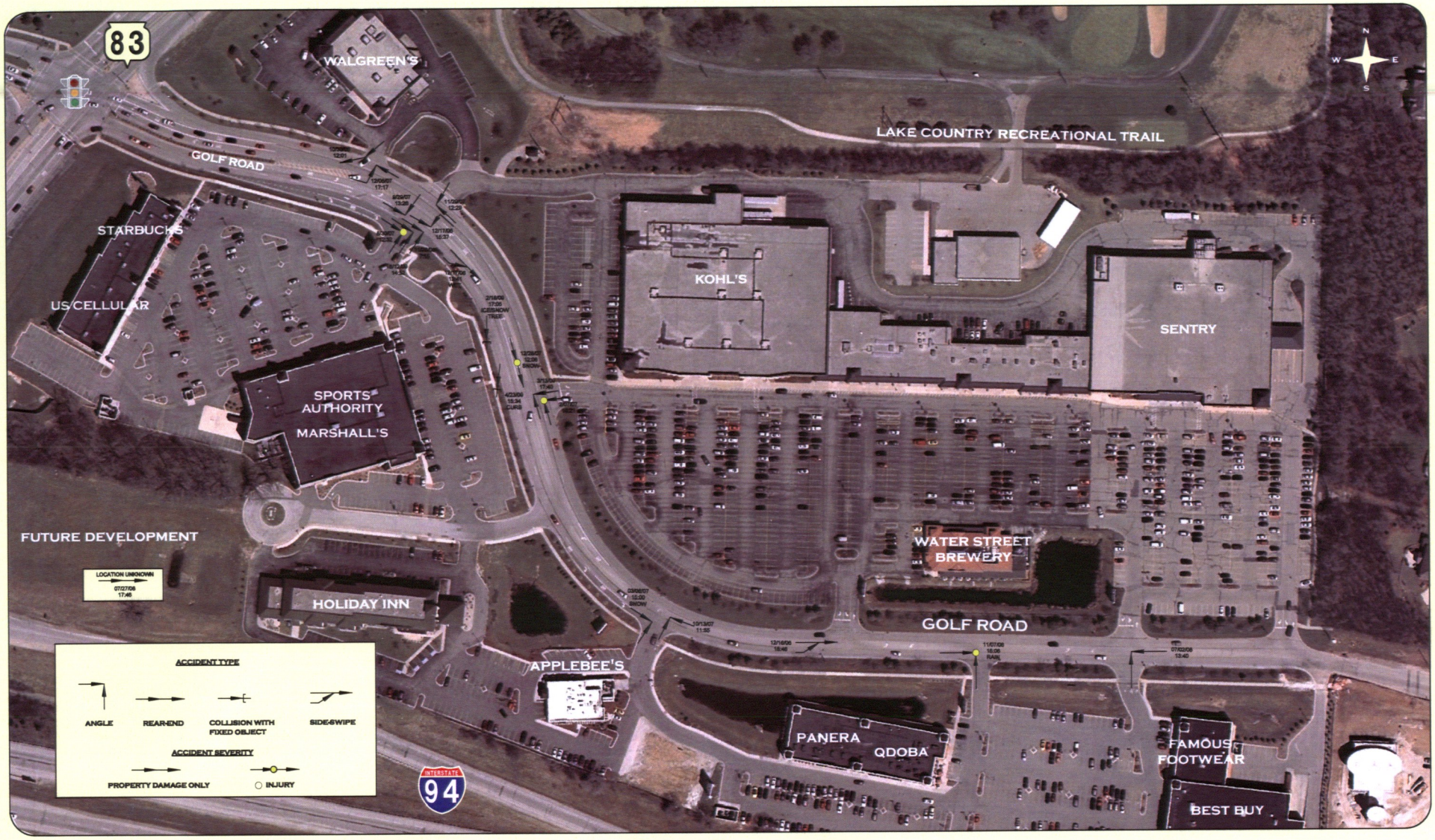
**EXHIBIT 4**
**YEAR 2035 PEAK HOUR TRAFFIC VOLUMES**
**GOLF ROAD (STH 83 TO EASTERN CITY LIMITS)**
**DELAFIELD, WISCONSIN**

# Appendix 1

## Crash Diagram



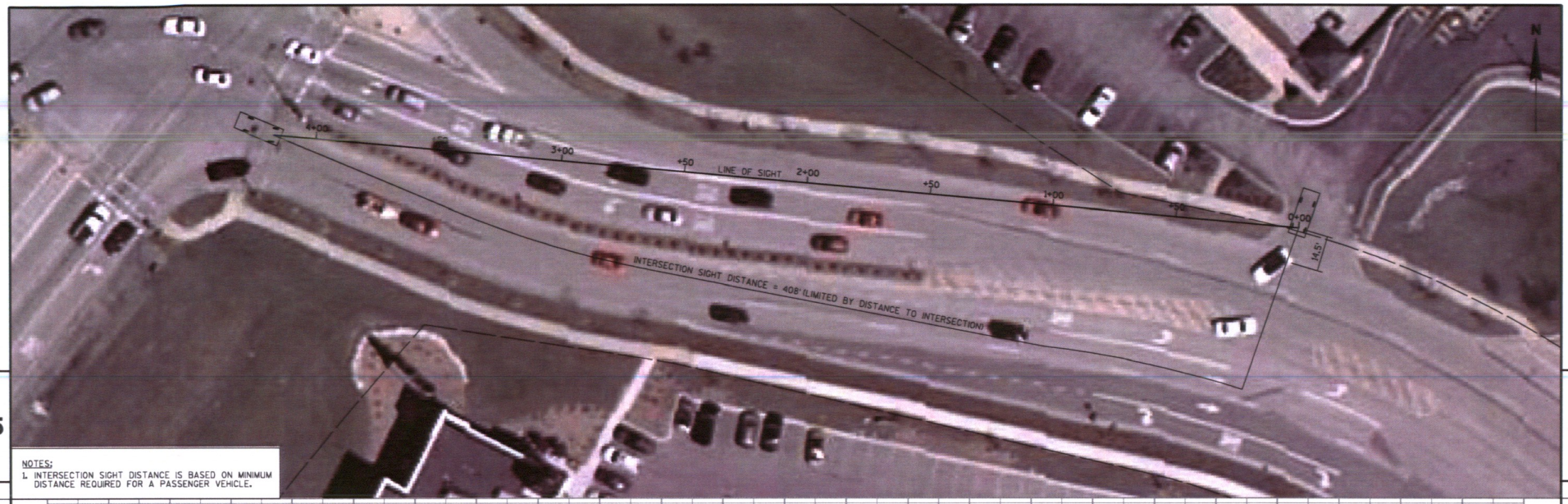

# CRASH DIAGRAM
## OCTOBER 2006 - OCTOBER 2009
# GOLF ROAD
## CITY OF DELAFIELD, WI

City of Delafield

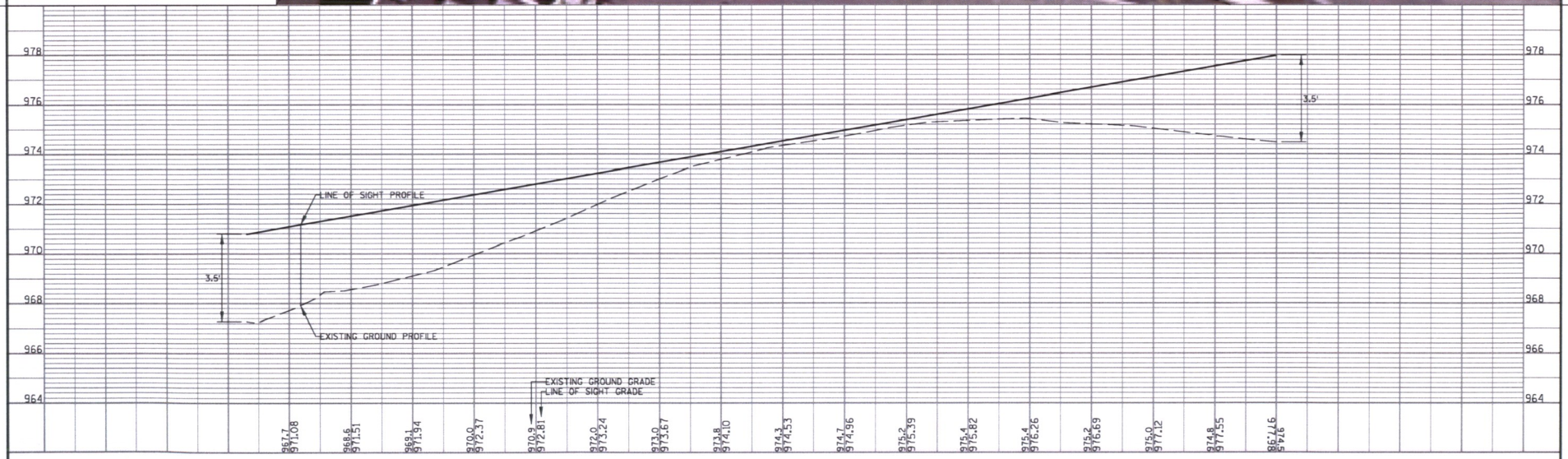
GRAEF

# Appendix 2

## Intersection Sight Distance Exhibit




NOTES:
1. INTERSECTION SIGHT DISTANCE IS BASED ON MINIMUM DISTANCE REQUIRED FOR A PASSENGER VEHICLE.

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|---|---|---|---|---|---|

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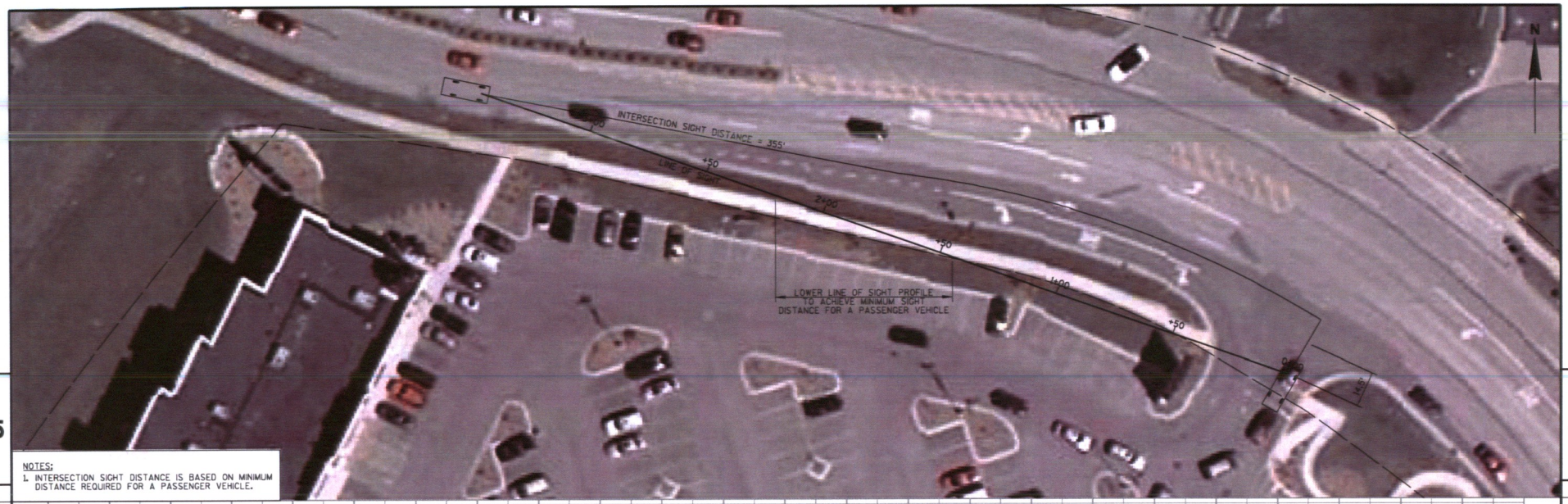
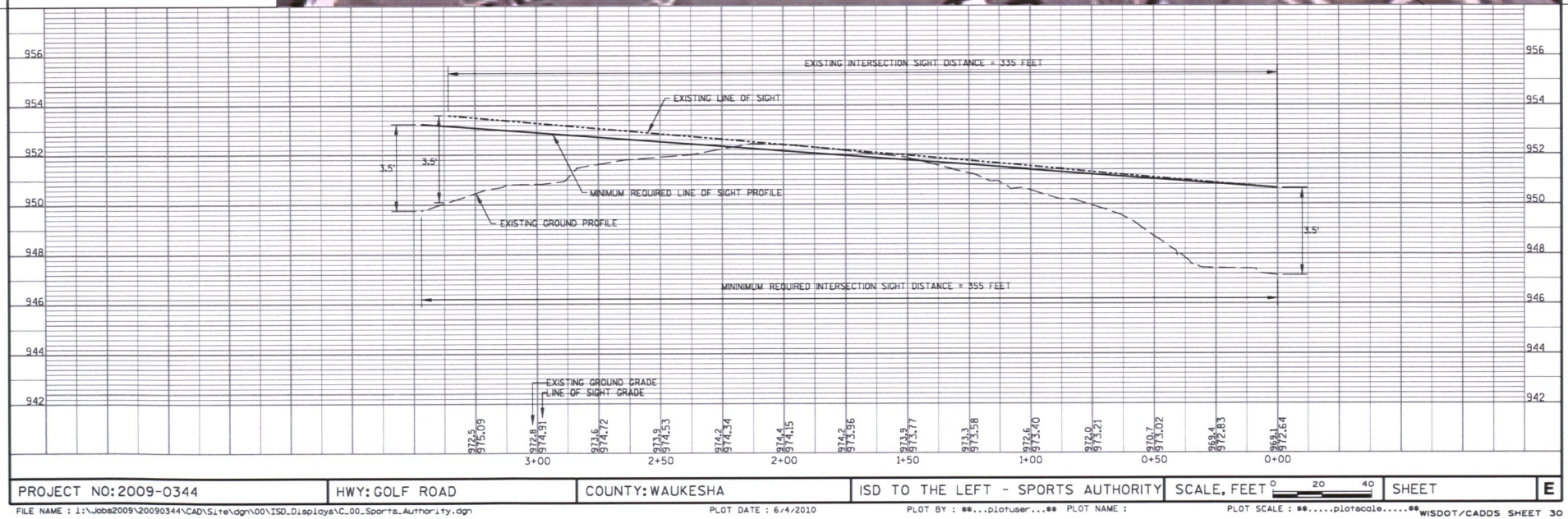



NOTES:
1. INTERSECTION SIGHT DISTANCE IS BASED ON MINIMUM DISTANCE REQUIRED FOR A PASSENGER VEHICLE.

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|---|---|---|---|---|---|---|

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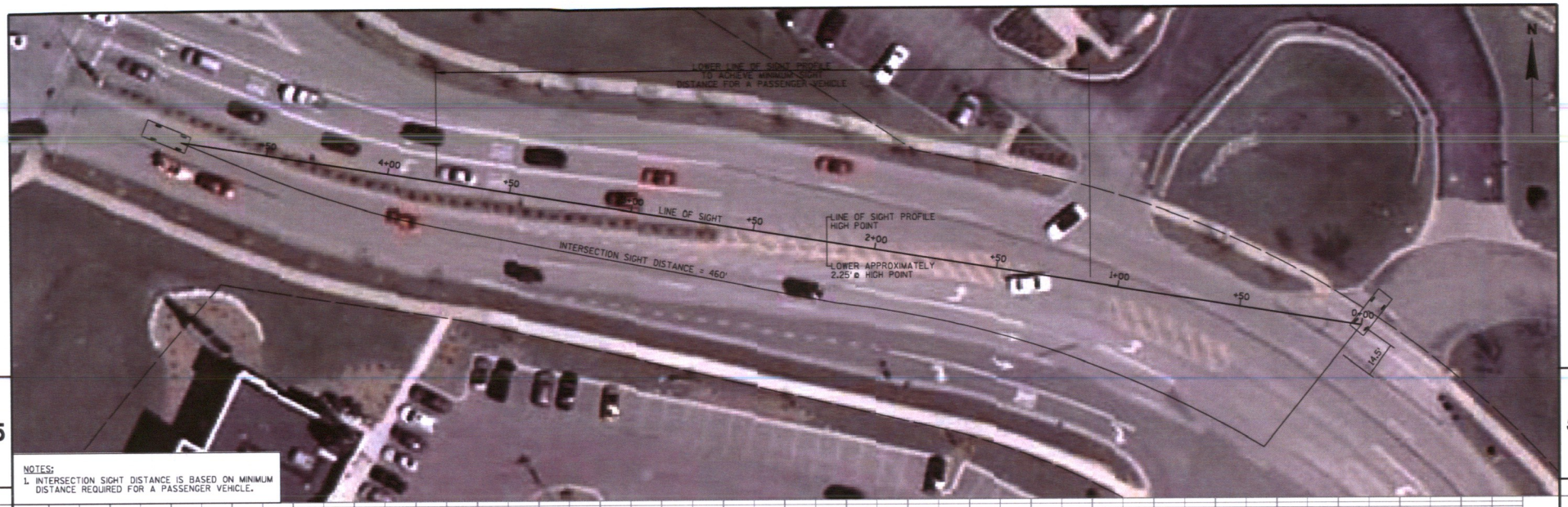
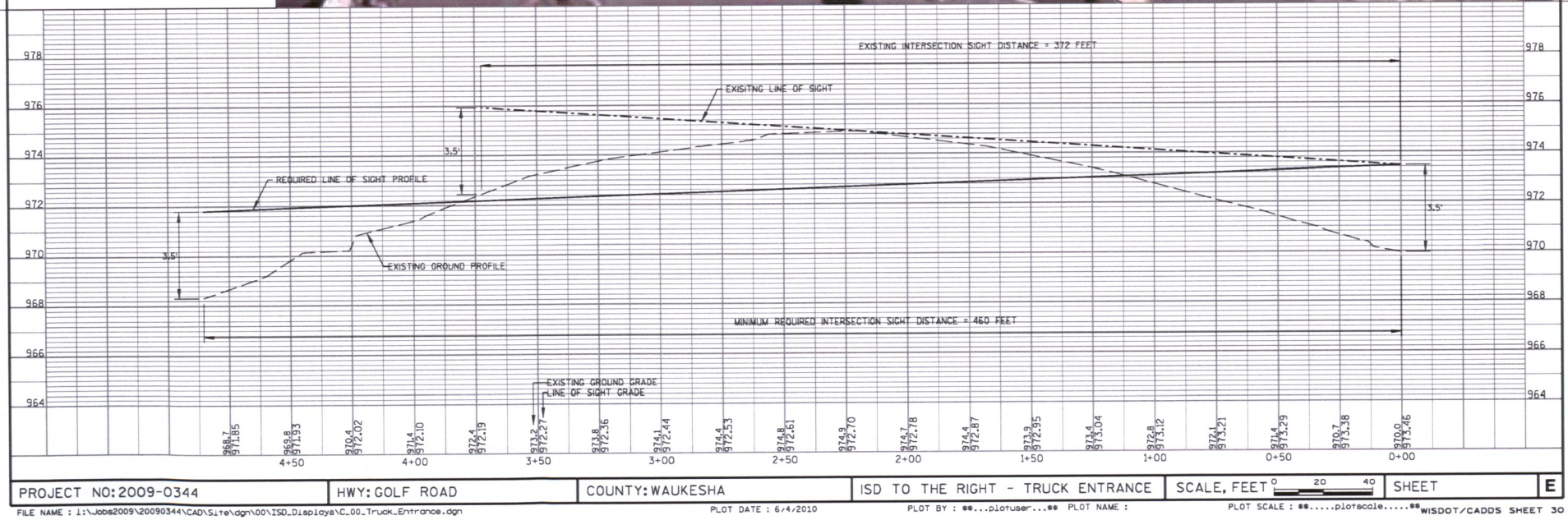



NOTES:
1. INTERSECTION SIGHT DISTANCE IS BASED ON MINIMUM DISTANCE REQUIRED FOR A PASSENGER VEHICLE.




| PROJECT NO: 2009-0344 | HWY: GOLF ROAD | COUNTY: WAUKESHA | ISD TO THE RIGHT - TRUCK ENTRANCE | SCALE, FEET 0 20 40 | SHEET E |
|---|---|---|---|---|---|

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# Appendix 3

## Existing (Year 2009) Traffic Operational Analysis

## Existing (Year 2009) Peak Hour Traffic Operations With Existing Geometrics

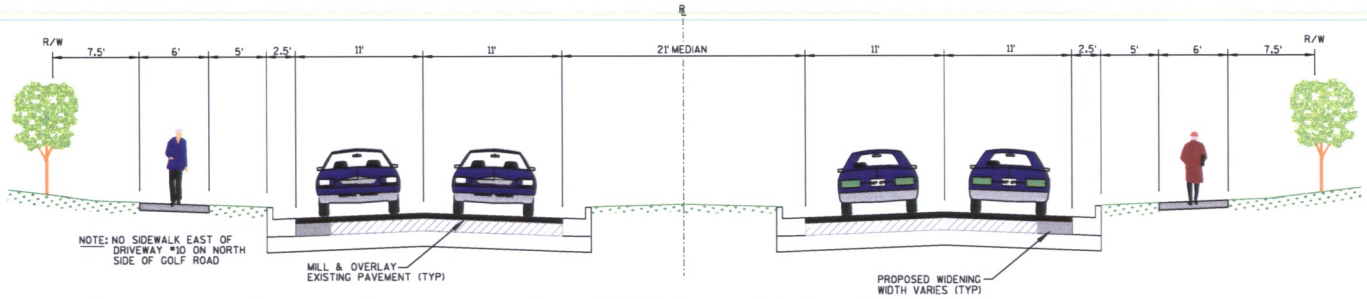
| Golf Road Intersection | Traffic Control | Peak Hour | Level of Service per Movement by Approach | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | Eastbound | | | Westbound | | | Northbound | | | Southbound | | |
| | | | LT | TH | RT | LT | TH | RT | LT | TH | RT | LT | TH | RT |
| STH 83 | Traffic Signal | PM | D | D | D | D | D | D | C | C | B | B | C | B |
| | | SAT | D | D | D | D | D | D | C | C | B | C | C | B |
| Walgreen's Driveway | One-Way Stop | PM | A | A | - | - | A | A | - | - | - | E[1] | - | B |
| | | SAT | B | A | - | - | A | A | - | - | - | F[2] | - | D |
| Sports Authority / Truck Access | Two-Way Stop | PM | A | A | A | A | A | A | F[3] | F[3] | B | C | C | C |
| | | SAT | A | A | A | B | A | A | F[4] | F[4] | B | D | D | D |
| Kohl's West Access | One-Way Stop | PM | A | A | - | - | A | A | - | - | - | E[5] | - | B |
| | | SAT | B | A | - | - | A | A | - | - | - | F[6] | - | B |
| Marshall's Access | One-Way Stop | PM | - | A | A | A | A | - | D | - | D | - | - | - |
| | | SAT | - | A | A | A | A | - | F[7] | - | F[7] | - | - | - |
| Applebee's Access | One-Way Stop | PM | - | A | A | A | A | - | B | - | B | - | - | - |
| | | SAT | - | A | A | A | A | - | B | - | B | - | - | - |
| Kohl's East Access | One-Way Stop | PM | A | A | - | - | A | A | - | - | - | B | - | B |
| | | SAT | A | A | - | - | A | A | - | - | - | B | - | B |
| Qdoba Access | One-Way Stop | PM | - | A | A | A | A | - | B | - | B | - | - | - |
| | | SAT | - | A | A | A | A | - | B | - | B | - | - | - |
| Sentry West Access / Best Buy Access | Two-Way Stop | PM | A | A | A | A | A | A | C | C | A | B | B | B |
| | | SAT | A | A | A | A | A | A | C | C | A | B | B | B |
| Sentry East Access / Truck Access | Two-Way Stop | PM | A | A | A | A | A | A | B | B | B | B | B | B |
| | | SAT | A | A | A | A | A | A | B | B | B | B | B | B |

Notes: Eastbound and westbound movements represent Golf Road.
(-) indicates a movement that is not possible.

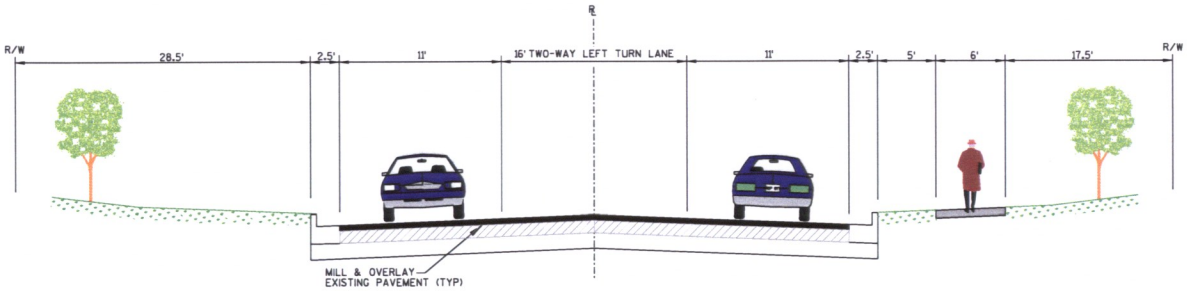
1) Delay = 40 seconds per vehicle
2) Delay = 63 seconds per vehicle
3) Delay = 76 seconds per vehicle
4) Delay = 290 seconds per vehicle
5) Delay = 38 seconds per vehicle
6) Delay = 68 seconds per vehicle
7) Delay = 67 seconds per vehicle

# Appendix 4

## Alternatives – Conceptual Roadway Designs




TYPICAL PROPOSED 4-LANE SECTION
WITH RAISED MEDIAN
WEST OF DRIVEWAY #2




TYPICAL EXISTING 2-LANE SECTION
WITH TWO-WAY LEFT TURN LANE
EAST OF DRIVEWAY #2

**PROPOSED LOW BUILD TYPICAL SECTIONS**

# GOLF ROAD

**CITY OF DELAFIELD, WI**

City of Delafield

GRAEF

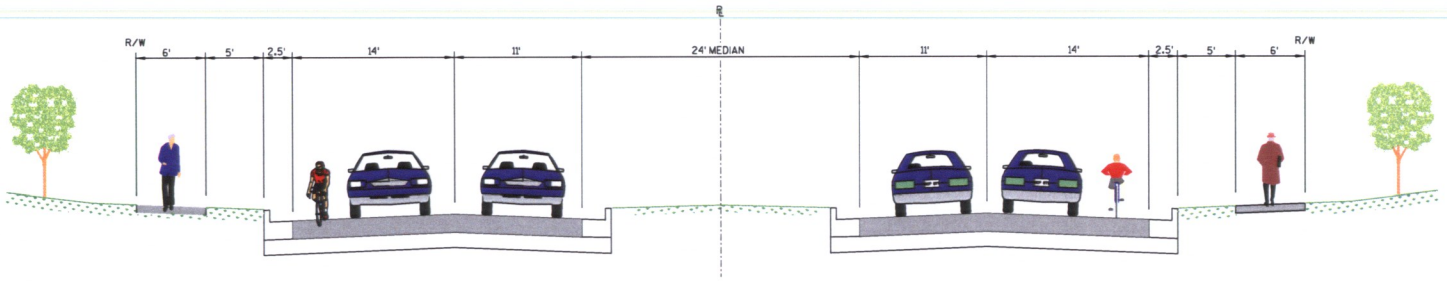
LOW BUILD

# GOLF ROAD

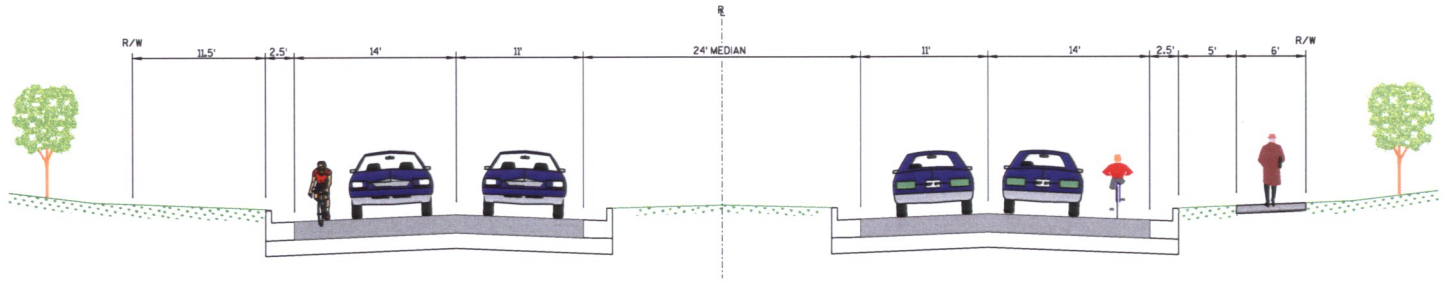
CITY OF DELAFIELD, WI

City of Delafield

GRAEF




TYPICAL PROPOSED 4-LANE SECTION
WITH RAISED MEDIAN AND BIKE ACCOMMODATION
WEST OF DRIVEWAY #10




TYPICAL PROPOSED 4-LANE SECTION
WITH RAISED MEDIAN AND BIKE ACCOMMODATION
EAST OF DRIVEWAY #10

**PROPOSED MEDIUM AND HIGH BUILD TYPICAL SECTIONS**

# GOLF ROAD

**CITY OF DELAFIELD, WI**

GRAEF

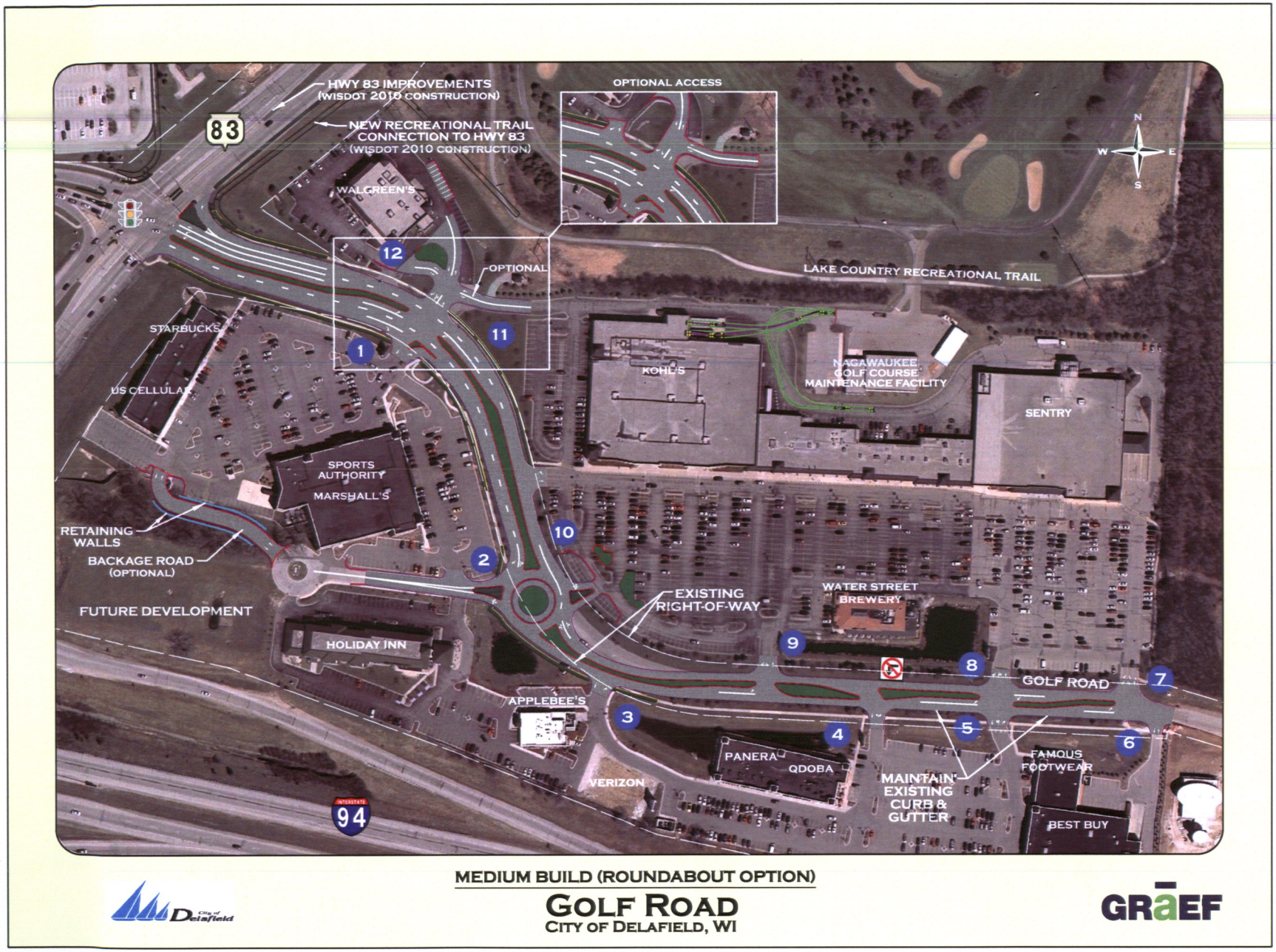
**MEDIUM BUILD (SIGNAL OPTION)**

# GOLF ROAD

CITY OF DELAFIELD, WI

City of Delafield

GRAEF



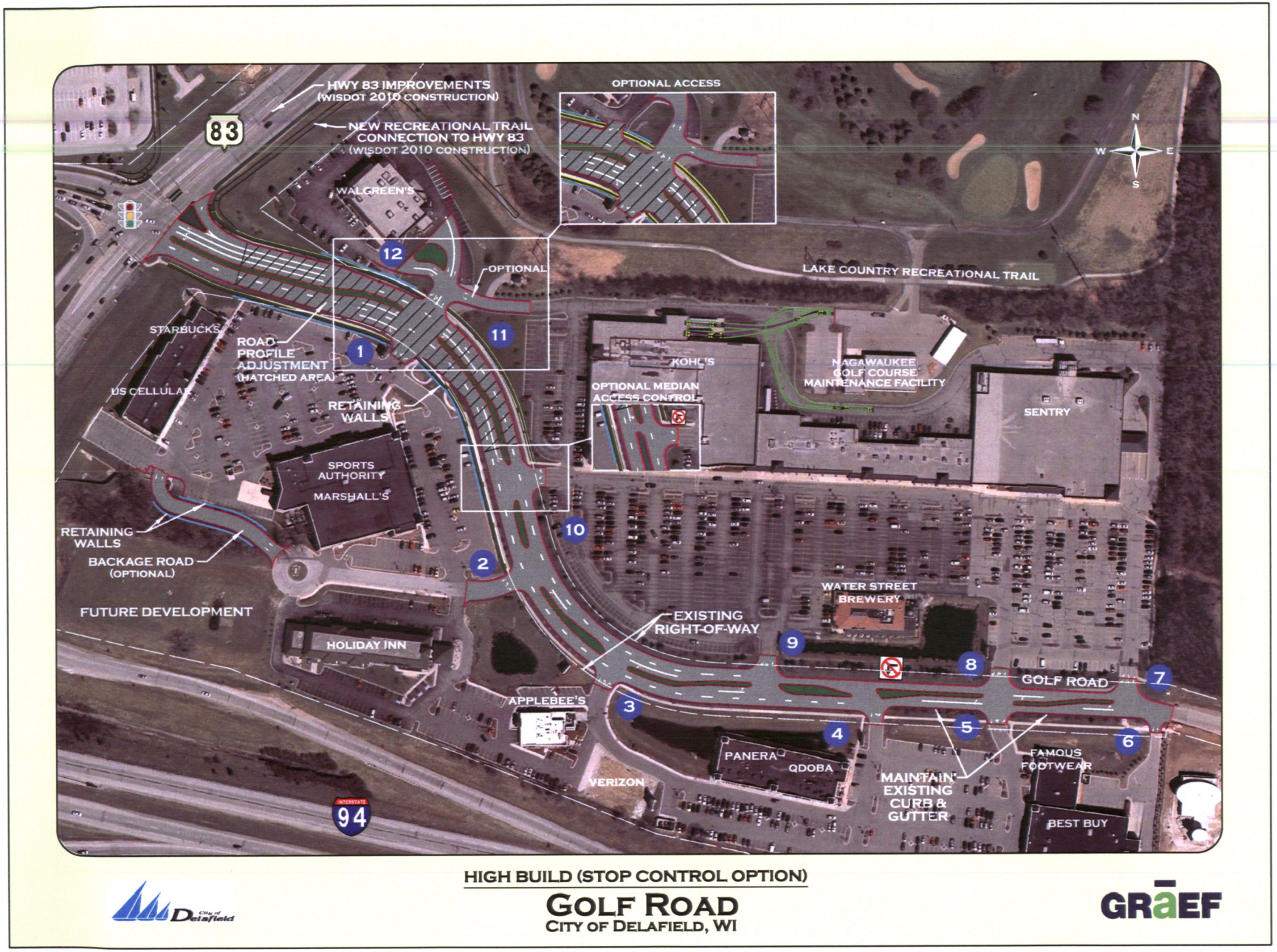

MEDIUM BUILD (ROUNDABOUT OPTION)

# GOLF ROAD

CITY OF DELAFIELD, WI

City of Delafield

GRAEF




**HIGH BUILD (STOP CONTROL OPTION)**

# GOLF ROAD

CITY OF DELAFIELD, WI

City of Delafield

GRAEF

HIGH BUILD (SIGNAL OPTION)

# GOLF ROAD

CITY OF DELAFIELD, WI

**HIGH BUILD (ROUNDABOUT OPTION)**

# GOLF ROAD

**CITY OF DELAFIELD, WI**

City of Delafield

GRAEF

# Appendix 5

## Year 2035 Traffic Operational Analysis Summaries

## Low Build Alternative
## Year 2035 Peak Hour Traffic Operations

| Golf Road Intersection | Traffic Control | Peak Hour | Level of Service per Movement by Approach | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | Eastbound | | | Westbound | | | Northbound | | | Southbound | | |
| | | | LT | TH | RT | LT | TH | RT | LT | TH | RT | LT | TH | RT |
| STH 83 | Traffic Signal | PM | D | D | D | C | D | D | B | C | B | B | C | B |
| | | SAT | C | D | D | D | C | C | C | D | C | C | C | B |
| Walgreen's Driveway | One-Way Stop | PM | - | A | - | - | A | A | - | - | - | - | - | B |
| | | SAT | - | A | - | - | A | A | - | - | - | - | - | B |
| Sports Authority / Truck Access | Two-Way Stop | PM | B | A | A | B | A | A | - | - | B | F[1] | F[1] | F[1] |
| | | SAT | B | A | A | B | A | A | - | - | C | F[2] | F[2] | F[2] |
| Kohl's West Access | One-Way Stop | PM | B | A | - | - | A | A | - | - | - | F[3] | - | B |
| | | SAT | B | A | - | - | A | A | - | - | - | F[4] | - | B |
| Marshall's Access | One-Way Stop | PM | - | A | A | A | A | - | F[5] | - | A | - | - | - |
| | | SAT | - | A | A | B | A | - | F[6] | - | A | - | - | - |
| Applebee's Access | One-Way Stop | PM | - | A | A | A | A | - | B | - | B | - | - | - |
| | | SAT | - | A | A | A | A | - | B | - | B | - | - | - |
| Kohl's East Access | One-Way Stop | PM | A | A | - | - | A | A | - | - | - | B | - | B |
| | | SAT | A | A | - | - | A | A | - | - | - | C | - | B |
| Qdoba Access | One-Way Stop | PM | - | A | A | A | A | - | B | - | B | - | - | - |
| | | SAT | - | A | A | A | A | - | C | - | C | - | - | - |
| Sentry West Access / Best Buy Access | Two-Way Stop | PM | A | A | A | A | A | A | C | C | A | B | B | B |
| | | SAT | A | A | A | A | A | A | C | C | B | C | C | B |
| Sentry East Access / Truck Access | Two-Way Stop | PM | A | A | A | A | A | A | B | B | B | B | B | B |
| | | SAT | A | A | A | A | A | A | B | B | B | B | B | B |

Notes: Eastbound and westbound movements represent Golf Road.
(-) indicates a movement that is not possible.

1) Delay = 126 seconds per vehicle
2) Delay = 410 seconds per vehicle
3) Delay = 51 seconds per vehicle
4) Delay = 104 seconds per vehicle
5) Delay = 106 seconds per vehicle
6) Delay = 644 seconds per vehicle

**Medium Build Alternative Signal Option**
**Year 2035 Peak Hour Traffic Operations**

| Golf Road Intersection | Traffic Control | Peak Hour | Level of Service per Movement by Approach | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | Eastbound | | | Westbound | | | Northbound | | | Southbound | | |
| | | | LT | TH | RT | LT | TH | RT | LT | TH | RT | LT | TH | RT |
| STH 83 | Traffic Signal | PM | D | D | D | C | D | D | B | C | B | B | C | B |
| | | SAT | C | D | D | D | C | C | C | D | C | C | C | B |
| Walgreen's Driveway | One-Way Stop | PM | - | A | - | - | A | A | - | - | - | - | - | B |
| | | SAT | - | A | - | - | A | A | - | - | - | - | - | B |
| Sports Authority / Truck Access | Two-Way Stop | PM | B | A | A | B | A | A | - | - | B | C | C | C |
| | | SAT | B | A | A | B | A | A | - | - | B | D | D | D |
| Kohl's West Access/ Marshall's Access | Traffic Signal | PM | A | A | A | B | B | B | C | C | B | B | B | B |
| | | SAT | B | B | B | C | C | C | C | C | B | B | B | B |
| Applebee's Access | One-Way Stop | PM | - | A | A | - | A | - | - | - | B | - | - | - |
| | | SAT | - | A | A | - | A | - | - | - | A | - | - | - |
| Kohl's East Access | One-Way Stop | PM | A | A | - | - | A | A | - | - | - | B | - | B |
| | | SAT | A | A | - | - | A | A | - | - | - | C | - | B |
| Qdoba Access | One-Way Stop | PM | - | A | A | - | A | - | B | - | B | - | - | - |
| | | SAT | - | A | A | - | A | - | C | - | C | - | - | - |
| Sentry West Access / Best Buy Access | Two-Way Stop | PM | A | A | A | A | A | A | C | C | A | C | C | B |
| | | SAT | A | A | A | A | A | A | D | D | B | C | C | B |
| Sentry East Access / Truck Access | Two-Way Stop | PM | A | A | A | A | A | A | B | B | B | B | B | B |
| | | SAT | A | A | A | A | A | A | B | B | B | B | B | B |

Notes: Eastbound and westbound movements represent Golf Road.
(-) indicates a movement that is not possible.

## Medium Build Alternative Roundabout Option
## Year 2035 Peak Hour Traffic Operations

| Golf Road Intersection | Traffic Control | Peak Hour | Level of Service per Movement by Approach | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | Eastbound | | | Westbound | | | Northbound | | | Southbound | | |
| | | | LT | TH | RT | LT | TH | RT | LT | TH | RT | LT | TH | RT |
| STH 83 | Traffic Signal | PM | D | D | D | C | D | D | B | C | B | B | C | B |
| | | SAT | C | D | D | D | C | C | C | D | C | C | C | B |
| Walgreen's Driveway | One-Way Stop | PM | - | A | - | - | A | A | - | - | - | - | - | B |
| | | SAT | - | A | - | - | A | A | - | - | - | - | - | B |
| Sports Authority / Truck Access | Two-Way Stop | PM | B | A | A | B | A | A | - | - | B | D | D | D |
| | | SAT | B | A | A | B | A | A | - | - | B | E[1] | E[1] | E[1] |
| Kohl's West Access/ Marshall's Access | Roundabout | PM | A | | | A | | | A | | | A | | |
| | | SAT | B | | | A | | | A | | | A | | |
| Applebee's Access | One-Way Stop | PM | - | A | A | - | A | - | - | - | B | - | - | - |
| | | SAT | - | A | A | - | A | - | - | - | B | - | - | - |
| Kohl's East Access | One-Way Stop | PM | A | A | - | - | A | A | - | - | - | C | - | B |
| | | SAT | A | A | - | - | A | A | - | - | - | C | - | B |
| Qdoba Access | One-Way Stop | PM | - | A | A | - | A | - | B | - | B | - | - | - |
| | | SAT | - | A | A | - | A | - | C | - | C | - | - | - |
| Sentry West Access / Best Buy Access | Two-Way Stop | PM | A | A | A | A | A | A | C | C | A | C | C | B |
| | | SAT | A | A | A | A | A | A | D | D | B | C | C | B |
| Sentry East Access / Truck Access | Two-Way Stop | PM | A | A | A | A | A | A | B | B | B | B | B | B |
| | | SAT | A | A | A | A | A | A | B | B | B | B | B | B |

Notes: Eastbound and westbound movements represent Golf Road.
(-) indicates a movement that is not possible.

1) Delay = 38 seconds per vehicle

## High Build Alternative Stop Control Option
## Year 2035 Peak Hour Traffic Operations

| Golf Road Intersection | Traffic Control | Peak Hour | Level of Service per Movement by Approach | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | Eastbound | | | Westbound | | | Northbound | | | Southbound | | |
| | | | LT | TH | RT | LT | TH | RT | LT | TH | RT | LT | TH | RT |
| STH 83 | Traffic Signal | PM | D | D | D | C | D | D | B | C | B | B | C | B |
| | | SAT | C | D | D | D | C | C | C | D | C | C | C | B |
| Walgreen's Driveway | One-Way Stop | PM | - | A | - | - | A | A | - | - | - | - | - | B |
| | | SAT | - | A | - | - | A | A | - | - | - | - | - | B |
| Sports Authority / Truck Access | Two-Way Stop | PM | B | A | A | B | A | A | F[1] | F[1] | B | C | C | C |
| | | SAT | B | A | A | B | A | A | F[2] | F[2] | B | D | D | D |
| Kohl's West Access | One-Way Stop | PM | B | A | - | - | A | A | - | - | - | C | - | B |
| | | SAT | B | A | - | - | A | A | - | - | - | D | - | B |
| Marshall's Access | One-Way Stop | PM | - | A | A | A | A | - | C | - | A | - | - | - |
| | | SAT | - | A | A | B | A | - | E[3] | - | A | - | - | - |
| Applebee's Access | One-Way Stop | PM | - | A | A | A | A | - | B | - | B | - | - | - |
| | | SAT | - | A | A | A | A | - | C | - | B | - | - | - |
| Kohl's East Access | One-Way Stop | PM | A | A | - | - | A | A | - | - | - | B | - | B |
| | | SAT | A | A | - | - | A | A | - | - | - | C | - | B |
| Qdoba Access | One-Way Stop | PM | - | A | A | - | A | - | B | - | B | - | - | - |
| | | SAT | - | A | A | - | A | - | C | - | C | - | - | - |
| Sentry West Access / Best Buy Access | Two-Way Stop | PM | A | A | A | A | A | A | C | C | A | C | C | B |
| | | SAT | A | A | A | A | A | A | D | D | B | C | C | B |
| Sentry East Access / Truck Access | Two-Way Stop | PM | A | A | A | A | A | A | B | B | B | B | B | B |
| | | SAT | A | A | A | A | A | A | B | B | B | B | B | B |

Notes: Eastbound and westbound movements represent Golf Road.
(-) indicates a movement that is not possible.

1) Delay = 52 seconds per vehicle
2) Delay = 129 seconds per vehicle
3) Delay = 39 seconds per vehicle

**High Build Alternative Signal Option**
**Year 2035 Peak Hour Traffic Operations**

| Golf Road Intersection | Traffic Control | Peak Hour | Level of Service per Movement by Approach | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | Eastbound | | | Westbound | | | Northbound | | | Southbound | | |
| | | | LT | TH | RT | LT | TH | RT | LT | TH | RT | LT | TH | RT |
| STH 83 | Traffic Signal | PM | D | D | D | C | D | D | B | C | B | B | C | B |
| | | SAT | C | D | D | D | C | C | C | D | C | C | C | B |
| Walgreen's Driveway | One-Way Stop | PM | - | A | - | - | A | A | - | - | - | - | - | B |
| | | SAT | - | A | - | - | A | A | - | - | - | - | - | B |
| Sports Authority / Truck Access | Two-Way Stop | PM | B | A | A | B | A | A | - | - | B | C | C | C |
| | | SAT | B | A | A | B | A | A | - | - | B | D | D | D |
| Kohl's West Access/ Marshall's Access | Traffic Signal | PM | A | A | A | B | B | B | C | C | B | B | B | B |
| | | SAT | B | B | B | C | C | C | C | C | B | B | B | B |
| Applebee's Access | One-Way Stop | PM | - | A | A | - | A | - | - | - | B | - | - | - |
| | | SAT | - | A | A | - | A | - | - | - | A | - | - | - |
| Kohl's East Access | One-Way Stop | PM | A | A | - | - | A | A | - | - | - | B | - | B |
| | | SAT | A | A | - | - | A | A | - | - | - | C | - | B |
| Qdoba Access | One-Way Stop | PM | - | A | A | - | A | - | B | - | B | - | - | - |
| | | SAT | - | A | A | - | A | - | C | - | C | - | - | - |
| Sentry West Access / Best Buy Access | Two-Way Stop | PM | A | A | A | A | A | A | C | C | A | C | C | B |
| | | SAT | A | A | A | A | A | A | D | D | B | C | C | B |
| Sentry East Access / Truck Access | Two-Way Stop | PM | A | A | A | A | A | A | B | B | B | B | B | B |
| | | SAT | A | A | A | A | A | A | B | B | B | B | B | B |

Notes: Eastbound and westbound movements represent Golf Road.
(-) indicates a movement that is not possible.

## High Build Alternative Roundabout Option
## Year 2035 Peak Hour Traffic Operations

| Golf Road Intersection | Traffic Control | Peak Hour | Level of Service per Movement by Approach | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | Eastbound | | | Westbound | | | Northbound | | | Southbound | | |
| | | | LT | TH | RT | LT | TH | RT | LT | TH | RT | LT | TH | RT |
| STH 83 | Traffic Signal | PM | D | D | D | C | D | D | B | C | B | B | C | B |
| | | SAT | C | D | D | D | C | C | C | D | C | C | C | B |
| Walgreen's Driveway | One-Way Stop | PM | - | A | - | - | A | A | - | - | - | - | - | B |
| | | SAT | - | A | - | - | A | A | - | - | - | - | - | B |
| Sports Authority / Truck Access | Two-Way Stop | PM | B | A | A | B | A | A | - | - | B | D | D | D |
| | | SAT | B | A | A | B | A | A | - | - | B | E[1] | E[1] | E[1] |
| Kohl's West Access/ Marshall's Access | Roundabout | PM | A | | | A | | | A | | | A | | |
| | | SAT | B | | | A | | | A | | | A | | |
| Applebee's Access | One-Way Stop | PM | - | A | A | - | A | - | - | - | B | - | - | - |
| | | SAT | - | A | A | - | A | - | - | - | B | - | - | - |
| Kohl's East Access | One-Way Stop | PM | A | A | - | - | A | A | - | - | - | C | - | B |
| | | SAT | A | A | - | - | A | A | - | - | - | C | - | B |
| Qdoba Access | One-Way Stop | PM | - | A | A | - | A | - | B | - | B | - | - | - |
| | | SAT | - | A | A | - | A | - | C | - | C | - | - | - |
| Sentry West Access / Best Buy Access | Two-Way Stop | PM | A | A | A | A | A | A | C | C | A | C | C | B |
| | | SAT | A | A | A | A | A | A | D | D | B | C | C | B |
| Sentry East Access / Truck Access | Two-Way Stop | PM | A | A | A | A | A | A | B | B | B | B | B | B |
| | | SAT | A | A | A | A | A | A | B | B | B | B | B | B |

Notes: Eastbound and westbound movements represent Golf Road.
(-) indicates a movement that is not possible.

1) Delay = 38 seconds per vehicle

# Appendix 6

## Construction Cost Estimates

## Golf Road Feasibility Study

City of Delafield, WI
2009-0344

**OPINION OF PROBABLE COSTS**
April 23, 2010

| Items | | Low Build | | | Medium Build Signal Option | | | Medium Build Roundabout Option | | | High Build Stop Control Option | | | High Build Signal Option | | | High Build Roundabout Option | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | QTY | Unit Cost | $ | QTY | Unit Cost | $ | QTY | Unit Cost | $ | QTY | Unit Cost | $ | QTY | Unit Cost | $ | QTY | Unit Cost | $ |
| Resurface Pavement with 2" Mill & Overlay | SY | 14673 | $ 12.00 | $ 176,100 | - | $ 12.00 | $ - | - | $ 12.00 | $ - | - | $ 12.00 | $ - | - | $ 12.00 | $ - | - | $ 12.00 | $ - |
| Remove Pavement | SY | - | $ 5.00 | $ - | 15100 | $ 5.00 | $ 75,500 | 16960 | $ 5.00 | $ 84,800 | 15280 | $ 5.00 | $ 76,400 | 15100 | $ 5.00 | $ 75,500 | 16960 | $ 5.00 | $ 84,800 |
| 6" Asphaltic Pavement on 8" Base Aggregate | SY | 1450 | $ 35.00 | $ 50,800 | 19400 | $ 35.00 | $ 679,000 | 21200 | $ 35.00 | $ 742,000 | 19100 | $ 35.00 | $ 668,500 | 19400 | $ 35.00 | $ 679,000 | 21200 | $ 35.00 | $ 742,000 |
| Storm Sewer | LF | 250 | $ 50.00 | $ 12,500 | 2800 | $ 50.00 | $ 140,000 | 2800 | $ 50.00 | $ 140,000 | 2950 | $ 50.00 | $ 147,500 | 2950 | $ 50.00 | $ 147,500 | 2950 | $ 50.00 | $ 147,500 |
| Curb & Gutter | LF | 2610 | $ 10.00 | $ 26,100 | 9640 | $ 10.00 | $ 96,400 | 10870 | $ 10.00 | $ 108,700 | 8936 | $ 10.00 | $ 89,400 | 9577 | $ 10.00 | $ 95,800 | 10870 | $ 10.00 | $ 108,700 |
| Concrete Sidewalk | SF | 2773 | $ 3.00 | $ 8,300 | 8733 | $ 3.00 | $ 26,200 | 10209 | $ 3.00 | $ 30,600 | 10097 | $ 3.00 | $ 30,300 | 8949 | $ 3.00 | $ 26,800 | 10949 | $ 3.00 | $ 32,800 |
| Retaining Walls | SF | - | $ 30.00 | $ - | - | $ 30.00 | $ - | - | $ 30.00 | $ - | 2020 | $ 30.00 | $ 60,600 | 1820 | $ 30.00 | $ 54,600 | 1840 | $ 30.00 | $ 55,200 |
| Common Excavation | CY | - | $ 8.00 | $ - | - | $ 8.00 | $ - | - | $ 8.00 | $ - | 4300 | $ 8.00 | $ 34,400 | 4300 | $ 8.00 | $ 34,400 | 4300 | $ 8.00 | $ 34,400 |
| Roadway Lighting | EACH | - | $ 3,000.00 | $ - | 13 | $ 3,000.00 | $ 39,000 | 13 | $ 3,000.00 | $ 39,000 | 13 | $ 3,000.00 | $ 39,000 | 13 | $ 3,000.00 | $ 39,000 | 13 | $ 3,000.00 | $ 39,000 |
| Adjust Storm Sewer Inlets | EACH | 18 | $ 150.00 | $ 2,700 | - | $ 150.00 | $ - | - | $ 150.00 | $ - | - | $ 150.00 | $ - | - | $ 150.00 | $ - | - | $ 150.00 | $ - |
| Adjust Storm Sewer Manholes | EACH | 7 | $ 150.00 | $ 1,100 | - | $ 150.00 | $ - | - | $ 150.00 | $ - | - | $ 150.00 | $ - | - | $ 150.00 | $ - | - | $ 150.00 | $ - |
| Adjust Water Valves | EACH | 6 | $ 200.00 | $ 1,200 | 6 | $ 200.00 | $ 1,200 | 8 | $ 200.00 | $ 1,600 | 6 | $ 200.00 | $ 1,200 | 6 | $ 200.00 | $ 1,200 | 8 | $ 200.00 | $ 1,600 |
| Adjust Sanitary Manholes | EACH | 3 | $ 150.00 | $ 500 | 3 | $ 150.00 | $ 500 | 3 | $ 150.00 | $ 500 | 3 | $ 150.00 | $ 500 | 3 | $ 150.00 | $ 500 | 3 | $ 150.00 | $ 500 |
| Relocated Hydrants | EACH | - | $ 2,500.00 | $ - | 3 | $ 2,500.00 | $ 7,500 | 3 | $ 2,500.00 | $ 7,500 | 3 | $ 2,500.00 | $ 7,500 | 3 | $ 2,500.00 | $ 7,500 | 3 | $ 2,500.00 | $ 7,500 |
| Relocated Telephone Pedestals outside Ex -R/W | EACH | - | $ 1,200.00 | $ - | - | $ 1,200.00 | $ - | 1 | $ 1,200.00 | $ 1,200 | - | $ 1,200.00 | $ - | - | $ 1,200.00 | $ - | 1 | $ 1,200.00 | $ 1,200 |
| Tree Planting | EACH | 20 | $ 500.00 | $ 10,000 | 20 | $ 500.00 | $ 10,000 | 20 | $ 500.00 | $ 10,000 | 20 | $ 500.00 | $ 10,000 | 20 | $ 500.00 | $ 10,000 | 20 | $ 500.00 | $ 10,000 |
| Traffic Signals | LS | - | $ 150,000.00 | $ - | 1 | $ 150,000.00 | $ 150,000 | - | $ 150,000.00 | $ - | - | $ 150,000.00 | $ - | 1 | $ 150,000.00 | $ 150,000 | - | $ 150,000.00 | $ - |
| Real Estate | ACRES | - | $ 375,000.00 | $ - | 0.31 | $ 375,000.00 | $ 116,300 | 0.45 | $ 375,000.00 | $ 168,800 | 0.29 | $ 375,000.00 | $ 108,800 | 0.5 | $ 375,000.00 | $ 187,500 | 0.62 | $ 375,000.00 | $ 232,500 |
| **Sub Total Costs** | | | | $ 289,300 | | | $ 1,341,600 | | | $ 1,334,700 | | | $ 1,274,100 | | | $ 1,509,300 | | | $ 1,497,700 |
| **Items as Percentage of Subtotal Cost** | | | | | | | | | | | | | | | | | | | |
| Pavement Marking | % | 7% | $ 289,300.00 | $ 20,300 | 0.9% | $ 1,341,600.00 | $ 12,100 | 0.8% | $ 1,334,700.00 | $ 10,700 | 0.7% | $ 1,274,100.00 | $ 8,900 | 0.75% | $ 1,509,300.00 | $ 11,300 | 0.75% | $ 1,497,700.00 | $ 11,200 |
| Signing | % | 1% | $ 289,300.00 | $ 2,900 | 0.8% | $ 1,341,600.00 | $ 10,700 | 1.0% | $ 1,334,700.00 | $ 13,300 | 0.6% | $ 1,274,100.00 | $ 7,600 | 0.7% | $ 1,509,300.00 | $ 9,800 | 1.0% | $ 1,497,700.00 | $ 15,000 |
| Landscaping (Terrace, Medians, Restoration) | % | 2% | $ 289,300.00 | $ 5,800 | 2% | $ 1,341,600.00 | $ 26,800 | 2% | $ 1,334,700.00 | $ 26,700 | 2% | $ 1,274,100.00 | $ 25,500 | 2% | $ 1,509,300.00 | $ 30,200 | 2% | $ 1,497,700.00 | $ 30,000 |
| Traffic Control | % | 5% | $ 289,300.00 | $ 14,500 | 5% | $ 1,341,600.00 | $ 67,100 | 5% | $ 1,334,700.00 | $ 66,700 | 5% | $ 1,274,100.00 | $ 63,700 | 5% | $ 1,509,300.00 | $ 75,500 | 5% | $ 1,497,700.00 | $ 74,900 |
| Miscellaneous | % | 5% | $ 289,300.00 | $ 14,500 | 5% | $ 1,341,600.00 | $ 67,100 | 5% | $ 1,334,700.00 | $ 66,700 | 5% | $ 1,274,100.00 | $ 63,700 | 5% | $ 1,509,300.00 | $ 75,500 | 5% | $ 1,497,700.00 | $ 74,900 |
| Mobilization | % | 25% | $ 289,300.00 | $ 72,300 | 10% | $ 1,341,600.00 | $ 134,200 | 10% | $ 1,334,700.00 | $ 133,500 | 10% | $ 1,274,100.00 | $ 127,400 | 10% | $ 1,509,300.00 | $ 150,900 | 10% | $ 1,497,700.00 | $ 149,800 |
| Design Costs for preparation of Construction Documents[5] | 8% | | | $ 34,000 | | | $ 133,000 | | | $ 132,000 | | | $ 126,000 | | | $ 149,000 | | | $ 148,000 |
| **Total Planning\Budgeting Project Cost[6]** | | | | $ 454,000 | | | $ 1,793,000 | | | $ 1,784,000 | | | $ 1,697,000 | | | $ 2,012,000 | | | $ 2,002,000 |
| **Optional Items** | | | | | | | | | | | | | | | | | | | |
| Backage Road[1] | LS | 1 | $ 260,000.00 | $ 260,000 | 1 | $ 260,000.00 | $ 260,000 | 1 | $ 260,000.00 | $ 260,000 | 1 | $ 260,000.00 | $ 260,000 | 1 | $ 260,000.00 | $ 260,000 | 1 | $ 260,000.00 | $ 260,000 |
| Optional Access at Driveways 11 & 12 [2] | LS | N/A | $ (5,000.00) | $ - | 1 | $ (5,000.00) | $ (5,000) | 1 | $ (5,000.00) | $ (5,000) | 1 | $ (5,000.00) | $ (5,000) | 1 | $ (5,000.00) | $ (5,000) | 1 | $ (5,000.00) | $ (5,000) |
| 5-ft wide Bike Lanes [3] | LS | N/A | $ 42,000.00 | $ - | N/A | $ 42,000.00 | $ - | N/A | $ 42,000.00 | $ - | 1 | $ 42,000.00 | $ 42,000 | 1 | $ 42,000.00 | $ 42,000 | 1 | $ 42,000.00 | $ 42,000 |
| 10-ft wide Shared-Use Path (south side of road)[4] | LS | N/A | $ 56,000.00 | $ - | 1 | $ 56,000.00 | $ 56,000 | 1 | $ 56,000.00 | $ 56,000 | 1 | $ 56,000.00 | $ 56,000 | 1 | $ 56,000.00 | $ 56,000 | 1 | $ 56,000.00 | $ 56,000 |

[1] Cost of backage road includes fill (5500 CY @ $12/CY), pavement (950 SY @ $33/SY), curb & gutter (729 LF @ $10/LF), and retaining wall (5100 SF @ $30/SF) costs

[2] Cost of optional access at Driveways 11 & 12 includes a credit for costs related to less curb & gutter (-130 LF @ $10/LF) and less pavement (-102 SY @ $33/SY)

[3] Cost of bike lanes includes additional costs related to extra 2-ft pavement width (1050 SY @ $33/SY) and pavement marking (4700 LF * $1.50/LF)

[4] Shared-Use Path includes a credit for costs related to less sidewalk along the south side of Golf Road (-3985 SF @ $3/SF and additional cost for 5" asphaltic pavement with 6" base aggregate (2600 SY @ $26/SY)

[5] Design costs for construction documents are based on 8% of construction cost due to the completion of the planning level concepts as part of this study.

[5 & 6] Total project costs have been rounded to the nearest $1000 for summary purposes.

[6] Planning\Budgeting project costs do not assume **construction and design costs** for optional items within each alternative.

[7] Right-of-way costs include costs for FEE acquisition, in addition to Temporary Limited Easements

Notes:
1. This opinion of probable costs is for alternate comparison purposes and can vary +/- 20% given construction industry economic trends
2. Optional items are not included in the Planning\Budgeting Project Cost

# Appendix 7

## Public Involvement Summaries

# Public Information Meeting #1
# November 17, 2009

# Golf Road Traffic Improvement Feasibility Study

## Public Information Meeting
Minutes and Comment Summary
November 17, 2009

GRĀEF

Golf Road Traffic Improvement
Feasibility Study
City of Delafield
Waukesha County

**GOLF ROAD TRAFFIC IMPROVEMENT FEASIBILITY STUDY**
**PUBLIC INFORMATION MEETING**
**MINUTES AND SUMMARY OF COMMENTS RECEIVED**

**MEETING DATE:** November 17, 2009
**TIME:** 5:00 – 7:00 p.m.

**LOCATION:** Fish Hatchery Building
425 Main Street, Delafield, Wisconsin

**PRESENT:**

| Name | Representing |
|---|---|
| Thomas Hafner | City of Delafield |
| Mary Beth Pettit | GRAEF |
| Shana Mogensen | GRAEF |
| Nick Skiffington | GRAEF |
| General Public | Sign-in sheet (see Attachment A) |

**DISCUSSION:**

A Public Information Meeting was held at the Fish Hatchery Building from 5:00 to 7:00 p.m. on November 17, 2009 to discuss concepts for improving traffic along Golf Road within the City of Delafield.

Upon arrival, attendees were presented with a handout (see Attachment B) that included a project summary, project contacts, options being considered for improvement, project study limits, and a comment sheet. The project summary outlines the project description, meeting focus topics, and the project schedule. Representatives from GRAEF and the City of Delafield were available for questions.

A large display showed an aerial of the project study limits and the surrounding vicinity. This display is included in Attachment C.

The first hour of the meeting was held in an open format in order to allow each individual's questions and concerns to be presented and addressed by project representatives. Project engineers from GRAEF then gave a formal presentation at 6:00pm, including a PowerPoint presentation which focused on the goals of the traffic improvement feasibility study, the progress made to-date, different types of access management under consideration, and the current project schedule (see Attachment D).

Phone Messages received prior to the meeting

No phone messages were received prior to the meeting.

General Questions and Comments received at the meeting

Area around driveways for Sports Authority, Kohl's Truck access, and Walgreens

- A resident commented that the current configuration of the three driveways does not work. The Kohl's truck access and Sports Authority driveways do not align, which creates confusion for drivers exiting the driveways looking for cross traffic. If three cars exit the driveways at the same time, it results in a lot of "close calls" in the median. Driveways #1 and #11 should be aligned better and brought further east.

- Another resident commented that the Walgreen's driveway (#12) is too close to the STH 83 intersection. Eastbound vehicles on Golf Road back up towards the intersection waiting for a gap to turn into Walgreens. A suggestion was made to make driveway #12 a right-in, right-out only.
- The large business sign at the driveway to Sports Authority blocks drivers' view of eastbound vehicles on Golf Road.
- A comment was also made that the drive between the Marshall's and Sports Authority parking lots is very steep, and cars that crest the top of the hill do not see the line of cars exiting onto Golf Road until the last second.
- Another resident commented that the steep hill east of the Sports Authority driveway makes it tough to see westbound traffic.

Area around driveways for Marshall's and Kohl's

- One resident suggested better aligning the driveways from Marshall's and Kohl's, possibly by shifting the driveway from Kohl's (#10) to the southeast.
- Another resident stated that the sight distance at driveway #10 looking left was very limited by the line of trees, and made difficulty seeing westbound traffic
- Roundabout idea got 50/50 support. One resident was absolutely certain that a roundabout wouldn't work at the Kohl's/Marshall's driveways because of how the Moreland Road & I-43 roundabouts have functioned. She states that she will not shop at that shopping center because of how badly traffic flows there.

Area along Golf Road from Applebee's to Best Buy

- Many residents wanted the TWLTL gone. Several people stated that they were used widely in the 70's & 80's, or to retrofit existing roadways. They didn't understand why one was installed along Golf Road in the first place, being that it was a new development.
- Numerous residents liked the idea of a raised median with left-turn lanes.
- Numerous residents liked the idea of right-turn lanes and cutting back the trees.

Miscellaneous Items

- One resident wanted to see some sort of connection made to the recreational trail at the east end of the project. The resident was also interested as to whether or not counts along the recreational trail would be a part of the study. Mary Beth Pettit indicated that trail counts were not part of the current scope of the project. GRAEF could coordinate with Waukesha County to see if counts are available for the use of the Recreational Trail.
- Another resident stated that the speed drop from 45mph to 30mph for westbound traffic at Greywood Lane wasn't heeded by motorists until they entered the first curve down by the Kohl's parking lot.
- Apparently driveways #4 and #9 aligned at one point until the Panera/Qdoba went in. Driveway spacing may be an issue along that stretch of Golf Road.
- One resident questioned whether the traffic data was available for public dissemination. Shana stated that the data was still being summarized by GRAEF and could possibly be made available at a later date.

Written Comments received following the meeting

All written comments received following the meeting are included in Attachment E.

Summary

The meeting ended at 7:00 p.m.

Attachments

A. Public Information Meeting Sign-In Sheet
B. Public Information Meeting Handout
C. Public Information Meeting Display
D. Public Information Meeting PowerPoint
E. Public Comment Forms

# Public Information Meeting
# Sign-in Sheet

**Attachment A**

# Meeting Attendance
## Golf Road Traffic Improvement Feasibility Study
## Public Information Meeting #1
## November 17, 2009

| | Name | Business Owner | Resident | Address/ Company (if applicable) | Email | Phone | How Did You Hear About This Meeting? |
|---|---|---|---|---|---|---|---|
| 1. | CHUCK + LAURA MORANCHEK | ☐ | ☒ | 2609 HORSESHOE BEND HARTLAND | cmoranchek@wi.rr.com | 367-5702 | ☐ Postcard / Invite ☐ City Website ☐ Other – Please specify: ☐ Local Access TV |
| 2. | DAVID GREENWAY | ☐ | ☒ | 145T MAIN STREET | | 646-9281 | ☐ Postcard / Invite ☐ City Website ☐ Other – Please specify: ☐ Local Access TV |
| 3. | Joe Deklotz | ☐ | ☒ | Work ID Area 4160 601 Genesee street | Joe Deklotz@GMail.Com | 370-1862 | ☐ Postcard / Invite ☐ City Website ☒ Other – Please specify: ☐ Local Access TV BBJ/My Business Group |
| 4. | Kelly Smith | ☐ | ☐ | Lake County Builders | KSmith@scpgroup.com | 262-538-3372 | ☐ Postcard / Invite ☐ City Website ☐ Other – Please specify: ☐ Local Access TV |
| 5. | DAN JASHINSKY | ☐ | ☐ | 415 S. Indian Spring Delafield | | 646-8054 | ☐ Postcard / Invite ☐ City Website ☐ Other – Please specify: ☐ Local Access TV |
| 6. | Janet Fourth | ☐ | ☒ | 1236 Woodside St. Hartland, WI 53029 | | 262-367-5329 | ☐ Postcard / Invite ☐ City Website ☐ Other – Please specify: ☐ Local Access TV Newspaper |
| 7. | Bob and Jennifer Schmidt | ☐ | ☒ | 2837 MEADOW LANE HARTLAND, WI 53029 | | 262 367 3982 | ☐ Postcard / Invite ☐ City Website ☐ Other – Please specify: ☐ Local Access TV |
| 8. | George DieTz | ☐ | ☒ | 2255F CIRCLE Rdg Delafield WI 53018 | gjdietz@execpc.com | | ☒ Postcard / Invite ☐ City Website ☐ Other – Please specify: ☐ Local Access TV |
| 9. | GENSMAN Russell | ☐ | ☒ | 300 FIELDSTONE RD 53018 | | | ☒ Postcard / Invite ☐ City Website ☐ Other – Please specify: ☐ Local Access TV |
| 10. | TED FERRARA | ☐ | ☒ | 1005 SUNSET DRIVE DELAFIELD WIS 53018 | tedpfc@wi.rr.com | 262-646-3778 | ☒ Postcard / Invite ☐ City Website ☐ Other – Please specify: ☐ Local Access TV |
| 11. | Beth Leonard | ☐ | ☒ | 2313 Nagawicka Rd Hartland, WI 53029 | bleonard@ci.delafield.wi.us | 262-367-2434 | ☒ Postcard / Invite ☐ City Website ☐ Other – Please specify: ☐ Local Access TV |
| 12. | PAT HAWLEY | ☐ | ☐ | 359 STOCKS DRIVE | PHAWLEY@WI.RR.COM | 646 8955 | ☐ Postcard / Invite ☐ City Website ☐ Other – Please specify: ☐ Local Access TV |
| 13. | Jill Fitzgerald | ☐ | ☒ | 3000 NAGAWICKA Rd Hartland, WI 53029 | JFitzgerald@WI.RR.Com | 367-3833 | ☐ Postcard / Invite ☐ City Website ☐ Other – Please specify: ☐ Local Access TV |

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# Meeting Attendance
## Golf Road Traffic Improvement Feasibility Study
## Public Information Meeting #1
## November 17, 2009

| | Name | Business Owner | Resident | Address/ Company (if applicable) | Email | Phone | How Did You Hear About This Meeting? |
|---|---|---|---|---|---|---|---|
| 1. | ART BAUMANN | ☐ | ☒ | 917 BROKEN BOW CT DELAFIELD, WI 53018 | baum@wi.rr.com | 262-968-9100 | ☐ Postcard / Invite ☐ City Website ☒ Other – Please specify: Public Works Committee ☐ Local Access TV |
| 2. | Kevin Fitzgerald | ☐ | ☒ | 3000 Nagawicka Rd | Kgfitzgerald@wi.rr.com | 262 367-3532 | ☒ Postcard / Invite ☐ City Website ☐ Other – Please specify: ☐ Local Access TV |
| 3. | Jim GROSS | ☐ | ☐ | 363 Huntington Rd | | 262-370-0182 | ☐ Postcard / Invite ☐ City Website ☐ Other – Please specify: ☐ Local Access TV |
| 4. | ED MCALEER | ☐ | ☐ | | EMCALEER@CI.DELAFIELD.WI.US | | ☐ Postcard / Invite ☐ City Website ☐ Other – Please specify: ☐ Local Access TV |
| 5. | | ☐ | ☐ | | | | ☐ Postcard / Invite ☐ City Website ☐ Other – Please specify: ☐ Local Access TV |
| 6. | | ☐ | ☐ | | | | ☐ Postcard / Invite ☐ City Website ☐ Other – Please specify: ☐ Local Access TV |
| 7. | | ☐ | ☐ | | | | ☐ Postcard / Invite ☐ City Website ☐ Other – Please specify: ☐ Local Access TV |
| 8. | | ☐ | ☐ | | | | ☐ Postcard / Invite ☐ City Website ☐ Other – Please specify: ☐ Local Access TV |
| 9. | | ☐ | ☐ | | | | ☐ Postcard / Invite ☐ City Website ☐ Other – Please specify: ☐ Local Access TV |
| 10. | | ☐ | ☐ | | | | ☐ Postcard / Invite ☐ City Website ☐ Other – Please specify: ☐ Local Access TV |
| 11. | | ☐ | ☐ | | | | ☐ Postcard / Invite ☐ City Website ☐ Other – Please specify: ☐ Local Access TV |
| 12. | | ☐ | ☐ | | | | ☐ Postcard / Invite ☐ City Website ☐ Other – Please specify: ☐ Local Access TV |
| 13. | | ☐ | ☐ | | | | ☐ Postcard / Invite ☐ City Website ☐ Other – Please specify: ☐ Local Access TV |

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# Public Information Meeting Handout

Attachment B

# Project Information

**Golf Road** | Public Information Meeting November 17, 2009

### Project Description

The project area for the Golf Road Traffic Improvement study includes a heavily commercialized locale consisting of numerous large-box retailers, a grocery store, a pharmacy, a bank, several restaurants, a hotel, and various specialty service providers. Golf Road provides four travel lanes on the west section of the project (near STH 83) and narrows to a two-lane roadway with a two-way left-turn lane (TWLTL) on east portion of the project. East of STH 83, Golf Road currently carries 18,200 vehicles per day with a posted speed limit of 30 miles per hour.

The City will be looking at options to resurface or reconstruct Golf Road in the near future. The study will look to balance the specific needs of the corridor including: traffic capacity and operations, pedestrian and vehicle safety, truck turning, bicycle accommodations, and access. The team will also evaluate construction cost estimates associated with various alternates and investigate opportunities for funding assistance on the project.

### Schedule

| | |
|---|---|
| Data Collection | October 2009 |
| Public Meeting #1 | November 17, 2009 |
| Conceptual Plan Development | Nov / Dec 2010 |
| Public Meeting #2 | January 2010 |
| Recommendation to City Council | March 2010 |

### Meeting Focus Topics

Access Management: Access management is a critical component to provide safe and efficient traffic operations. One of the principles that specifically applies to this corridor includes the separation of conflict points. Separating conflict points is a vital element to ensuring that motorists have adequate time to identify and respond to each conflict point. Conflict points include intersections, turn lanes, and medians.

Pedestrian & Bicycle Accommodations: Safe pedestrian and bicycle accommodations are an important aspect to all roadway improvement projects. The close proximity of the Lake County Recreational Trail encourage cyclists to access this shopping area. Proposed improvements will look to incorporate these elements by considering various types of accommodations as outlined in this handout.

Intersection Control: The team will evaluate various types of intersection control as alternates are considered for the proposed improvements. Traffic signals, roundabouts, and stop sign control will be evaluated as part of this study.

### Next Phase of Work

The design team has completed data collection for the corridor. Following this public meeting, the team will begin to analyze alternates for consideration along the corridor. A public meeting will be held in January to allow for public comments on these alternates.

## contact information


Tom Hafner, P.E.
Director of Public Works
City of Delafield
500 Genesee Street
Delafield, Wisconsin
262 / 646-6225
*email:*
thafner@ci.delafield.wi.us

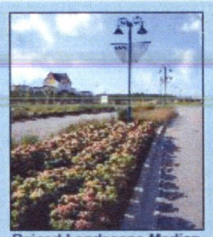
Shana Mogensen, P.E.
GRAEF
125 South 84th St.,
Suite 401
Milwaukee, WI 53214
414 / 266-9141
*email:*
shana.mogensen@graef-usa.com

**Golf Road Improvement Options** | Public Information Meeting November 17, 2009

City of Delafield | 500 Genesee Street | Delafield, WI 53018

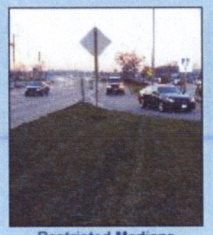
We are seeking your feedback on various design elements that are being considered during the planning phase. Please offer comments in the boxes to the right so that we can better understand your concerns along the corridor.

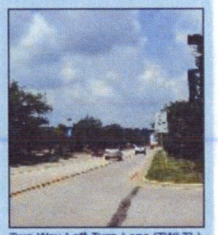
## Access Management


Raised Landscape Median

Raised Grass Median

Raised Concrete Median


Restricted Medians

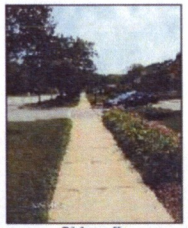

Two-Way-Left-Turn-Lane (TWLTL)

## Pedestrian/Bicycle Accommodations

On-Road Bike Lanes

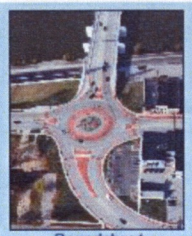
On-Road Bike Accommodations*

Multi-Use Path (off road)


Sidewalk

## Intersection Control

Traffic Signal


Roundabout

Roundabouts in Series

Stop Sign

* Wider outside travel lane.

Please provide your comments on the **Access Management** options pictured at the left:

Please provide your comments on the **Pedestrian and Bicycle** options pictured at the left:

Please provide your comments on the **Intersection Control** options pictured at the left:

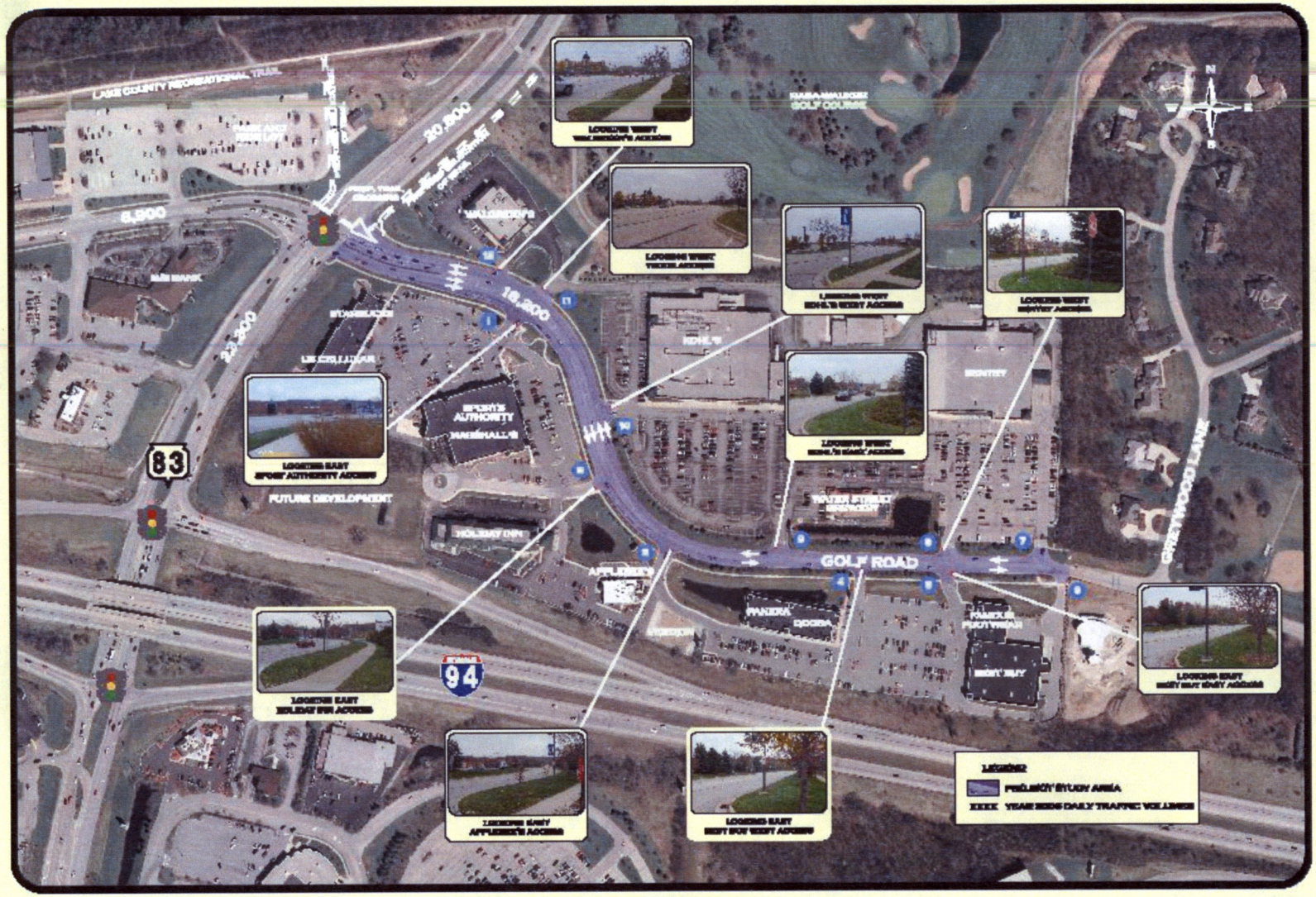
Please outline any safety concerns you are aware of within the project limits:

Additional comments:

A map of the corridor has been included on the back of this handout. Please use the numbers shown on the various driveways to comment on project concerns. Also, please feel free to mark up the map with any additional concerns.

# Public Information Meeting
# Display

**Attachment C**




PROJECT OVERVIEW

# GOLF ROAD

CITY OF DELAFIELD, WI

GRAEF

# Public Information Meeting
# PowerPoint

**Attachment D**

# Golf Road Traffic Improvement Feasibility Study

## STH 83 to Eastern City Limits

Public Information Meeting

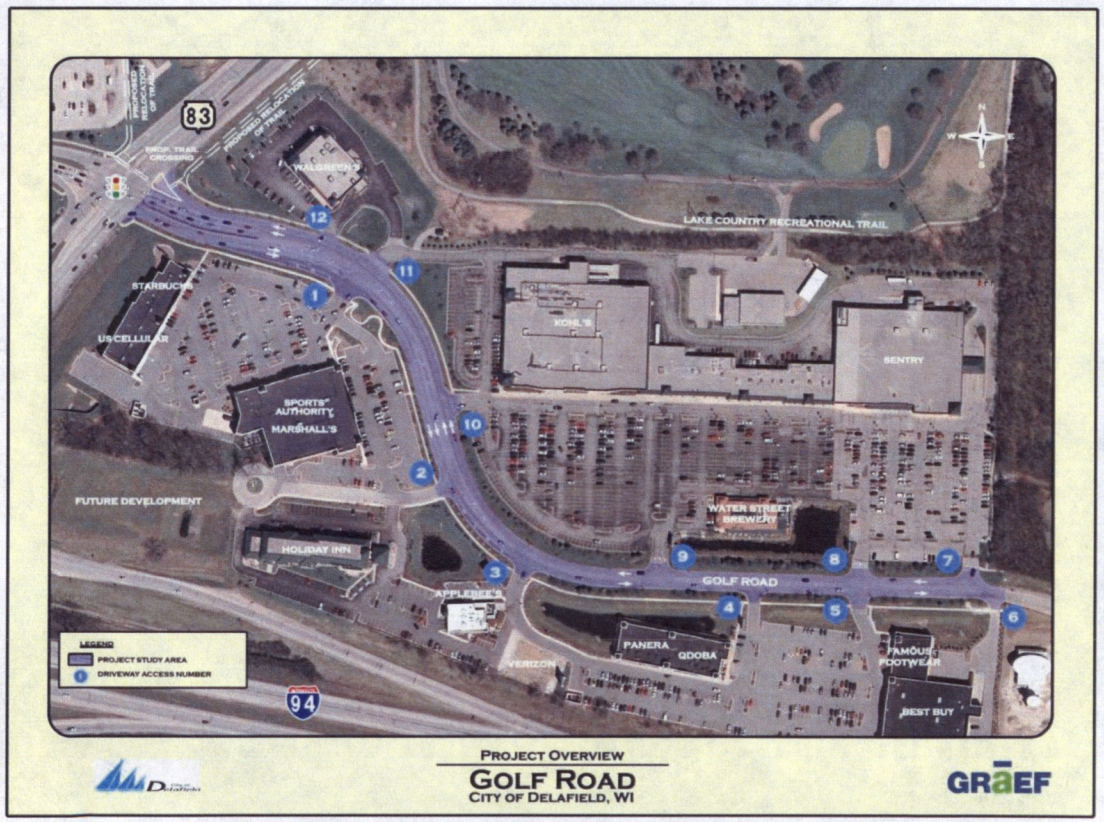
November 17, 2009

Fish Hatchery Building

425 Main Street

Delafield, Wisconsin

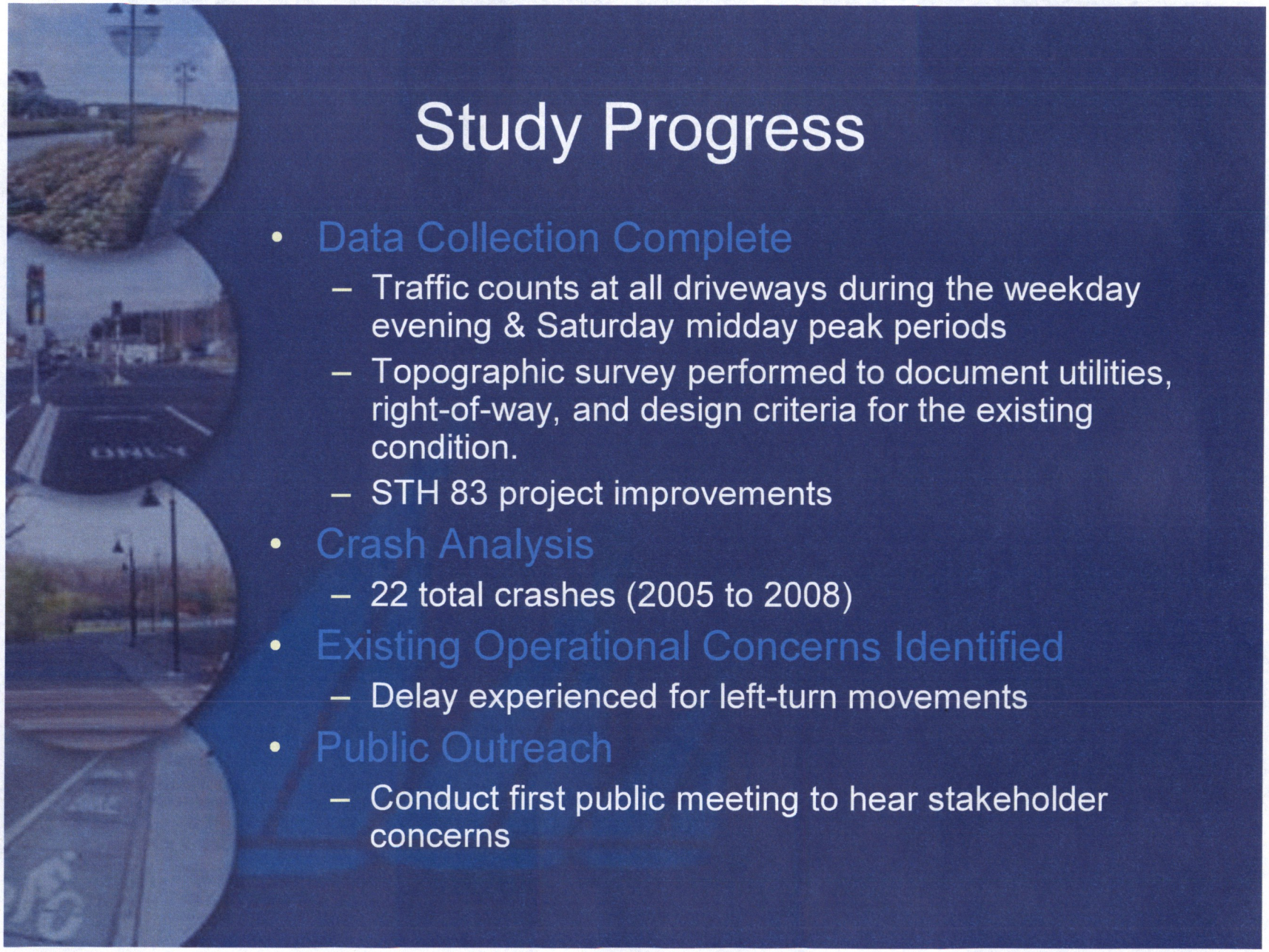
# Study Overview

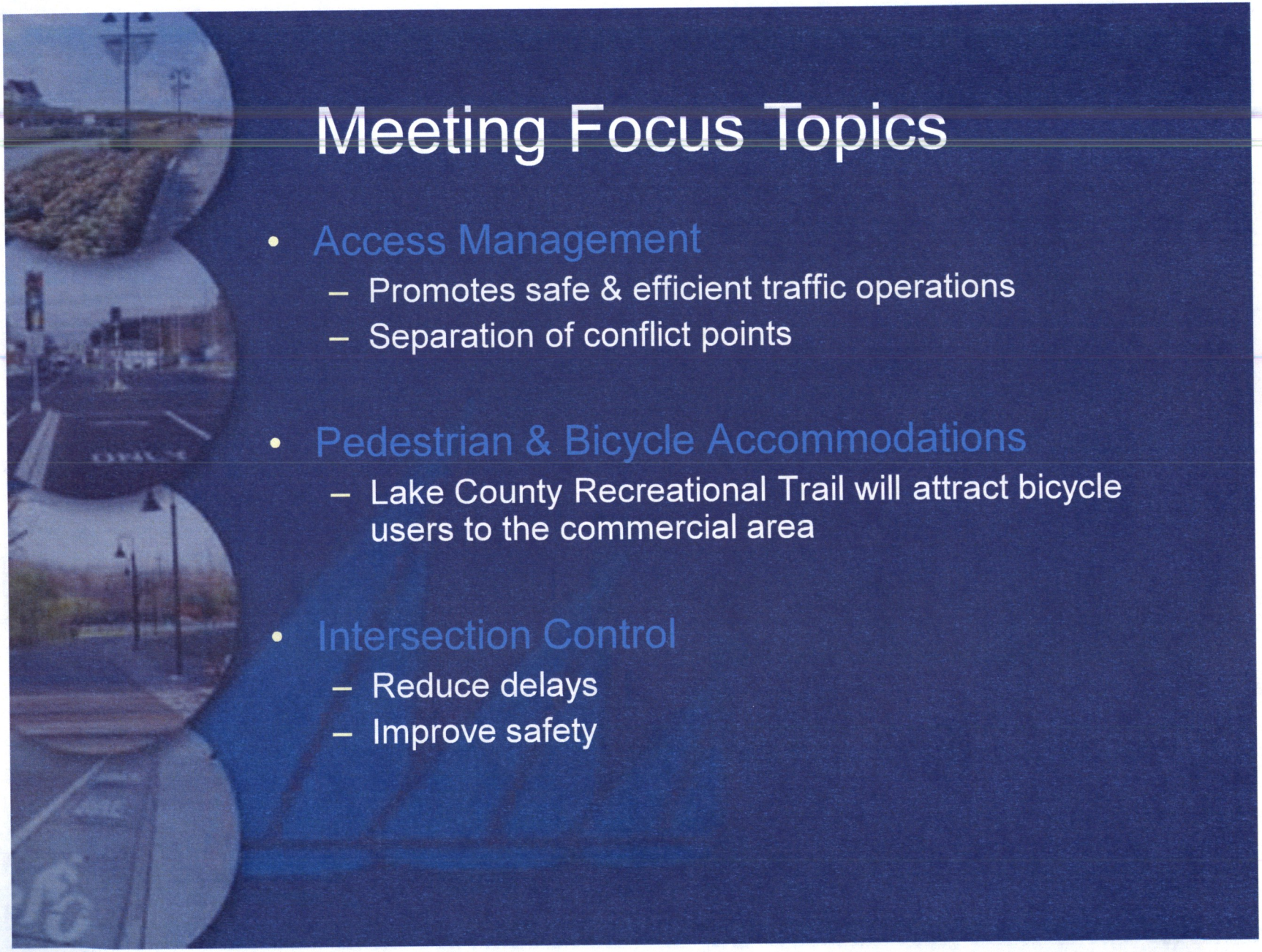



- Heavily Commercialized Corridor
- Poor Site Distance & Operational Concerns
- Pavement Condition is deteriorating
- Average Daily Traffic 18,200 (2009)

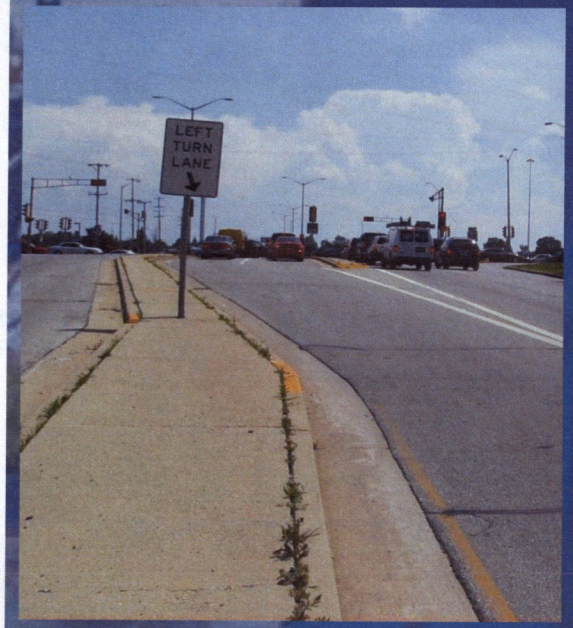
# Study Goals

- Identify operational & geometric deficiencies along the corridor.
- Study alternates to address concerns
- Create a public involvement plan that includes all stakeholders along the Golf Road corridor:
  - City of Delafield Residents
  - Businesses
  - Business Patrons
  - Property Owners
  - Commuters
- Research funding options for proposed improvement
- Determine a preferred alternate for presentation to the city council


Study Progress
• Data Collection Complete
– Traffic counts at all driveways during the weekday evening & Saturday midday peak periods
– Topographic survey performed to document utilities, right-of-way, and design criteria for the existing condition.
– STH 83 project improvements
• Crash Analysis
– 22 total crashes (2005 to 2008)
• Existing Operational Concerns Identified
– Delay experienced for left-turn movements
• Public Outreach
– Conduct first public meeting to hear stakeholder concerns


Meeting Focus Topics
• Access Management
– Promotes safe & efficient traffic operations
– Separation of conflict points
• Pedestrian & Bicycle Accommodations
– Lake County Recreational Trail will attract bicycle users to the commercial area
• Intersection Control
– Reduce delays
– Improve safety

# Access Management




Raised Concrete Median

Raised Grass Median

Raised Landscaped Median

# Access Management

Restricted Median

Two-Way-Left-Turn-Lane (TWLTL)

Roundabouts in Series

# Pedestrian & Bicycle Accommodations

On-Road (Wider Travel Lane)

On Road Bike Lanes

Multi Use Paths

Sidewalks

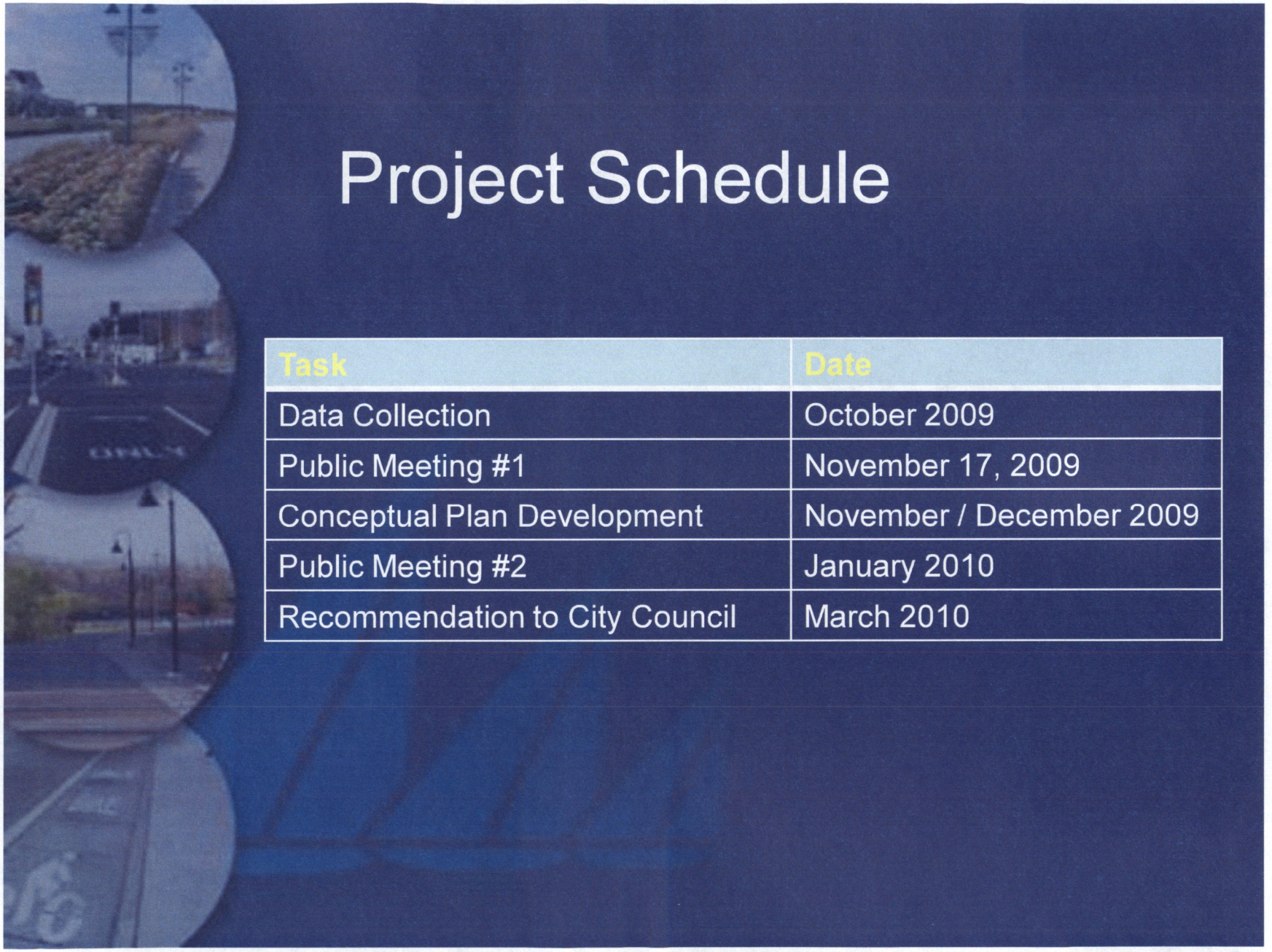
# Intersection Control

Traffic Signal

Roundabout

Stop Sign

Roundabouts in Series



# Project Schedule

| Task | Date |
|---|---|
| Data Collection | October 2009 |
| Public Meeting #1 | November 17, 2009 |
| Conceptual Plan Development | November / December 2009 |
| Public Meeting #2 | January 2010 |
| Recommendation to City Council | March 2010 |

# Thank you!

Please sign in at the registration desk and complete a comment form.

We would like to hear your thoughts and concerns regarding the Golf Road Corridor!

# Public Comment Forms

**Attachment E**

City of Delafield | 500 Genesee Street | Delafield, WI 53018

Please provide your comments on the **Access Management** options pictured at the left:

Low maintenance, no restricted view.
2 way, left-turn lanes where appropriate.

Please provide your comments on the **Pedestrian and Bicycle** options pictured at the left:

Multi-use path. Pedestrian/bicycle safety must be a major concern.
Handicapped access must be considered.

Please provide your comments on the **Intersection Control** options pictured at the left:

No roundabouts unless well engineered.

Please outline any safety concerns you are aware of within the project limits:

The intersections 1, 12, 11 must be re-engineered. Level out the rise between 83 and these intersections.

Additional comments:

A map of the corridor has been included on the back of this handout. Please use the numbers shown on the various driveways to comment on project concerns. Also, please feel free to mark up the map with any additional concerns.

PROJECT OVERVIEW

# GOLF ROAD

CITY OF DELAFIELD, WI

GRÄEF

City of Delafield | 500 Genesee Street | Delafield, WI 53018

Please provide your comments on the **Access Management** options pictured at the left:

Please NO Roundabout - two way left turn at 83 from West Golf Rd. (By Bank)

Please provide your comments on the **Pedestrian and Bicycle** options pictured at the left:

1st choice (offroad) Multi-use Path
2nd On road Bike Accommodation

Please provide your comments on the **Intersection Control** options pictured at the left:

NO Roundabouts!!
1st choice traffic light
2nd stop Sign

Please outline any safety concerns you are aware of within the project limits:

It's hard to make a left turn on 1 or 2 (of back page) → (too much traffic)

Additional comments:

the light at 83 is very short for green - and long for the red light - so everyone is trying to beat the light & race to get through the green - maybe needs to be regulated -

A map of the corridor has been included on the back of this handout. Please use the numbers shown on the various driveways to comment on project concerns. Also, please feel free to mark up the map with any additional concerns.

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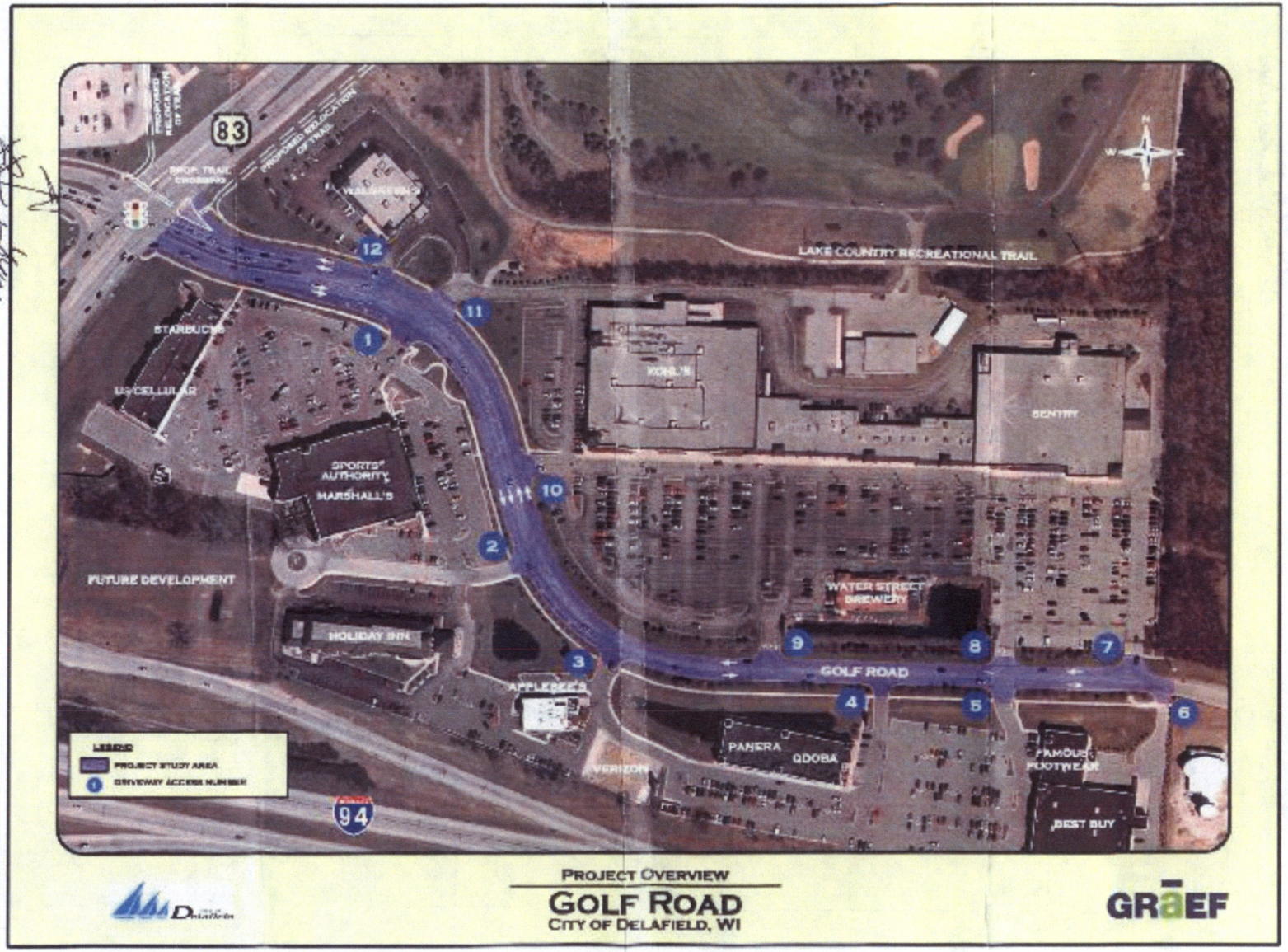



PROJECT OVERVIEW

# GOLF ROAD

CITY OF DELAFIELD, WI

GRÄEF

City of Delafield | 500 Genesee Street | Delafield, WI 53018

Please provide your comments on the **Access Management** options pictured at the left:

the current TWLTL Lane is difficult to manage between (4) and (8+5)

Please provide your comments on the **Pedestrian and Bicycle** options pictured at the left:

Prefer Multi-Use Path to Replace existing Sidewalk,

Please provide your comments on the **Intersection Control** options pictured at the left:

- Roundabout @ 2 > 2 would be nice and ... ?

Please outline any safety concerns you are aware of within the project limits:

Additional comments:

A map of the corridor has been included on the back of this handout. Please use the numbers shown on the various driveways to comment on project concerns. Also, please feel free to mark up the map with any additional concerns.

lengthen

Can't turn left, different to turn right

difficult to turn left

PROJECT OVERVIEW

**GOLF ROAD**

CITY OF DELAFIELD, WI

GRÄEF

Remove Trees

City of Delafield | 500 Genesee Street | Delafield, WI 53018

Holiday Inn Express

Please provide your comments on the **Access Management** options pictured at the left:

restricted medians or raised landscape median would look good.

RECEIVED
JAN 04 2010
CITY OF DELAFIELD

Please provide your comments on the **Pedestrian and Bicycle** options pictured at the left:

Like multi-use path we have alot of guest who come and bike and run looking for path to use. plus if it were lighted in areas.

Please provide your comments on the **Intersection Control** options pictured at the left:

If you would close the entrance on top of hill to Sports authority and force traffic to (2) enter by marshalls and Holiday Inn Express Take out the turnaround at end of street and put road going in back and up. Also put (1)

Please outline any safety concerns you are aware of within the project limits:

stop and go light there. And Stop sign at entrance of hotel it would help. Too much traffic to get out by entrance of our street. onto Golf Rd.

Additional comments:

See map on back

A map of the corridor has been included on the back of this handout. Please use the numbers shown on the various driveways to comment on project concerns. Also, please feel free to mark up the map with any additional concerns.

PROJECT OVERVIEW

# GOLF ROAD

CITY OF DELAFIELD, WI

GRÄEF

# Property Owner Meeting #1
# January 20, 2010

# Property Owner Meeting #1
# Golf Road Traffic Improvement Feasibility Study

Client: City of Delafield
Meeting Date: January 20, 2010
Meeting Location: City of Delafield, Public Safety Building, 115 Main Street
Meeting Time: 6:00 PM

| | | |
|---|---|---|
| **Attendance:** | Tom Hafner | City of Delafield |
| | Greg Schilz | Sentry Foods |
| | Gregory Kost | TOLD Development |
| | Brian Adamson | TOLD Development |
| | Jim Voelz | The Redmond Company |
| | John Bieberitz | Traffic Analysis & Design for TOLD Development |
| | | Walgreens |
| | Lauren Dunn | Starbucks |
| | Dave Becker | Five Guys |
| | Dan Fluyeras | Gallery 1 Delafield |
| | Mary Beth Pettit | GRAEF |

A copy of the meeting attendance sign-in sheet is included as Attachment 1 to these minutes.

This meeting was held with the property owners of the Golf Road Corridor to inform them of the goals and scope of the Golf Road Traffic Improvement Feasibility Study and listen to their concerns with regards to the existing facility.

## Discussion Items:

## Action Items:

After an introduction of attendees, Mary Beth presented the Powerpoint used at the Public Information Meeting in November 2009. The presentation included the following general topics:

1. Study Overview / Scope
2. Study Goals
3. Study Progress
4. Corridor Focus Topics
5. Study Schedule

A copy of the Powerpoint is included as Attachment 2 to these minutes.

## Question & Answer Session:

Following the presentation, the City and Design team accepted questions\comments from the attendees. These questions are summarized as follows:

*Legend*
***Q*** Question
***A*** Answer.
***C*** Comment.

**Q** When will the project occur? When can we expect the disruption to the access of our businesses?

**A** At this time the project is in the study mode. As part of the study we will be developing funding options as well as defining the scope of the project. The timing of the construction project will be dependent on financing. At this time it is not known how the project will be funded; therefore it is too early to predict the construction time period.

**Q** Once the project is under construction, how long is the construction likely to last?

**A** This is also difficult to estimate at this time since we have yet to determine a recommendation for proposed improvement. A full reconstruction with new curbs and reconfigured lanes would take significantly longer than a simple resurfacing of the roadway. Over the next couple of months we will be considering various alternates and we will be able to estimate approximate construction time schedules once these are developed.

**C** Greg Schilz, the representative of Sentry Food Stores commented that any disruption to the access will be difficult for the various businesses during touch economic times. He requested that we keep this in consideration as we plan the project.

**C** A comment was made regarding the roundabouts built in the City of Franklin near STH 100 & Loomis at the Target entrance. Golf Road has significantly more traffic than that particular location and he is concerned that traffic would not operate efficiently if this application were proposed for this corridor.

**C** John Bieberitz, of Traffic Analysis & Design, representing TOLD Development, indicated that he feels that the general public has some acceptance of single lane roundabouts but are not yet ready for dual lane roundabouts at many locations; he specifically mentioned the roundabouts at IH 43 & Moorland Road. He indicated that he feels the general public remains unsure on how to drive through multi-lane roundabouts and tends to avoid locations where they are built.

**C** A comment was made that roundabouts are designed with too small of a radius in the state of Wisconsin and that shoppers are staying away from them, they are perceived to be an obstacle to businesses.

**Q** John asked if there was a crash pattern that could be identified along the corridor.

**A** Mary Beth indicated that she did not have this information present at the meeting and that crash diagrams could be provided through the City upon request.

GREAF to provide crash diagrams and traffic volumes to the City of Delafield for distribution to interested property owners.

**Q** John asked if traffic volumes are available for the corridor and how long a peak hour was counted.

**A** Mary Beth indicated that the team is in the process of summarizing the data, she believes that a 3 hour peak was used to analyze the area, but that will need to be verified with Shana Mogensen the project manager for the study.

**Q** John asked if a speed study had been performed for the corridor.

**A** Mary Beth indicated that this was not currently part of the scope of the project.

**Q** Attendees questioned if there had been consideration given to reducing the speed limit along the corridor and increasing enforcement.

**A** The current speed limit is 30 mph. Mary Beth indicated that studies have shown that drivers tend to drive a speed that is comfortable for the corridor and that reducing the speed limit will become and issue of enforcement. It will be much more effective to introduce physical elements of roadway design will work as traffic calming measures to reduce speed along the corridor.

**C** Greg Schilz, the representative with TOLD Development, indicated that safety must be balanced with the concept of keeping access for surrounding businesses. Nobody will be happy if the road improvement results in vacant store fronts.

**Q** Tom and Mary Beth asked if in general, the attendees felt that there were safety concerns along the corridor and whether the study was necessary.

**A** There was general consensus that there are a couple of problem areas along the corridor, driveways #1 & #10 were specifically identified. .

**Q** An attendee asked how the Average Daily Traffic (ADT) was calculated and is data available to show which months may have heavier traffic.

**A** John Bieberitz indicated that a tube count is performed for three days to calculate the average daily traffic. It is then adjusted based on traffic parameters to reflect seasonal adjustments.

**C** An attendee commented that they feel a raised median near the Walgreen driveway would be helpful to allow traffic to cross in two-stages vs. the one-stage maneuver that drivers attempt because there is no refuge area.

**Q** An attendee asked if there had been thought given to changing the timing of the light at STH 83 & Golf Road.

**A** Mary Beth indicated that this will be part of the state project planned for this summer. She was unaware if this signal will be coordinated with the traffic signal at the IH-94 westbound ramp terminal. She indicated that the team will coordinate with the WisDOT project manager and provide an answer.

GRAEF will speak with the PM for WisDOT to determine if coordination of these two traffic signals is planned as part of the improvements.

*The State's Project Manager for the STH 83 project (Glacier Pass to Golf Road) is John Kanzenbach. His phone number is (262) 548-6467 or he may be reached via email at John.Kanzenbach@dot.wi.gov. The project has a May 11, 2010 letting date with construction to begin around mid-June 2010. The project will include the intersection of Golf Road – with new signals, bike path crossing at intersection north side and adjusting the east bound median and left turn lane. Opposite left turn lanes on Golf Road will then have same phasing, reducing signal timing.*

**Q** Attendees questioned if there was a way to coordinate the construction between the state project and the city project.

**A** The state project is planned for 2010 and the earliest the City would likely have a construction project would be 2011, so this is not feasible.

**Q** An attendee asked if the improvements planned by the state for STH 83 & Golf Road would have an operational impact on this corridor that could potentially eliminate the need for this project.

**A** Mary Beth indicated that there will remain some sight distance and access concerns that should be corrected. Tom added that the condition of the pavement will dictate the need for some type of City project independent of operational concerns.

**C** Lauren Dunn, a representative for Starbucks, indicated that she feels that many of the near misses may occur at Driveway #1, but safe\efficient access to her business is essential due to the fact that customers are often in a hurry on there way to\from work.

**C** Greg Kost, the representative with TOLD Development, indicated that he did not feel there is a great demand to add sidewalk to the project. The sidewalk was built to facilitate pedestrian access to the fronts of business, he considers this a relatively low priority for the project.

**C** An attendee indicated that they are in favor of the idea of a median along Golf Road to facilitate the two-stage crossing; however, they are not in favor of the restricted medians like the ones recently built along Bluemound Road.

**C** Jim Voelz, a representative for Walgreens indicated that they are very sensitive to any proposal to change access at this location. Walgreen's typically likes to have access to the two major cross roads at a corner. This is not the situation at this location so they already feel that they have limited access.

**C** A comment was made that landscaped or turf medians would be preferable to concrete medians.

**Q** An attendee asked what type of thoughts the design team had on proposed solutions.

**A** Mary Beth indicated the team is just beginning to consider alternatives, and this will be the primary focus of the next meeting; however the team has begun to study the alignment of various driveways, potential backage road behind the Holiday Inn, raised medians, and opportunities to line up driveways to provide potential locations for intersection control (stop sign, roundabout, signals).

If you have any questions regarding the contents of these minutes, please contact Mary Beth Pettit directly at 414.266.9175.

Respectfully Submitted,
**GRAEF**

Mary Beth Pettit, P.E.
Public Involvement Lead

L:\Jobs2009\20090344\Project_Information\Meetings\100120_PropertyOwnerMtg#1\100120 Draft

PropertyOwnerMeeting#1 Minutes.doc

cc: All Attendees

Attachments:

1) Meeting Attendance Sign-In Sheet
2) PowerPoint presentation

# Meeting Attendance Sign-In Sheet

**Attachment 1**

## Meeting Attendance
**Golf Road Traffic Improvement Feasibility Study**
**Property Owner Meeting #1**
**January 20, 2010**

| | Name | Business Owner | Resident | Address/ Company (if applicable) | Email | Phone | How Did You Hear About This Meeting? |
|---|---|---|---|---|---|---|---|
| 1. | JOHN BROCKLEZ | ☐ | ☐ | TRAFFIC ANALYSIS & DESIGN, INC FOR THIS MTG. | jbrockliz@trafficanddesign.com | 262-777-1875 | ☐ Postcard / Invite ☐ City Website ☑ Other – Please specify: TOLD DEV. ☐ Local Access TV |
| 2. | DANIEL FOUYERAS | ☑ | ☐ | 3201 Golf Rd | golfroad@ecdelafield.net | 262 646 2980 | ☐ Postcard / Invite ☐ City Website ☑ Other – Please specify: Told Developer ☐ Local Access TV |
| 3. | Sue Reiner | ☑ | ☐ | 3219 Golf Road | | 262-646-9440 | ☐ Postcard / Invite ☐ City Website ☑ Other – Please specify: Told Developer ☐ Local Access TV |
| 4. | Greg Kurt | ☑ | ☐ | 20800 Swenson Drive, Suite 400 Waukesha, WI 53186 | gkurtzeld@wi.rr.com | 262 797 4102 | ☑ Postcard / Invite ☐ City Website ☐ Other – Please specify: ☐ Local Access TV |
| 5. | Jim Voelz | ☑ | ☐ | W228 N745 Westmound Drive Waukesha, WI 53186 | jvoelz@thevelandco.com | 262-896-8920 | ☐ Postcard / Invite ☐ City Website ☑ Other – Please specify: Told Developer ☐ Local Access TV |
| 6. | Brian Adamson | ☑ | ☐ | 20800 Swenson Drive, Suite 400 Waukesha, WI | badamson@talgwi.com | 262-797-4104 | ☐ Postcard / Invite ☐ City Website ☑ Other – Please specify: ☐ Local Access TV |
| 7. | Lauren Dunn | ☐ | ☐ | 2940 Golf Road | jmurray@retail.bentwoods.com | 262-646-2542 | ☐ Postcard / Invite ☐ City Website ☑ Other – Please specify: Told Developer ☐ Local Access TV |
| 8. | DAVE BECKER | ☑ | ☐ | 1200 GOLF | BECKERDJ@GMAIL.COM | 262.607.1960 | ☑ Postcard / Invite ☐ City Website ☐ Other – Please specify: ☐ Local Access TV |
| 9. | GREG SCHULZ | ☑ | ☐ | 3255 Golf RD | GREGSCHULZ@YAHOO.COM | 262 646 9483 | ☐ Postcard / Invite ☐ City Website ☑ Other – Please specify: ☐ Local Access TV |
| 10. | | ☐ | ☐ | | | | ☐ Postcard / Invite ☐ City Website ☐ Other – Please specify: ☐ Local Access TV |
| 11. | | ☐ | ☐ | | | | ☐ Postcard / Invite ☐ City Website ☐ Other – Please specify: ☐ Local Access TV |
| 12. | | ☐ | ☐ | | | | ☐ Postcard / Invite ☐ City Website ☐ Other – Please specify: ☐ Local Access TV |
| 13. | | ☐ | ☐ | | | | ☐ Postcard / Invite ☐ City Website ☐ Other – Please specify: ☐ Local Access TV |

Wisconsin Municipal Records Law Data. This document is not confidential – It's an Open Record as defined in Sections 19.31 to 19.39 of the Wisconsin Statutes. Although the information is limited to individuals solely for official use, it may be released to other individuals and groups on request (complete fees apply). This means that information disclosed above could be obtained by project supporters and/or opponents. If you do not wish to receive communications about the project, you should not put your name on the list.

# PowerPoint Presentation

**Attachment 2**

# Golf Road Traffic Improvement Feasibility Study

## STH 83 to Eastern City Limits

I-94/Hwy 83 Business Owners Group

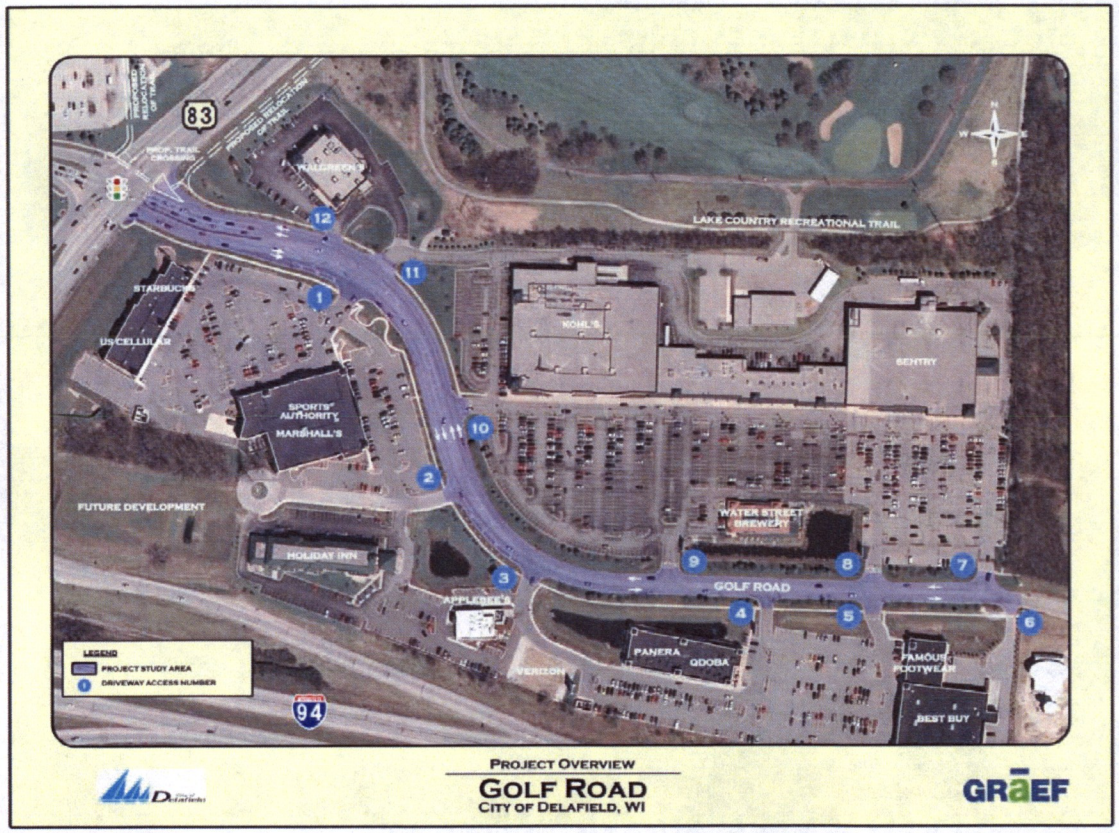
January 27, 2010

Holiday Inn

3030 Golf Road

Delafield, Wisconsin

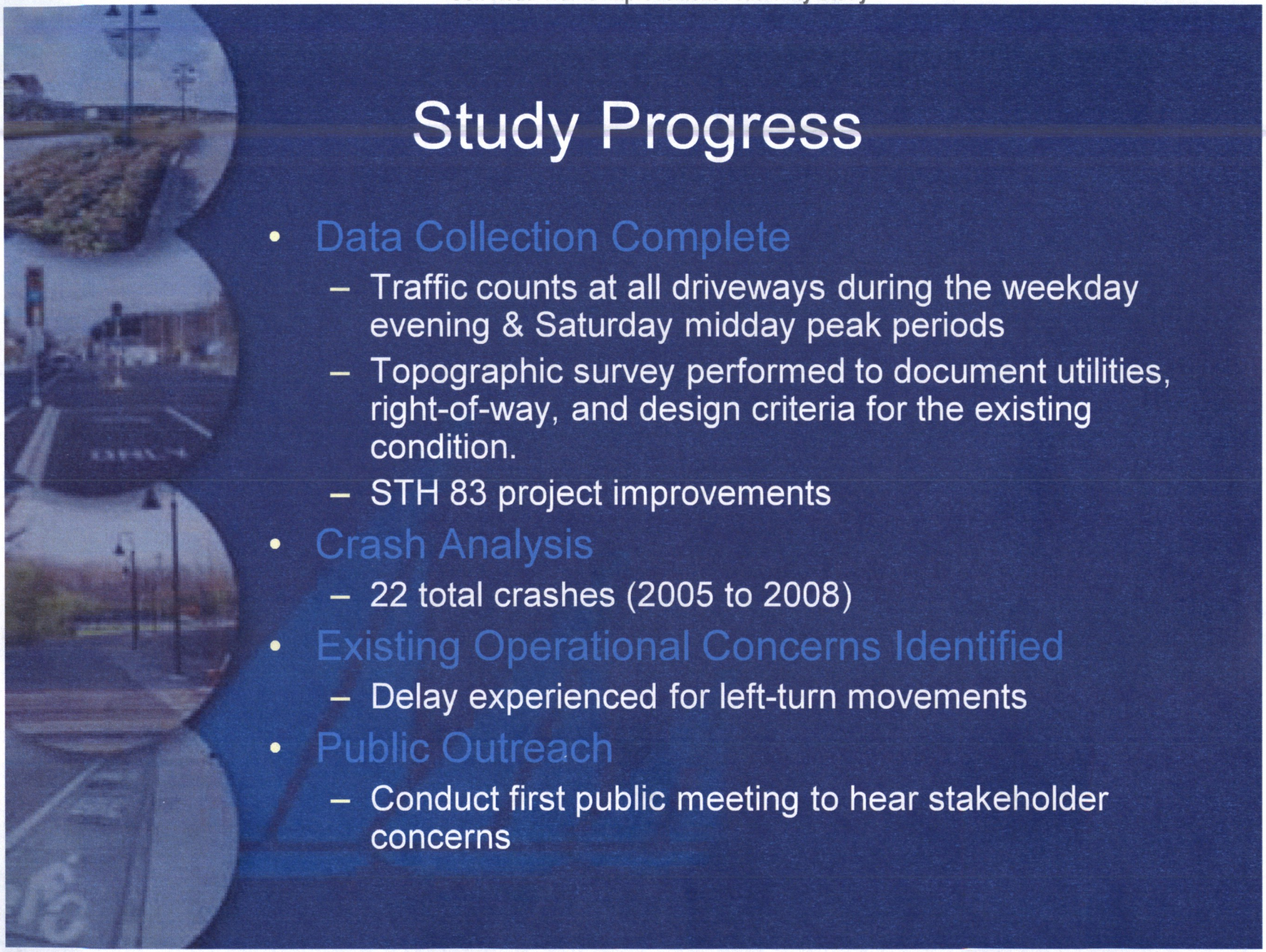
# Study Overview

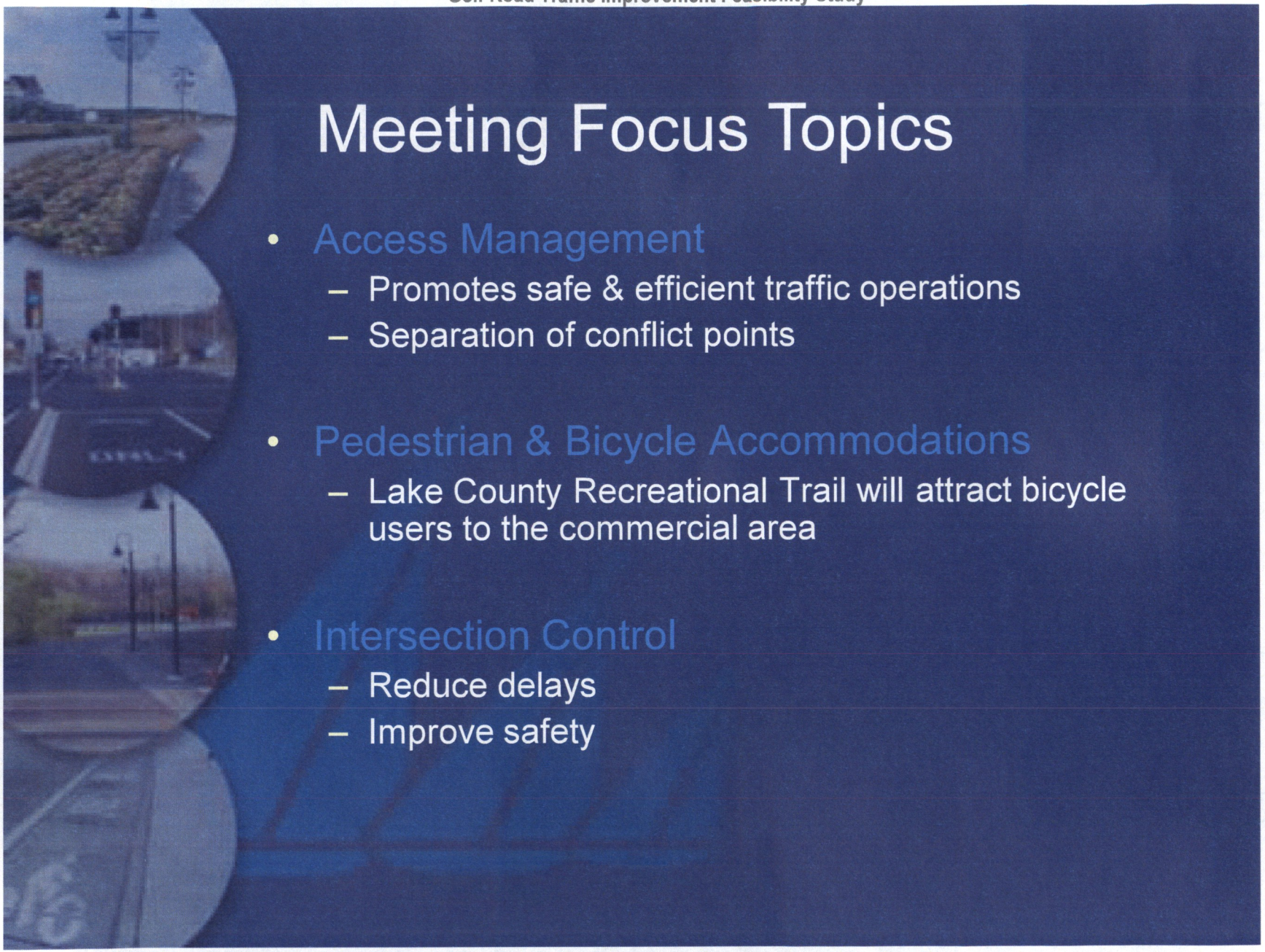


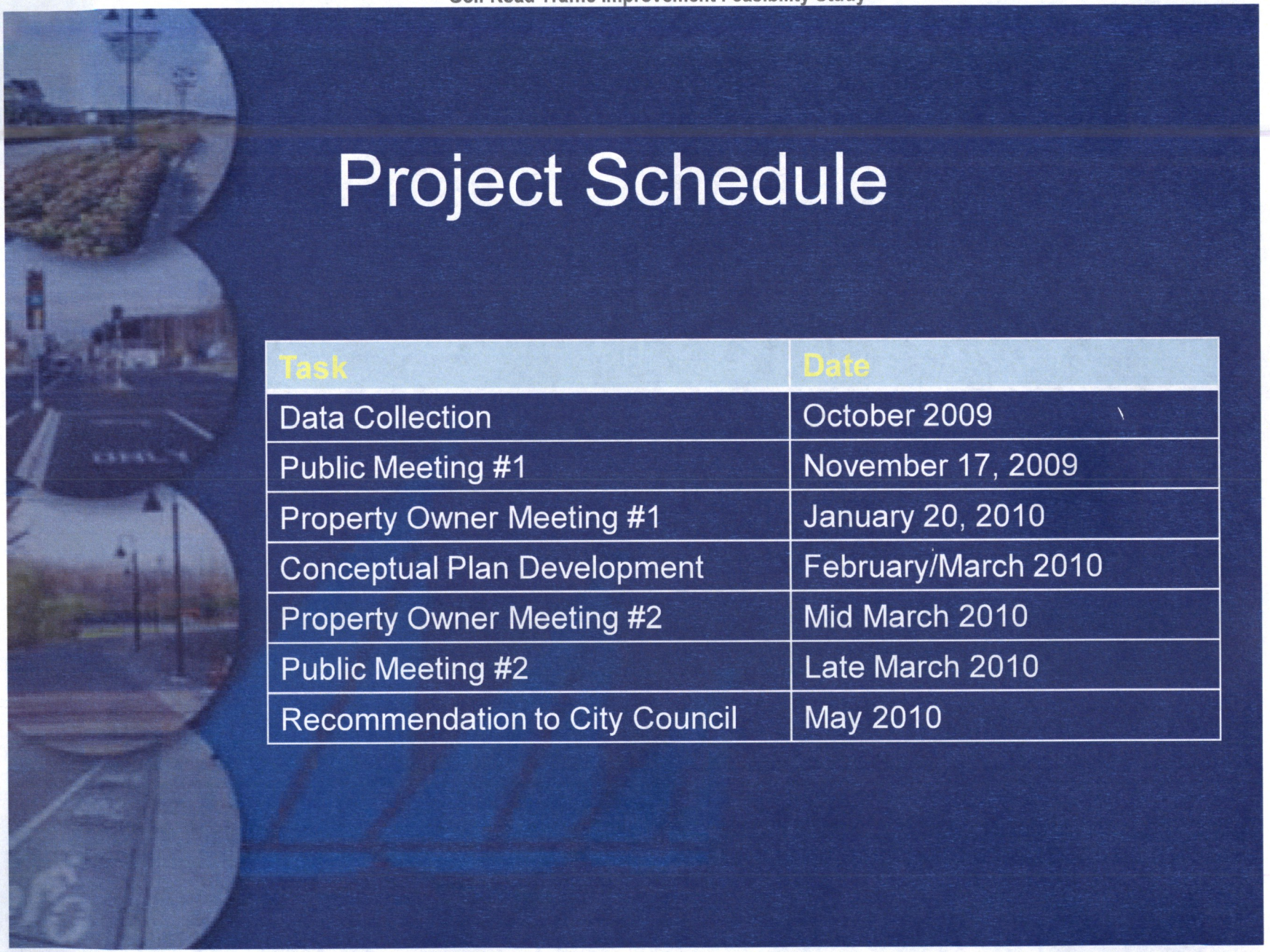

- Heavily Commercialized Corridor
- Poor Site Distance & Operational Concerns
- Pavement Condition is deteriorating
- Average Daily Traffic 18,200 (2009)

# Study Goals

- Identify operational & geometric deficiencies along the corridor.
- Study alternates to address concerns
- Create a public involvement plan that includes all stakeholders along the Golf Road corridor:
  - City of Delafield Residents
  - Businesses
  - Business Patrons
  - Property Owners
  - Commuters
- Research funding options for proposed improvement
- Determine a preferred alternate for presentation to the city council

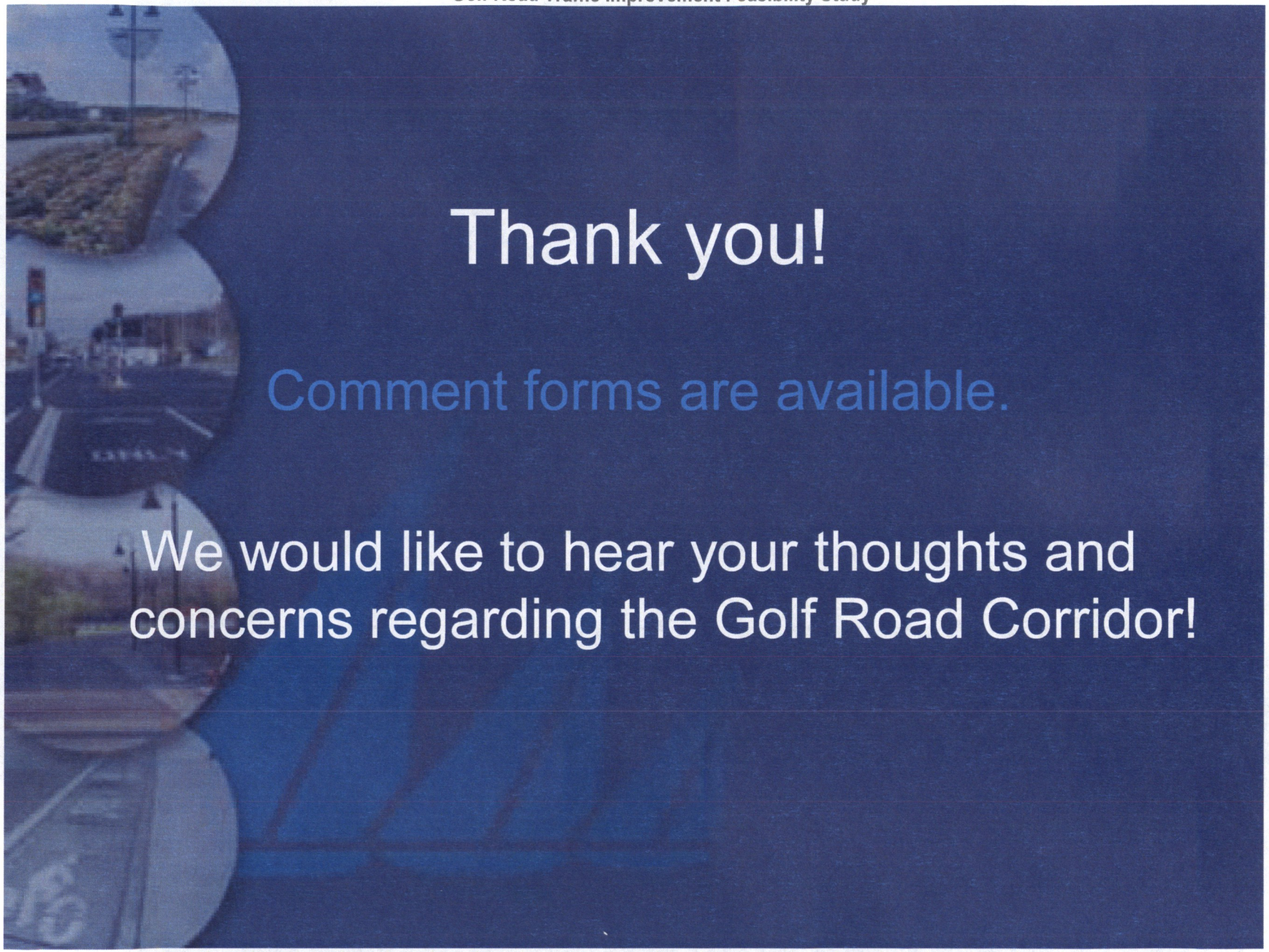

Study Progress
• Data Collection Complete
– Traffic counts at all driveways during the weekday evening & Saturday midday peak periods
– Topographic survey performed to document utilities, right-of-way, and design criteria for the existing condition.
– STH 83 project improvements
• Crash Analysis
– 22 total crashes (2005 to 2008)
• Existing Operational Concerns Identified
– Delay experienced for left-turn movements
• Public Outreach
– Conduct first public meeting to hear stakeholder concerns


Meeting Focus Topics
• Access Management
– Promotes safe & efficient traffic operations
– Separation of conflict points
• Pedestrian & Bicycle Accommodations
– Lake County Recreational Trail will attract bicycle users to the commercial area
• Intersection Control
– Reduce delays
– Improve safety



# Project Schedule

| Task | Date |
|---|---|
| Data Collection | October 2009 |
| Public Meeting #1 | November 17, 2009 |
| Property Owner Meeting #1 | January 20, 2010 |
| Conceptual Plan Development | February/March 2010 |
| Property Owner Meeting #2 | Mid March 2010 |
| Public Meeting #2 | Late March 2010 |
| Recommendation to City Council | May 2010 |


Thank you!
Comment forms are available.
We would like to hear your thoughts and concerns regarding the Golf Road Corridor!

# Property Owner Meeting #2
# April 19 & 20, 2010

# TOLD Property Owner Meeting
# Golf Road Traffic Improvement Feasibility Study

Client: City of Delafield
Meeting Date: April 19, 2010
Meeting Location: City of Delafield, Department of Public Works, 115 Main Street
Meeting Time: 11:30 AM

| | | |
|---|---|---|
| **Attendance:** | Dan Jashinsky | Delafield Public Works Committee |
| | Art Baumann | Delafield Public Works |
| | Tom Hafner | City of Delafield |
| | Brian Adamson | TOLD Development |
| | Greg Kost | TOLD Development |
| | Bob Doren | Kohl's |
| | John Bieberitz | Traffic Analysis & Design |
| | Mary Beth Pettit | Graef |
| | Shana Mogensen | Graef |
| | Pat Hawley | Delafield Public Works Committee |
| | | |

A copy of the meeting attendance sign-in sheet is included as Attachment 1 to these minutes.

This meeting was held at the request of TOLD Development to discuss the study alternates with the City, the consultant and the primary tenant of the Nagawaukee Shopping Center, Kohl's Department Store.

## Discussion Items:

These questions are summarized as follows:

*Legend*

**Q** Question
**A** Answer.
**C** Comment.

After an introduction of attendees, TOLD Development asked Bob Doren, representing Kohl's Department Store, to express his thoughts with regards to the alternates currently under study.

## Summary of comments made by representatives of Kohl's Department Store:

**Q** Bob requested that the City provide background as the purpose and need of the planning study.

**A** Tom indicated that the pavement within the Golf Road corridor is experiencing significant deterioration and will be in need of a resurfacing in the coming years. Over the past couple of years, the City has received numerous complaints from

residents who are patrons to the area shopping centers and that consistent complaints regarding the safety of the Sports Authority driveway have been voiced. The City felt that prior to spending the money on a resurfacing project that it would be a good idea to conduct a planning project to study to determine whether safety improvements should be implemented as part of a proposed project along the corridor.

**Q** How will the project be funded? Will the property owners receive special assessments? Have LRIP or STP funds been considered?

**A** The study includes an assessment of potential funding opportunities for the various alternates currently being studied. The City has yet to determine if special assessments will be needed to finance the infrastructure improvement. If the City decides to go this route, a public hearing will be held. Golf Road is classified as a major collector and it is anticipated that the City will consider filing an application for the Surface Transportation Program for Urbanized Areas (STP-U). However, the City currently carries a negative balance in their current account for this program due to work on the Genesee Street project and funding does not see likely at this time.

**C** Greg Kost indicated that the numerous property owners along Golf Road have different reactions to the various alternates currently under study and he wanted to create this opportunity to specifically listen to the concerns of the Kohl's Department Store.

**Q** Bob asked when it would be likely that the construction would occur.

**A** Tom indicated that the earliest a project could occur would be 2011; however, depending on the selected alternate and the necessary funding, it could occur anytime in the next couple of years.

**C** Bob indicated that Kohl's would only support the Low Build Option and the High Build Option with Stop Control. He indicated that they feel that all other options shown in the distribution packet have severe impacts to the Kohl's parking areas. He also indicated that the parking impacts would be more severe than shown due to the fact that stacking and queuing in the drive lanes would require the removal of additional parking spaces.

**C** Bob commented that the current traffic patterns caused by the location of Driveway #10 offer vehicles to circulate in front of the store. He indicated that the change in access to the south side of the site would not provide good traffic circulation within the site.

**Q** Bob asked if any right-of-way was needed for the project.

**A** Mary Beth indicated that the GRAEF design team was currently in the process of adding the right-of-way lines to the existing drawings and that right-of-way is anticipated for both the roundabout and traffic signal option.

**C** Bob indicated that he had one concern with the High Build/Stop Control Option with regards to the truck access. He does not see this as optional, he indicated that this is essential and must be designed for a WB-67 truck with a 75' articulated

angle. He expressed concern about the intersection spacing between the Golf Road intersection (Driveways #2 & #10) and the internal site intersection located ~50 feet to the north. He was concerned about distance for stacking and truck turning. He indicated that most truck deliveries occur during off-peak hours.

**Q** Tom asked Bob if Kohl's receives and comments or calls regarding safety concerns along Golf Road.

**A** Bob indicated that these would likely go to the store manager; however, he was not aware of reports of any of these types of concerns.

**C** Brian (TOLD) made a comment that information compiled as part of the study does not indicated that there is a crash problem at the Sports Authority Driveway. In his opinion; this directly translates to the fact that changes are not warranted. He indicated that six crashes over the three year study period should not warrant with regards to the closure of the left-out at the driveway. However, he does feel that improvements could be made that would help the situation and he feels if a two-stage left turn out of Sports Authority could be made to work, that this would alleviate many of the concerns that exist today.

**Q** An attendee asked for clarification on the LOS at the various driveways.

**A** Shana indicated that the Sports Authority, Kohl's and Marshal's Driveways are experiencing LOS F during peak hours of operation.

**Q** Tom asked Bob to summarize Kohl's position on the potential to eliminate the left out from Driveway #10.

**A** Bob indicated that this is a low volume movement that they would consider closing it if needed. He indicated the left-in at Driveway #10 is the top concern. Art indicated that this option would mimic some of the median treatments along Bluemound Road in Brookfield where many commercial accesses have been changed to allow the left-in from Bluemound Road but only allows a right-out of the commercial driveway.

**C** Bob indicated that there is a "pecking order" with regard to their priorities and thoughts on the proposed alternates:

- Their first choice would to have all access remain as it is today.
- The second choice would be to allow the left in to Driveway #10 and restrict the left-out.
- The last and unacceptable choice from their perspective is to move the access point to the south as shown in the medium and high build alternates that proposed a traffic signal or roundabout.

**Q** Tom asked Bob to summarize Kohl's position on roundabouts.

**A** Bob indicated that Kohl's is not in favor of roundabouts; however, they are not the owner of this property and they are not sure if their opinion is important. He indicated that they are specifically against the roundabout drawn at this location due to the parking impacts.

**C** Brian (TOLD) indicated that they find that most retailers they work with are not in favor of the roundabouts at site access points. They often hear that if

roundabouts are implemented that business patrons will go elsewhere.

## Summary of comments made by representatives of TOLD Development:

- C Greg Kost indicated that they have been talking with many of their tenants within the corridor and many of them echo Kohl's concerns. .

- C A representative of TOLD indicated that they had spoken with Sentry Foods and that their representatives have expressed concerns with regard to the proposed roundabouts in the medium and high build alternates. They are not in favor of this aspect of the design.

- C A representative of TOLD reiterated that they are in favor of a two-stage crossing at the Sports Authority driveway. Another acceptable element of the design would be to allow Driveway #10 to remain as a left-in and continue to allow for a potential signal at the Marshal's access which would be a "T" intersection.

- Q Greg questioned whether it was truly cost effective to consider bike lanes or accommodations along the corridor.
- A Tom indicated that the City Council has asked that these provisions remain in the study and receive further consideration.

- C Greg Kost indicated they could support a multi-use path, but hope that this would not be assessed to the property owners who do not feel it is necessary within this corridor.

- C Greg indicated that the alternates have been discussed with Walgreens (a tenant of TOLD Development) and they would like to see a combination of the access alternates presented in the medium and high build alternates. They would like the full circulation on the separate access in addition to allowing the driveway along Golf Road to remain.

- C TOLD will not support any plans that alters the access at Driveway #1 to be a right-out only, they feel the left-out at this location has not been documented as a safety concern and needs to remain for the convenience of the businesses. TOLD will support the low-build with the removal of the pork chop island to restrict the left out at the Sports Authority Driveway and the High Build/Stop Control Option.

If you have any questions regarding the contents of these minutes, please contact Mary Beth Pettit directly at 414.266.9175.

Respectfully Submitted,
**GRAEF**

Mary Beth Pettit, P.E.
Public Involvement Lead

L:\Jobs2009\20090344\Project_Information\Meetings\100419 Property Owner Mtg\100419 Draft TOLD_Development_PropertyOwnerMeeting Minutes.docx

cc: All Attendees

Attachments:

1) Meeting Attendance Sign-In Sheet

# Meeting Attendance Sign-In Sheet

**Attachment 1**

## Meeting Attendance
### Golf Road Traffic Improvement Feasibility Study
### Property Owner Meeting
### April 19, 2010

| | Name | Business Owner | Resident | Address/ Company (if applicable) | Email | Phone | How Did You Hear About This Meeting? |
|---|---|---|---|---|---|---|---|
| 1. | Dan Jashinsky | ☐ | ☐ | Delafield Public Works Committee | djashinsky@wi.rr.com | | ☐ Postcard / Invite ☐ City Website ☐ Other – Please specify: ☐ Local Access TV |
| 2. | Art Baumann | ☐ | ☐ | Delafield Public Works Committee | baum@wi.rr.com | | ☐ Postcard / Invite ☐ City Website ☐ Other – Please specify: ☐ Local Access TV |
| 3. | Tom Hafner | ☐ | ☐ | City of Delafield | thafner@ci.delafield.wi.us | 262-303-4626 | ☐ Postcard / Invite ☐ City Website ☐ Other – Please specify: ☐ Local Access TV |
| 4. | Brian Adamson | ☐ | ☐ | TOLD Development Co | badamson@toldwi.com | 262-797-9000 | ☐ Postcard / Invite ☐ City Website ☐ Other – Please specify: ☐ Local Access TV |
| 5. | Greg Kost | ☐ | ☐ | TOLD Development Co | gkost@toldwi.com | 262-797-9000 | ☐ Postcard / Invite ☐ City Website ☐ Other – Please specify: ☐ Local Access TV |
| 6. | Bob Doren | ☐ | ☐ | Kohl's | Robert.doren@kohls.com | 262-703-2760 | ☐ Postcard / Invite ☐ City Website ☐ Other – Please specify: ☐ Local Access TV |
| 7. | John Bieberitz | ☐ | ☐ | Traffic Analysis & Design | jbieberitz@traffic-ad.com | 262-377-1845 | ☐ Postcard / Invite ☐ City Website ☐ Other – Please specify: ☐ Local Access TV |
| 8. | Mary Beth Pettit | ☐ | ☐ | Graef | marybeth.pettit@graef-usa.com | 414-266-9175 | ☐ Postcard / Invite ☐ City Website ☐ Other – Please specify: ☐ Local Access TV |
| 9. | Shana Mogensen | ☐ | ☐ | Graef | shana.mogensen@graef-usa.com | 414-266-9141 | ☐ Postcard / Invite ☐ City Website ☐ Other – Please specify: ☐ Local Access TV |
| 10. | Pat Hawley | ☐ | ☐ | Delafield Public Works Committee | Pat.hawley@wi.rr.com | 414-405-2725 | ☐ Postcard / Invite ☐ City Website ☐ Other – Please specify: ☐ Local Access TV |
| 11. | | ☐ | ☐ | | | | ☐ Postcard / Invite ☐ City Website ☐ Other – Please specify: ☐ Local Access TV |
| 12. | | ☐ | ☐ | | | | ☐ Postcard / Invite ☐ City Website ☐ Other – Please specify: ☐ Local Access TV |
| 13. | | ☐ | ☐ | | | | ☐ Postcard / Invite ☐ City Website ☐ Other – Please specify: ☐ Local Access TV |

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GRAEF

# Property Owner Meeting #2
# Golf Road Traffic Improvement Feasibility Study

Client: City of Delafield
Meeting Date: April 20, 2010
Meeting Location: City of Delafield, Fish Hatchery Building, 425 Main Street
Meeting Time: 6:00 PM

| | | |
|---|---|---|
| **Attendance:** | Brian Adamson | TOLD Development |
| | Greg Kost | TOLD Development |
| | Jim Voelz | Legacy Asset Management |
| | Dan Jashinsky | Delafield Public Works Committee |
| | John Bieberitz | Traffic Analysis & Design |
| | Hans Weissgerber | Ozauchee, WI |
| | Jack Weissgerber | Hartland, WI |
| | David Lamerand | Sentry Foods |
| | Tom Hafner | City of Delafield, Director of Public Works |
| | Shana Mogensen | GRAEF |
| | Mary Beth Pettit | GRAEF |

A copy of the meeting attendance sign-in sheet is included as Attachment 1 to these minutes.

This meeting was held in accordance with the public involvement plan prepared for the Golf Road Traffic Improvement Feasibility Study. The meeting was held with the property owners of the Golf Road Corridor to provide updates on the study progress since the meeting held on January 20, 2010.

## Discussion Items:

## Action Items:

Shana began the PowerPoint presentation at 6:15. The presentation included the following general topics:

1. Study Overview / Scope
2. Study Goals
3. Study Progress
4. Intersection Site Distance
5. Crash Study
6. Alternatives Analysis
7. Presentation of Low\Medium\High Build Alternates
8. Study Schedule

A copy of the PowerPoint is included as Attachment 2 to these minutes.

## Question & Answer Session:

The meeting was held in a casual format allowing questions to occur during the formal presentation. The City and design team also accepted questions\comments from the attendees following the presentation. These questions are summarized as follows:

*Legend*

**Q** Question
**A** Answer.
**C** Comment.

**Q** Greg Kost asked if there is a separate crash rate used for commercial corridors vs. non commercial corridors of an urban nature.

**A** The statewide average is calculated for urban streets, this average includes corridors that are both commercial and residential in nature. Typically urban corridors consist of more intersections than rural roadways and this is the major differential when looking at crash rates.

**C** Greg Kost indicated that TOLD Development disagrees with the values presented for sight distance presented for the various driveways along the corridor. He stated that a study was prepared for the City at the time of development that documented the situation and it was approved by the City. He does not think it is fair that the new design will be held to a stricter standard that could result in negative impacts to their properties.

GREAF to review previous study prepared by TOLD for the City of Delafield.

**Q** John Bieberitz asked if any of the driveways were specifically failing, in other words experiencing a LOS F?

**A** Shana indicated that the Sports Authority, Kohl's and Marshal's Driveways are experiencing LOS F during peak hours of operation.

**Q** Brian asked for clarification of the peak hour?

**A** Shana indicated the following specifics regarding the operations.

- Sports Authority Access: The left-turn movement exiting the development currently operates unacceptably at LOS F conditions during the weekday evening and Saturday midday peak hours.
- Kohl's West Access: The left-turn movement exiting the development currently operates unacceptably at LOS E conditions during the weekday evening peak hour and LOS F during the Saturday midday peak hour.
- Marshall's Access: During the Saturday midday peak hour, the left-turn movement exiting the development currently operates unacceptably at LOS F conditions.

**Q** An attendee asked if the traffic that turns left today out of the Sports Authority driveway was redistributed to a new location as part of the analysis that proposed to prohibit this movement.

**A** Shana indicated that multiple options have been considered for this redistributed traffic including the backage road, the Marshal's driveway, and u-turn maneuvers within the corridor. All options have resulted in an increase in the LOS along the corridor.

**Q** Hans Weissgerbber asked if the backagre road was built if it would be possible to eliminate the current traffic circle located at the west end of the current cul de sac.

**A** Shana indicated the project team had an understanding that there was a desire to allow this traffic circle to remain. The team will look at this further to assess

GRAEF team to evaluate options that may eliminate existing traffic circle at west end of cul de sac

options.

C Greg indicated that the traffic circle is needed to allow trucks to access their loading docks in the area.

C Jim Voelz, representing Walgreens, indicated that they would like a combination of the two access options shown for their property. They would like to see a combination of the access alternates presented in the medium and high build alternates. They would like the full circulation on the separate access in addition to allowing the driveway along Golf Road to remain.

C Shana indicated that this would likely cause concerns for the study team in that the driveway along Golf Road would in close proximity to the combined access location causing confusion for turning vehicles along westbound Golf Road. There is also a concern that there would be no room for stacking at the Golf Road driveway within the Walgreens site.

C Brian of TOLD Development indicated that they continue to express a concern regarding the design of the truck access to the Kohl's site. He feels the radius is too tight and should be adjusted to remove the "bulb-like" configuration.

C TOLD indicated that they are not in favor of special assessments that may be considered for this road work. Brian continued to express his concern regarding the need for the project; he does not feel that change is warranted.

C Jim Voelz of Walgreens expressed concern regarding the possibility of assessments as well. He indicate that due to the fact that since there is not a crash history or a site distance concern at the primary Walgreens driveway, that they would object to funding a project that is not needed.

Q Greg Kost asked if the study team had begun the research on funding options of the corridor and if so, what is being considered.

A Mary Beth indicated that three primary options will be considered for funding the improvements which include the following:

- Municipal Funding: The City funds the infrastructure improvement project with funds from the annual street program or from a special Golf Road project budget that is currently in the Capital Improvement Program with no designated amount.
- Private\Public Funding: The infrastructure improvements are funded partially by the development using special assessments and partially by the City. Special assessments would likely be determined by looking at traffic generated by the individual sites.
- Federal Aid: The City could apply for federal aid through the Surface Transportation Program –Urban (STP-U) or the Highway Safety Improvement Program (HSIP). Funding through both programs is not considered likely at this time due to a negative a negative balance in their current account due to work on the Genesee Street project and the fact that HSIP projects are typically smaller in scope.

C Hans indicated that he thought that any special assessment of funds to the

owners in this area would be unfair. They all contributed quite a bit to the original TIF that was paid off ahead of schedule. This area is the highest tax base in the city and already pays its fare share of taxes to support an infrastructure improvement.

**C** Hans indicated that he thought that the left-out at the Sports Authority Driveway must remain to keep people in business; however, good alternates should be provided for drivers during the peak travel times.

**C** Brian indicated that the current shopping centers are 100% leased and that it would be a shame if this project had a negative impact on retail in the area.

**Q** Brian asked how input from these meetings is taken into consideration with regards to the decision.

**A** All project meetings are documented with minutes and included in the report for review by the Public Works Committee. Any comments submitted by a meeting attendee will be included in the final report within the public involvement comment section. The project team encourages the attendees to complete comment forms on any and all alternates and submit to the team for consideration.

**C** A statement was made that there are too many alternates to comment on which makes this difficult. Mary Beth indicated that these alternates will remain under consideration through the public information meeting planned for April 27 at the Fish Hatchery Building. The public has yet to see any alternates for the corridor and still deserves the opportunity to comment. Currently there are five alternates for comment, with many similar elements incorporated at specified locations, this should allow for comments to be prepared.

**C** A TOLD representative indicated that they have spent considerable time meeting with tenants and that the number of alternates has caused confusion with regards to allowing comment, but in general they indicate that their tenants are not in favor of changing access.

**Q** An attendee asked if we had looked at how were would stage the construction and how long the construction would take. He feels this should come into play with the city is making a decision on the alternates.

**A** Mary Beth mentioned that very general schedule components have been considered with regards to the fact that a resurfacing will be done much quicker than either of the reconstruction options.

GRAEF to add schedule comments on each alternate to the draft report.

**C** The City indicated that they would like to add comments on schedule to the analysis of the alternatives in the report.

**Q** An attendee asked how many alternates will go to council for consideration.

**A** The PWC will make a recommendation to the city council on one alternate. However, the complete report, including all alternates shown here tonight will be provided as background data for the decision making process.

GRAEF to provide site distance calculations once draft report has been reviewed by City staff.

**C** TOLD requested data on the site distance calculations performed by the GRAEF

team.

**Q** Attendees asked how they stay involved with the process and continue to express concerns on the various alternates.

**A** Meetings are conducted in a public setting, everyone is welcome to continue to attend City meetings and make comments. The next PWC meeting where the study will be discussed will be on May 5, 2010.

If you have any questions regarding the contents of these minutes, please contact Mary Beth Pettit directly at 414.266.9175.

Respectfully Submitted,
**GRAEF**

Mary Beth Pettit, P.E.
Public Involvement Lead

L:\Jobs2009\20090344\Project_Information\Meetings\100420 Property Owner Mtg#2\100420 Draft PropertyOwnerMeeting#2 Minutes.docx

cc: All Attendees

Attachments:
1) Meeting Attendance Sign-In Sheet
2) PowerPoint presentation

# Meeting Attendance Sign-In Sheet

**Attachment 1**

## Meeting Attendance
## Golf Road Traffic Improvement Feasibility Study
## Property Owner Meeting
## April 20, 2010

| | Name | Business Owner | Resident | Address/ Company (if applicable) | Email | Phone | How Did You Hear About This Meeting? |
|---|---|---|---|---|---|---|---|
| 1. | Brian Adamson | ☐ | ☐ | TOLD Development Co | badamson@toldwi.com | 262-797-9000 | ☐ Postcard / Invite ☐ City Website ☐ Other – Please specify: ☐ Local Access TV |
| 2. | Greg Kost | ☐ | ☐ | TOLD Development Co | gkost@toldwi.com | 262-797-4102 | ☐ Postcard / Invite ☐ City Website ☐ Other – Please specify: ☐ Local Access TV |
| 3. | Jim Voelz | ☐ | ☐ | Legacy Asset Management | jvelz@theredmondco.com | 262-613-1681 | ☐ Postcard / Invite ☐ City Website ☐ Other – Please specify: ☐ Local Access TV |
| 4. | Dan Jashinsky | ☐ | ☐ | Public Works Committee | | | ☐ Postcard / Invite ☐ City Website ☐ Other – Please specify: ☐ Local Access TV |
| 5. | John Bieberitz | ☐ | ☐ | TADI | jbieberitz@traffic-ad.com | | ☐ Postcard / Invite ☐ City Website ☐ Other – Please specify: ☐ Local Access TV |
| 6. | Hans Weissgerber | ☐ | ☐ | Okauchee, Wi | hw7r@weissgerbergroup.com | 262-366-0066 | ☐ Postcard / Invite ☐ City Website ☐ Other – Please specify: ☐ Local Access TV |
| 7. | Jack Weissgerber | ☒ | ☐ | 1819 Nagawicua Rd Hartland | jackseas@aol.com | 227-7545 | ☐ Postcard / Invite ☐ City Website ☐ Other – Please specify: ☐ Local Access TV |
| 8. | David Lamerand | ☒ | ☐ | Sentry Foods | | 414-803-4626 | ☐ Postcard / Invite ☐ City Website ☐ Other – Please specify: ☐ Local Access TV |
| 9. | | ☐ | ☐ | | | | ☐ Postcard / Invite ☐ City Website ☐ Other – Please specify: ☐ Local Access TV |
| 10. | | ☐ | ☐ | | | | ☐ Postcard / Invite ☐ City Website ☐ Other – Please specify: ☐ Local Access TV |
| 11. | | ☐ | ☐ | | | | ☐ Postcard / Invite ☐ City Website ☐ Other – Please specify: ☐ Local Access TV |
| 12. | | ☐ | ☐ | | | | ☐ Postcard / Invite ☐ City Website ☐ Other – Please specify: ☐ Local Access TV |
| 13. | | ☐ | ☐ | | | | ☐ Postcard / Invite ☐ City Website ☐ Other – Please specify: ☐ Local Access TV |

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# PowerPoint Presentation

**Attachment 2**

# Golf Road Traffic Improvement Feasibility Study

## STH 83 to Eastern City Limits

Property Owner Meeting #2

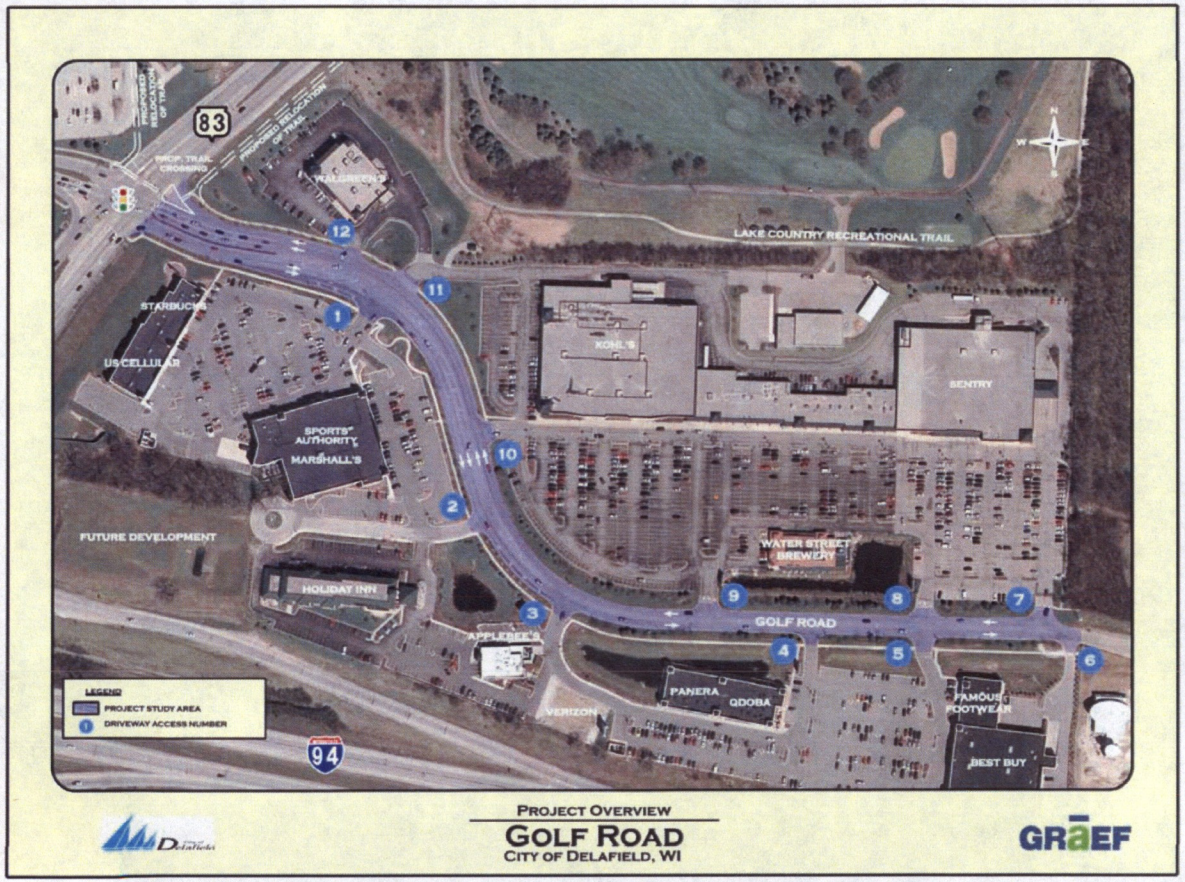
April 20, 2010

Fish Hatchery Building

425 Main Street

Delafield, Wisconsin

# Study Overview




- Heavily Commercialized Corridor
- Poor Site Distance & Operational Concerns
- Pavement Condition is deteriorating
- 2009 Average Daily Traffic 5,900 to 18,200

# Study Goals

- Identify operational & geometric deficiencies along the corridor.
- Study alternates to address concerns
- Create a public involvement plan that includes all stakeholders along the Golf Road corridor:
  - City of Delafield Residents
  - Businesses
  - Business Patrons
  - Property Owners
  - Commuters
- Research funding options for proposed improvement
- Determine a preferred alternate for presentation to the city council

# Study Progress

- Data Collection Complete
  - Traffic counts at all driveways during the weekday evening & Saturday midday peak periods
  - Topographic survey performed to document utilities, right-of-way, and design criteria for the existing condition.
  - STH 83 project improvements
- Existing Safety Concerns Identified
  - 20 crashes over 3 years
  - Crash rates exceed statewide average (257):
    - West Section – 352 crashes per HMVM
    - East Section – 274 crashes per HMVM
  - Sports Authority, Walgreen's & Truck Access do not meet minimum intersection sight distance due to crest vertical curve.

# Intersection Sight Distance at Sports Authority Access ~ 345 feet

# Intersection Sight Distance at Truck Access ~ 355 feet

# Study Progress

- Operational Concerns Identified
  - Delay experienced for left-turn movements:
    - Sports Authority Access
    - Kohl's West Access
    - Marshall's Access
- Public Outreach
  - Conduct public meetings to hear stakeholder's concerns
- Feasibility Evaluation
  - Access Management
  - Improve Geometric Deficiencies
  - Pedestrian & Bicycle Accommodations
  - Intersection Control

# Feasibility Evaluation

- Access Management
  - Promotes safe & efficient traffic operations
  - Limit the number of conflict points
  - Separation of conflict points
- Pedestrian & Bicycle Accommodations
  - Lake County Recreational Trail may attract bicycle users to the commercial area
  - On road & off road facilities were considered
- Intersection Control
  - Accommodate future traffic
  - Reduce delays
  - Improve safety

# Alternates

- Alternates
  - Low Build
  - Medium Build
    - Signal Option
    - Roundabout Option
  - High Build
    - Stop Control Option
    - Signal Option
    - Roundabout Option
- Cost Estimates
  - Developed for the 6 alternates/subalternates & optional improvements.
- Funding
  - Researched municipal, private/public partnership and WisDOT funding opportunities

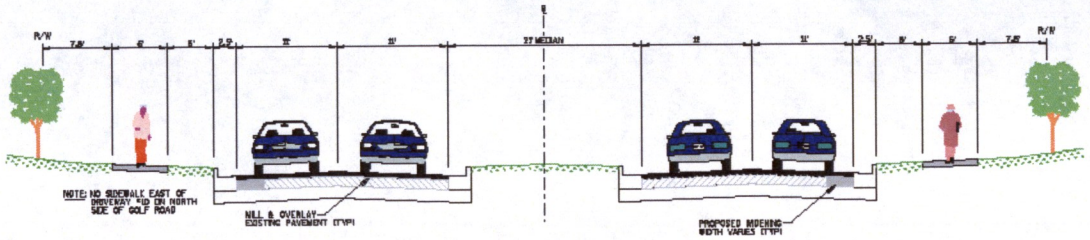
# Alternates

- Alternates
  - Low Build
  - Medium Build
    - Signal Option
    - Roundabout Option
  - High Build
    - Stop Control Option
    - Signal Option
    - Roundabout Option
- Cost Estimates
  - Developed for the 6 alternates/subalternates & optional improvements.
- Funding
  - Researched municipal, private/public partnership and WisDOT funding opportunities

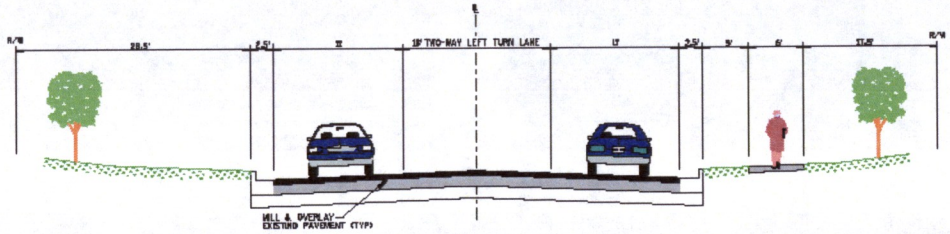
# Low Build Alternate Typical Sections

**DRAFT**

APRIL 20, 2010




TYPICAL PROPOSED 4-LANE SECTION
WITH RAISED MEDIAN
WEST OF DRIVEWAY #2




TYPICAL EXISTING 2-LANE SECTION
WITH TWO-WAY LEFT TURN LANE
EAST OF DRIVEWAY #2

**PROPOSED LOW BUILD TYPICAL SECTIONS**

**GOLF ROAD**
**CITY OF DELAFIELD, WI**

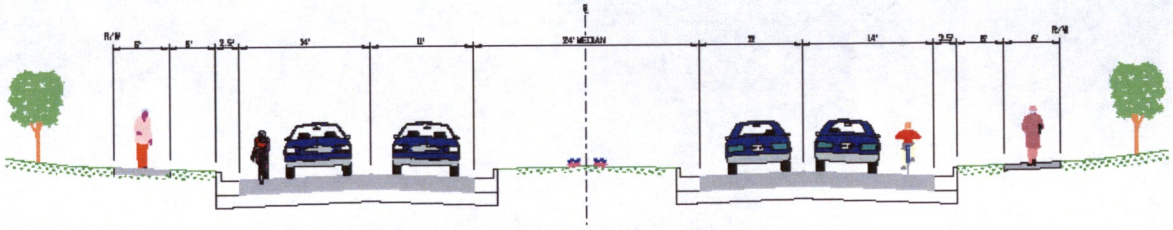
GRAEF

# Low Build Alternate

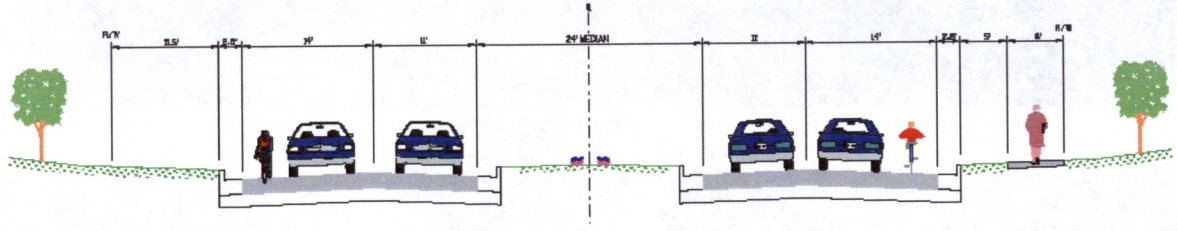
# Medium/High Build Alternate Typical Sections

**DRAFT**

APRIL 20, 2010



TYPICAL PROPOSED 4-LANE SECTION
WITH RAISED MEDIAN AND BIKE ACCOMMODATION
WEST OF DRIVEWAY #10



TYPICAL PROPOSED 4-LANE SECTION
WITH RAISED MEDIAN AND BIKE ACCOMMODATION
EAST OF DRIVEWAY #10

PROPOSED MEDIUM AND HIGH BUILD TYPICAL SECTIONS
GOLF ROAD
CITY OF DELAFIELD, WI

GRAEF

# Medium Build Alternate
# Signal Option

# Medium Build Alternate
# Roundabout Option

# High Build Alternate
# Stop Control Option

# High Build Alternate
# Signal Option

# High Build Alternate Roundabout Option

**DRAFT**

APRIL 20, 2010

HIGH BUILD (ROUNDABOUT OPTION)

GOLF ROAD

CITY OF DELAFIELD, WI

GRAEF

# Project Schedule

| Task | Date |
|---|---|
| Public Meeting #1 | November 17, 2009 |
| Property Owner Meeting #1 | January 20, 2010 |
| Conceptual Plan Development | February/March 2010 |
| Property Owner Meeting #2 | April 20, 2010 |
| Public Meeting #2 | April 27, 2010 |
| Property Owner Meetings | ongoing |
| Recommendation to City Council | May/June 2010 |

# Thank you!

Please sign in at the registration desk and complete a comment form.

We would like to hear your thoughts and concerns regarding the Golf Road Corridor!

# Public Information Meeting #2
# April 27, 2010

# Golf Road Traffic Improvement Feasibility Study

## Public Information Meeting
Minutes and Comment Summary
April 27, 2010

GRAEF

Golf Road Traffic Improvement
Feasibility Study
City of Delafield
Waukesha County

**GOLF ROAD TRAFFIC IMPROVEMENT FEASIBILITY STUDY**
**PUBLIC INFORMATION MEETING**
**MINUTES AND SUMMARY OF COMMENTS RECEIVED**

**MEETING DATE:** April 27, 2010
**TIME:** 5:00 – 7:00 p.m.

**LOCATION:** Fish Hatchery Building
425 Main Street, Delafield, Wisconsin

**PRESENT:**

| Name | Representing |
|---|---|
| Thomas Hafner | City of Delafield |
| Mary Beth Pettit | GRAEF |
| Shana Mogensen | GRAEF |
| Nick Skiffington | GRAEF |
| General Public | Sign-in sheet (see Attachment A) |

**DISCUSSION:**

A Public Information Meeting was held at the Fish Hatchery Building from 5:00 to 7:00 p.m. on April 27, 2010 to discuss potential alternatives for improving traffic along Golf Road within the City of Delafield.

Upon arrival, attendees were presented with a handout (see Attachment B) that included a project summary, project contacts, alternatives being considered and a comment sheet. The project summary outlines the project description, meeting focus topics, and the project schedule. Representatives from GRAEF and the City of Delafield were available for questions.

Large displays showed the alternatives being considered. The displays are included in Attachment C.

The first hour of the meeting was held in an open format in order to allow each individual's questions and concerns to be presented and addressed by project representatives. Project engineers from GRAEF then gave a formal presentation at 6:00pm, including a PowerPoint presentation which focused on the goals of the traffic improvement feasibility study, the alternatives being considered and the current project schedule (see Attachment D).

Phone Messages received prior to the meeting

No phone messages were received prior to the meeting.

General Questions and Comments received during open house session:

***Q*** A resident asked if the roundabout is more expensive then the traffic signal.
***A*** Mary Beth explained to the resident that often the two options are fairly similar when you include all aspects including traffic signal cost, future maintenance, pavement, and right-of-way. For this particular project the two options are very similar in cost.

***C*** A resident of 36 years who has shopped here his entire life thinks that there are many concerns along this corridor, especially at the Sports Authority access point. He specifically visits this

shopping center during off-peak hours to avoid traffic congestion. He is very happy that these concerns are being looked at by the City.

**C** A resident commented that drivers often do not use the TWLTL to turn left into the shopping center. He indicated drivers turn left from the through lane.

**C** Representatives from the City of Delafield Police Department commented that their biggest concern is the Sports Authority Driveway. They indicated that the only saving grace at this location is the short distance between the STH 83 intersection and the Sports Authority driveway, this does not allow vehicles to get up to full speed prior to the conflict point.

**C** Representatives from the City of Delafield Police Department indicated that they are in favor of the backage road concept.

**Q** What is the cut to the roadway profile son the high build alternate?
**A** The cut is estimated at approximately 1.5' at a maximum.

**Q** A resident asked what the truck movement in the back of the shopping center represented.
**A** Mary Beth explained that this truck maneuver is showing that the truck access from the west could be eliminated. If eliminated, trucks would need to enter on the east end of the plaza, circle to the back, and back up to the loading docks as shown on the drawings.

**Q** An attendee asked how cyclist accesses the shopping area from the trail.
**A** Mary Beth indicated that this is probably done informally through the Waukesha County property; however, a permanent connection could be further evaluated by the City.

**C** A resident commented that he was surprised there were so few documented crashes based on how dangerous the corridor is today.

**Q** An attendee asked if a roundabout could be installed at STH 83 & Golf Road.
**A** May Beth indicated that this would be studied by WisDOT at some point in the future with this portion of the STH 83 corridor is planned for a full reconstruction. The current resurfacing project planned for this summer does not require an evaluation of a roundabout due to the fact that it is essentially a resurfacing project; however, a complete reconstruction would require this analysis.

**Q** A resident asked why crashes on the east approach to the STH 83 & Golf Road intersection were not included in the crash analysis for the Golf Road corridor.
**A** This intersection is currently outside the project limits due to the intersection being under state jurisdiction. The study team will further evaluate whether this data should be included in the study.

**C** A resident commented that he is not in favor of bicycle lanes on Golf Road.

**Q** An attendee asked what funding options are available for the project.
**A** Mary Beth indicated that three primary options will be considered for funding the improvements which include the following:

- Municipal Funding: The City funds the infrastructure improvement project with funds from the annual street program or from a special Golf Road project budget that is currently in the Capital Improvement Program with no designated amount.
- Private\Public Funding: The infrastructure improvements are funded partially by the development using special assessments and partially by the City. Special assessments would likely be determined by looking at traffic generated by the individual sites.
- Federal Aid: The City could apply for federal aid through the Surface Transportation Program – Urban (STP-U) or the Highway Safety Improvement Program (HSIP). Funding through both programs is not considered likely at this time due to a negative a negative balance in their current account due to work on the Genesee Street project and the fact that HSIP projects are typically smaller in scope.

***C*** A resident commented that she does not want any more traffic signals along the corridor and is very much in favor of the roundabout options. She also indicated that she did not see the benefit of cutting the hill in the high build alternate.

***Q*** A resident asked how the roundabout worked?
***A*** Mary Beth explained that entering traffic yields to traffic that is in the roundabout.

***C*** Debbi Triplette, Wild Bird's unlimited, has concerns over not allowing a left in at Driveway #10, she feels this is essential to her business. She does not feel the left out is as important. She also expressed concern about the staging of the roadway during construction. She was worried that the City may consider shutting down the entire roadway similar to Oconomowoc.
***A*** Mary Beth commented that the medium and high build alternates are being considered as staged operations that would allow for continued access to businesses throughout the duration of construction. The city will consider special signing indicating the area is open for business during the design phase of the project.

<u>Questions and Comments received during presentation:</u>

***Q*** How does the inclusion of the roundabout in the plan impact the pedestrian circulation along the corridor.
***A*** Pedestrians will use the crosswalks located at the splitter islands and will have refuge within the median.

***Q*** A follow-up question was asked with regards to ADA compliance.
***A*** Shana indicated that all ramps with the roundabout and on the splitter islands are designed to be ADA compliant.

***Q*** It appears that the roundabout alternates shown today restrict the left-out maneuver at Driveway #3 to Applebee's and Panera. How do patrons in this area exit the facility?
***A*** Traffic heading eastbound can enter this shopping area at either Driveway #3 or #4. Traffic returning westbound can then either exit at Driveway #4 or exit at Driveway #3 and head eastbound and make a u-turn in the median at Driveway #9.

**Q** What is the expected construction timeline for each alternate?
**A** Total construction time has been determined for each of the alternates based on quantities for comparison purposes. The PWC will next recommend an alternate to the City Council, and a final decision is likely to be several months away.

**Q** Is the backage road necessary for each of the alternates?
**A** The backage road is not essential for any of the alternates, but is used to further improve traffic flow within the area.

**Q** How would proposed access restrictions to businesses affect the construction timeline and cost?
**A** Any required staging / access issues would be agreed upon between the City/businesses/designer. As access requirements become more restrictive to the contractor's operations, the project cost and timelines will be increased.

**C** An attendee commented that this is very important to the businesses and access and that this should be available for people to comment on for each alternate.

**Q** A follow-up question was asked with regards to the range of construction durations based on the current study.
**A** Mary Beth indicated that construction schedules will vary considerably, but very preliminary estimates shown 2 months for the low-build and up to four-to-five months for the medium and high build alternates.

**Q** Through the study, a crash history and safety concern has been identified at the Sports Authority driveway. Will the City be liable if they do not propose an alternate to fix the concern and something happens in the future?
**A** The design team deferred this question to Tom Hafner of the City, he indicate he would like to check with the City attorney, but his first thought would be that the level of concern that has been identified is not significant enough to put the City at risk.

**Q** Are the drawings available to the public?
**A** The City will post the drawings on the website on Wednesday morning, April 28th.

***Straw Pole:*** Shana asked for a show of hands of individuals in attendance who feel there is a safety concern at Driveway #1 (Sports Authority) -- Approximately 9 of 20 attendees indicated they thought this driveway has an existing safety concerns.

Written Comments received following the meeting

All written comments received following the meeting are included in Attachment E.

Summary

The meeting ended at 7:00 p.m.

Attachments

A. Public Information Meeting Sign-In Sheet
B. Public Information Meeting Handout
C. Public Information Meeting Displays
D. Public Information Meeting PowerPoint
E. Public Comment Forms

# Public Information Meeting
# Sign-in Sheet

**Attachment A**

# Meeting Attendance
## Golf Road Traffic Improvement Feasibility Study
## Public Information Meeting #2
## April 27, 2010

| | Name | Business Owner | Resident | Address/ Company (if applicable) | Email | Phone | How Did You Hear About This Meeting? |
|---|---|---|---|---|---|---|---|
| 1. | Darrell Pope | ☐ | ☑ | 1236 Mill Road | darrellpope@mac.com | | ☐ Postcard / Invite ☐ City Website ☒ Other – Please specify: ☐ Local Access TV |
| 2. | WARREN TARDY | ☐ | ☑ | 1143 WOODSIDE ST. | | 262-367-4471 | ☐ Postcard / Invite ☐ City Website ☐ Other – Please specify: LOCAL PAPER ☐ Local Access TV |
| 3. | Beth Leonard | ☐ | ☐ | 2313 Nagawicka Rd | bleonard@ci.delafield.wi.us | 367 2434 | ☐ Postcard / Invite ☒ City Website ☐ Other – Please specify: ☐ Local Access TV |
| 4. | Kent Attwell | ☐ | ☑ | 2916 Ridley Rd | Kent.Attwell@Sabic-IP.com | 367-1992 | ☐ Postcard / Invite ☐ City Website ☐ Other – Please specify: ☒ Local Access TV |
| 5. | RYAN JACOBS | ☒ | ☐ | 115 MAIN ST | | 646-6240 | ☐ Postcard / Invite ☒ City Website ☐ Other – Please specify: ☐ Local Access TV |
| 6. | LANDON NYREN | ☒ | ☐ | 45 MAIN ST (PD) | LNYREN@CI.DELAFIELD.WI.US | 646-6240 | ☐ Postcard / Invite ☒ City Website ☐ Other – Please specify: ☐ Local Access TV |
| 7. | DAN JASHINSKY | ☐ | ☐ | Delafield Public Works Comm. | | | ☐ Postcard / Invite ☐ City Website ☐ Other – Please specify: ☐ Local Access TV |
| 8. | Joe Deklotz | ☐ | ☒ | 601 Genesee St | JoeDeklotz@Gmail.Com | 370-1302 | ☐ Postcard / Invite ☐ City Website ☒ Other – Please specify: E-mail ☐ Local Access TV |
| 9. | Lynn Morrison | ☐ | ☒ | 2366 Lakeview Ct | lmorrison@wi.rr.com | 414-588-3308 | ☐ Postcard / Invite ☒ City Website ☐ Other – Please specify: ☐ Local Access TV |
| 10. | Tom & Gail Backhaus | ☐ | ☐ | 3255 Hoy Rd. | Manager2825@SVHarbor.com | 646-9483 | ☐ Postcard / Invite ☒ City Website ☒ Other – Please specify: E-mail ☐ Local Access TV |
| 11. | SALVATORE (TED) FERRARA | ☐ | ☐ | 1005 SUNSET DR DELAFIELD | tedpol@wi.rr.com | 646-5778 | ☐ Postcard / Invite ☐ City Website ☐ Other – Please specify: ☐ Local Access TV |
| 12. | DAN Wiley | ☐ | ☒ | 443 Lillian Ct. Delafield | mdwileyf@wi.rr.com | 646-2529 | ☐ Postcard / Invite ☐ City Website ☒ Other – Please specify: E-mail ☐ Local Access TV |
| 13. | PAUL BURG | ☐ | ☒ | 831 Division St. | Paul_d_burg@yahoo.com | 442-3116 | ☐ Postcard / Invite ☐ City Website ☒ Other – Please specify: facebook ☐ Local Access TV |

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# Meeting Attendance
## Golf Road Traffic Improvement Feasibility Study
## Public Information Meeting #2
## April 27, 2010

| | Name | Business Owner | Resident | Address/ Company (if applicable) | Email | Phone | How Did You Hear About This Meeting? |
|---|---|---|---|---|---|---|---|
| 1. | Sue Reiner | ☒ | ☐ | GNC 3219 Golf Road | | | ☒ Postcard / Invite ☐ City Website ☐ Other – Please specify: ☐ Local Access TV |
| 2. | Arthur Cunningham | ☐ | ☒ | 1320 Mill Rd. | howso@wi.rr.com | | ☐ Postcard / Invite ☐ City Website ☒ Other – Please specify: Neighbor ☐ Local Access TV |
| 3. | Fran Bills | ☐ | ☒ | 1522 Milwaukee Rd Delafield | sandh.llcrane@hotmail.com | | ☐ Postcard / Invite ☐ City Website ☐ Other – Please specify: LC Reporter ☐ Local Access TV |
| 4. | Gerry MacDougall | ☐ | ☒ | 300 Fieldstone Road 53018 | | | ☐ Postcard / Invite ☒ City Website ☐ Other – Please specify: ☐ Local Access TV |
| 5. | JEFF KRICKHAHN | ☐ | ☒ | 4506 VETTELSON RD. | | | ☐ Postcard / Invite ☐ City Website ☐ Other – Please specify: ☐ Local Access TV |
| 6. | Michelle Harrington | ☑ | ☐ | 3255 Golf Rd Sentry | mharrington3255@yahoo.com | | ☐ Postcard / Invite ☐ City Website ☐ Other – Please specify: ☐ Local Access TV |
| 7. | GREG SCHILZ | ☒ | ☐ | 3255 GOLF RD SENTRY FOODS | GREGSCHILZ@YAHOO.COM | 262-646-9483 | ☐ Postcard / Invite ☐ City Website ☒ Other – Please specify: LANDLORD NOTICE ☐ Local Access TV |
| 8. | DEBBI TRIPLETT | ☒ | ☐ | 3173 GOLF ROAD WILD BIRDS UNLIMITED | wbudelafield@hotmail.com | | ☐ Postcard / Invite ☐ City Website ☐ Other – Please specify: ☐ Local Access TV |
| 9. | GREG KOST | ☒ | ☐ | [redacted] 20800 Swenson DR. Waukesha, WI 53186 | gkostetoldwi.com | 262 797 4102 | ☐ Postcard / Invite ☐ City Website ☐ Other – Please specify: ☐ Local Access TV |
| 10. | GERRY HOLTON | ☐ | ☒ | 485 LILLIAN CT. DELAFIELD, WI 53018 | | 262-646-3931 | ☐ Postcard / Invite ☒ City Website ☐ Other – Please specify: ☐ Local Access TV |
| 11. | LYNDA HOLTON | ☐ | ☒ | 485 LILLIAN CT. DELAFIELD, WI 53018 | | 262-646-3931 | ☐ Postcard / Invite ☒ City Website ☐ Other – Please specify: ☐ Local Access TV |
| 12. | Jim Voelz | ☒ | ☐ | Redmond | | | ☐ Postcard / Invite ☐ City Website ☐ Other – Please specify: ☐ Local Access TV |
| 13. | | ☐ | ☐ | | | | ☐ Postcard / Invite ☐ City Website ☐ Other – Please specify: ☐ Local Access TV |

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# Public Information Meeting Handout

**Attachment *B***

# Project Report

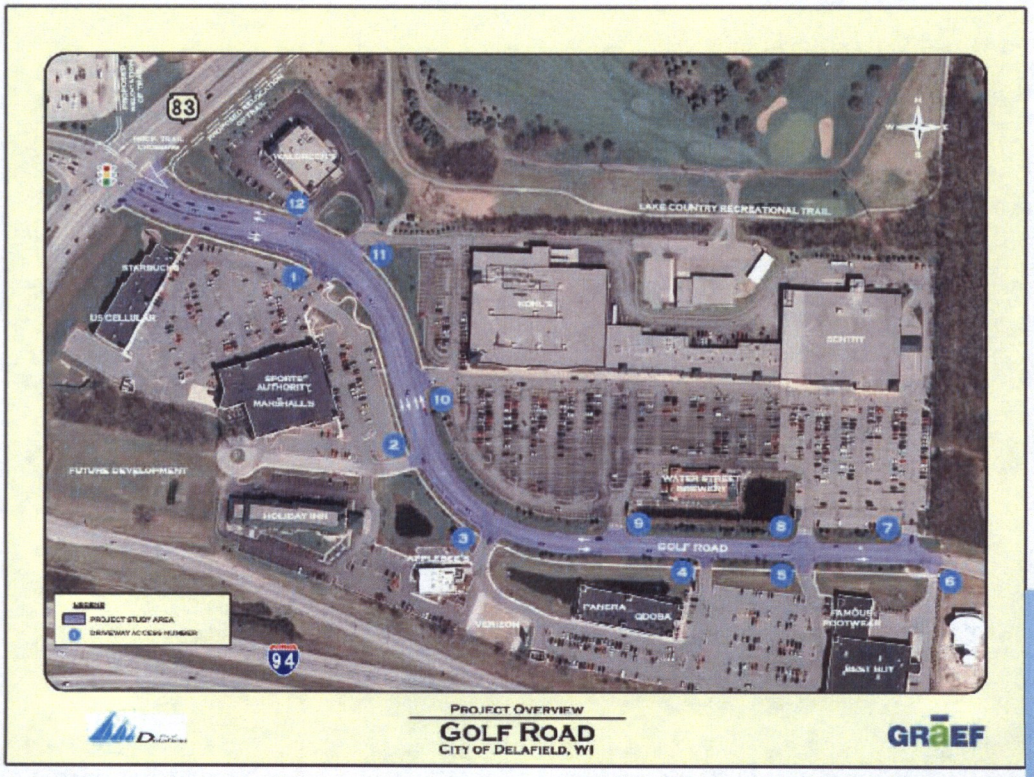
April 27, 2010

## Golf Road Traffic Improvement Feasibility Study

### Project Description

The City of Delafield plans to resurface or reconstruct the 0.45 mile section of Golf Road between STH 83 and the eastern city limits due to deteriorating pavement condition. The study area includes a heavily commercialized locale consisting of numerous large-box retailers, a grocery store, a pharmacy, a bank, several restaurants, a hotel and various specialty service providers. Golf Road provides four travel lanes on the west section of the project (near STH 83) and narrows to a two-lane roadway with a two-way left-turn lane (TWLTL) on the east portion of the project. East of STH 83, Golf Road currently carries 18,200 vehicles per day with a posted speed limit of 30 miles per hour.

The purpose of this feasibility study is to evaluate options to resurface or reconstruct Golf Road. The study is balancing the specific needs of the corridor including: traffic capacity and operations, pedestrian and vehicle safety, truck turning, bicycle accommodations and access. The project also evaluates the construction cost estimates associated with each alternate and investigates opportunities for funding.




Visit the City's website for more information

www.cityofdelafield.com

All displays shown at this meeting will be available on the website.

## Meeting Focus Topics:

- **Existing Safety & Traffic Operational Concerns:** The project team has received comments regarding the safety and intersection sight distance for specific locations. The Golf Road crash rate exceeds the state wide average. Currently there are operational deficiencies for left-turn movements exiting at driveways 1, 2, 10 and 12 during the peak hours.
- **Feasibility Consideration:** The following elements were considered throughout the feasibility phase of the study:
  - Access Management
  - Improve Geometric Deficiencies
  - Pedestrian & Bicycle Accommodations
  - Intersection Control
- **Alternatives:** The following alternatives have been identified for further evaluation:

  **Low Build** – resurfacing with minor widening and access restrictions at driveways 1 and 12

  **Medium Build** - reconstruction to provide a raised median and bicycle accommodations
  - Access restrictions at driveways 1, 3, 4 and 12.
  - Traffic Control Options – Traffic Signal & Roundabout

  **High Build** – full reconstruction including lowering the crest vertical curve to improve intersection sight distance and providing a raised median and bicycle accommodations
  - Stop Control Option – access restrictions at driveways 4, 10 (optional) and 12
  - Traffic Signal Option – access restrictions at driveways 1, 3, 4, 10 and 12
  - Roundabout Option – access restrictions at driveways 1, 3, 4, 10 and 12

  *Optional Improvements include a backage road, bicycle lanes and a multi-use path on the south side of Golf Road.*
- **Construction Cost Estimates:** Preliminary cost estimates have been developed for the alternates/subalternates and optional improvements.
- **Funding:** The team is researching municipal, private/public partnership and WisDOT programs to assist with funding the improvement project.

## Contact information:

**Golf Road Traffic Improvement Feasibility Study**


Tom Hafner
*Director of Public Works*
*City of Delafield*
111 Main Street
Delafield, WI 53018
Phone: 262.646.6225
Email: thafner@ci.delafield.wi.us

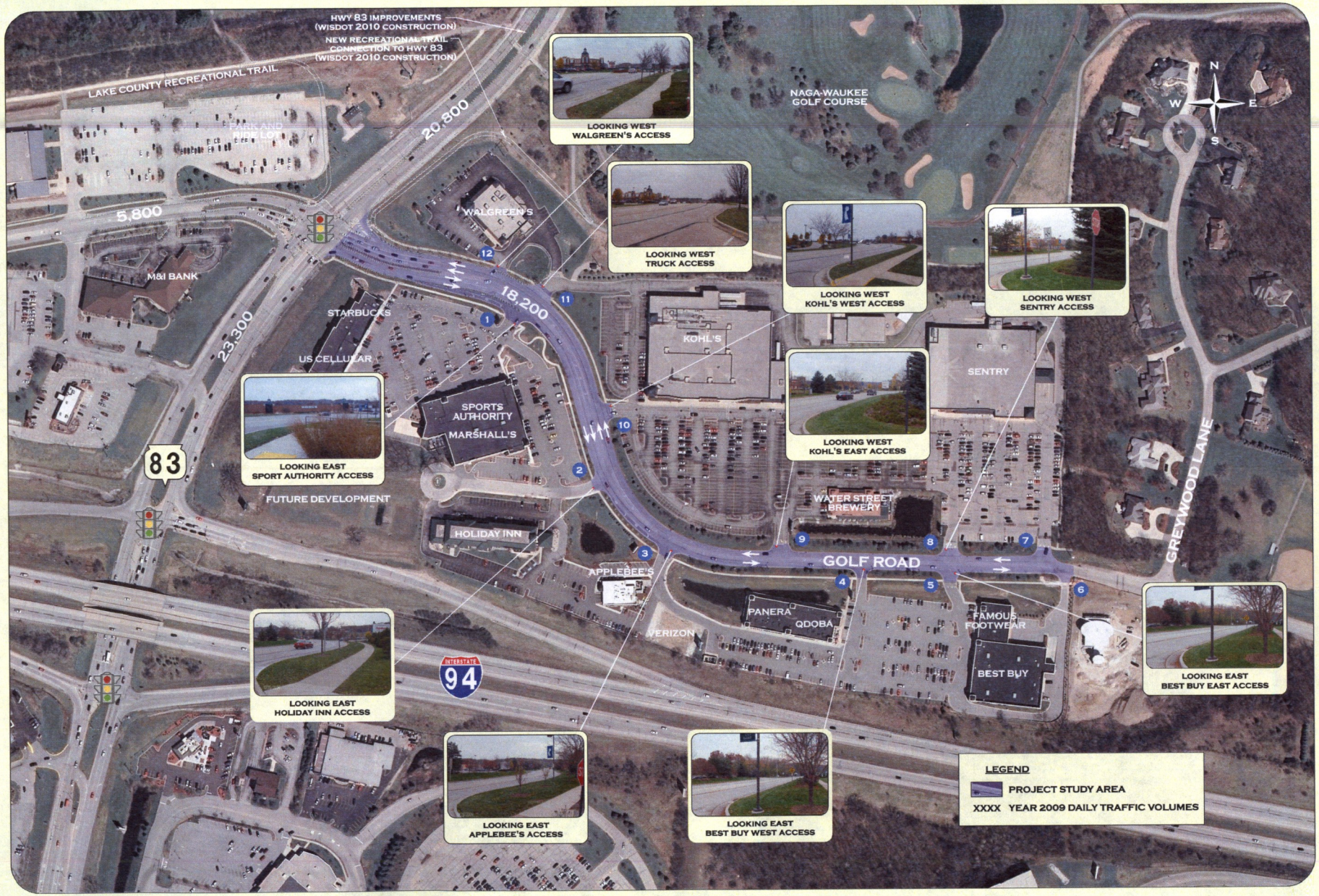
Shana Mogensen, P.E.
*Project Manager*
*GRAEF*
125 South 84th Street, Suite 401
Milwaukee, WI 53214-1470
Phone: 414.266.9141
E-mail:
shana.mogensen@graef-usa.com


## Next Phase

Questions and comments presented today will be evaluated and considered during this alternatives analysis portion of the project. GRAEF will be working with the City to identify the preferred alternate. Presentation of the preferred alternate to the Common Council is anticipated to occur in June/July of 2010.

# Public Information Meeting Displays

Attachment C



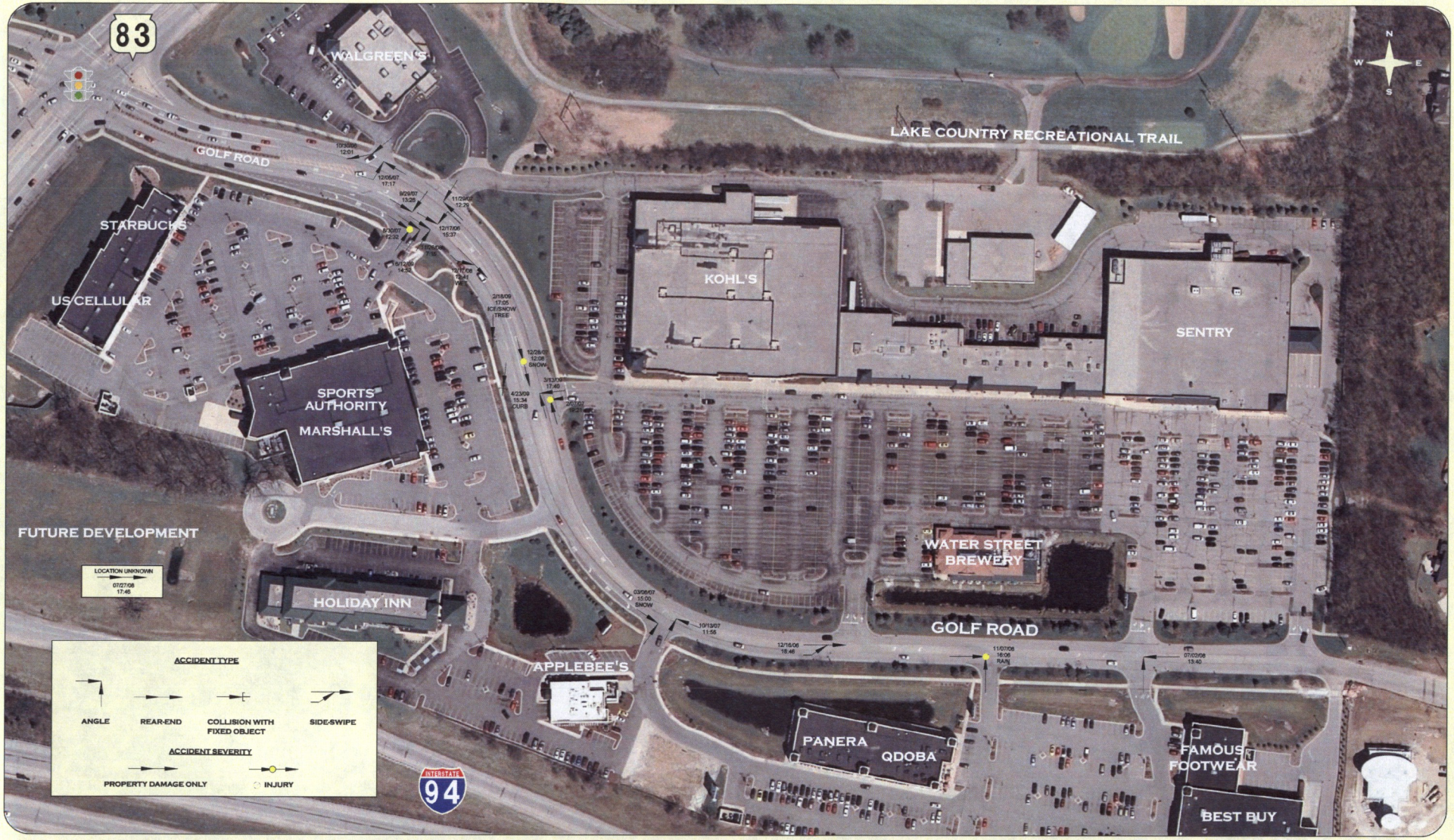

City of Delafield

## PROJECT OVERVIEW

# GOLF ROAD

CITY OF DELAFIELD, WI

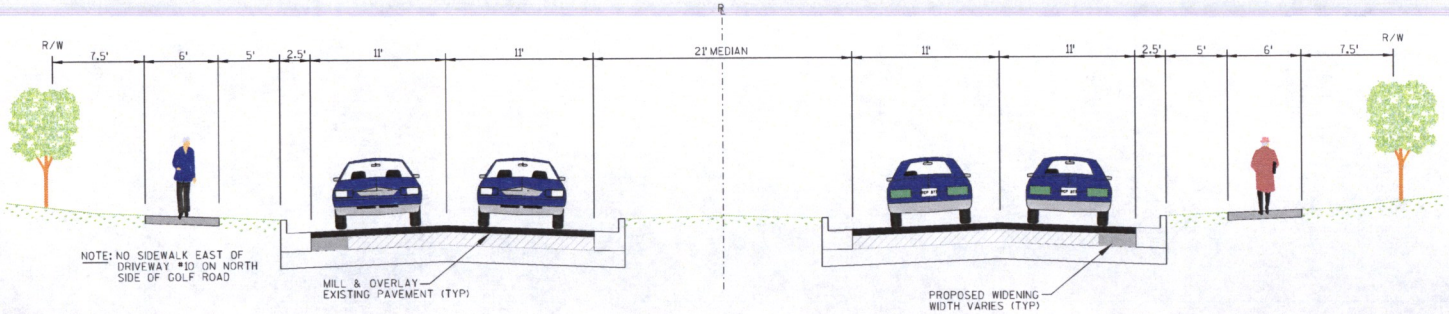
GRAEF



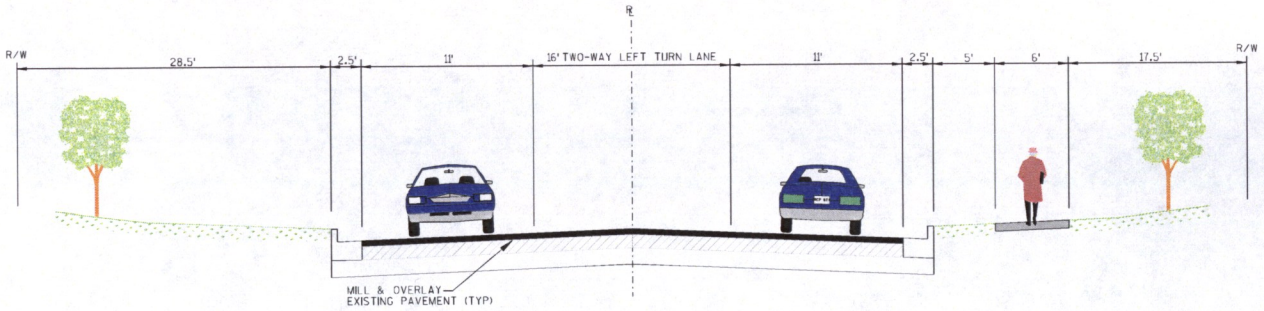

# CRASH DIAGRAM
## OCTOBER 2006 - OCTOBER 2009
# GOLF ROAD
## CITY OF DELAFIELD, WI

City of Delafield

GRAEF




TYPICAL PROPOSED 4-LANE SECTION
WITH RAISED MEDIAN
WEST OF DRIVEWAY #2




TYPICAL EXISTING 2-LANE SECTION
WITH TWO-WAY LEFT TURN LANE
EAST OF DRIVEWAY #2

**PROPOSED LOW BUILD TYPICAL SECTIONS**

# GOLF ROAD

**CITY OF DELAFIELD, WI**

City of Delafield

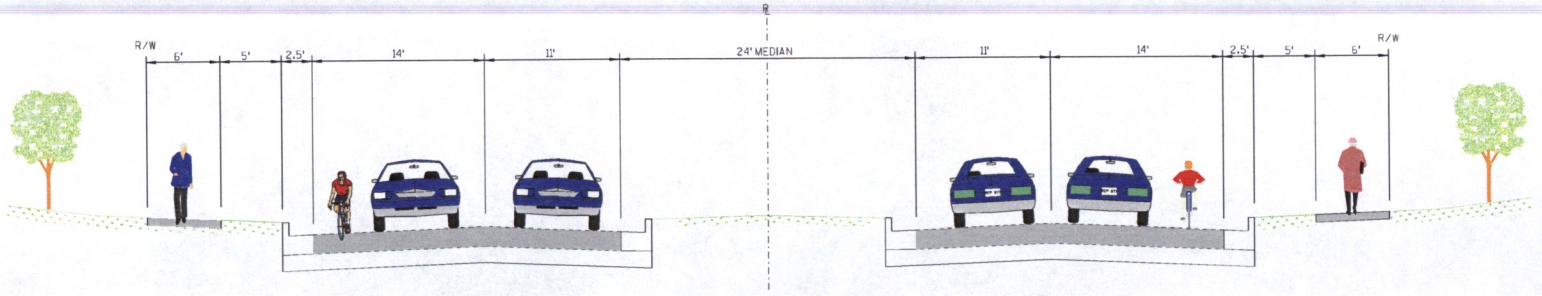
GRAEF

LOW BUILD

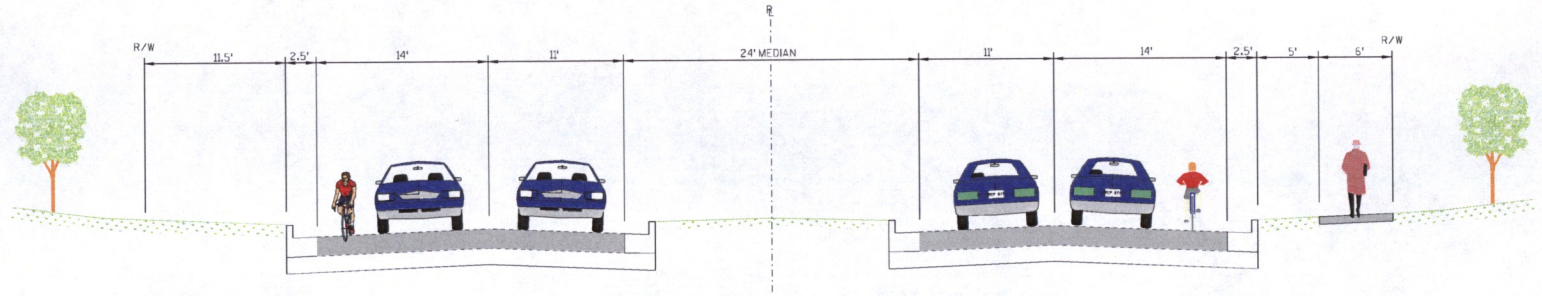
# GOLF ROAD

CITY OF DELAFIELD, WI

GRAEF




TYPICAL PROPOSED 4-LANE SECTION
WITH RAISED MEDIAN AND BIKE ACCOMMODATION
WEST OF DRIVEWAY #10




TYPICAL PROPOSED 4-LANE SECTION
WITH RAISED MEDIAN AND BIKE ACCOMMODATION
EAST OF DRIVEWAY #10

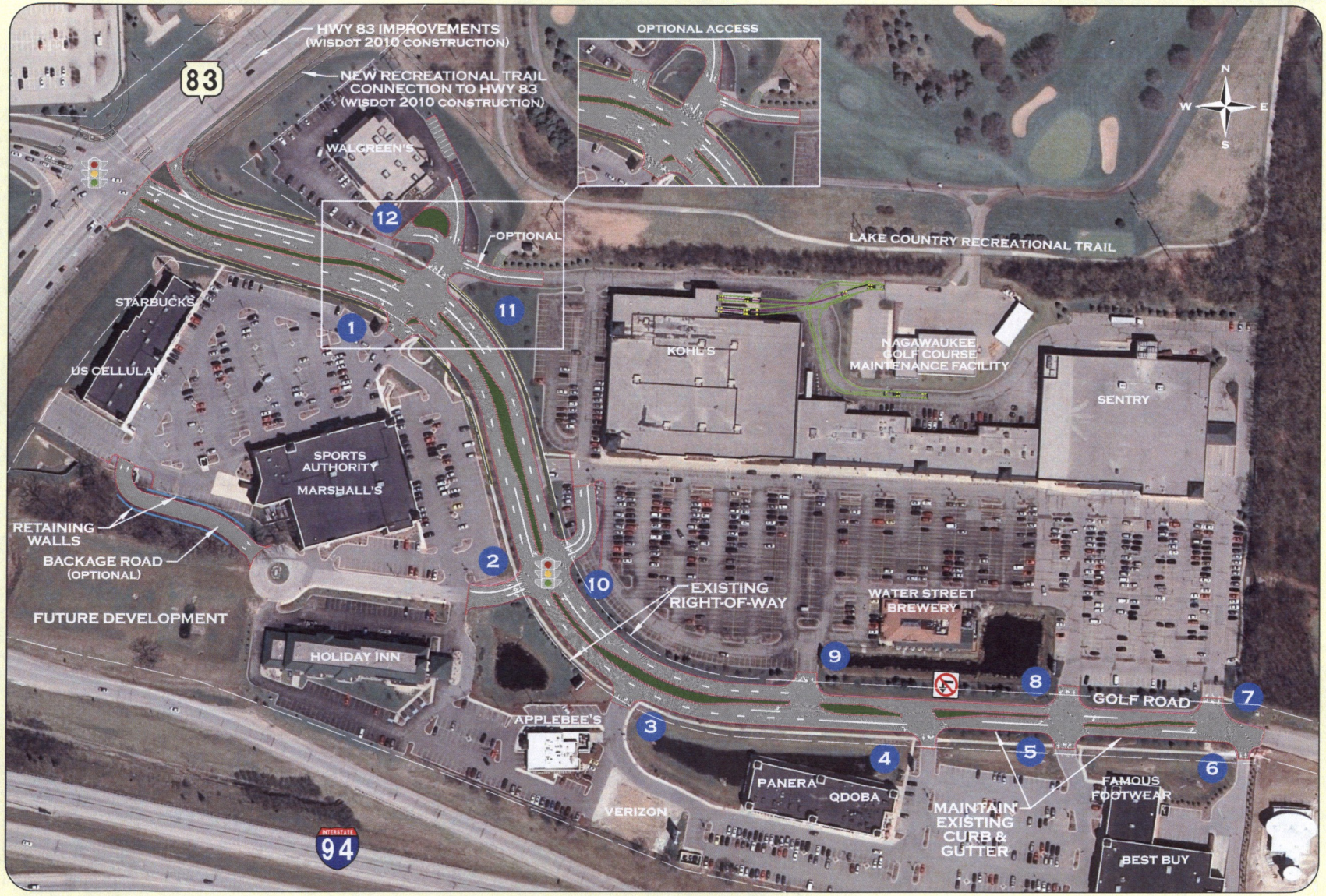
**PROPOSED MEDIUM AND HIGH BUILD TYPICAL SECTIONS**

# GOLF ROAD

**CITY OF DELAFIELD, WI**

City of Delafield

GRAEF



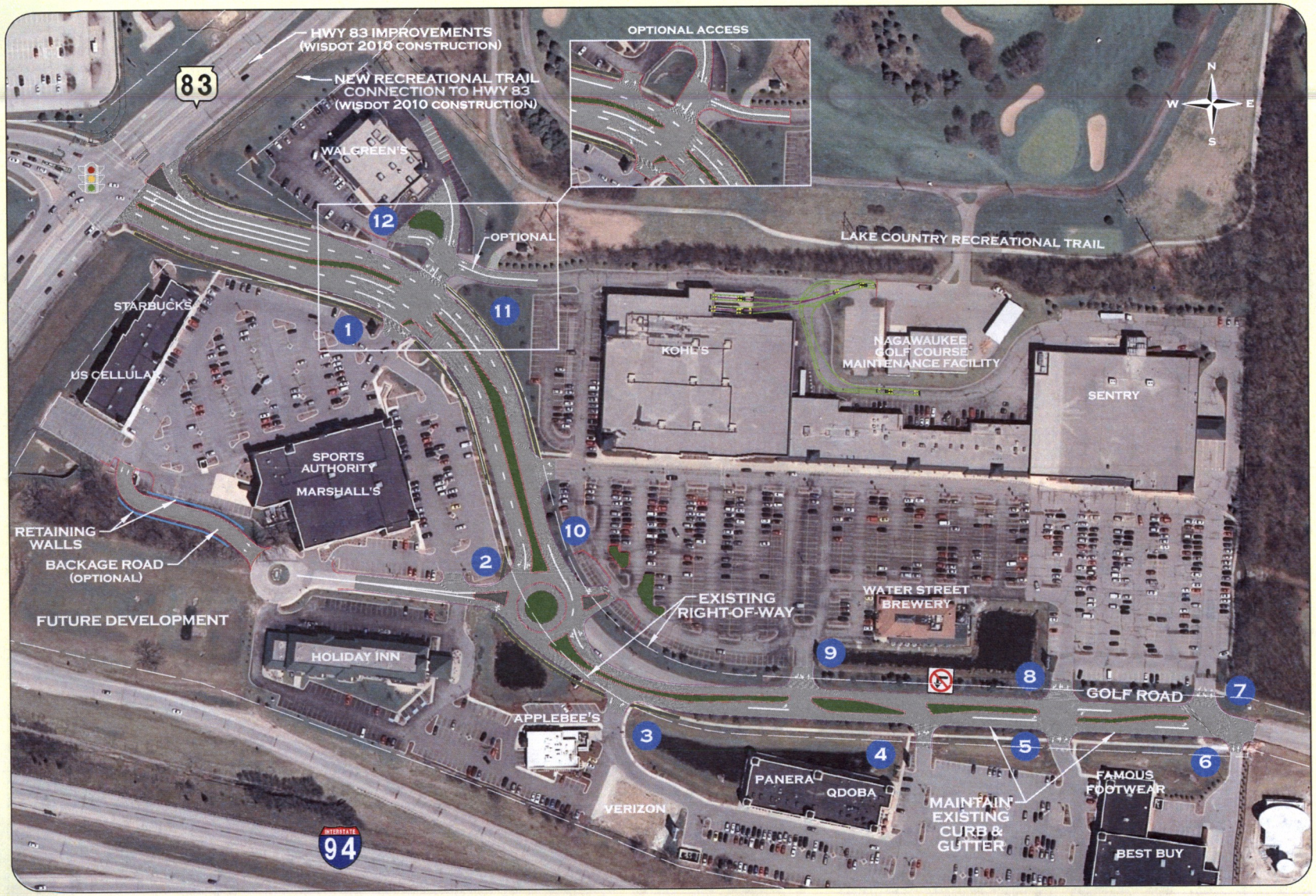

MEDIUM BUILD (SIGNAL OPTION)

# GOLF ROAD

CITY OF DELAFIELD, WI

City of Delafield

GRAEF



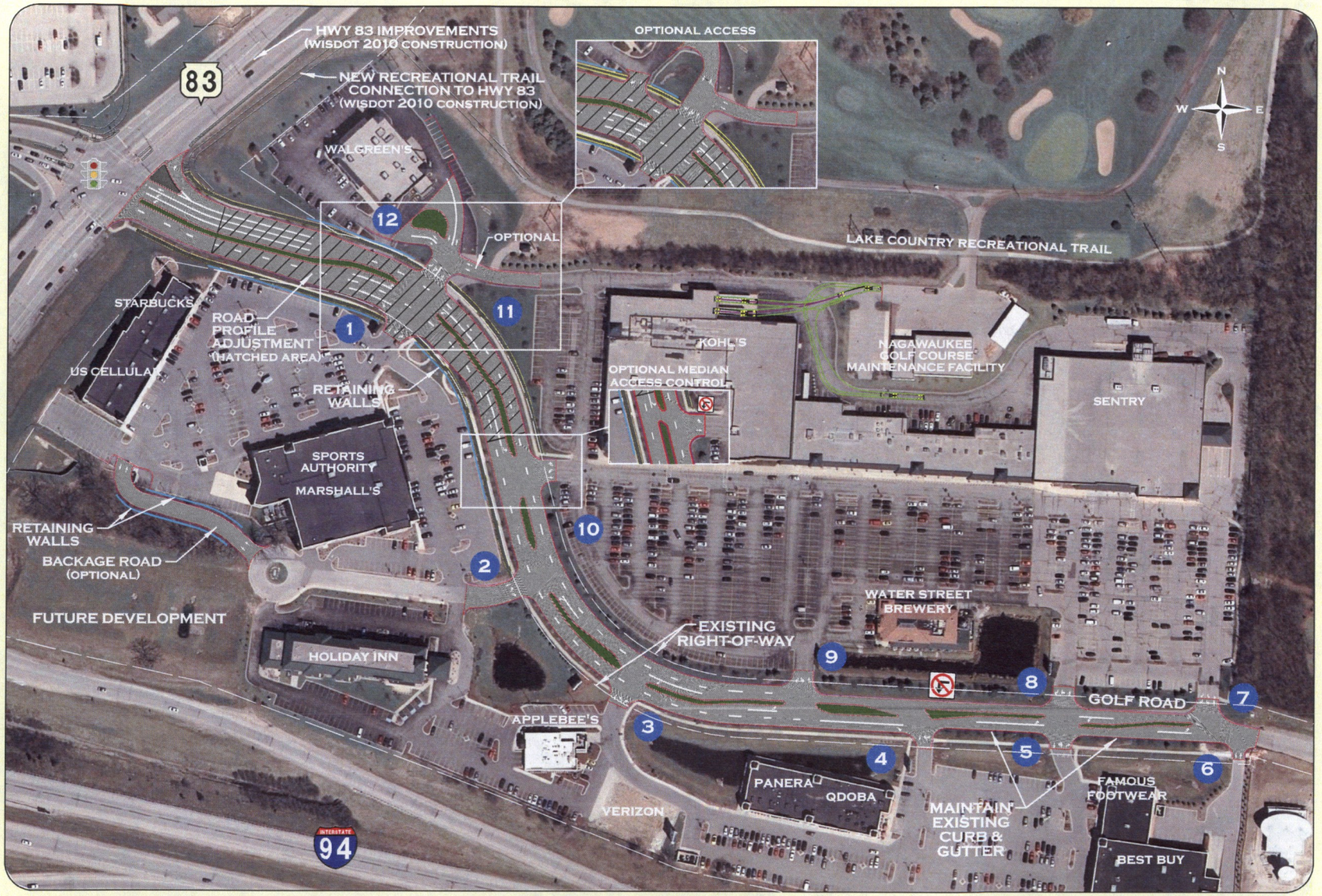

**MEDIUM BUILD (ROUNDABOUT OPTION)**

# GOLF ROAD

CITY OF DELAFIELD, WI

City of Delafield

GRAEF




HIGH BUILD (STOP CONTROL OPTION)

# GOLF ROAD

CITY OF DELAFIELD, WI

City of Delafield

GRAEF

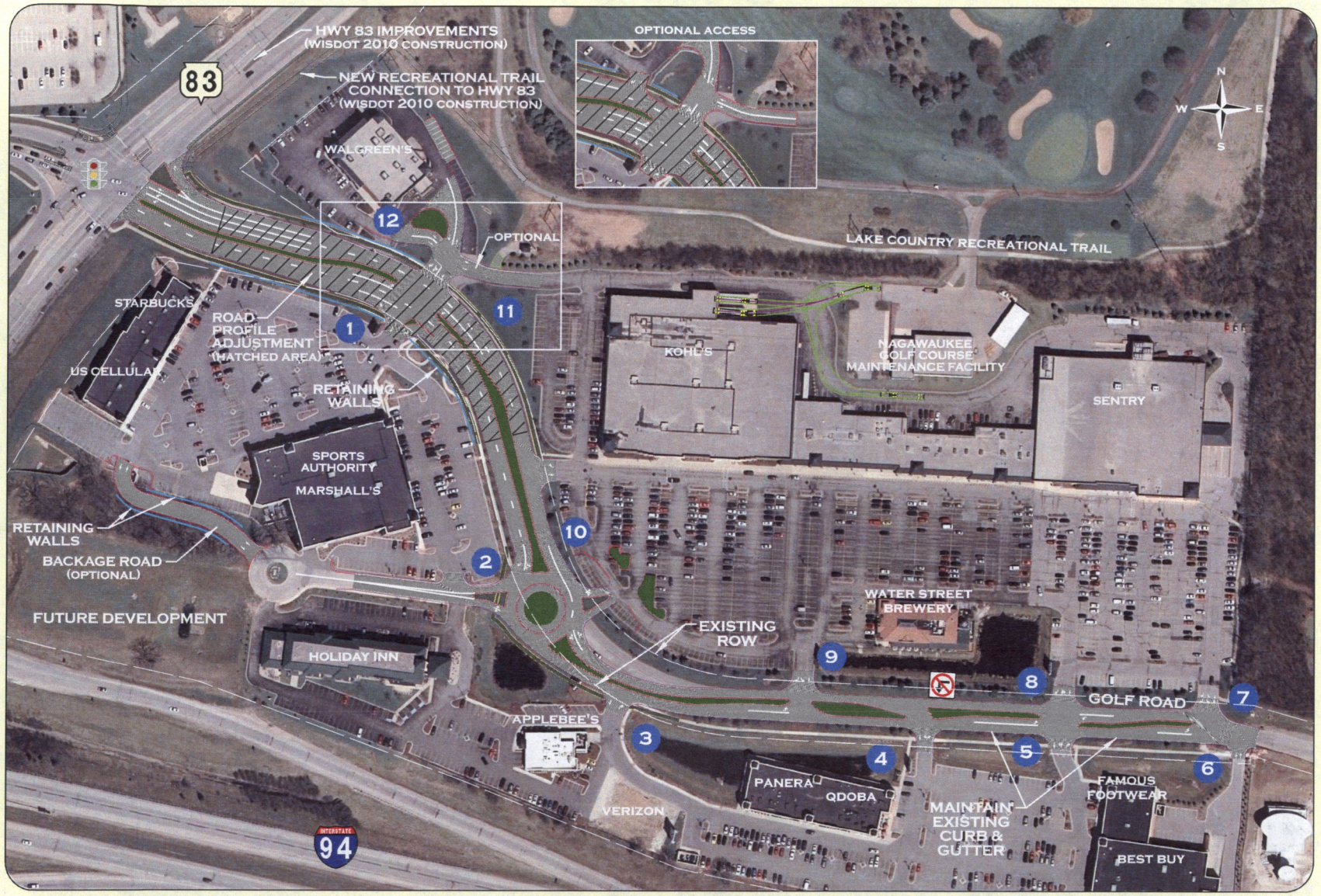
HIGH BUILD (SIGNAL OPTION)

# GOLF ROAD

CITY OF DELAFIELD, WI

City of Delafield

GRAEF




HIGH BUILD (ROUNDABOUT OPTION)

# GOLF ROAD

CITY OF DELAFIELD, WI

City of Delafield

GRAEF

# Public Information Meeting
# PowerPoint

**Attachment D**

# Golf Road Traffic Improvement Feasibility Study

## STH 83 to Eastern City Limits

Public Information Meeting #2

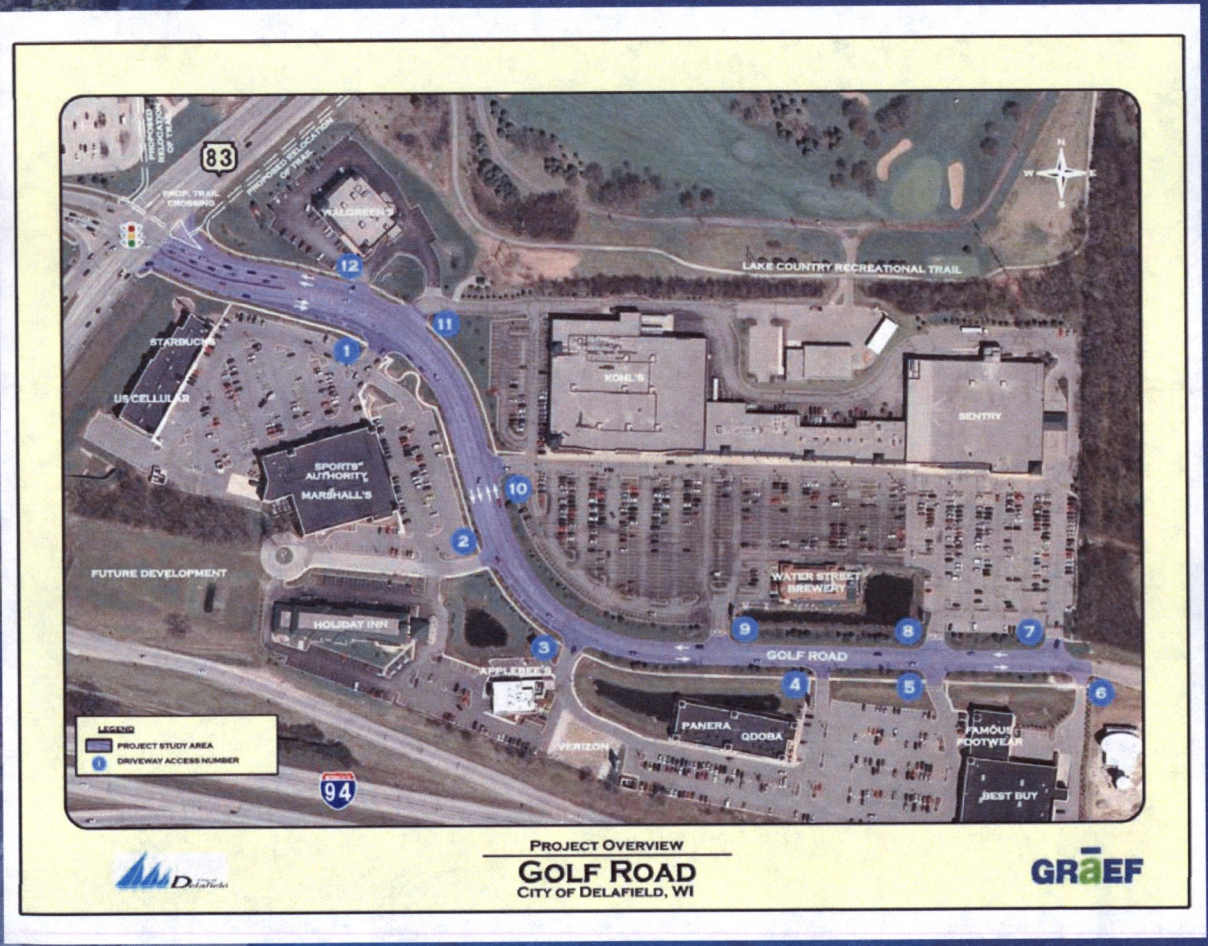
April 27, 2010

Fish Hatchery Building

425 Main Street

Delafield, Wisconsin

# Study Overview




- Heavily Commercialized Corridor
- Poor Site Distance & Operational Concerns
- Pavement Condition is deteriorating
- 2009 Average Daily Traffic 5,900 to 18,200

# Study Goals

- Identify operational & geometric deficiencies along the corridor.
- Study alternates to address concerns
- Create a public involvement plan that includes all stakeholders along the Golf Road corridor:
  - City of Delafield Residents
  - Businesses
  - Business Patrons
  - Property Owners
  - Commuters
- Research funding options for proposed improvement
- Determine a preferred alternate for presentation to the city council

# Study Progress

- Data Collection Complete
  - Traffic counts at all driveways during the weekday evening & Saturday midday peak periods
  - Topographic survey performed to document utilities, right-of-way, and design criteria for the existing condition.
  - STH 83 project improvements
- Existing Safety Concerns Identified
  - 20 crashes over 3 years
  - Crash rates exceed statewide average (257):
    - West Section – 352 crashes per HMVM
    - East Section – 274 crashes per HMVM
  - Intersection Sight Distance to the west
    - Truck Access (#11) – less than minimum
    - Sports Authority Access (#1) – less than desirable
    - Walgreen's (#12) – less than desirable / obstructed by traffic queues at STH 83

# Intersection Sight Distance

## Truck Access (#11) ~ 100 feet less than minimum

# Intersection Sight Distance

## Sports Authority (#1) – less than desirable

# Study Progress

- Existing Operational Concerns Identified
  - Delay experienced for left-turn movements:
    - Walgreen's Access (#12)
    - Sports Authority Access (#1)
    - Kohl's West Access (#10)
    - Marshall's Access (#2)
- Public Outreach
  - Conduct public meetings to hear stakeholder's concerns
- Feasibility Evaluation
  - Access Management
  - Improve Geometric Deficiencies
  - Pedestrian & Bicycle Accommodations
  - Intersection Control

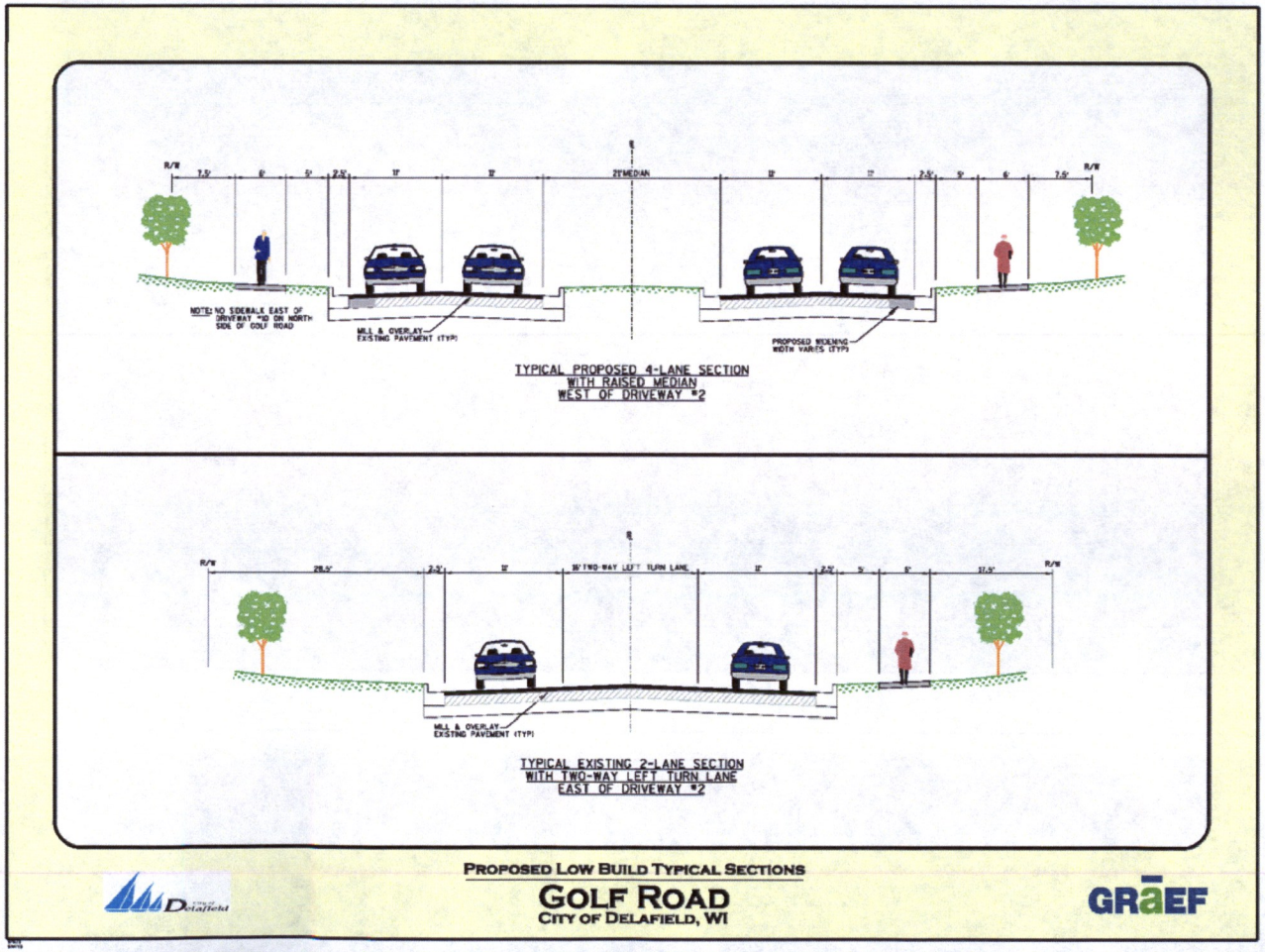
# Feasibility Evaluation

- Access Management
  - Promotes safe & efficient traffic operations
  - Limit the number of conflict points
  - Separation of conflict points
- Pedestrian & Bicycle Accommodations
  - Lake County Recreational Trail may attract bicycle users to the commercial area
  - On road & off road facilities were considered
- Intersection Control
  - Accommodate future traffic
  - Reduce delays
  - Improve safety

# Alternates

- **Low Build**
  Resurfacing with minor widening
- **Medium Build**
  Reconstruction including widening to provide a 24-foot raised median & bicycle accommodations
  - Traffic Signal Option
  - Roundabout Option
- **High Build**
  Major reconstruction to adjust the crest vertical curve and widen to provide a 24-foot raised median & bicycle accommodations
  - Stop Control Option
  - Traffic Signal Option
  - Roundabout Option

# Low Build Alternate Typical Sections



# Low Build Alternate

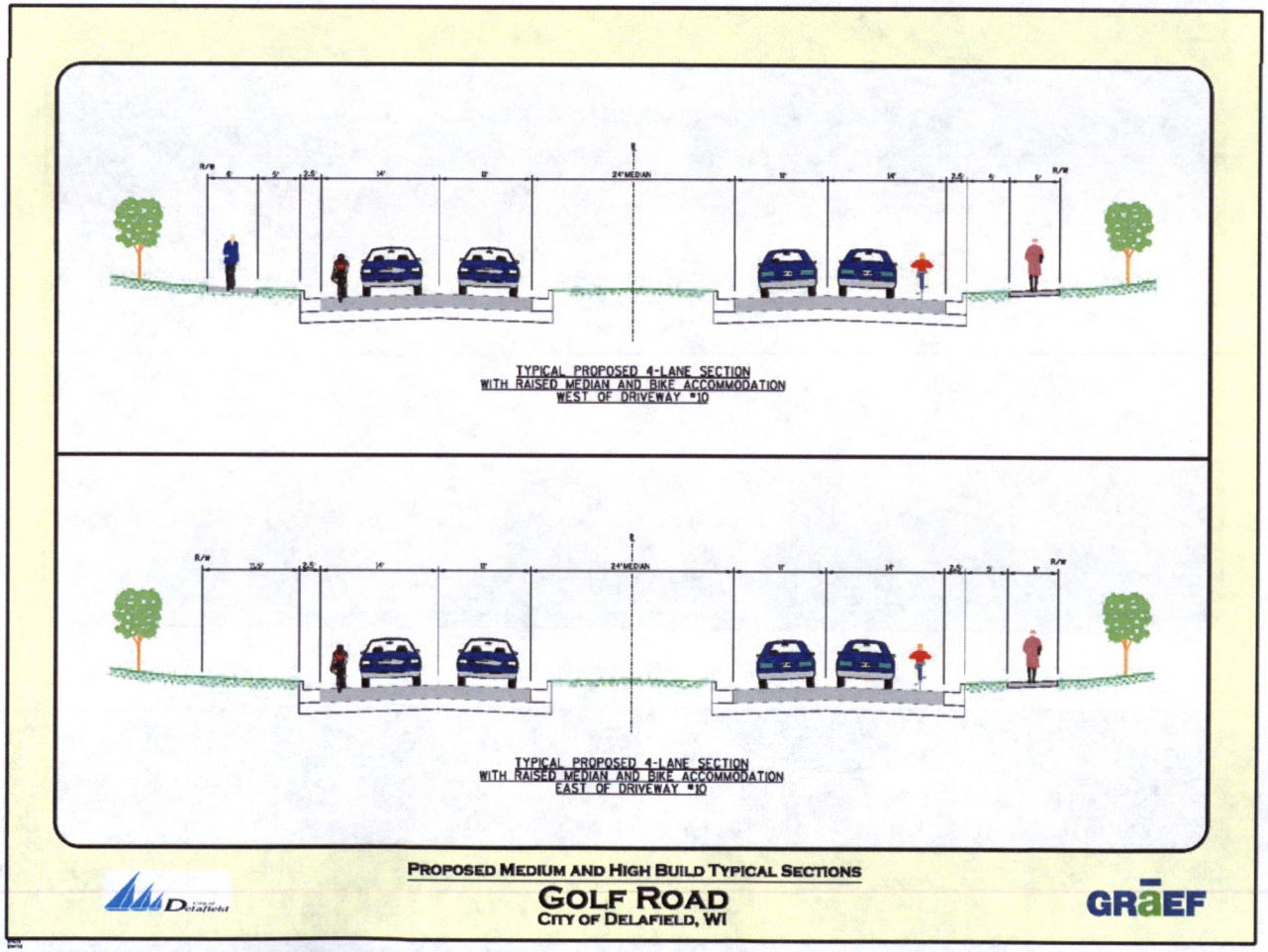
LOW BUILD

GOLF ROAD

CITY OF DELAFIELD, WI

GRÄEF

# Medium/High Build Alternate Typical Sections



# Medium Build Alternate
# Traffic Signal Option

MEDIUM BUILD (SIGNAL OPTION)

**GOLF ROAD**

CITY OF DELAFIELD, WI

GRAEF

# Medium Build Alternate
# Roundabout Option

MEDIUM BUILD (ROUNDABOUT OPTION)

GOLF ROAD

CITY OF DELAFIELD, WI

GRAEF

# High Build Alternate
# Stop Control Option

HIGH BUILD (STOP CONTROL OPTION)

GOLF ROAD

CITY OF DELAFIELD, WI

GRAEF

# High Build Alternate
# Traffic Signal Option

HIGH BUILD (SIGNAL OPTION)

GOLF ROAD

CITY OF DELAFIELD, WI

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# High Build Alternate
# Roundabout Option

HIGH BUILD (ROUNDABOUT OPTION)

**GOLF ROAD**

CITY OF DELAFIELD, WI

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# Alternates

- Cost Estimates
  - Preliminary construction cost estimates developed for the 6 alternates/subalternate and optional improvements
  - Costs include utilities & right-of-way
- Funding
  - Researching municipal, private/public partnership and WisDOT programs to assist with funding the improvement project.

# Project Schedule

| Task | Date |
|---|---|
| Public Meeting #1 | November 17, 2009 |
| Property Owner Meeting #1 | January 20, 2010 |
| Conceptual Plan Development | February/March 2010 |
| Property Owner Meeting #2 | April 20, 2010 |
| Public Meeting #2 | April 27, 2010 |
| Property Owner Meetings | ongoing |
| Recommendation to City Council | June/July 2010 |

# Thank you!

Please sign in at the registration desk and complete a comment form.

We would like to hear your thoughts and concerns regarding the alternatives for the Golf Road Corridor!

# Public Comment Forms

**Attachment E**

From: mdeyoe@execpc.com
Subject: **Re: Golf Road Project Input**
Date: April 24, 2010 9:45:27 AM CDT
To: "Gerald MacDougall" <gerrymacd@aol.com>

> Regarding the Gulf Road Project.

I am unable to attend the citizen's meeting Tuesday, but wanted to voice my concerns about the dangerous conditions on Golf Rd. east of Hwy 83. As the mother of 2 daughters, I would never allow them to make a left turn across Golf Rd. from the Starbucks plaza while they were learning to drive. Visibility is terrible, the road is curved and there are just too many cars to make the turn safe. Therefore, we do not regularly patronize that plaza because of the impossibility of making left turns on many days.

Even though some merchants are against anything but resurfacing, I think it is in the interest of public safety that the City decides on the most cost-effective method of re-engineering that small stretch of Golf Rd. It may be inconvenient for a while, but in the long run it will improve traffic flow and safety and actually increase patronage at some of the businesses.

Michele DeYoe

# Comment Sheet
# Golf Road
# Traffic Improvement Feasibility Study
# Public Information Meeting #2

Golf Road
STH 83 to Eastern City Limits
City of Delafield
Waukesha County

Tuesday, April 27, 2010
5:00 p.m.

Name: ARTHUR CUNNINGHAM
Address: 1320 MILL RD
Phone: 262 696 5273
Email: howso@wi.rr.com

☐ Business ☒ Resident

COMMENTS:

Need 2 Right Turn lanes off 83 (going north from I-94)
NEED CIRCLE at Walgreen entrance (for trucks to deliver behind Strip & entrance to Sport Auth. area & Walgreens.)
NEED ROUND CIRCLE at Holiday Inn Entrance & Appleby etc.

I am there everyday and avoid after 4 pm.

Arthur Cunningham

Feel free to fill out tonight or fill out and mail no later than May 11, 2010 to:

GRAEF
Attn: Shana Mogensen
125 South 84th Street, Suite 401
Milwaukee, WI 53214-1470

Email: Shana.Mogensen@graef-usa.com

This form may be used as a mailer by folding it along the lines as shown on the reverse side and stapling or taping shut.

# Comment Sheet
# Golf Road
# Traffic Improvement Feasibility Study
# Public Information Meeting #2

Golf Road
STH 83 to Eastern City Limits
City of Delafield
Waukesha County

Tuesday, April 27, 2010
5:00 p.m.

Name: Fran Bills
Address: 1522 Milwaukee St.; Delafield, WI 53018
Phone: 262-646-2191
Email: sandhillcrane@hotmail.com

☐ Business ☑ Resident

COMMENTS:

Prefer roundabout with no new lights. Prefer roundabout + stop signs to lights.

Very much like making the area attractive to walkers + those on bicycles.

Extending service road near Marshalls + Sports Authority to give more options to drivers.

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# Comment Sheet
# Golf Road
# Traffic Improvement Feasibility Study
# Public Information Meeting #2

Golf Road
STH 83 to Eastern City Limits
City of Delafield
Waukesha County

Tuesday, April 27, 2010
5:00 p.m.

Name: LANDON NYREN
Address: 115 MAIN ST - POLICE
Phone: 262 646 6240
Email: LNYREN@CI.DELAFIELD.WI.US

☒ Business ☐ Resident

COMMENTS:
BACKAGE ROAD SPORTS AUTH - MARSHALLS.
REDUCE WALGREENS ENTRANCE TO
A SINGLE FOUR WAY ENTRANCE.
ROUND ABOUT FOR EASY TURN AROUND
FOR RIGHT TURN ONLY FROM
SPORTS AUTHORITY.

Feel free to fill out tonight or fill out and mail no later than May 11, 2010 to:

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Attn: Shana Mogensen
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# Comment Sheet
# Golf Road
# Traffic Improvement Feasibility Study
# Public Information Meeting #2

Golf Road
STH 83 to Eastern City Limits
City of Delafield
Waukesha County

Tuesday, April 27, 2010
5:00 p.m.

Name: RYAN JACOBS
Address: 115 MAIN ST. DELAFIELD
Phone: 646-6240
Email: _____

☐ Business ☐ Resident

COMMENTS:

BACKAGE ROAD A MUST.
ONE ENTRANCE TO WALGREENS
EXIT FROM STARBUCK RIGHT TURN ONLY

MEDIUM BULB & ROUNDABOUT OPTION IS THE BEST.

Feel free to fill out tonight or fill out and mail no later than May 11, 2010 to:

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# Comment Sheet
# Golf Road
# Traffic Improvement Feasibility Study
# Public Information Meeting #2

Golf Road
STH 83 to Eastern City Limits
City of Delafield
Waukesha County

Tuesday, April 27, 2010
5:00 p.m.

Name: GREG SCHILZ / MICHELLE HARRINGTON
Address: 3255 GOLF RD.
Phone: 262-646-9483
Email: gregschilz@yahoo.com

☒ Business ☐ Resident

COMMENTS:

OUR MAJOR CONCERN WHEN CONSIDERING IMPROVEMENTS IS THE IMPACT ON OUR CUSTOMERS AND OBVIOUSLY THEIR ABILITY OR PATIENCE TO GET THROUGH A CONSTRUCTION PROJECT.

WE CAN'T STRESS ENOUGH JUST HOW DEVASTATING A PROLONGED PROCESS COULD BE TO OUR BUSINESS.

PLEASE LOOK TO EXPEDITE WHICHEVER PLAN IS AGREED UPON AS QUICKLY AS POSSIBLE.

THANK YOU FOR YOUR UNDERSTANDING.

Feel free to fill out tonight or fill out and mail no later than May 11, 2010 to:

GRAEF
Attn: Shana Mogensen
125 South 84th Street, Suite 401
Milwaukee, WI 53214-1470

Email: Shana.Mogensen@graef-usa.com

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# Common Council Presentation
# July 6, 2010

# Golf Road Traffic Improvement Feasibility Study

## STH 83 to Eastern City Limits

Common Council Meeting

July 6, 2010

Public Safety Building

115 Main Street

Delafield, Wisconsin

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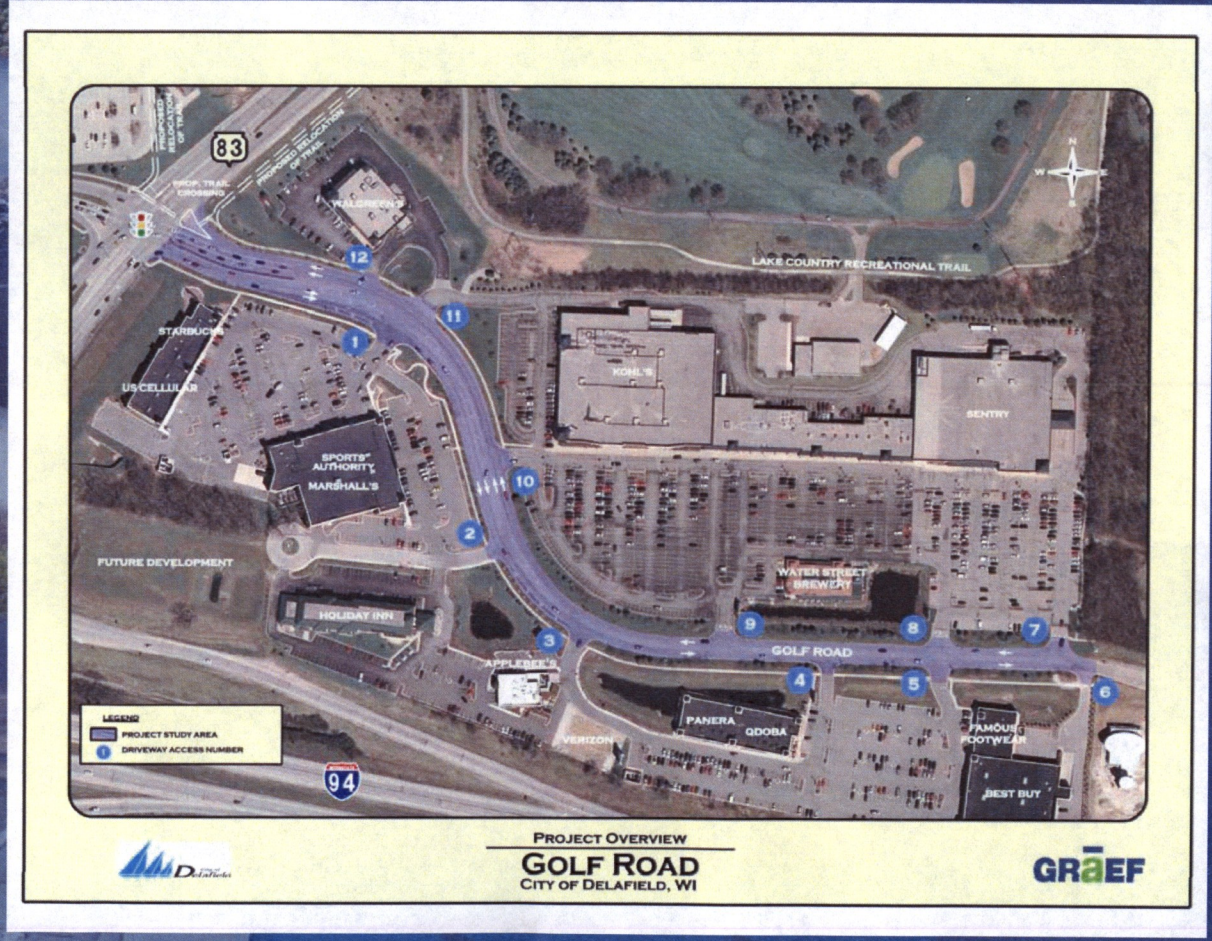
# Study Overview




- Heavily Commercialized Corridor
- Poor Site Distance & Operational Concerns
- Pavement Condition is deteriorating
- 2009 Average Daily Traffic 5,900 to 18,200

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# Crash History

- 20 crashes during 3 year period
  - Crash rates exceed statewide average (257 crashes per hundred million vehicle miles):
    - West Section – 352 crashes per HMVM
    - East Section – 274 crashes per HMVM

# Corridor Safety

- Both superelevated horizontal curves are substandard.
- Vertical curves meets desirable standards for stopping sight distance.
- Intersection Sight Distance to the west

**Existing Intersection Sight Distances**

| Access | Intersection Sight Distance for Passenger Vehicle | | |
|---|---|---|---|
| | Existing | Minimum | Desirable |
| Walgreen's Access to the right | 408'* | 460' | 585' |
| Sports Authority Access to the left | 335' | 355' | 435' |
| Truck Access to the right | 372' | 460' | 585' |

*Sight distance is limited by the Golf Road intersection with STH 83.

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# Existing (Year 2009) Traffic Operations

**Existing (Year 2009) Peak Hour Traffic Operations**
**With Existing Geometrics**

| Golf Road Intersection | Traffic Control | Peak Hour | Level of Service per Movement by Approach | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | Eastbound | | | Westbound | | | Northbound | | | Southbound | | |
| | | | LT | TH | RT | LT | TH | RT | LT | TH | RT | LT | TH | RT |
| STH 83 | Traffic Signal | PM | D | D | D | D | D | D | C | C | B | B | C | B |
| | | SAT | D | D | D | D | D | D | C | C | B | C | C | B |
| Walgreen's Driveway | One-Way Stop | PM | A | A | - | - | A | A | - | - | - | E[1] | - | B |
| | | SAT | B | A | - | - | A | A | - | - | - | F[2] | - | D |
| Sports Authority / Truck Access | Two-Way Stop | PM | A | A | A | A | A | A | F[3] | F[3] | B | C | C | C |
| | | SAT | A | A | A | B | A | A | F[4] | F[4] | B | D | D | D |
| Kohl's West Access | One-Way Stop | PM | A | A | - | - | A | A | - | - | - | E[5] | - | B |
| | | SAT | B | A | - | - | A | A | - | - | - | F[6] | - | b |
| Marshall's Access | One-Way Stop | PM | - | A | A | A | A | - | D | - | D | - | - | - |
| | | SAT | - | A | A | A | A | - | F[7] | - | F[7] | - | - | - |
| Applebee's Access | One-Way Stop | PM | - | A | A | A | A | - | B | - | B | - | - | - |
| | | SAT | - | A | A | A | A | - | B | - | B | - | - | - |
| Kohl's East Access | One-Way Stop | PM | A | A | - | - | A | A | - | - | - | B | - | B |
| | | SAT | A | A | - | - | A | A | - | - | - | B | - | B |
| Qdoba Access | One-Way Stop | PM | - | A | A | A | A | - | B | - | B | - | - | - |
| | | SAT | - | A | A | A | A | - | B | - | B | - | - | - |
| Sentry West Access / Best Buy Access | Two-Way Stop | PM | A | A | A | A | A | A | C | C | A | B | B | B |
| | | SAT | A | A | A | A | A | A | C | C | A | B | B | B |
| Sentry East Access / Truck Access | Two-Way Stop | PM | A | A | A | A | A | A | B | B | B | B | B | B |
| | | SAT | A | A | A | A | A | A | B | B | B | B | B | B |

Notes: Eastbound and westbound movements represent Golf Road.
(-) indicates a movement that is not possible.

1) Delay = 40 seconds per vehicle
2) Delay = 63 seconds per vehicle
3) Delay = 76 seconds per vehicle
4) Delay = 290 seconds per vehicle
5) Delay = 38 seconds per vehicle
6) Delay = 68 seconds per vehicle
7) Delay = 67 seconds per vehicle

## Level of Service (LOS)

Average Delay for Stop Controlled Intersections:

- LOS A: <10 seconds
- LOS B: 10-15 seconds
- LOS C: 15-25 seconds
- LOS D: 25-35 seconds
- LOS E: 35-50 seconds
- LOS F: >50 seconds

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# Year 2035 Traffic Forecasts

- Traffic Forecasts include:
  - 0.5% annual growth for through traffic
  - Future development (22,400 SF Restaurant)

**Year 2035 Daily Traffic Forecasts**

| Golf Road | Year 2009 Daily Traffic | Year 2035 Daily Traffic Forecast |
|---|---|---|
| East of STH 83 | 18,200 | 20,600 |
| Eastern City Limits | 5,900* | 6,800* |

* Estimated volume assuming 10% of daily traffic occurs during the weekday evening peak hour.

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# Feasibility Evaluation

- Access Management
  - Promotes safe & efficient traffic operations
  - Limit the number of conflict points
  - Separation of conflict points
- Pedestrian & Bicycle Accommodations
  - Lake County Recreational Trail may attract bicycle users to the commercial area
  - On road & off road facilities were considered
- Intersection Control
  - Accommodate future traffic
  - Reduce delays
  - Improve safety

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# Alternatives

- **Low Build**
  Resurfacing with minor widening
- **Medium Build**
  Reconstruction including widening to provide a 24-foot raised median & bicycle accommodations
  - Traffic Signal Option
  - Roundabout Option
- **High Build**
  Major reconstruction to adjust the crest vertical curve and widen to provide a 24-foot raised median & bicycle accommodations
  - Stop Control Option
  - Traffic Signal Option
  - Roundabout Option

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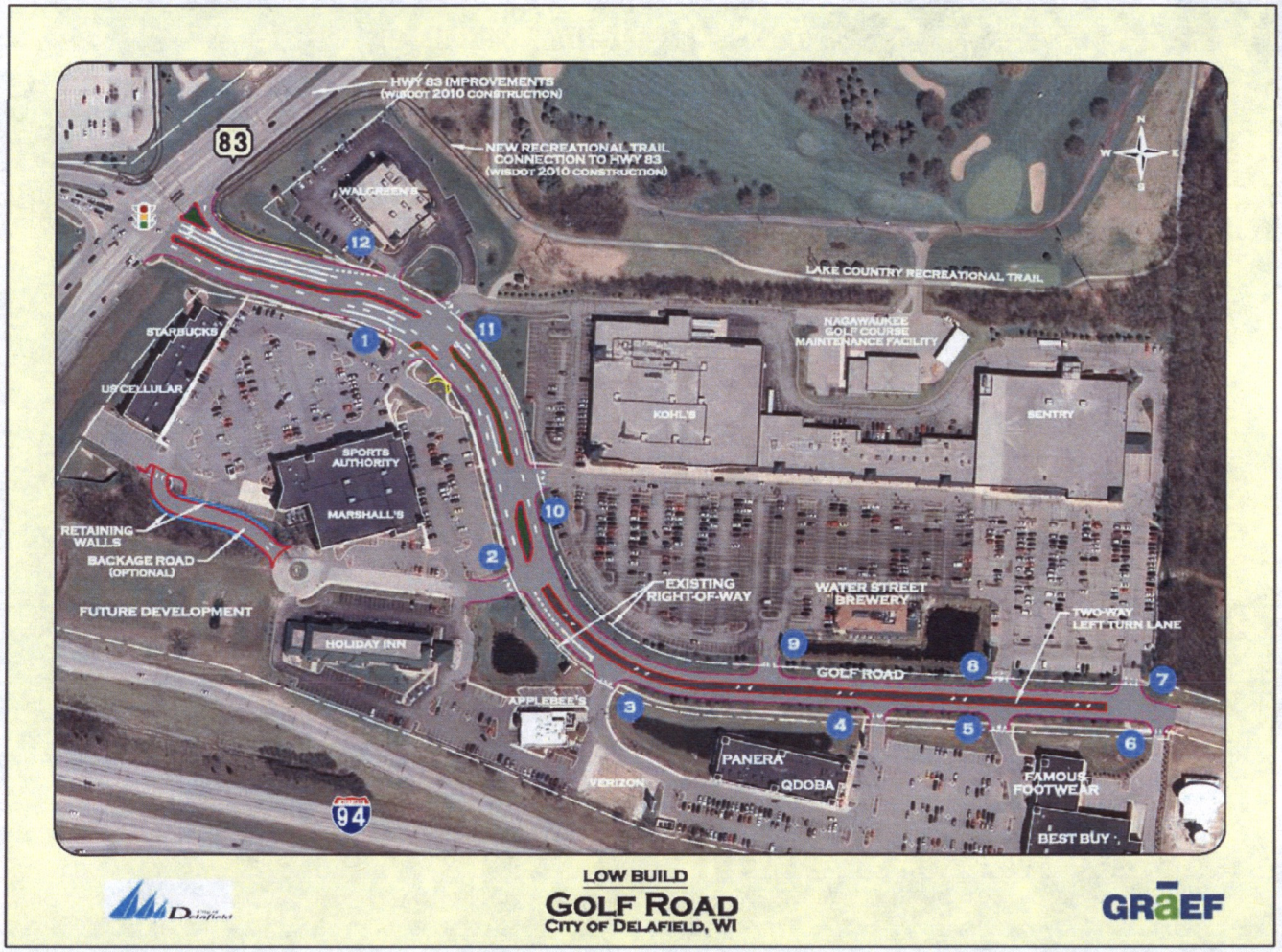
# Low Build Alternative




LOW BUILD

GOLF ROAD

CITY OF DELAFIELD, WI

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# Medium Build Alternative
# Traffic Signal Option

MEDIUM BUILD (SIGNAL OPTION)

GOLF ROAD

CITY OF DELAFIELD, WI

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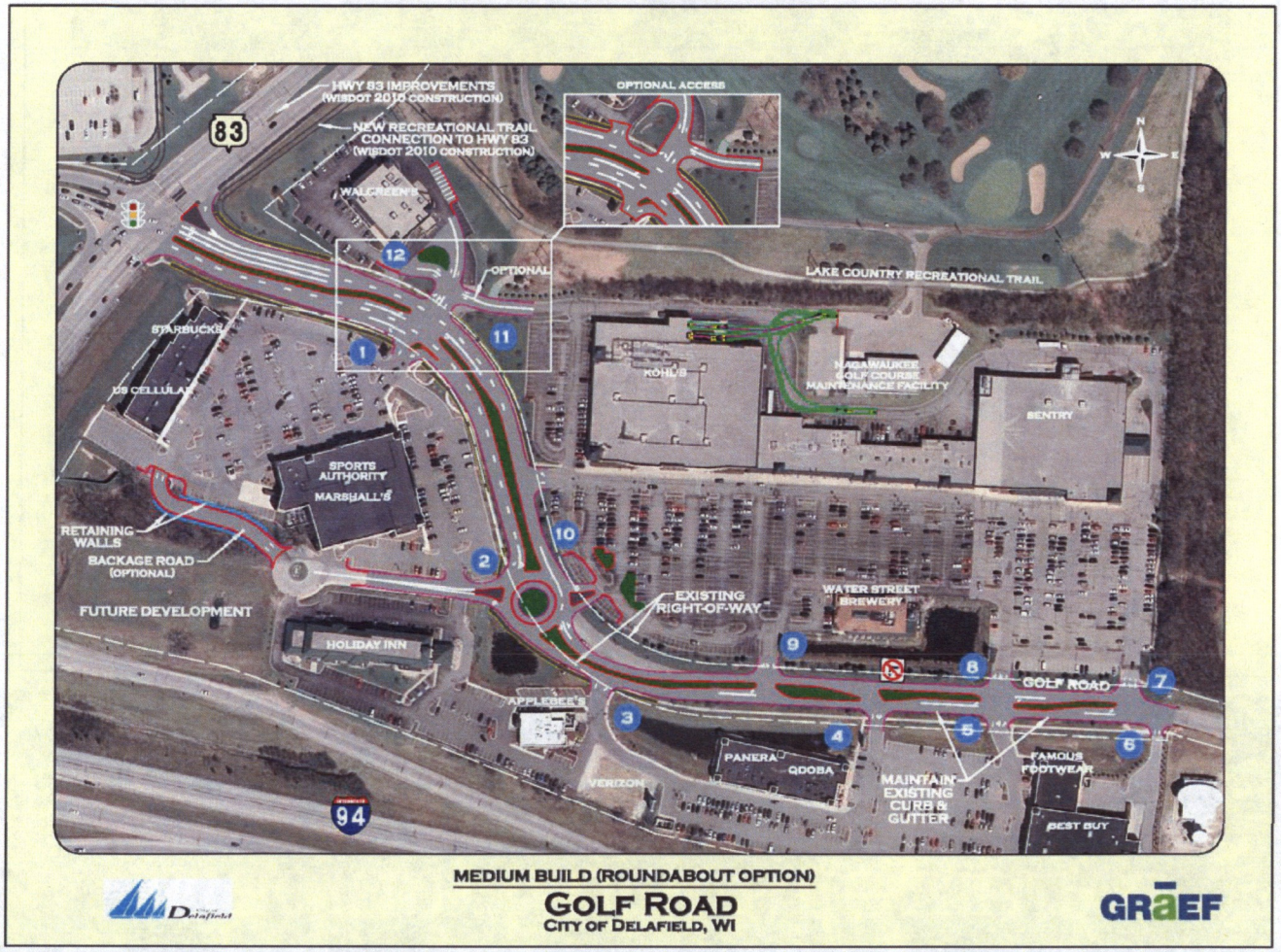
# Medium Build Alternative
# Roundabout Option




**MEDIUM BUILD (ROUNDABOUT OPTION)**

**GOLF ROAD**

CITY OF DELAFIELD, WI

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# High Build Alternative
# Stop Control Option

HIGH BUILD (STOP CONTROL OPTION)

GOLF ROAD

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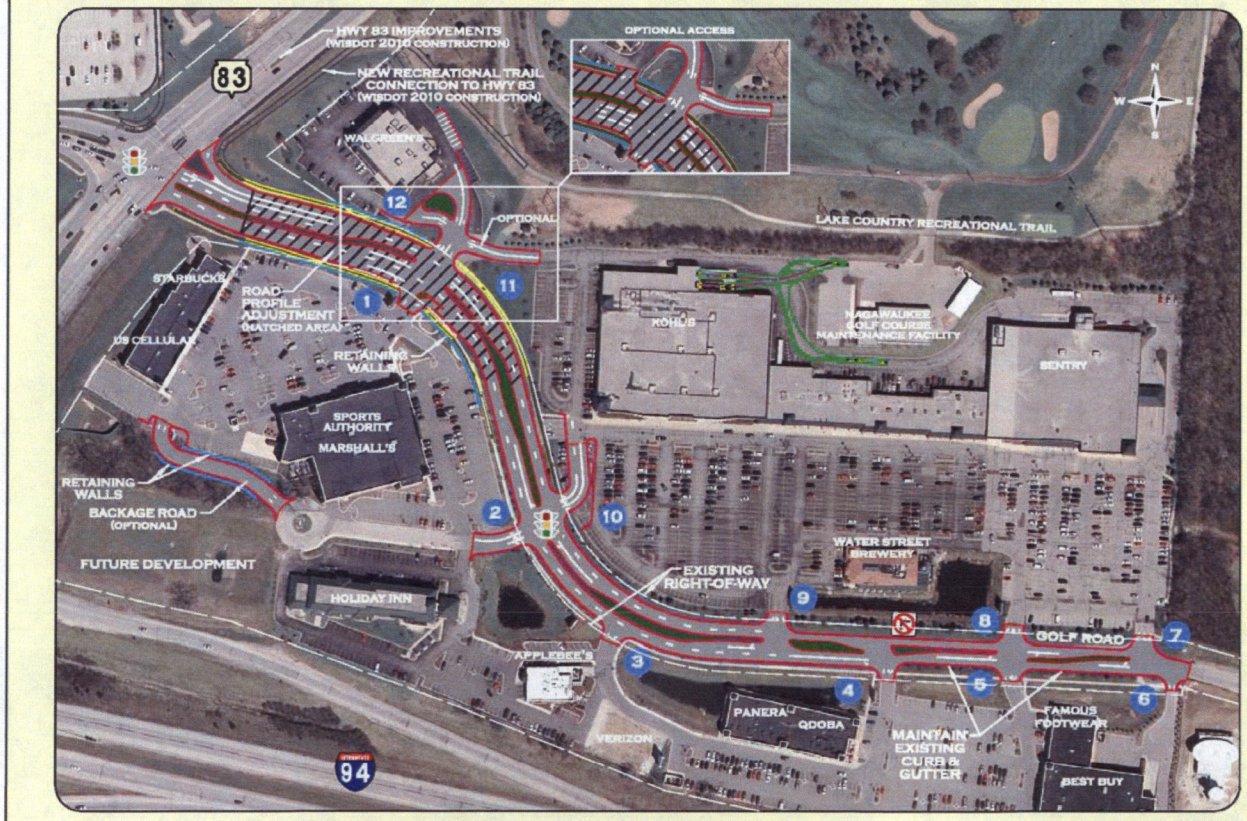
# High Build Alternative
# Traffic Signal Option




HIGH BUILD (SIGNAL OPTION)

**GOLF ROAD**

CITY OF DELAFIELD, WI

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# High Build Alternative
# Roundabout Option

HIGH BUILD (ROUNDABOUT OPTION)

GOLF ROAD

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# Project Costs

- Cost Estimates:
  - Estimates include design, utilities, real estate, and construction
  - Real estate acquisition costs are based on an average commercial property value of $375k per acre.

| | Low Build | Medium Build | | High Build | | |
|---|---|---|---|---|---|---|
| | | Signal | Roundabout | Stop Controlled | Signal | Roundabout |
| Total Project Cost | $454k | $1,793k | $1,784k | $1,697k | $2,012k | $2,002k |

  - *Estimates do not include the optional elements:*
    - *Backage Road – $260k*
    - *Bicycle Lanes – $42k*
    - *Shared-Use Path – $56k*

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# Alternatives Comparison

| Considerations | Existing | Low Build | Medium Build | | High Build | | |
|---|---|---|---|---|---|---|---|
| | | | Signal | Roundabout | Stop Controlled | Signal | Roundabout |
| Sight Distance | 🔴 | 🟠 | 🟠 | 🟠 | 🟡 | 🟡 | 🟡 |
| Safety | 🔴 | 🟠 | 🟡 | 🟡 | 🟡 | 🟢 | 🟢 |
| Traffic Operations | 🔴 | 🟠 | 🟢 | 🟢 | 🔴 | 🟢 | 🟢 |
| Access | 🟢 | 🟡 | 🟡 | 🟡 | 🟡 | 🟡 | 🟡 |
| Cost | 🟢 | 🟡 | 🟠 | 🟠 | 🟠 | 🟠 | 🟠 |
| Duration of Construction | 🟢 | 🟡 | 🟠 | 🟠 | 🟠 | 🟠 | 🟠 |

- 🟢 Optimum
- 🟡 Favorable
- 🟠 Caution
- 🔴 Red Flag

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# Public Involvement

- Listening/Data Gathering Meetings:
  - City Wide Public Information Meeting: November 17, 2009
  - Property Owner Meeting: January 20, 2010
- Present Alternatives for Public Input:
  - Property Owner Meeting: April 20, 2010
  - City Wide Public Information Meeting: April 27, 2010
- Public Input throughout project at PWC Meetings

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# Recommendation

- GRAEF recommends the Medium Build Alternative Traffic Signal Option with the Backage Road (Estimated Cost - $1,903k to $2,053k)
- If Backage Road is not feasible, GRAEF concurs with PWC's recommendation of the Medium Build Alternative Roundabout Option (Estimated Cost - $1,784k)
- Prepare applications for WisDOT project funding assistance:
  - Traffic Signal Option – STP-U
  - Roundabout Option – STP-U & HSIP

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# Funding

- Municipal Funding
  - Annual budget of $620k
  - Medium & High Build alternates require a separate funding category
- Private\Public Partnering
  - Shared cost to the City and adjacent property owners
  - The determination of and appropriate assessment value could be based on one or a number of factors including: traffic generated per parcel, property values, taxes, and\or land use.
- WisDOT Funding Programs
  - STP-U (Surface Transportation – Urban)
  - HSIP (Highway Safety Improvement Program

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# STP-U Funding Option

- Program objective is to improve federal aid eligible highways within urban areas
- Funding
  - Typically financed 80% Federal/20% City
  - Design, Utilities, Right-of-Way & Construction eligibility
- Project selection based on entitlement balance.
  - City of Delafield Balance = $-316,378.98
  - 2011 Fiscal Year allocation ≈ $175,000
- Application Due Date - July 30, 2010
- Anticipated project schedule:

| Phase | Schedule |
|---|---|
| Design | July 2011 – November 2012 |
| Construction | Summer 2013 |

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# HSIP Funding Option

- Funds projects that reduce the number and severity of crashes and decrease the potential for crashes on all public roads
- Funding
  - Typically financed 90% Federal/10% City Match Required
  - Project Size capped at $1.5 M
- Project selection based on effectiveness of safety improvement / roundabout options are only likely candidates
- Application Due Date - August 15, 2010
- Anticipated project schedule:

| Phase | Schedule |
|---|---|
| Design | July 2012 – November 2013 |
| Construction | Summer 2014 |

GRAEF

# Questions?

Shana Mogensen

414.266.9141

Shana.Mogensen@graef-usa.com

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