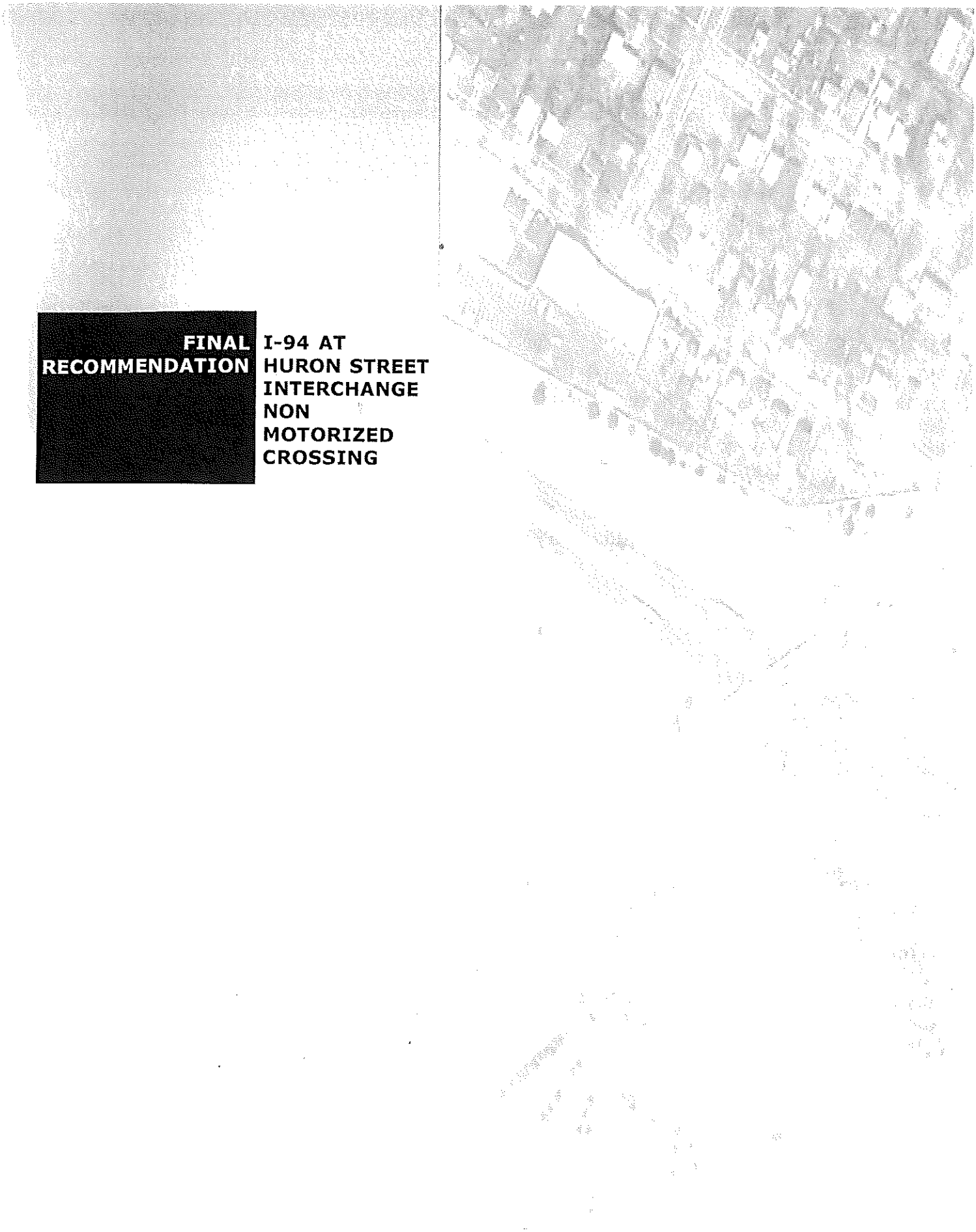

FINAL RECOMMENDATION

I-94 AT HURON STREET INTERCHANGE NON MOTORIZED CROSSING

OCTOBER 2004

Acknowledgements

Ypsilanti City Council
Cheryl C. Farmer, Mayor
S.A. Trudy Swanson, Mayor Pro-Tem
Lois Richardson, Council Member
John Gawlas, Council Member
William Nickels, Council Member
Sandi Schulze, Council Member

Charter Township of Ypsilanti - Township Board
Karen Lovejoy Roe, Supervisor
Brenda L. Stumbo, Clerk
Larry J. Doe, Treasurer
George Beaudette, Trustee
Jean Hall Currie, Trustee
William Gagnon, Trustee
Dee Sizemore, Trustee

Huron Street / I-94 Non-Motorized Crossing Study Steering Committee
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Midwest Consulting LLC

Table of Contents

Overview

The I-94/Huron Street Interchange provides a key connection between Ypsilanti Township and the City of Ypsilanti. It is the gateway to the area from vehicles and tractor trailers, to inline skaters, skateboarders, bicyclists, pedestrians and runners, the quality of life and economic vitality of the township and city are enriched by this intersection. Connecting the urban environment to the north and open space and new developments to the south.

The Intersection currently acts as a vehicular connector, but could be converted to a combined motorized **AND** non-motorized connecting point for the region. Historically, non-motorized traffic has not been integrated into the construction of MDOT bridges and overpass structures. The I-94 Non-Motorized Crossing Study is one of the first studies in the state to embark on developing an integrated transportation alternative for an existing structure. This study details the design process including public input and community involvement that created an economical and creative solution linking the Township and the City with an inviting and vibrant community gateway to their representing communities.

Previous Planning Efforts

This plan builds on previous planning efforts; merging their goals and objectives to provide a non-motorized connection at the bridge. Plans used as a foundation for the design concepts include:

- City of Ypsilanti - Huron River Corridor Study, 1998
- Huron River Greenway Planning Report, December 2000
- Ypsilanti Township Park and Recreation Master Plan, 2002
- City of Ypsilanti Parks and Recreation Master Plan, 2003

Project Goal

The primary goal for the study area is to develop a safe, community friendly and aesthetically pleasing non-motorized, two-way path system that unites the City and Township of Ypsilanti, while maintaining the current vehicular transportation patterns with minimum interruption.

Plan Process

A steering committee comprised of representatives from the City of Ypsilanti, Charter Township of Ypsilanti, and Washtenaw Area Transportation Service (WATS), and MDOT, directed the planning process. Goals and objectives evolved through a series of committee meetings, land use and traffic analyses and future traffic projections. Ideas were presented to the community for feedback. Comments from the public session were included into the development of the preferred alternative. This alternative was formatted into a traffic simulation (Corsim) for further analysis. The Corsim model confirmed that the refined concept will work with the projected traffic data.

The Plan

The I-94/Huron Street Non-Motorized Crossing Study includes brief summaries of the traffic and land use analysis, developed concepts, public participation process, estimates of probable costs, final preferred plan, and a schematic package of potential architectural concepts for the preferred plan. The final preferred plan illustrates the connection to the existing sidewalk systems, modifications to the vehicular lanes, including I-94 on- and off-ramps, revised intersection configurations, and elements for safer pedestrian crossing, safety signage and reconfigured signalization.

Achieving the Vision

Implementation of the I-94/Huron Street Non-Motorized Crossing Study Plan will achieve the long envisioned goal for the township and city to be more connected. Both entities can achieve this ambitious goal with the continued support and active participation of a diverse group of township and city stakeholders, including local and regional Chambers of Commerce, Economic Development organizations, Downtown Development Authorities, The Ypsilanti Area Convention and Visitor Bureau, historic and planning commissions, Eastern Michigan University, local businesses and the current and future land owners adjacent to the overpass.

Many of these organizations have already played an instrumental role in the development of the plan, and their willingness to continue the process will be critical to its success. Their efforts will need to continue and the Michigan Department of Transportation will assist the local units of government to identify funding and implement the final recommendations. Implementation will aid in the continued thoughtful development and redevelopment of the area.

Aerial view of project site

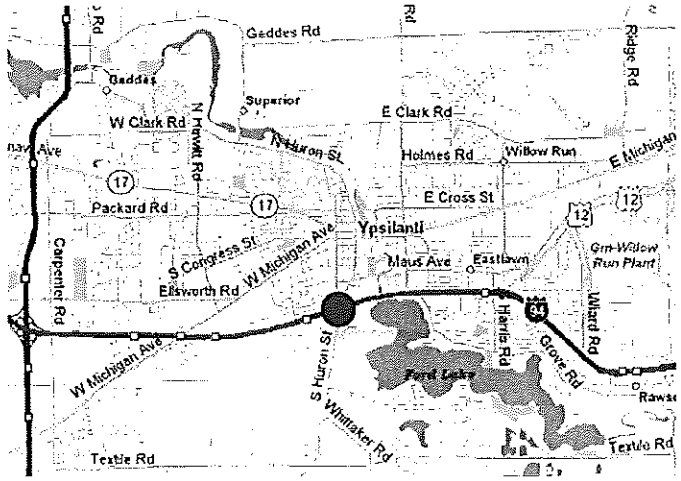
PROJECT OVERVIEW

US-23 travels north-south through the state where it connects to I-75 at the Upper Penninsula and in Toledo. I-94 travels east-west from Michigan's east coast to the western U.S. The Huron Street overpass is located along I-94 just east of US-23, 24 miles west of downtown Detroit and 10 miles east of Ann Arbor. I-94 bisects Ypsilanti Township and the City of Ypsilanti creating a physical barrier between the two, while providing community residents convient access to many local, regional and statewide recreational, business, commercial, and cultural facilities.

The City and Township of Ypsilanti are located in eastern Washtenaw County. The name Washtenaw is derived from the Chippewa "wash-ten-ong," meaning "grand river," in reference to the Huron River that flows adjacent to the I-94/ Huron Street interchange. The river remains a showpiece of the county. The Washtenaw County Parks and Recreation Commission (WCPRC) has developed a countywide greenway system connecting many communities and recreational resources within the county. A non-motorized facility at this project site will enhance the countywide system. Washtenaw County remains one of the leading recreational centers of Southeastern Michigan.

Huron Street provides a north/south vehicular connection to the City of Ypsilanti to the rapidly growing Ypsilanti Township. Ypsilanti was founded along the banks of the Huron River in the early 1800's. Today the City is designed as a "Cool City" by the Govenor home to Eastern Michigan University and is experiencing a rejuvenation of its downtown, neighborhoods and parks.

Based on The 2000 Census, Ypsilanti Township is one of the fastest growing communities in Washtenaw County. Growth projections include an increase of 37% in service oriented employment and 19% in retail trade thus increasing demand for additional residential development. The township consists primarily of agriculture land and new low density residential developments. The northern portion is quickly becoming developed because of the proximity to recreation opportunities, accessibility to nearby employment centers and convenient access to the interstate system towards Ann Arbor and Detroit.



Location Map

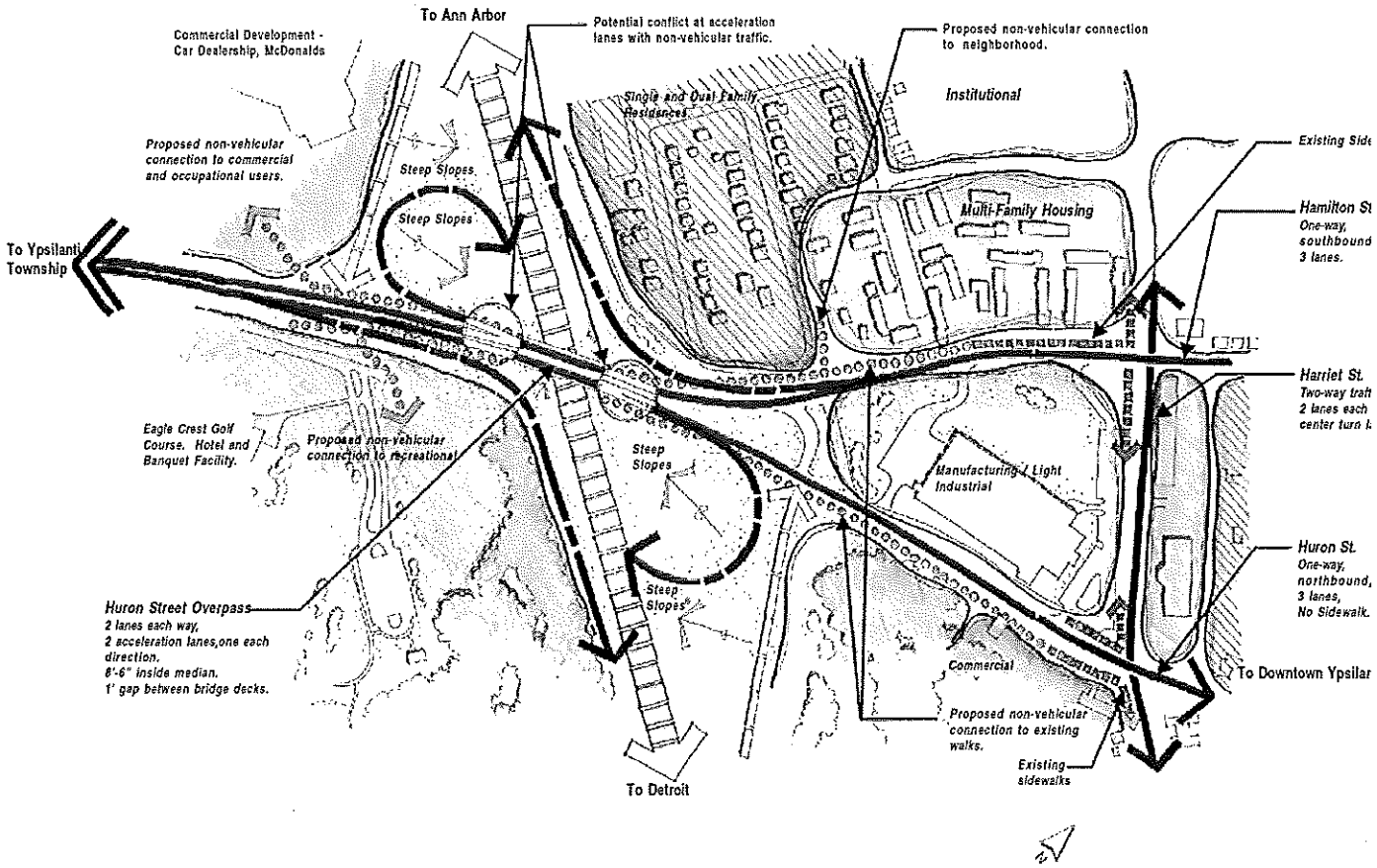
INVENTORY AND ANALYSIS

Understanding the opportunities and constraints for the I-94/Huron Street Non Motorized Crossing Study is essential to the development of design concepts. Team members visited the site to begin to evaluate and understand the project issues.

This section summarizes information and findings gathered from site visits, meetings, plan and document, public input, steering committee meetings and pedestrians interviews. The following key issues and opportunities were identified.

Adjacent Land Uses

The northwestern quadrant of the project area consists of primarily single and multi-family residential. Many residents from these homes currently cross the median on the overpass. They access the area through a wire fence with many openings adjacent to southbound Hamilton Street. The Northeast quadrant consists of vacant land currently owned by the City of Ypsilanti, and is being considered for development. A light manufacturing facility is located directly north of the project area. This facility has recently become vacant with no definite timeline for its reuse. Ypsilanti Township controls the area to the southeast. This park has recently been developed and is very active and is an integral part to the County's greenway system as identified in the Huron River Greenway Planning Report of December 2000. Access from the new crossing

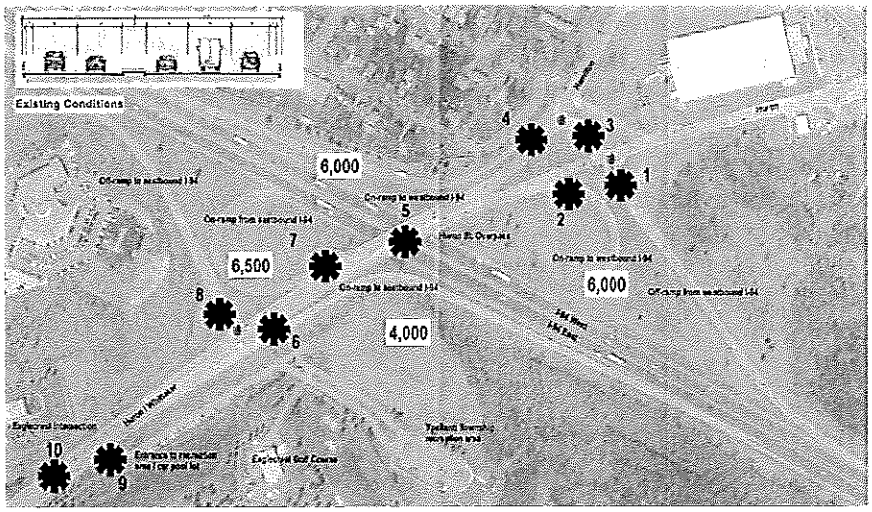


should connect North Bay Park. A commercial business park is housed on the southwest corner. This area continues to grow and is a destination for non-motorized traffic observed crossing the bridge.

The township has encouraged commercial and retail development such as new banks, retail centers, a post office, etc. on Huron St. south of I-94. The Ypsilanti Regional Library is also located in this area.

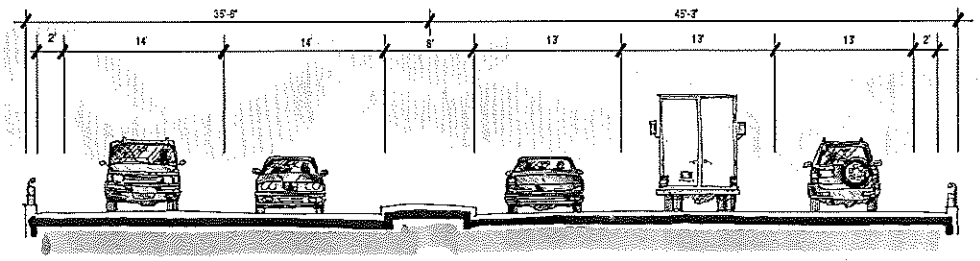
Pedestrian Circulation

Pedestrians cross the overpass in an unorganized manner because there are no defined crossing routes or sidewalks on the bridge deck. Pedestrians were observed utilizing the 8.5 foot wide raised center median. Access to the median is unsafe for both pedestrians and bicycles. The four on-ramps allowing access onto I-94 were also identified as a concern for pedestrian crossings. Vehicles entering these lanes are generally increasing in speed in order to merge onto the interstate. Ten (10) potential points of vehicular and pedestrian conflicts were visually identified within the study area.



Bridge Deck

The bridge deck cross section consists of two northbound lanes of 14 foot each along with a 2 foot wide shoulder and a barrier that is 1 foot and 6 inches in width. The southbound lane consists of three 13 foot lanes with a 2 foot wide shoulder and barrier wall 1 foot 6 inches wide. Between the north and southbound lanes is an 8.0 foot wide raised concrete curb with no vertical barrier.



Existing Bridge Cross Section

EXISTING TRAFFIC CONDITIONS

Intersection Highway Capacity Analysis (HCS-2000)

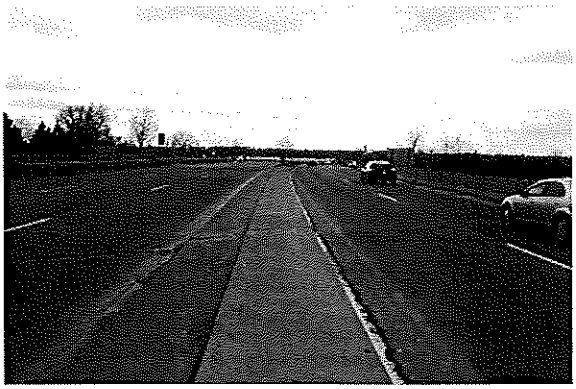
Traffic operations at the following intersection ramps of the I-94 interchange at Huron St. were analyzed:

- I-94 eastbound entry and exit ramps with Huron Street
- I-94 westbound entry and exit ramps with Huron Street

Currently, the entry ramps are free-flow clover leaf ramps. These two on-ramps should be reconfigured to form a T-type intersection with Huron Street. This modification will, enhance public safety for pedestrian/bicycle crossings by:

- Shortening the actual crossing area and thereby reducing exposure
- Utilize the existing signalize traffic control to allow pedestrians/bicyclists to activate the walk control phase.

To evaluate how the proposed ramp intersections would operate, a highway capacity (level of service) analysis was conducted utilizing HCS-2000 software. This analysis was based on traffic volume count data that identified all intersection approach movements. In addition to the traffic count data taken at the two ramp intersections, manual counts were also taken at the intersections of Hamilton Street / Harriet Street – Spring Street; Huron Street / Harriet Street-Spring Street; and Huron / James L. Hart Parkway. This field could data is provided in the Appendix.



Huron Street looking south

Huron Street looking north

South bound Huron Street on-ramp to east bound I-94

Huron Street looking north to City of Ypsilanti

June 2004 count volumes were then projected to the design year of 2024 by using a growth factor of 1.485 as provided by the Washtenaw Area Transportation Study (WATS) committee.

The actual capacity analysis for the two I-94 ramp intersections is provided in the Appendix. The analysis was conduced for both roadway peak hours of 7:30 – 8:30 AM and 4:30 – 5:30 PM. Results of the analysis indicate all movements are at acceptable levels of service.

Existing planning document review, site visits and steering committee workshops led to the development of the goals and objectives detailed below. Design alternatives were then developed.

Goals

Develop a safe, community friendly and aesthetically pleasing non-motorized two-way path system that unites the City and Township of Ypsilanti, while maintaining the current transportation patterns with minimum interruption.

Objectives

- Provide a non-motorized connection on or adjacent to the existing bridge deck.
- If possible, maximize the width of the path to accommodate two-way traffic.
- Incorporate the "image / theme" of the City and Township of Ypsilanti into the architectural features of the crossing.
- Minimize the number of pedestrian / roadway crossings to improve safety.
- Develop a phasing plan identifying key implementation stages.
- Maximize the existing pedestrian sidewalk systems in the City and Township.
- Continue to coordinate the improvements with City, Township and County to incorporate previously developed plans.

Aerial view of project site

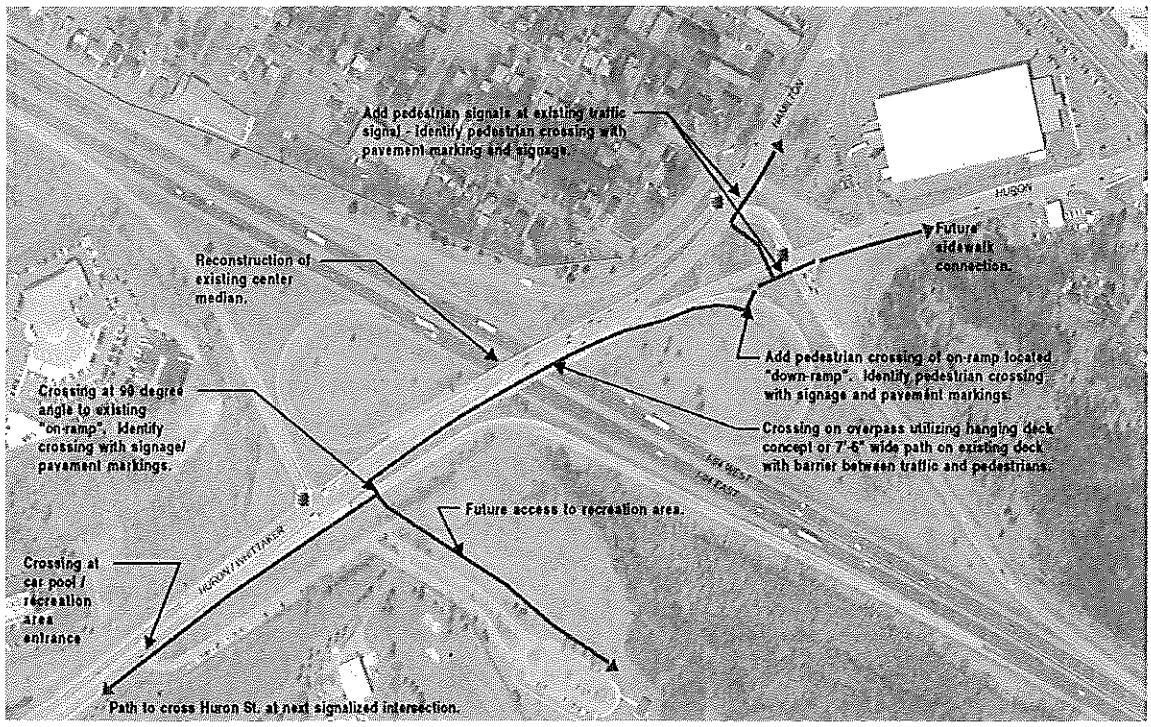
Design Alternatives

The conceptual design program for the I-94/Huron Street Non-motorized Crossing Study focuses on pedestrian and bicycle traffic connections that are developed with two-way vehicular traffic that is safe and simplistic. Preliminary concepts include unique alternatives that explored minimizing the pedestrian and vehicular conflicts. These concepts included pathways on one side, both sides, and down the middle of the overpass. Two additional alternatives were explored. A freestanding non-motorized only structure could be constructed divorcing these patterns from the overpass. Secondly, an "at highway grade" concept was investigated. These alternative designs take into account the overall site, pedestrian and vehicular traffic patterns and aesthetics.

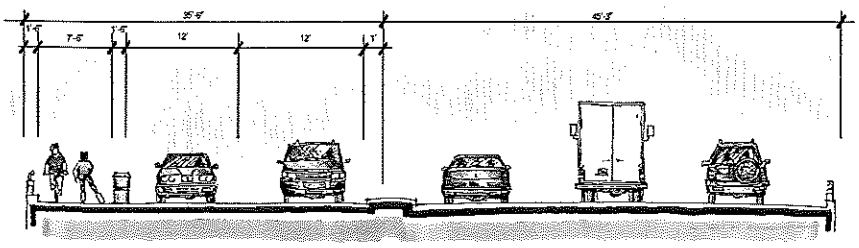
The following brief descriptions detail the six alternatives that were initially developed for review by the steering committee.

Concept 1 – Northbound Huron Street / Narrowed Lanes:

Non-motorized access on existing overpass / bridge deck would be implemented by incorporating a narrowed center median and NB lanes. The 7 foot 6 inches wide path will be located on the right side of traffic and will be separated by a physical barrier.

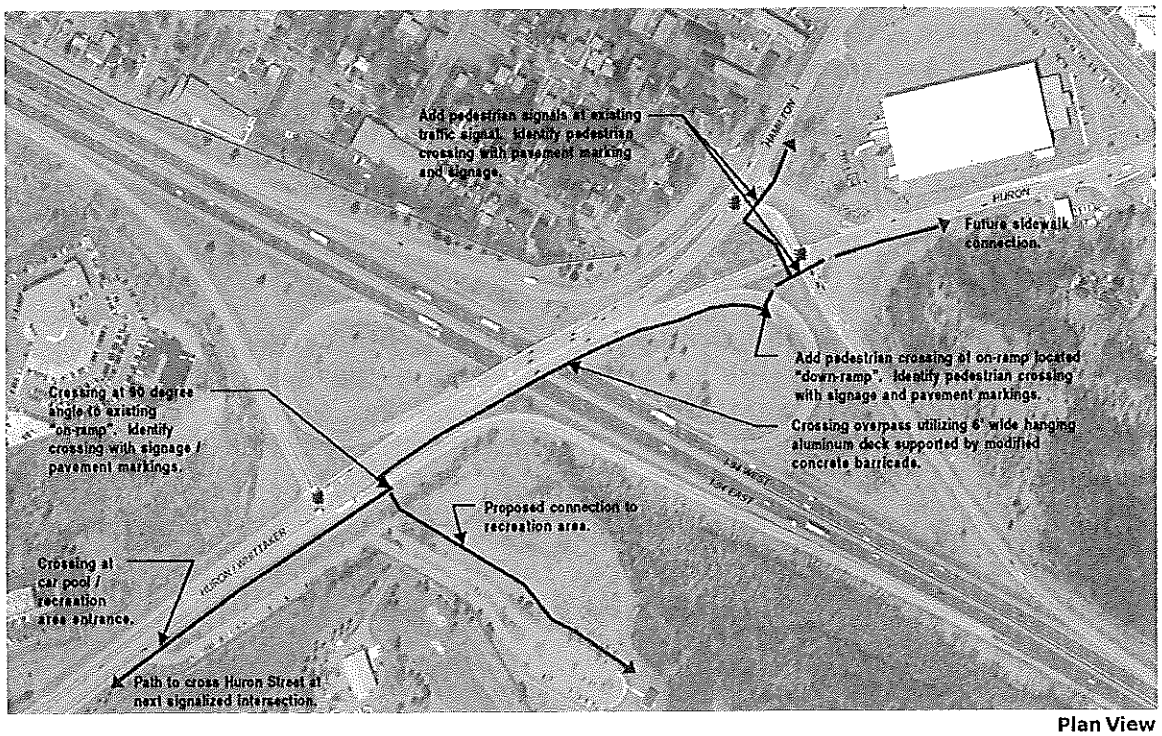


Plan View

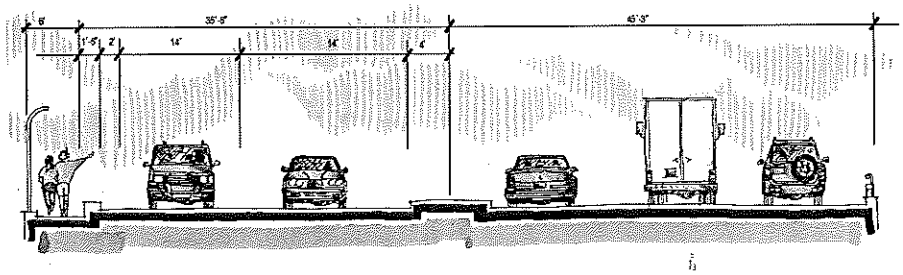


Section

Concept 2 – Northbound Huron Street / Hanging Structure:
A new aluminum structure secured to existing concrete barrier would accomodate Non-motorized traffic. Traffic lanes and center median will remain. Path shall be 6 foot wide.



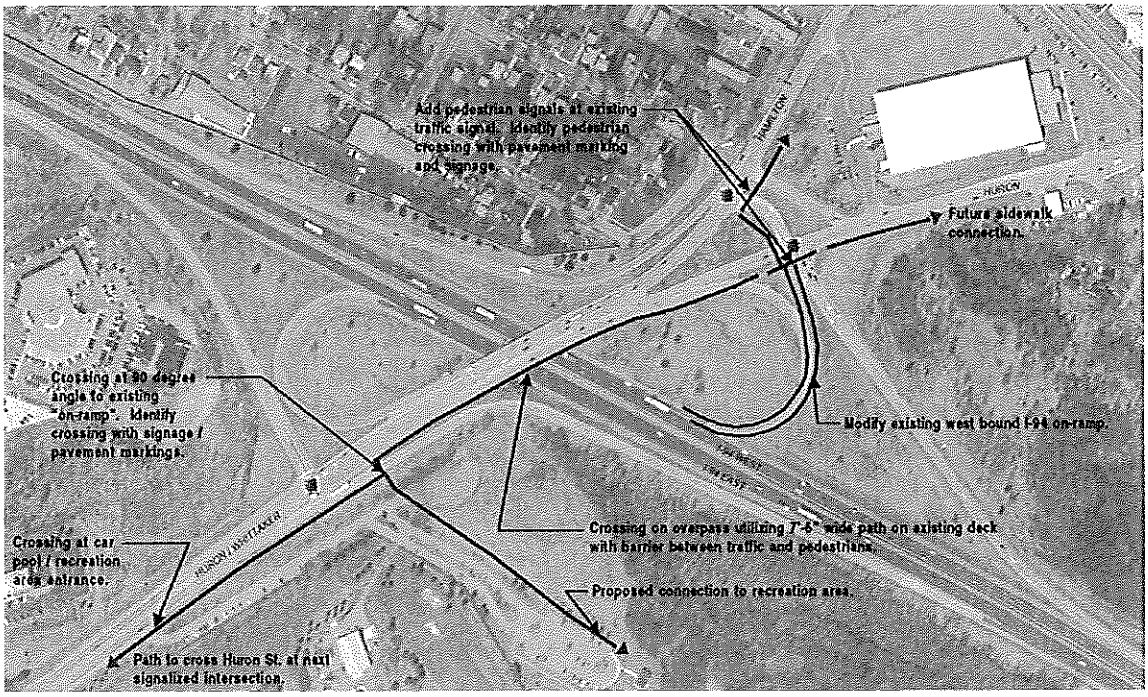
Plan View



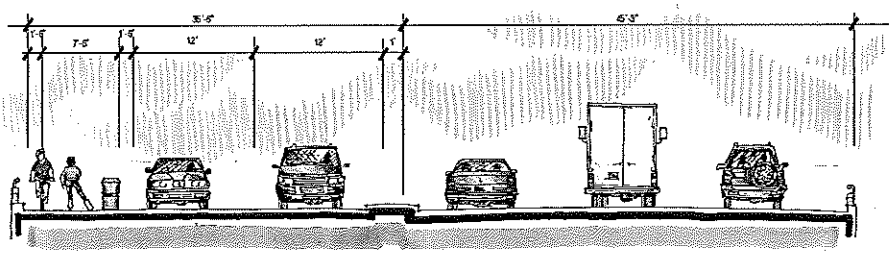
Section

Concept 3 – Northbound Huron St. / Narrowed Lanes / Reconfigured On Ramp:

Access for Non-motorized traffic will be provided on the existing overpass / bridge deck. This concept would incorporate a narrowed center median and NB lanes. A path located immediately right of NB lanes will be separated by a verticle concrete barrier. This pathway will be 7 foot 6 inches wide. A reconfigured WB I-94 on-ramp from NB Huron Street to WB I-94, would be constructed to minimize the vehicular and pedestrian conflict points.



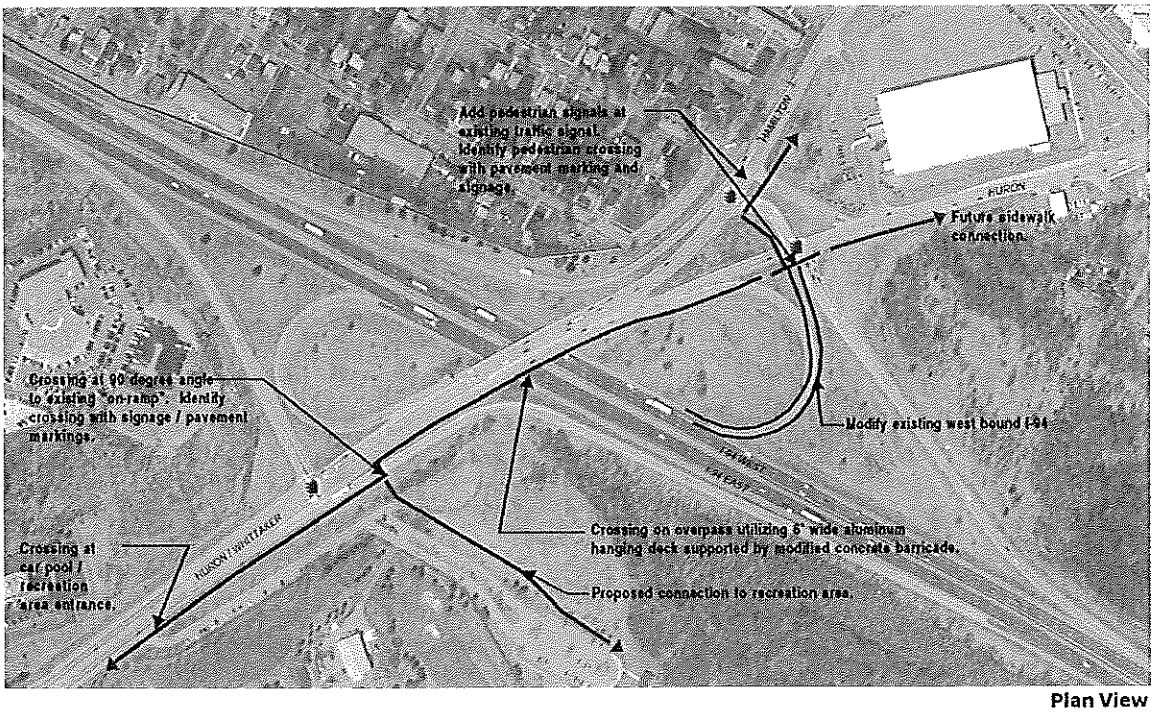
Plan View



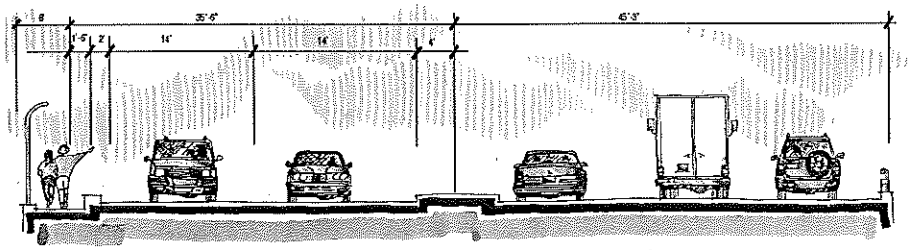
Section

Concept 4 – Northbound Huron St. / Hanging Structure / Reconfigured On Ramp:

A 6 foot wide Non-motorized pathway would be located on a new aluminum structure that would be secured to the existing concrete barricade. The vehicular lanes and center median remain intact. The WB I-94 "on ramp" from NB Huron Street to WB I-94 would be reconfigured to improve pedestrian crossing and minimize vehicular conflicts.



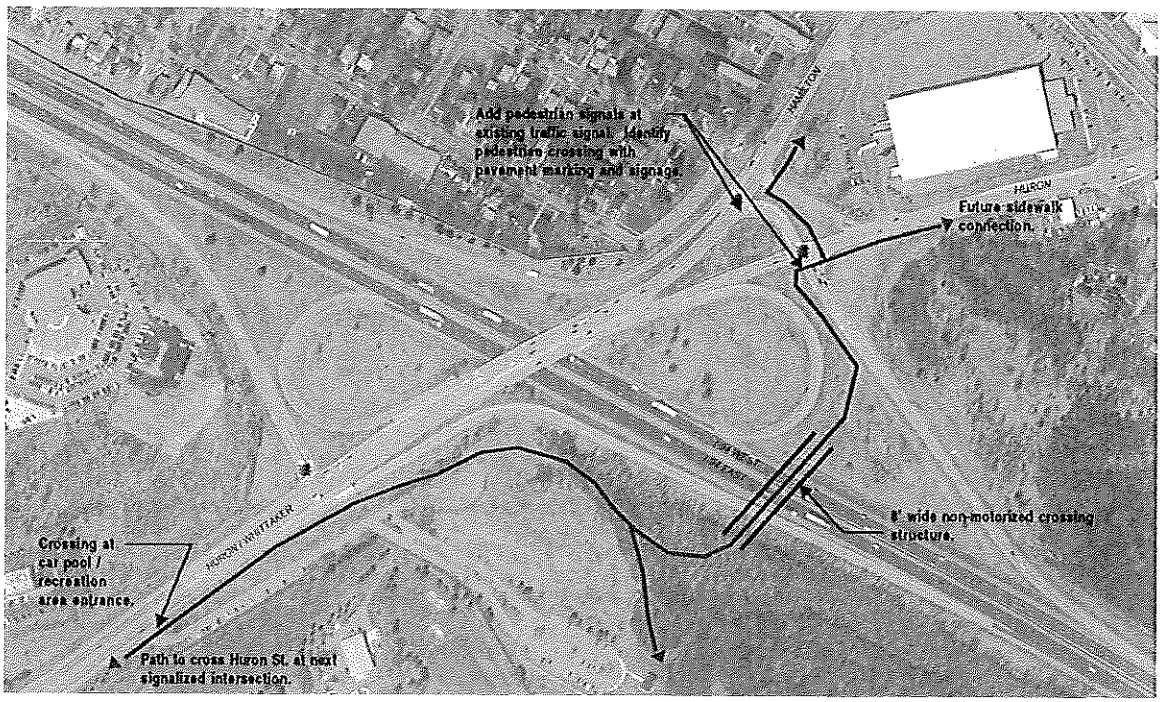
Plan View



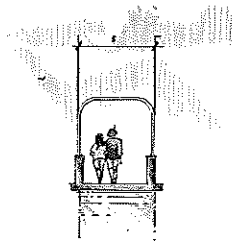
Section

Concept 5 - Free Standing Structure:

A new 8 foot wide Non-motorized crossing separated from existing overpass. The concrete structure with chain link fencing would be located east of current vehicular overpass (Huron Street) and adjacent to township recreation area.



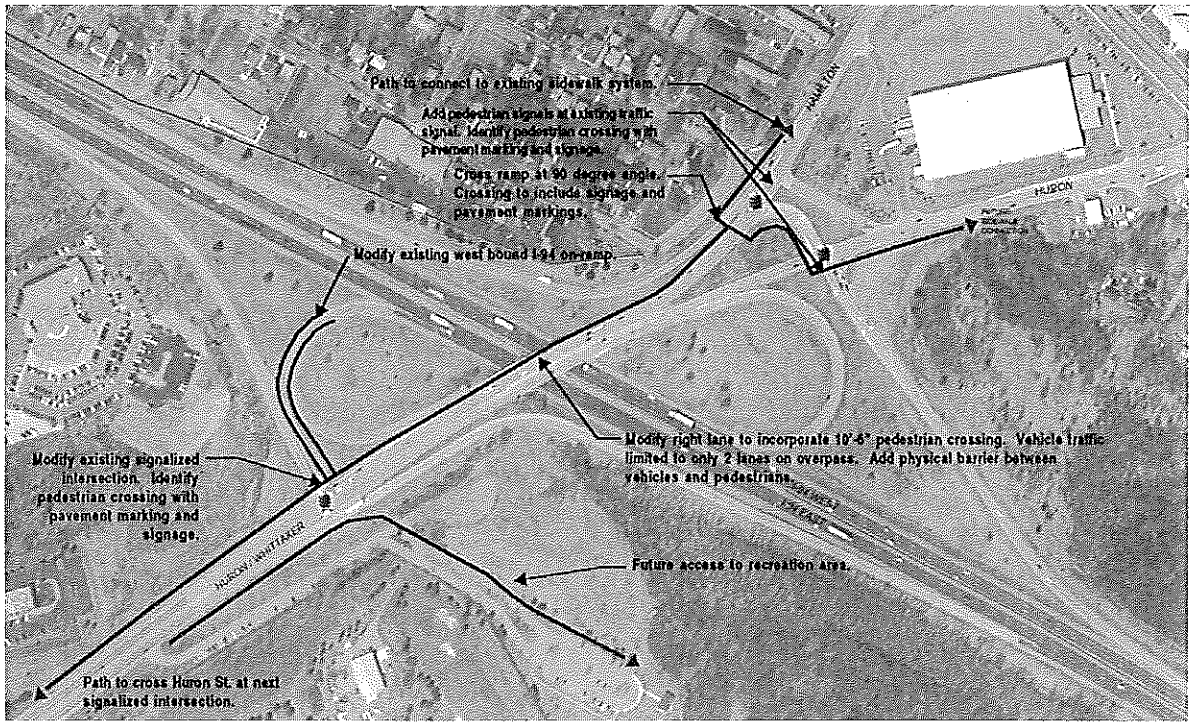
Plan View



Section

Concept 6 – Southbound Lane, Huron Street:

A 10 foot 6 inches wide Non-motorized access would be provided on the existing overpass / bridge deck. The existing far right SB lane would be dedicated to non-motorized traffic with a verticle concrete barrier being constructed between vehicular and pedestrian traffic. The southbound Huron Street "on-ramp" to EB I-94 ramp will be reconfigured to improve pedestrian crossing.



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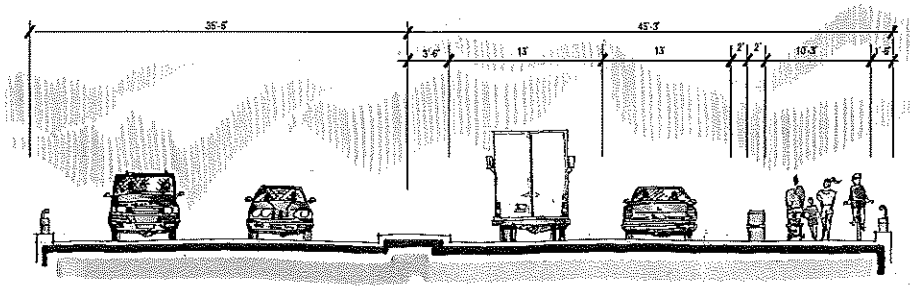


Section

Design Evaluation

Understanding all the issues relating to the six alternatives was essential to the final selection of a preferred concept. During the design phase and public participation process, the design team and steering committee continued to evaluate all the presented alternatives. The evaluation process focused on rerouting vehicle and pedestrian traffic to minimize vehicular and pedestrian conflicts. This section summarizes the evaluations of each alternative that were presented at a public participation meeting and reviewed by the steering committee.

Ten key components were developed by the steering committee to evaluate the six initial concepts. They are as follows:

1. Accomplishes Goal
2. Path Width
3. Traffic Interface
4. Community Linkages
5. Safety
6. Accessibility
7. Constructability
8. Cost
9. Pedestrian Comfort Levels
10. Public Input

The steering committee and the participants at the public session rated the evaluation criteria in three separate categories:

1. High – Exceeds vision and / or requirements and demonstrates superior or highest level of results;
2. Moderate – Meets and sometimes exceeds project vision and demonstrates average results;
3. Low – Least consistent with vision of the project demonstrating below average results.

	Evaluation Criteria	Concept One	Concept Two	Concept Three	Concept Four	Concept Five	Concept Concept
1	Accomplishes Goal	high	high	high	high	high	high
2	Path width	moderate (7' - 6")	moderate / low (6' - 0")	moderate (7' - 6")	moderate / low (6' - 0")	high / moderate (8' - 0")	high (10' - 3")
3	Traffic Interface	moderate	moderate	moderate	moderate / low	high	high / moderate
4	Community Linkages	high / moderate	high / moderate	high / moderate	high / moderate	high / moderate	high / moderate
5	Safety	moderate / low	moderate / low	moderate	moderate	high / moderate	high / moderate
6	Accessibility	moderate	moderate	high / moderate	high / moderate	high	high / moderate
7	Constructability	high / moderate	high / moderate	high / moderate	high / moderate	moderate	high / moderate
8	Cost	high / moderate	high / moderate	moderate	moderate	low	high
9	Pedestrian Comfort Levels	moderate	moderate / low	moderate	moderate / low	high	high / moderate
10	Public Input	moderate	moderate / low	moderate	moderate / low	high	high

Cost Estimates

Cost information and assumptions are based upon previous experience with similar projects and cost data provided by the MDOT. The estimates do not include phasing, they assume the project will be completed at one time. Construction costs were based upon year 2003 estimates. Pre design, design, bidding and construction administration fees are not included.

*All take-offs for the cost estimates were based upon the aerial photograph used for planning purposes. Detailed survey information was not a part of this study and was unavailable.

	Concept 1 - Northbound Huron Street / Narrowed Lanes	**Cost**
	Item	
1	Mobilization	$2,500
2	Site Demo.	$30,000
3	Modification to overpass raised median	$326,000
4	Lane tapers / restriping	$10,000
5	Signalization upgrade	$10,000
6	North Sidewalk - 10' wide	$39,000
7	South Sidewalk - 10' wide	$58,500
8	Site Amenities (banners, flags, seating, etc.)	$35,000
9	Earthwork	$20,000
10	Landscaping and seeding	$40,000
11	Construction Traffic Control	$10,000
	Subtotal	**$581,000**
	Contingency (15%)	**$87,150**
	Total	**$668,150**

	Concept 2 - Northbound Huron Street / Hanging Structure	**Cost**
	Item	
1	Mobilization	$2,500
2	Site Demo.	$30,000
3	Hanging System - 6' wide	$280,000
4	Lane tapers / restriping	$10,000
5	Signalization upgrade	$10,000
6	North Sidewalk - 10' wide	$39,000
7	South Sidewalk - 10' wide	$58,500
8	Site Amenities (banners, flags, seating, etc.)	$35,000
9	Earthwork	$20,000
10	Landscaping and seeding	$40,000
11	Construction Traffic Control	$10,000
	Subtotal	**$535,000**
	Contingency (15%)	**$80,250**
	Total	**$615,250**

Concept 3 - Northbound Huron Street / Narrowed Lanes / Reconfigured On-Ramp		Cost
	Item	
1	Mobilization	$2,500
2	Site Demo.	$30,000
3	Modification to overpass raised median	$326,000
4	Lane tapers / restriping	$10,000
5	Reconfiguration of on ramp	$125,000
6	Signalization upgrade	$10,000
7	North Sidewalk - 10' wide	$39,000
8	South Sidewalk - 10' wide	$58,500
9	Site Amenities (banners, flags, seating, etc.)	$35,000
10	Earthwork	$20,000
11	Landscaping and seeding	$40,000
12	Construction Traffic Control	$10,000
	Subtotal	**$706,000**
	Contingency (15%)	**$105,900**
	Total	**$811,900**

Concept 4 - Northbound Huron Street / Hanging Structure / Reconfigured On-Ramp		Cost
	Item	
1	Mobilization	$2,500
2	Site Demo.	$30,000
3	Hanging System - 6' wide	$280,000
4	Lane tapers / restriping	$10,000
5	Reconfiguration of on ramp	$125,000
6	Signalization upgrade	$10,000
7	North Sidewalk - 10' wide	$39,000
8	South Sidewalk - 10' wide	$58,500
9	Site Amenities (banners, flags, seating, etc.)	$35,000
10	Earthwork	$20,000
11	Landscaping and seeding	$40,000
	Construction Traffic Control	$10,000
	Subtotal	**$660,000**
	Contingency (15%)	**$99,000**
	Total	**$759,000**

Concept 5 - "Free Standing Structure"		Cost
	Item	
1	Mobilization	$2,500
2	Site Demo.	$15,000
3	8' wide overpass with approaches	$800,000
4	Lane tapers / restriping	$5,000
5	Signalization upgrade	$5,000
6	North Sidewalk - 10' wide	$39,000
7	South Sidewalk - 10' wide	$58,500
8	Site Amenities (banners, flags, seating, etc.)	$35,000
9	Earthwork	$65,000
10	Landscaping and seeding	$50,000
11	Construction Traffic Control	$15,000
	Subtotal	**$1,090,000**
	Contingency (15%)	**$163,500**
	Total	**$1,253,500**

Concept 6 - Southbound Lane - Huron Street		Cost
	Item	
1	Mobilization	$2,500
2	Site Demo.	$30,000
3	Decorative Separation Barricade	$60,000
4	Reconfiguration of on ramp	$125,000
5	Lane tapers / restriping	$10,000
6	Signalization upgrade	$10,000
7	North Sidewalk - 10' wide	$39,000
8	South Sidewalk - 10' wide	$58,500
9	Site Amenities (banners, flags, seating, etc.)	$35,000
10	Earthwork	$20,000
11	Landscaping and seeding	$40,000
12	Construction Traffic Control	$10,000
	Subtotal	**$440,000**
	Contingency (15%)	**$66,000**
	Total	**$506,000**

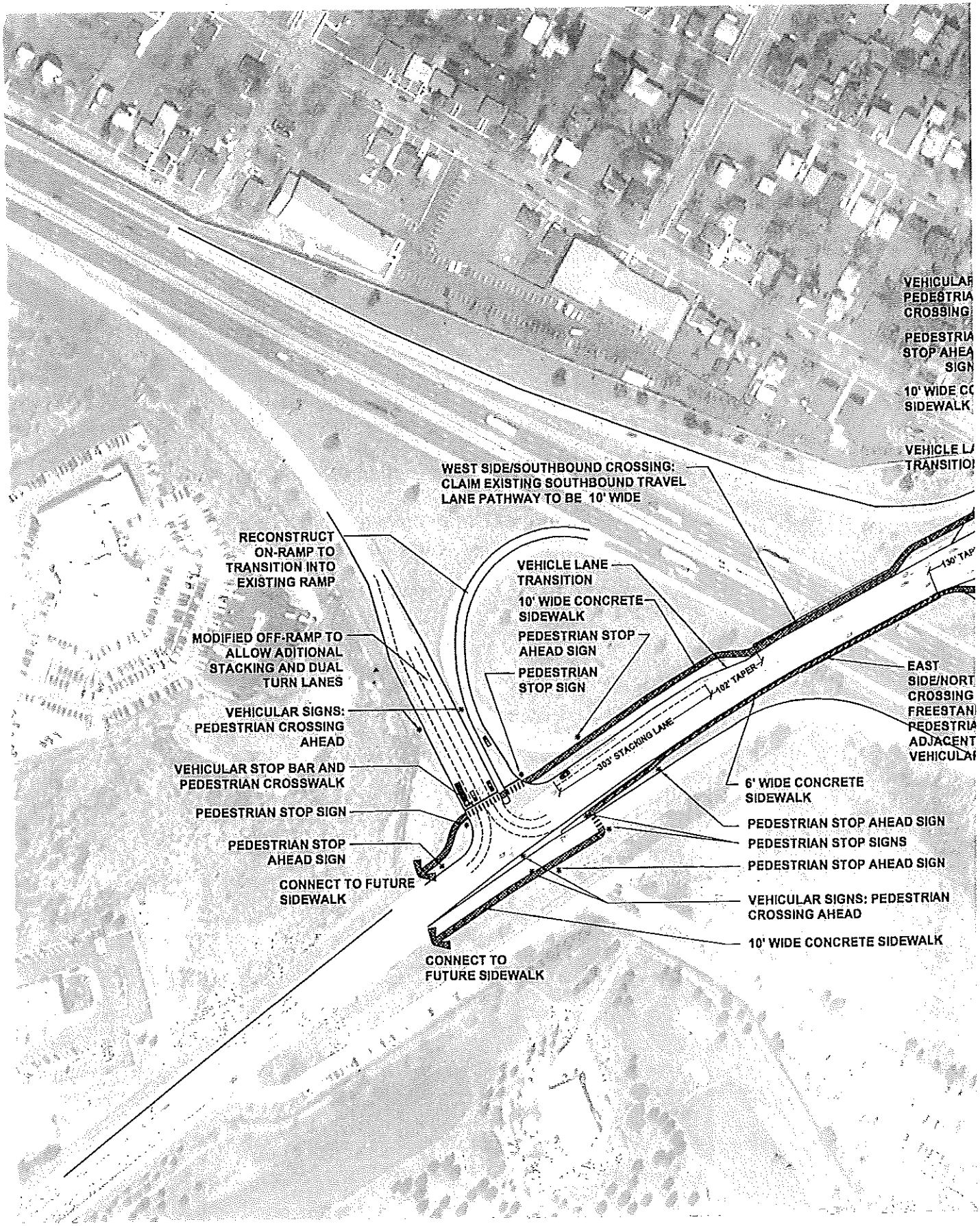
Plan

The preferred concept is a combination of several concepts developed during the initial phases of the project. This final concept features a non-motorized traffic system for pedestrians and bicycles that traverses the overpass on both sides. Non-motorized traffic northbound on Huron Street will cross the highway on a new 8 foot wide freestanding concrete structure immediately adjacent to the existing bridge. The vehicular on-ramp from southbound Huron Street to westbound I-94 ramp will be reconfigured to improve pedestrian crossing at the intersection.

Southbound non-motorized traffic on Huron Street will access the existing overpass / bridge deck using the existing far right southbound vehicular lane. This 10 foot 6 inch lane would be dedicated to non-motorized traffic with a concrete vertical barrier being constructed between vehicular and pedestrian traffic. The on-ramp from southbound Huron Street to eastbound I-94 ramp will be modified to improve pedestrian crossing minimizing vehicular and pedestrain conflicts.

A 6 foot 10 inch wide sidewalk leading to the overpass on both the northbound and southbound sides will be connected to existing township and city sidewalk systems. Aesthetic architectural elements such as lighting, banners, wall details, bridge structures, ect., will be integrated into both northbound and southbound non-motorized paths adjacent to the overpass. [see page 26 for conceptual sketches]

The final concept has been test modeled using Corsim software that simulates vehicular and pedestrian traffic circulation and signalization during peak and off- peak periods. [see fold-out]

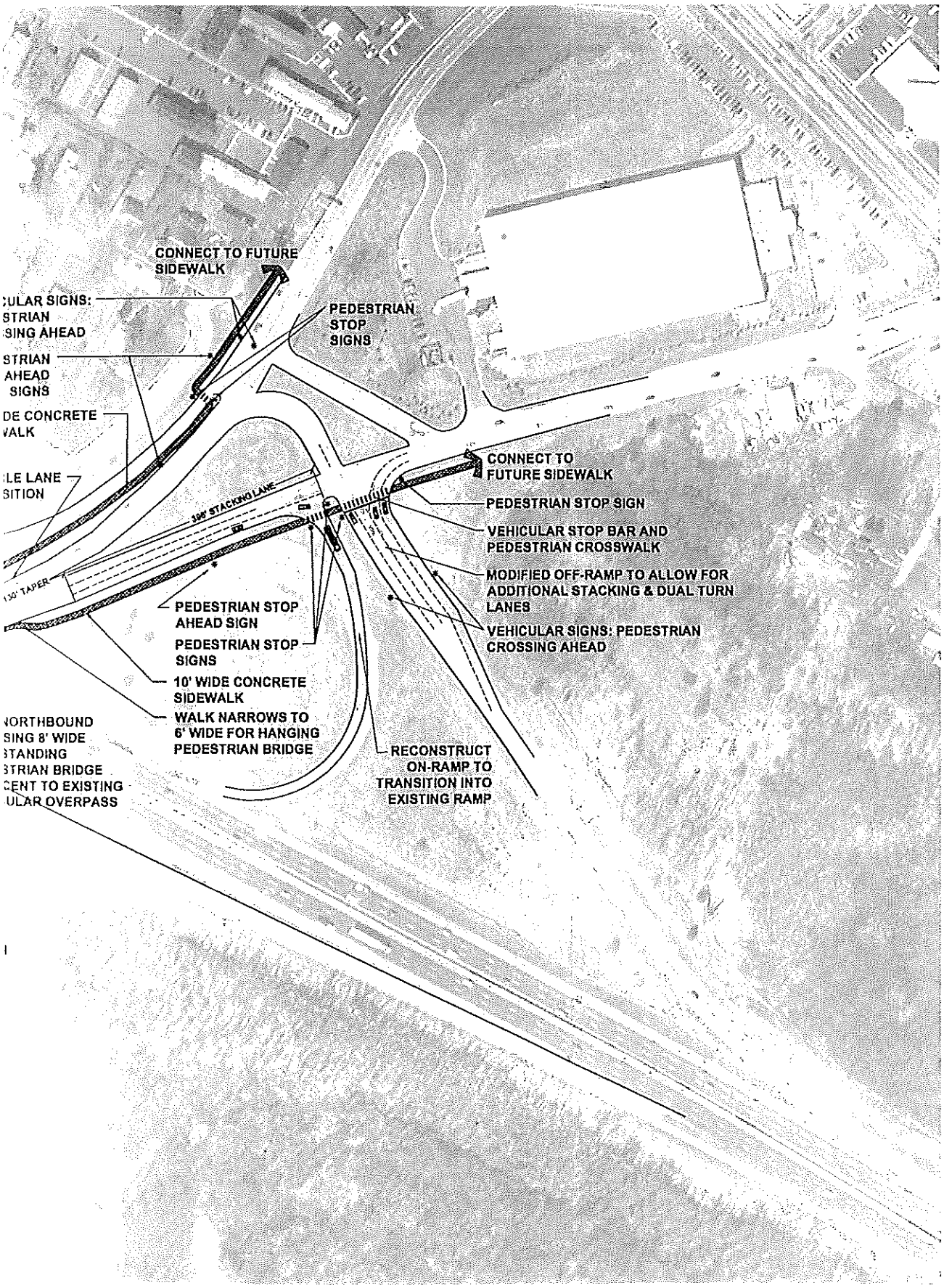


MDOT
Michigan Department of Transportation

hamiltonanderson
Midwestern Consulting, Inc.

I-94/HURON STREET NO
PEDESTRIAN CR

PREFERRED ALTE



ION-MOTORIZED
ROSSING
TERNATIVE

N

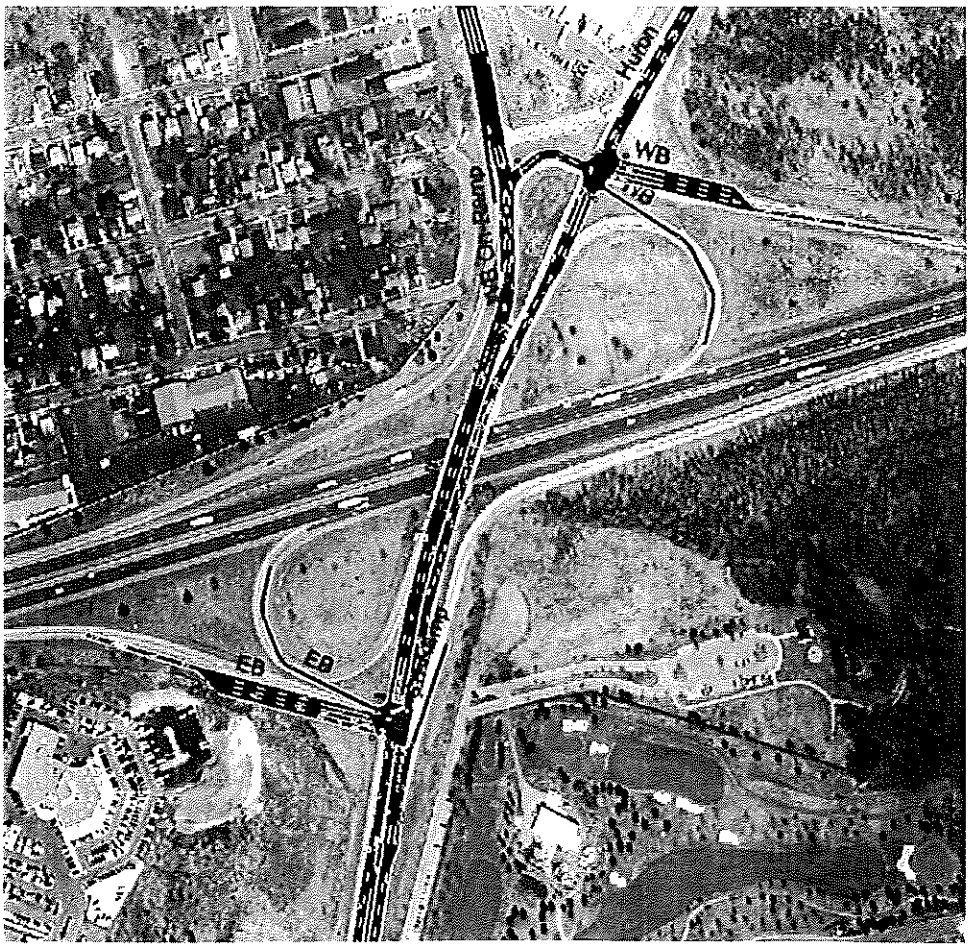
N.T.S.
SUMMER 2004

Traffic Simulation

Traffic simulation is a very effective tool for traffic engineers to evaluate present and future traffic operations. Additionally, this computer software allows study of different scenarios by using adjustable or variable factors. These factors include adjusting signal timing, adjusting traffic volumes and modifying turning movements and speed limits.

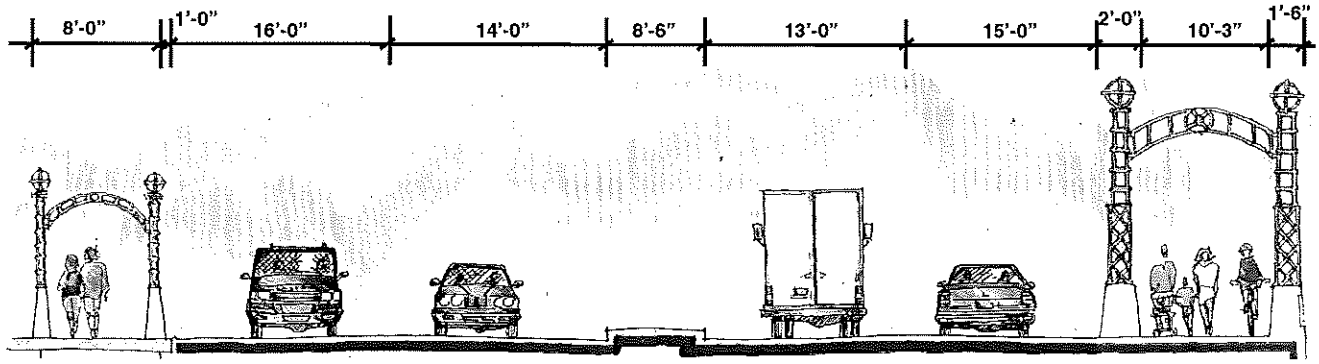
Once the I-94/Huron Street preferred plan was developed, the design team then modeled the intersection using Corsim software. The study area was enlarged to include traffic movements in the areas north to Harriet Street and south to James L. Hart Parkway along Huron Street. Using the traffic simulation, the design team / steering committee made the following conclusions:

- overall operations and individual intersection movements would be at acceptable levels of service
- lane queue would not form to unacceptable lengths
- coordination of intersection signal timing can be achieved.



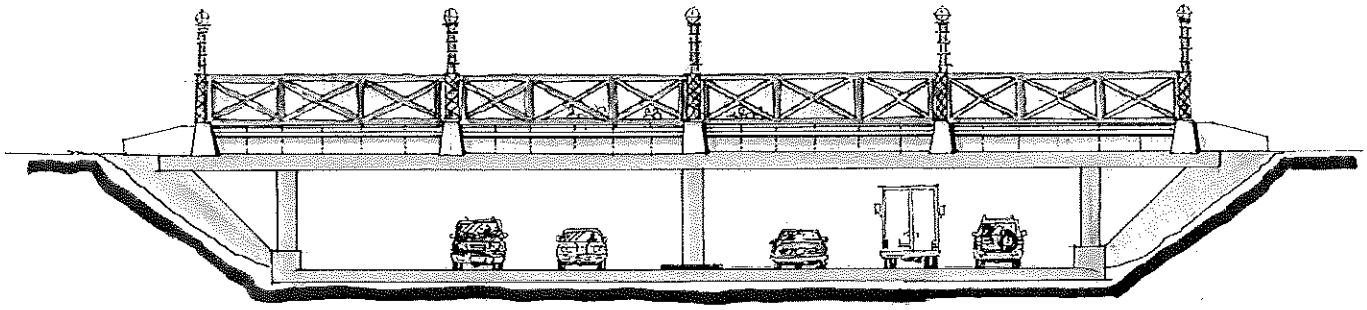
Corsim Traffic Simulation Model

Architectural Features



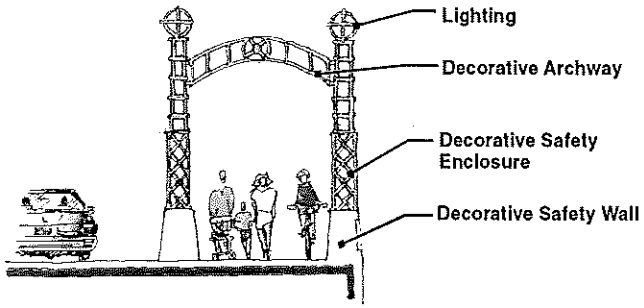
Bridge Deck Cross Section

N.T.S.



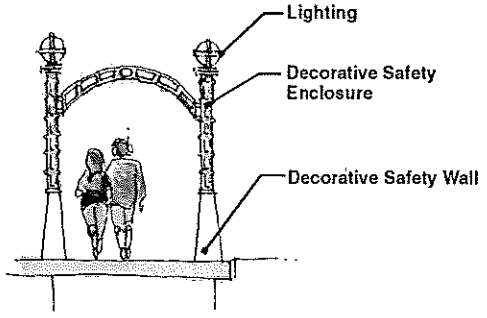
Highway Elevation "Looking East"

N.T.S.



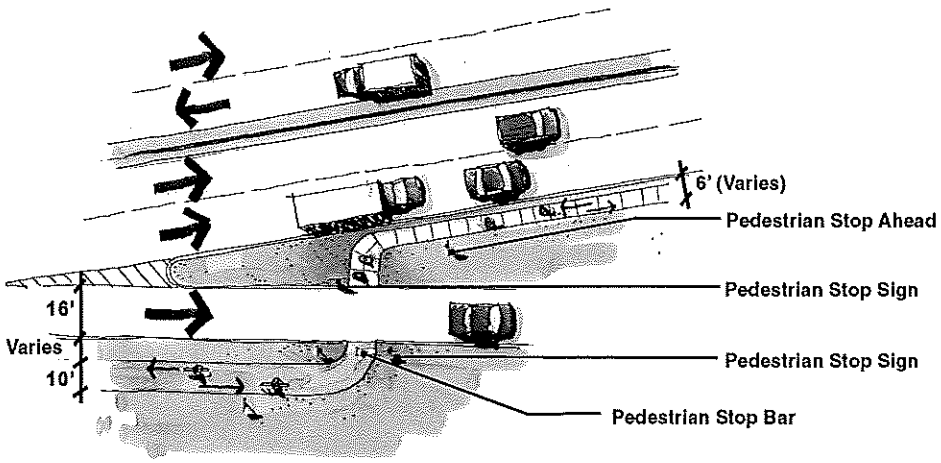
"Pedestrian Lane"
Southbound Huron Street

N.T.S.



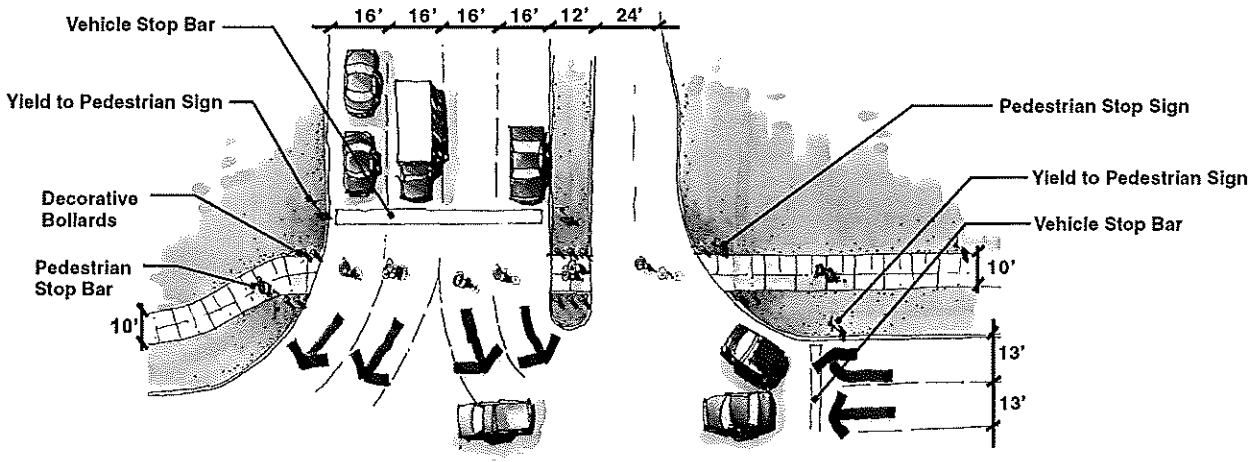
Free Standing Pedestrian Bridge
Northbound Huron Street

N.T.S.



Pedestrian / Slip Ramp Crossing

N.T.S.



Modified On/Off Ramp Intersection

N.T.S.

Appendix

Turning Movement Count Data
Midwestern Consulting LLC

File Name : 1
Site Code : 00000001
Start Date : 06/22/2004
Page No : 1

SB WB EB

Groups Printed- Vehicles

Start Time	Hamilton From North					Spring From East					Hamilton From South					Spring From West					Int. Total
	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	
Factor	1.0	1.0	1.0	1.0		1.0	1.0	1.0	1.0		1.0	1.0	1.0	1.0		1.0	1.0	1.0	1.0		
07:30 AM	6	110	5	0	121	0	25	99	0	124	0	0	0	0	0	12	15	0	0	27	272
07:45 AM	7	133	12	0	152	0	35	95	0	130	0	0	0	0	0	11	10	0	0	21	303
Total	13	243	17	0	273	0	60	194	0	254	0	0	0	0	0	23	25	0	0	48	575
08:00 AM	4	102	18	0	124	0	35	70	0	105	0	0	0	0	0	17	15	0	0	32	261
08:15 AM	7	103	10	0	120	0	28	82	0	110	0	0	0	0	0	8	22	0	0	30	260
*** BREAK ***																					
Total	11	205	28	0	244	0	63	152	0	215	0	0	0	0	0	25	37	0	0	62	521
*** BREAK ***	24 .86	448 .84	45 .62				123 .88	346 .87								48 .71	62 .70				
04:30 PM	17	211	50	0	278	0	73	88	0	161	0	0	0	0	0	21	50	0	0	71	510
04:45 PM	16	216	50	0	282	0	69	98	0	167	0	0	0	0	0	31	57	0	0	88	537
Total	33	427	100	0	560	0	142	186	0	328	0	0	0	0	0	52	107	0	0	159	1047
05:00 PM	20	270	52	0	342	0	54	119	0	173	0	0	0	0	0	31	63	0	0	94	609
05:15 PM	22	297	56	0	375	0	76	108	0	184	0	0	0	0	0	23	61	0	0	84	643
Grand Total	99	1442	253	0	1794	0	395	759	0	1154	0	0	0	0	0	154	293	0	0	447	3395
Apprch %	5.5	80.4	14.1	0.0		0.0	34.2	65.8	0.0		0.0	0.0	0.0	0.0		34.5	65.5	0.0	0.0		
Total %	2.9	42.5	7.5	0.0	52.8	0.0	11.6	22.4	0.0	34.0	0.0	0.0	0.0	0.0	0.0	4.5	8.6	0.0	0.0	13.2	
	75 .85	994 .84					272 .89	413 .87								106 .85	231 .92				

1.485

Turning Movement Count Data
Midwestern Consulting LLC

File Name : 2
Site Code : 00000002
Start Date : 06/23/2004
Page No : 1

SB WB NB EB

Groups Printed- Vehicles

	Huron From North					Spring From East					Huron From South					Spring From West					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
Factor	1.0	1.0	1.0	1.0		1.0	1.0	1.0	1.0		1.0	1.0	1.0	1.0		1.0	1.0	1.0	1.0		
07:30 AM	0	0	0	0	0	9	138	0	0	147	53	160	31	0	244	0	27	0	0	27	418
07:45 AM	0	0	0	0	0	8	100	0	0	108	103	213	42	0	358	0	25	3	0	28	494
Total	0	0	0	0	0	17	238	0	0	255	156	373	73	0	602	0	52	3	0	55	912
08:00 AM	0	0	0	0	0	10	94	0	0	104	84	170	36	0	290	0	23	2	0	25	419
08:15 AM	0	0	0	0	0	5	69	0	0	74	75	170	22	0	267	0	27	2	0	29	370
*** BREAK ***																					
Total	0	0	0	0	0	15	163	0	0	178	159	340	58	0	557	0	50	4	0	54	789
						32 .80	401 .73				315 .76	713 .84	131 .78				102 .94	7 .58			
*** BREAK ***																					
04:30 PM	0	0	0	0	0	5	130	0	0	135	82	172	42	0	296	0	112	13	0	125	556
04:45 PM	0	0	0	0	0	11	122	0	0	133	98	186	44	0	328	0	108	3	0	111	572
Total	0	0	0	0	0	16	252	0	0	268	180	358	86	0	624	0	220	16	0	236	1128
05:00 PM	0	0	0	0	0	14	135	0	0	149	89	168	50	0	307	0	97	8	0	105	561
05:15 PM	0	0	0	0	0	11	135	0	0	146	96	207	37	0	340	0	76	6	0	82	568
Grand Total	0	0	0	0	0	73	923	0	0	996	680	1446	304	0	2430	0	495	37	0	532	3958
Apprch %	0.0	0.0	0.0	0.0		7.3	92.7	0.0	0.0		28.0	59.5	12.5	0.0		0.0	93.0	7.0	0.0		
Total %	0.0	0.0	0.0	0.0	0.0	1.8	23.3	0.0	0.0	25.2	17.2	36.5	7.7	0.0	61.4	0.0	12.5	0.9	0.0	13.4	
						41 .73	522 .97				365 .93	733 .89	173 .86				393 .88	30 .58			

1.485

Turning Movement Count Data
Midwestern Consulting LLC

File Name : 3
Site Code : 00000003
Start Date : 06/24/2004
Page No : 1

WB NB

Groups Printed- Vehicles

	Huron From North					WB I-94 Ramps From East					Huron From South					From West					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
Factor	1.0	1.0	1.0	1.0		1.0	1.0	1.0	1.0		1.0	1.0	1.0	1.0		1.0	1.0	1.0	1.0		
07:30 AM	0	0	0	0	0	69	65	0	0	134	161	180	0	0	341	0	0	0	0	0	475
07:45 AM	0	0	0	0	0	98	101	0	0	199	173	232	0	0	405	0	0	0	0	0	604
Total	0	0	0	0	0	167	166	0	0	333	334	412	0	0	746	0	0	0	0	0	1079
08:00 AM	0	0	0	0	0	102	69	0	0	171	125	183	0	0	308	0	0	0	0	0	479
08:15 AM	0	0	0	0	0	72	79	0	0	151	132	204	0	0	336	0	0	0	0	0	487
*** BREAK ***																					
Total	0	0	0	0	0	174	148	0	0	322	257	387	0	0	644	0	0	0	0	0	966
						341	314				591	799									
*** BREAK ***						.84	.78				.85	.86									
04:30 PM	0	0	0	0	0	75	103	0	0	178	87	246	0	0	333	0	0	0	0	0	511
04:45 PM	0	0	0	0	0	91	118	0	0	209	102	274	0	0	376	0	0	0	0	0	585
Total	0	0	0	0	0	166	221	0	0	387	189	520	0	0	709	0	0	0	0	0	1096
05:00 PM	0	0	0	0	0	87	95	0	0	182	76	252	0	0	328	0	0	0	0	0	510
05:15 PM	0	0	0	0	0	100	93	0	0	193	82	219	0	0	301	0	0	0	0	0	494
Grand Total	0	0	0	0	0	694	723	0	0	1417	938	1790	0	0	2728	0	0	0	0	0	4145
Apprch %	0.0	0.0	0.0	0.0		49.0	51.0	0.0	0.0		34.4	65.6	0.0	0.0		0.0	0.0	0.0	0.0		
Total %	0.0	0.0	0.0	0.0	0.0	16.7	17.4	0.0	0.0	34.2	22.6	43.2	0.0	0.0	65.8	0.0	0.0	0.0	0.0	0.0	
						353	409				341	991									
						.88	.87				.85	.90									

1.485

Turning Movement Count Data
Midwestern Consulting LLC

File Name : 4
Site Code : 00000004
Start Date : 06/22/2004
Page No : 1

SB NB EB

Groups Printed- Vehicles

Start Time	Huron From North					EB I-94 Ramps From East					Huron From South					EB I-94 Ramps From West					
	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
Factor	1.0	1.0	1.0	1.0		1.0	1.0	1.0	1.0		1.0	1.0	1.0	1.0		1.0	1.0	1.0	1.0		
07:30 AM	61	139	0	0	200	0	0	0	0	0	87	327	0	0	414	69	0	65	0	134	748
07:45 AM	51	204	0	0	255	0	0	0	0	0	92	284	0	0	376	72	0	81	0	153	784
Total	112	343	0	0	455	0	0	0	0	0	179	611	0	0	790	141	0	146	0	287	1532
08:00 AM	49	105	0	0	154	0	0	0	0	0	94	252	0	0	346	68	0	74	0	142	642
08:15 AM	40	130	0	0	170	0	0	0	0	0	79	239	0	0	318	67	0	82	0	149	637
*** BREAK ***																					
Total	89	235	0	0	324	0	0	0	0	0	173	491	0	0	664	135	0	156	0	291	1279
	201	578									352	1102				276		302			
	.82	.71									.94	.84				.96		.92			
*** BREAK ***																					
04:30 PM	84	271	0	0	355	0	0	0	0	0	42	209	0	0	251	139	0	98	0	237	843
04:45 PM	80	295	0	0	375	0	0	0	0	0	72	215	0	0	287	150	0	115	0	265	927
Total	164	566	0	0	730	0	0	0	0	0	114	424	0	0	538	289	0	213	0	502	1770
05:00 PM	131	280	0	0	411	0	0	0	0	0	94	220	0	0	314	174	0	125	0	299	1024
05:15 PM	86	252	0	0	338	0	0	0	0	0	72	199	0	0	271	181	0	104	0	285	894
Grand Total	582	1676	0	0	2258	0	0	0	0	0	632	1945	0	0	2577	920	0	744	0	1664	6499
Apprch %	25.8	74.2	0.0	0.0		0.0	0.0	0.0	0.0		24.5	75.5	0.0	0.0		55.3	0.0	44.7	0.0		
Total %	9.0	25.8	0.0	0.0	34.7	0.0	0.0	0.0	0.0	0.0	9.7	29.9	0.0	0.0	39.7	14.2	0.0	11.4	0.0	25.6	
	381	1098									280	843				644		442			
	.73	.93									.74	.96				.89		.88			

1.485

Turning Movement Count Data
Midwestern Consulting LLC

File Name : 5
Site Code : 00000005
Start Date : 06/23/2004
Page No : 1

SB WB NB EB

Groups Printed- Vehicles

Start Time	Huron From North					James L Hart From East					Huron From South					James L Hart From West					Int. Total
	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	
Factor	1.0	1.0	1.0	1.0		1.0	1.0	1.0	1.0		1.0	1.0	1.0	1.0		1.0	1.0	1.0	1.0		
07:30 AM	67	163	33	0	263	7	2	2	0	11	5	361	18	0	384	9	3	32	0	44	702
07:45 AM	44	145	26	0	215	11	1	4	0	16	3	316	16	0	335	7	23	28	0	58	624
Total	111	308	59	0	478	18	3	6	0	27	8	677	34	0	719	16	26	60	0	102	1326
08:00 AM	33	130	28	0	191	20	1	3	0	24	3	291	19	0	313	8	4	17	0	29	557
08:15 AM	31	132	21	0	184	7	0	2	0	9	7	284	10	0	301	3	2	24	0	29	523
*** BREAK ***																					
Total	64	262	49	0	375	27	1	5	0	33	10	575	29	0	614	11	6	41	0	58	1080
	175	570	108			45	4	11			18	1252	63			27	32	101			
*** BREAK ***	.65	.87	.82			.56	.50	.69			.64	.87	.83			.75	.35	.79			
04:30 PM	34	364	18	0	416	25	1	1	0	27	2	243	9	0	254	14	4	38	0	56	753
04:45 PM	26	391	23	0	440	45	1	1	0	47	6	242	7	0	255	14	1	27	0	42	784
Total	60	755	41	0	856	70	2	2	0	74	8	485	16	0	509	28	5	65	0	98	1537
05:00 PM	27	403	18	0	448	41	1	5	0	47	10	267	8	0	285	16	4	50	0	70	850
05:15 PM	33	419	24	0	476	26	1	6	0	33	10	238	6	0	254	18	1	35	0	54	817
Grand Total	295	2147	191	0	2633	182	8	24	0	214	46	2242	93	0	2381	89	42	251	0	382	5610
Apprch %	11.2	81.5	7.3	0.0		85.0	3.7	11.2	0.0		1.9	94.2	3.9	0.0		23.3	11.0	65.7	0.0		
Total %	5.3	38.3	3.4	0.0	46.9	3.2	0.1	0.4	0.0	3.8	0.8	40.0	1.7	0.0	42.4	1.6	0.7	4.5	0.0	6.8	
	120	1577	83			137	4	13			28	990	30			62	10	150			
	.88	.94	.86			.76	1.00	.54			.70	.93	.83			.86	.62	.75			

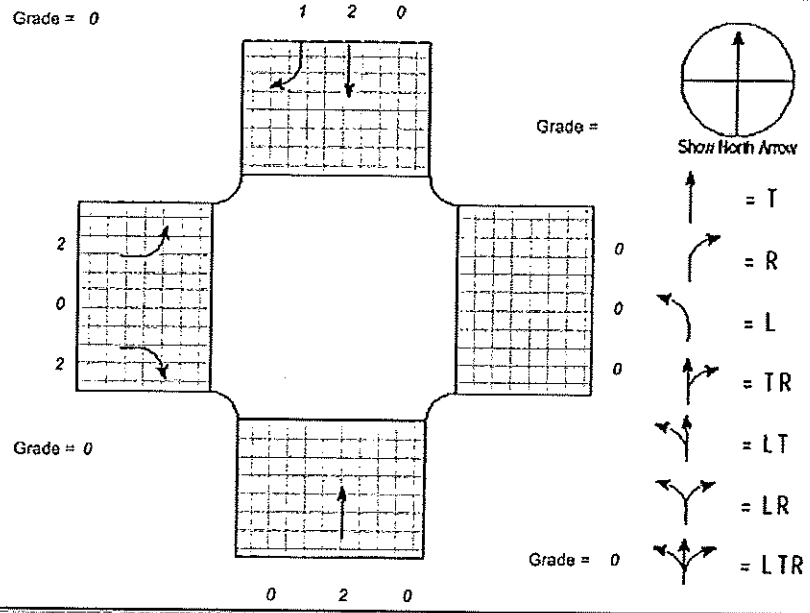
1,485

INPUT WORKSHEET

General Information		Site Information	
Analyst	klk	Intersection	huron / i-94 eb ramps
Agency or Co.	mcllc	Area Type	All other areas
Date Performed	june 22, 04	Jurisdiction	mdot / wcrc
Time Period	7:30-8:30 am peak hour-2024	Analysis Year	2024 am peak 2 sb 4 eb lns

Project Description *non-motorized path am peak hour 2 sb lns–4 eb lns–2024*

Intersection Geometry



Volume and Timing Input

	EB			WB			NB			SB		
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT
Volume, V (vph)	448		410					1636			858	298
% heavy vehicles, % HV	2		2					2			2	22
Peak-hour factor, PHF	0.92		0.96					0.84			0.71	0.82
Pretimed (P) or actuated (A)	P		P					P			P	P
Start-up lost time, l_1 (sec)	2.0		2.0					2.0			2.0	2.0
Extension of effective green, e (s)	2.0		2.0					2.0			2.0	2.0
Arrival type, AT	3		3					3			3	3
Unit extension, UE (s)	3.0		3.0					3.0			3.0	3.0
Ped/Bike/RTOR Volume per hour	0		0	0						0		0
Lane width, W	12.0		12.0					12.0			12.0	12.0
Parking (Y or N)	N		N	N		N	N		N	N		N
Parking maneuvers, N_m (man/h)												
Bus stopping, N_b (buses/hr)	0		0					0			0	0

	EB Only	02	03	04	Thru & RT	06	07	08
Timing	G = 25.0	G =	G =	G =	G = 40.0	G =	G =	G =
	Y = 4	Y =	Y =	Y =	Y = 4	Y =	Y =	Y =
Analysis duration, T (h) = 0.25						Cycle Length, C (s) = 73.0		

CAPACITY AND LOS WORKSHEET

General Information

Project Description *non-motorized path am peak hour 2 sb lns--4 eb lns--2024*

Capacity Analysis

	EB			WB			NB			SB	
Lane group	L		R				T			T	R
Adj. flow rate	487		427				1948			1208	363
Satflow rate	3437		2803				3547			3547	1324
Lost time	2.0		2.0				2.0			2.0	2.0
Green ratio	0.34		0.34				0.55			0.55	0.55
Lane group cap.	1177		960				1944			1944	725
v/c ratio	0.41		0.44				1.00			0.62	0.50
Flow ratio	0.14		0.15				0.55			0.34	0.27
Crit. lane group		N	Y		N		Y			N	N
Sum flow ratios	0.70										
Lost time/cycle	8.00										
Critical v/c ratio	0.79										

Lane Group Capacity, Control Delay, and LOS Determination

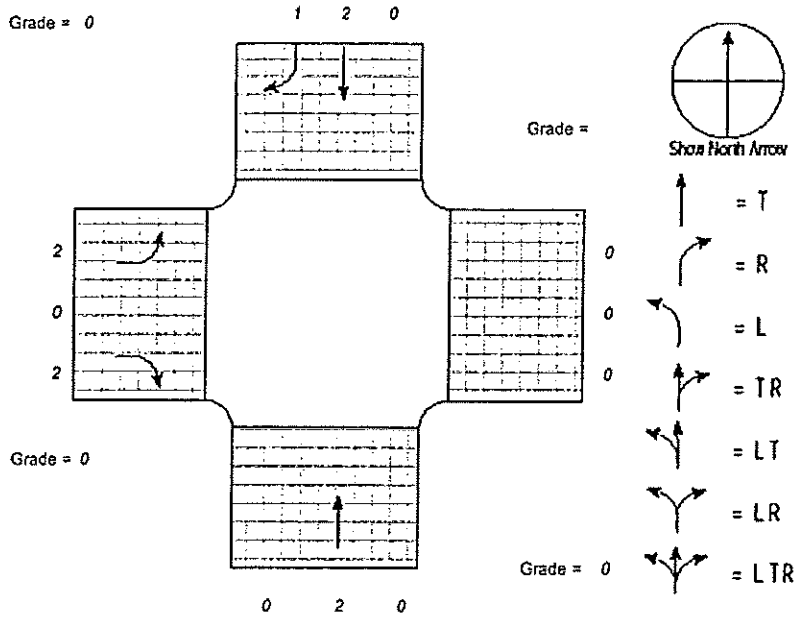
	EB			WB			NB			SB	
Lane group	L		R				T			T	R
Adj. flow rate	487		427				1948			1208	363
Lane group cap.	1177		960				1944			1944	725
v/c ratio	0.41		0.44				1.00			0.62	0.50
Green ratio	0.34		0.34				0.55			0.55	0.55
Unif. delay d1	18.4		18.6				16.5			11.3	10.3
Delay factor k	0.50		0.50				0.50			0.50	0.50
Increm. delay d2	1.1		1.5				20.9			1.5	2.5
PF factor	1.000		1.000				1.000			1.000	1.000
Control delay	19.5		20.1				37.4			12.8	12.7
Lane group LOS	B		C				D			B	B
Apprch. delay	19.8						37.4			12.8	
Approach LOS	B						D			B	
Intersec. delay	25.0			Intersection LOS						C	

INPUT WORKSHEET

General Information		Site Information	
Analyst	*klk*	Intersection	*huron / i-94 eb ramps*
Agency or Co.	*mcllc*	Area Type	*All other areas*
Date Performed	*june 22, 04*	Jurisdiction	*mdot / wcrc*
Time Period	*4:30-5:30 pm peak hour-2024*	Analysis Year	*2024 pm peak 3 sb 4 eb lns*

Project Description *non-motorized path pm peak hour 3 sb lns--4 eb lns--2024*

Intersection Geometry



Volume and Timing Input

	EB			WB			NB			SB		
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT
Volume, V (vph)	*656*		*956*					*1252*			*1631*	*566*
% heavy vehicles, % HV	*2*		*2*					*2*			*2*	*22*
Peak-hour factor, PHF	*0.88*		*0.89*					*0.96*			*0.93*	*0.73*
Pretimed (P) or actuated (A)	*P*		*P*					*P*			*P*	*P*
Start-up lost time, l_1 (sec)	*2.0*		*2.0*					*2.0*			*2.0*	*2.0*
Extension of effective green, e (s)	*2.0*		*2.0*					*2.0*			*2.0*	*2.0*
Arrival type, AT	*3*		*3*					*3*			*3*	*3*
Unit extension, UE (s)	*3.0*		*3.0*					*3.0*			*3.0*	*3.0*
Ped/Bike/RTOR Volume per hour	*0*		*0*	*0*						*0*		*0*
Lane width, W	*12.0*		*12.0*					*12.0*			*12.0*	*12.0*
Parking (Y or N)	*N*		*N*	*N*		*N*	*N*		*N*	*N*		*N*
Parking maneuvers, N_m (man/h)												
Bus stopping, N_b (buses/hr)	*0*		*0*					*0*			*0*	*0*

	EB Only	02	03	04	Thru & RT	06	07	08
Timing	G = *25.0*	G =	G =	G =	G = *30.0*	G =	G =	G =
	Y = *4*	Y =	Y =	Y =	Y = *4*	Y =	Y =	Y =

Analysis duration, T (h) = *0.25* Cycle Length, C (s) = *63.0*

CAPACITY AND LOS WORKSHEET

General Information

Project Description *non-motorized path pm peak hour 3 sb lns--4 eb lns--2024*

Capacity Analysis

	EB			WB			NB			SB	
Lane group	L		R				T			T	R
Adj. flow rate	745		1074				1304			1754	775
Satflow rate	3433		2787				3539			3539	1324
Lost time	2.0		2.0				2.0			2.0	2.0
Green ratio	0.40		0.40				0.48			0.48	1.00
Lane group cap.	1362		1106				1685			1685	1324
v/c ratio	0.55		0.97				0.77			1.04	0.59
Flow ratio	0.22		0.39				0.37			0.50	0.59
Crit. lane group		N	Y		N		N			Y	N
Sum flow ratios	0.88										
Lost time/cycle	8.00										
Critical v/c ratio	1.01										

Lane Group Capacity, Control Delay, and LOS Determination

	EB			WB			NB			SB	
Lane group	L		R				T			T	R
Adj. flow rate	745		1074				1304			1754	775
Lane group cap.	1362		1106				1685			1685	1324
v/c ratio	0.55		0.97				0.77			1.04	0.59
Green ratio	0.40		0.40				0.48			0.48	1.00
Unif. delay d1	14.6		18.6				13.7			16.5	0.0
Delay factor k	0.50		0.50				0.50			0.50	0.50
Increm. delay d2	1.6		20.9				3.5			33.4	1.9
PF factor	1.000		1.000				1.000			1.000	0.950
Control delay	16.2		39.6				17.2			49.9	1.9
Lane group LOS	B		D				B			D	A
Apprch. delay	30.0						17.2			35.2	
Approach LOS	C						B			D	
Intersec. delay	29.4			Intersection LOS						C	

HCS2000: Signalized Intersections Release 4.1d

Analyst: klk
Agency: mcllc
Date: june 22, 04
Period: 4:30-5:30 pm peak hour-2024
Project ID: non-motorized path pm peak hour 3 sb lns--4 eb lns--2024
E/W St: i-94 eb entry/exit ramps @4 ln

Inter.: huron / i-94 eb ramps
Area Type: All other areas
Jurisd: mdot / wcrc
Year : 2024 pm peak 3 sb 4 eb lns
N/S St: huron--3 sb lanes

SIGNALIZED INTERSECTION SUMMARY

	Eastbound			Westbound			Northbound			Southbound		
	L	T	R	L	T	R	L	T	R	L	T	R
No. Lanes	2	0	2	0	0	0	0	2	0	0	2	1
LGConfig	L		R					T			T	R
Volume	656		956					1252			1631	566
Lane Width	12.0		12.0					12.0			12.0	12.0
RTOR Vol			0									0

Duration 0.25 Area Type: All other areas

Signal Operations

Phase Combination	1	2	3	4	5	6	7	8
EB Left		P			NB Left			
Thru					Thru	P		
Right		P			Right			
Peds					Peds			
WB Left					SB Left			
Thru					Thru	P		
Right					Right	P		
Peds					Peds			
NB Right					EB Right			
SB Right		(P)			WB Right			
Green		25.0				30.0		
Yellow		4.0				4.0		
All Red		0.0				0.0		

Cycle Length: 63.0 secs

Intersection Performance Summary

Appr/ Lane Grp	Lane Group Capacity	Adj Sat Flow Rate (s)	Ratios v/c	Ratios g/C	Lane Group Delay	Lane Group LOS	Approach Delay	Approach LOS
Eastbound								
L	1362	3433	0.55	0.40	16.2	B		
							30.0	C
R	1106	2787	0.97	0.40	39.6	D		
Westbound								
Northbound								
T	1685	3539	0.77	0.48	17.2	B	17.2	B
Southbound								
T	1685	3539	1.04	0.48	49.9	D	35.2	D
R	1324	1324	0.59	1.00	1.9	A		

Intersection Delay = 29.4 (sec/veh) Intersection LOS = C

INPUT WORKSHEET

General Information

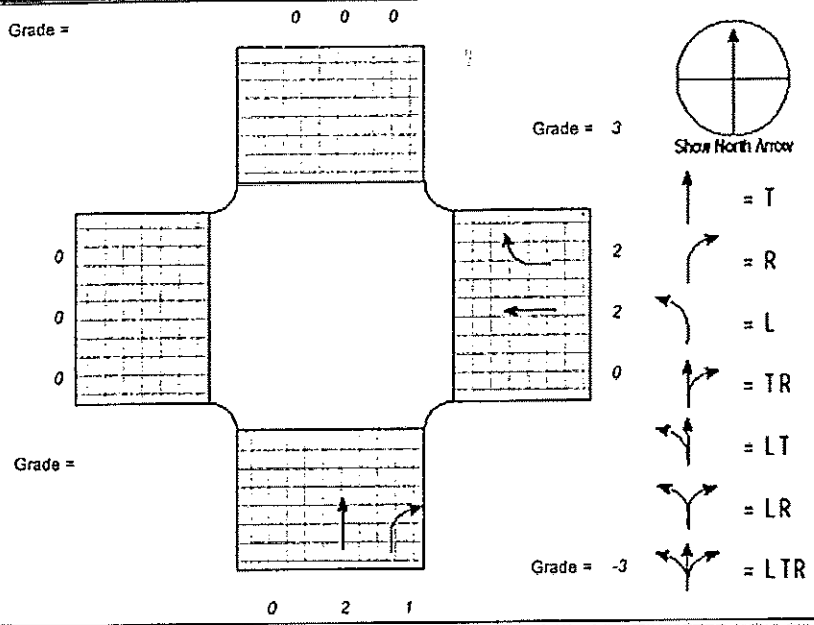
Analyst	klk
Agency or Co.	mcllc
Date Performed	june 24, 04
Time Period	7:30-8:30 am--2024

Site Information

Intersection	s huron / westbound i-94 ramps
Area Type	All other areas
Jurisdiction	mdot / wcrc
Analysis Year	2024-am-4 wb-3 nb

Project Description *non-motorized path am pk hr--4 wb lns--3 nb lns--2024*

Intersection Geometry



Volume and Timing Input

	EB			WB			NB			SB		
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT
Volume, V (vph)					466	506		1187	878			
% heavy vehicles, % HV					5	5		5	5			
Peak-hour factor, PHF					0.78	0.84		0.86	0.85			
Pretimed (P) or actuated (A)					A	A		A	A			
Start-up lost time, l_1 (sec)					2.0	2.0		2.0	2.0			
Extension of effective green, e (s)					2.0	2.0		2.0	2.0			
Arrival type, AT					3	3		3	3			
Unit extension, UE (s)					3.0	3.0		3.0	3.0			
Ped/Bike/RTOR Volume per hour				0		0	0		0			
Lane width, W					12.0	12.0		12.0	12.0			
Parking (Y or N)	N		N	N		N	N		N	N		N
Parking maneuvers, N_m (man/h)												
Bus stopping, N_b (buses/hr)					0	0		0	0			

	WB Only	02	03	04	NB Only	06	07	08
Timing	G = 25.0	G =	G =	G =	G = 35.0	G =	G =	G =
	Y = 5	Y =	Y =	Y =	Y = 5	Y =	Y =	Y =
Analysis duration, T (h) = 0.25						Cycle Length, C (s) = 70.0		

CAPACITY AND LOS WORKSHEET

General Information

Project Description *non-motorized path am pk hr–4 wb lns–3 nb lns–2024*

Capacity Analysis

	EB			WB			NB			SB		
Lane group				T	R		T	R				
Adj. flow rate				597	602		1380	1033				
Satflow rate				3387	2666		3490	1561				
Lost time				2.0	2.0		2.0	2.0				
Green ratio				0.36	0.36		0.50	1.00				
Lane group cap.				1210	952		1745	1561				
v/c ratio				0.49	0.63		0.79	0.66				
Flow ratio				0.18	0.23		0.40	0.66				
Crit. lane group		N		N	N		N	Y			N	
Sum flow ratios	0.66											
Lost time/cycle	0.00											
Critical v/c ratio	0.66											

Lane Group Capacity, Control Delay, and LOS Determination

	EB			WB			NB			SB		
Lane group				T	R		T	R				
Adj. flow rate				597	602		1380	1033				
Lane group cap.				1210	952		1745	1561				
v/c ratio				0.49	0.63		0.79	0.66				
Green ratio				0.36	0.36		0.50	1.00				
Unif. delay d1				17.6	18.7		14.5	0.0				
Delay factor k				0.11	0.21		0.34	0.24				
Increm. delay d2				0.3	1.4		2.6	1.1				
PF factor				1.000	1.000		1.000	0.950				
Control delay				17.9	20.1		17.0	1.1				
Lane group LOS				B	C		B	A				
Apprch. delay				19.0			10.2					
Approach LOS				B			B					
Intersec. delay	13.1			Intersection LOS						B		

INPUT WORKSHEET

General Information

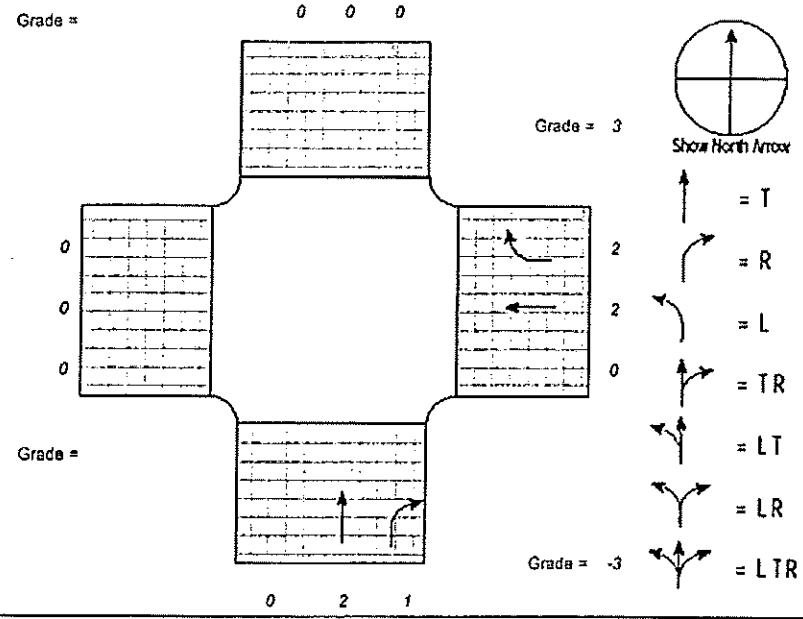
Analyst	klk
Agency or Co.	mcllc
Date Performed	june 24, 04
Time Period	4:30-5:30 pm–2024

Site Information

Intersection	s huron / westbound i-94 ramps
Area Type	All other areas
Jurisdiction	mdot / wcrc
Analysis Year	2024-pm-4 wb-3 nb

Project Description *non-motorized path pm pk hr--4 wb lns--3 nb lns--2024*

Intersection Geometry



Volume and Timing Input

	EB			WB			NB			SB		
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT
Volume, V (vph)					607	524		1472	515			
% heavy vehicles, % HV					5	5		5	5			
Peak-hour factor, PHF					0.87	0.88		0.90	0.85			
Pretimed (P) or actuated (A)					P	P		P	P			
Start-up lost time, l_1 (sec)					2.0	2.0		2.0	2.0			
Extension of effective green, e (s)					2.0	2.0		2.0	2.0			
Arrival type, AT					3	3		3	3			
Unit extension, UE (s)					3.0	3.0		3.0	3.0			
Ped/Bike/RTOR Volume per hour				0		0	0		0			
Lane width, W					12.0	12.0		12.0	12.0			
Parking (Y or N)	N		N	N		N	N		N	N		N
Parking maneuvers, N_m (man/h)												
Bus stopping, N_b (buses/hr)					0	0		0	0			

	WB Only	02	03	04	NB Only	06	07	08
Timing	G = 25.0	G =	G =	G =	G = 35.0	G =	G =	G =
	Y = 5	Y =	Y =	Y =	Y = 5	Y =	Y =	Y =

Analysis duration, T (h) = 0.25 | Cycle Length, C (s) = 70.0