5th Street

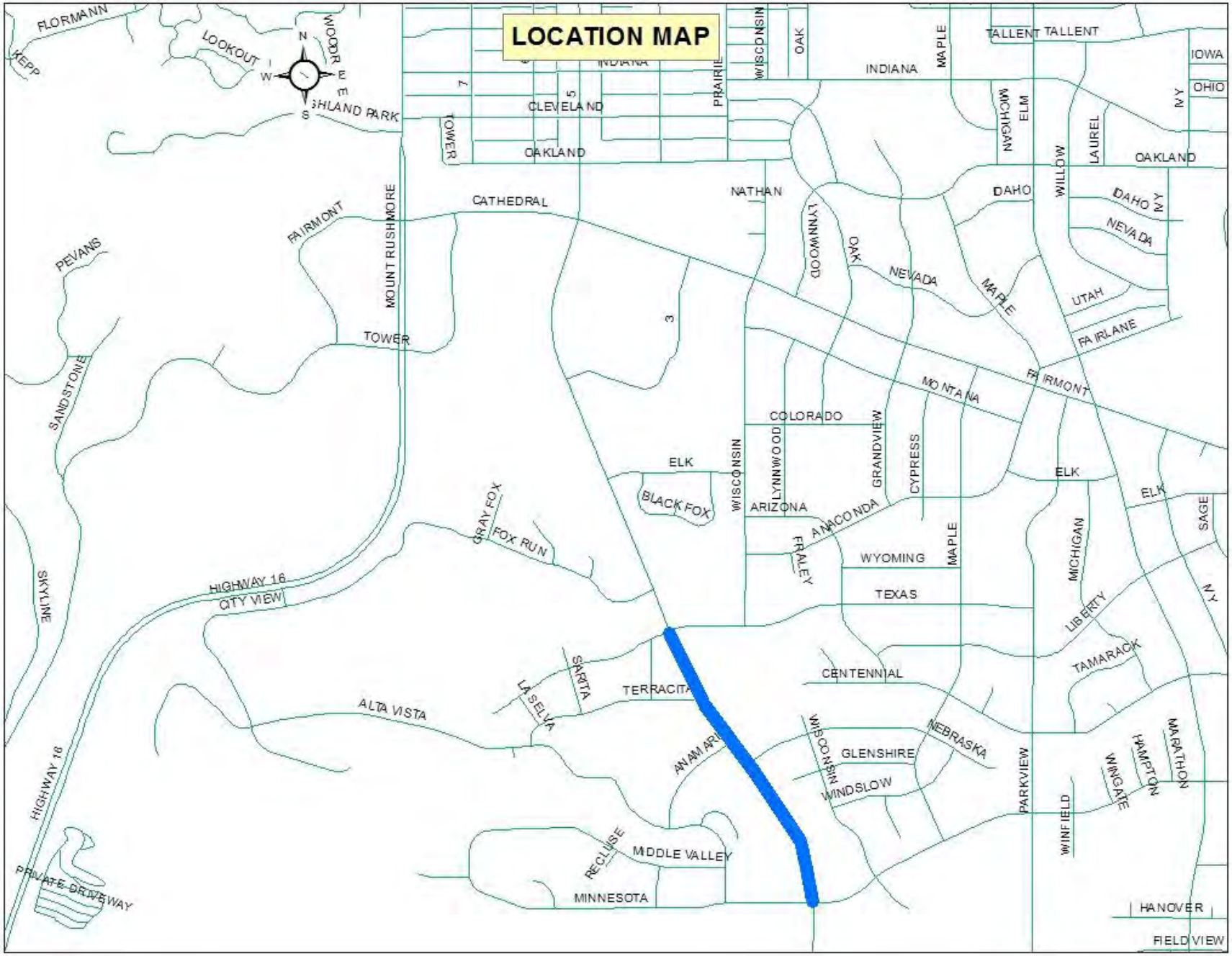
Texas St. to Minnesota St.

Center Turn Lane

26 June 2012

Engineering Services Division

Public Works Dept.


LOCATION MAP
FLORMANN
KEPP
LOOKOUT
N
W
E
S
WOODRIDGE
HIGHLAND PARK
INDIANA
CLEVELAND
OAKLAND
TOWER
PRAIRIE
WISCONSIN
OAK
MAPLE
TALLENT
IOWA
OHIO
NY
MICHIGAN
ELM
LAUREL
WILLOW
IDAHO
NEVADA
UTAH
FAIRLANE
NATHAN
CATHEDRAL
FAIRMONT
MOUNT RUSHMORE
PEVANS
SANDSTONE
SKYLINE
LYNNWOOD
MONTANA
COLORADO
GRANDVIEW
CYPRESS
ELK
BLACK FOX
ARIZONA
ANACONDA
FRALEY
WYOMING
TEXAS
GRAY FOX
FOX RUN
HIGHWAY 16
CITY VIEW
MICHIGAN
LIBERTY
SAGE
TAMARACK
CENTENNIAL
SARITA
LA SELVA
TERRACITA
ALTA VISTA
ANAMARIA
NEBRASKA
GLENSHIRE
WINDSLOW
PARKVIEW
WINFIELD
WINGATE
HAMPTON
MARATHON
RECLUSE
MIDDLE VALLEY
MINNESOTA
PRIVATE DRIVEWAY
HANOVER
FIELDVIEW

Background

- Mid 1970's – Texas St. to Fairmont Blvd.
- Mid 1990's – Minnesota St. to Texas St.
  - Recommended to be 5 lanes
  - Constructed as 4 lanes
- May 2012 – Citizen concern at Town Hall Meeting

Part 1 – Engineering Reasons for Adding Turn Lane

Capacity

- Access points
- 20-30 per mile
- High volume generators
- Very high through volumes

Part 1 – Engineering Reasons for Adding Turn Lane

5th St. between Texas St. and Minnesota St.

- 10 driveways per mile
- Low crash potential
- Low volume generators
- Relatively low through volumes (11,840 vpd)

Part 1 – Engineering Reasons for Adding Turn Lane

Crash Pattern

- Number of rear end crashes
- 3 between 2009 and 2011

Part 2 – Lane Widths

- Nationally accepted - "Green Book"
- American Association of State Highway Transportation Officials
- Founded in 1914 - first standards in the 1930's
- A Policy on Geometric Design of Highways and Streets

Part 2 – Lane Widths

Urban Arterial

- Ideal – 12 feet wide
- 11 feet wide common
- 10 feet wide acceptable for auxiliary lanes or low speed

Part 2 – Lane Widths

Why Does It Matter?

8 feet – 2 inches wide

9 feet – 2 inches wide

Part 2 – Lane Widths

Why Does It Matter?

- AASHTO Highway Safety Manual (2010)
- 9% increase in crashes for 10 foot lanes
- 21% increase for 9 foot lanes
- 5-7% capacity decrease

Part 2 – Lane Widths

5th St. between Minnesota St. and Texas St.

- Existing 12 foot wide lanes
- 48 foot wide pavement
- Re-striping creates 9 foot wide lanes

Part 2 – Lane Widths

AASHTO "Green Book"

"…lanes 9 feet wide may be appropriate on low-volume roads in rural and residential areas."

Part 3 – Existing Substandard Segments

Crash Rates

- Annual crashes per million vehicle miles travelled
- City-wide average = 1.62 (Arterial Street Safety Study)
- 5th St., Oakland St. to St. Francis St. = 2.9
- 5th St., Texas St. to RCRH = 1.5
- Haines Ave., Monroe St. to Nowlin St. = 1.8

Summary

5th St., Minnesota St. to Texas St.

- No capacity problem
- No crash pattern
- Pavement width precludes re-striping