

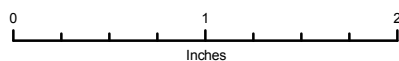
Figure 3.2.1
CAL UNION
DRAINAGE DITCH
SUBWATERSHED
OVERVIEW

Little Calumet River DWP

- Local Problems**
- Bank Erosion
 - ▲ Maintenance
 - ◆ Pavement Flooding
 - ◇ Storm Sewer Flow Restriction
- Regional Problems**
- Bank Erosion
 - ▲ Maintenance
 - Overbank Flooding
 - ◆ Pavement Flooding
 - ★ Problem Area Identified Through Modeling
 - * Candidate Structures for Floodproofing/Acquisition
 - ⊕ Project Alternative Location
- River/Stream
- ▭ Municipal Boundary
- ▭ County Boundary
- ▨ DWP 100-year Inundation Area
- FEMA Floodplain**
- Zone A; Zone AH; Zone AO
 - Zone AE



1 inch = 3,500 feet



December, 2009

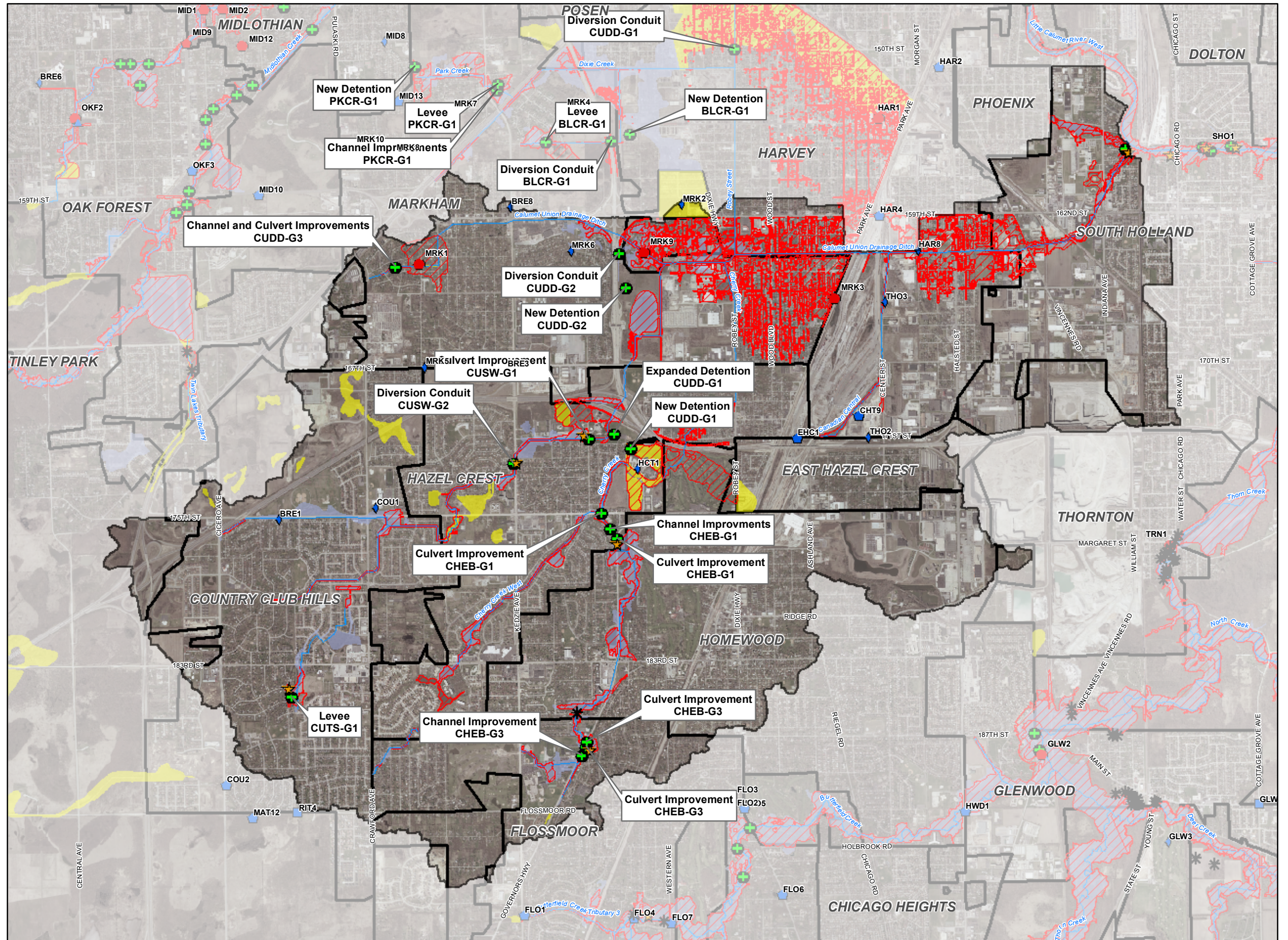


Figure 3.2.2

**CAL UNION DRAINAGE DITCH
ALTERNATIVE
CUDD-G1**
Little Calumet River DWP

Alternative Description:
Expansion and improvements to Calumet Union Reservoir and upsizing the Robey Street Diversion Conduit

Conceptual Level Cost:

\$165,318,000

Benefit: B/C Ratio:

\$5,782,000 0.03

* Candidate Structures for Floodproofing/Acquisition

Regional Problems

- Bank Erosion
- ▲ Maintenance
- Overbank Flooding
- ◆ Pavement Flooding

Local Problems

- Bank Erosion
- ▲ Maintenance
- ◆ Pavement Flooding
- ◆ Storm Sewer Flow Restriction

— River/Stream

▭ Municipalities

▭ County Boundary

▭ Project Alternative Location

■ 100-year Inundation Area With Project

■ 100-year Inundation Area Without Project

0 1 2 Inches

1 inch = 3,000 feet



December, 2009

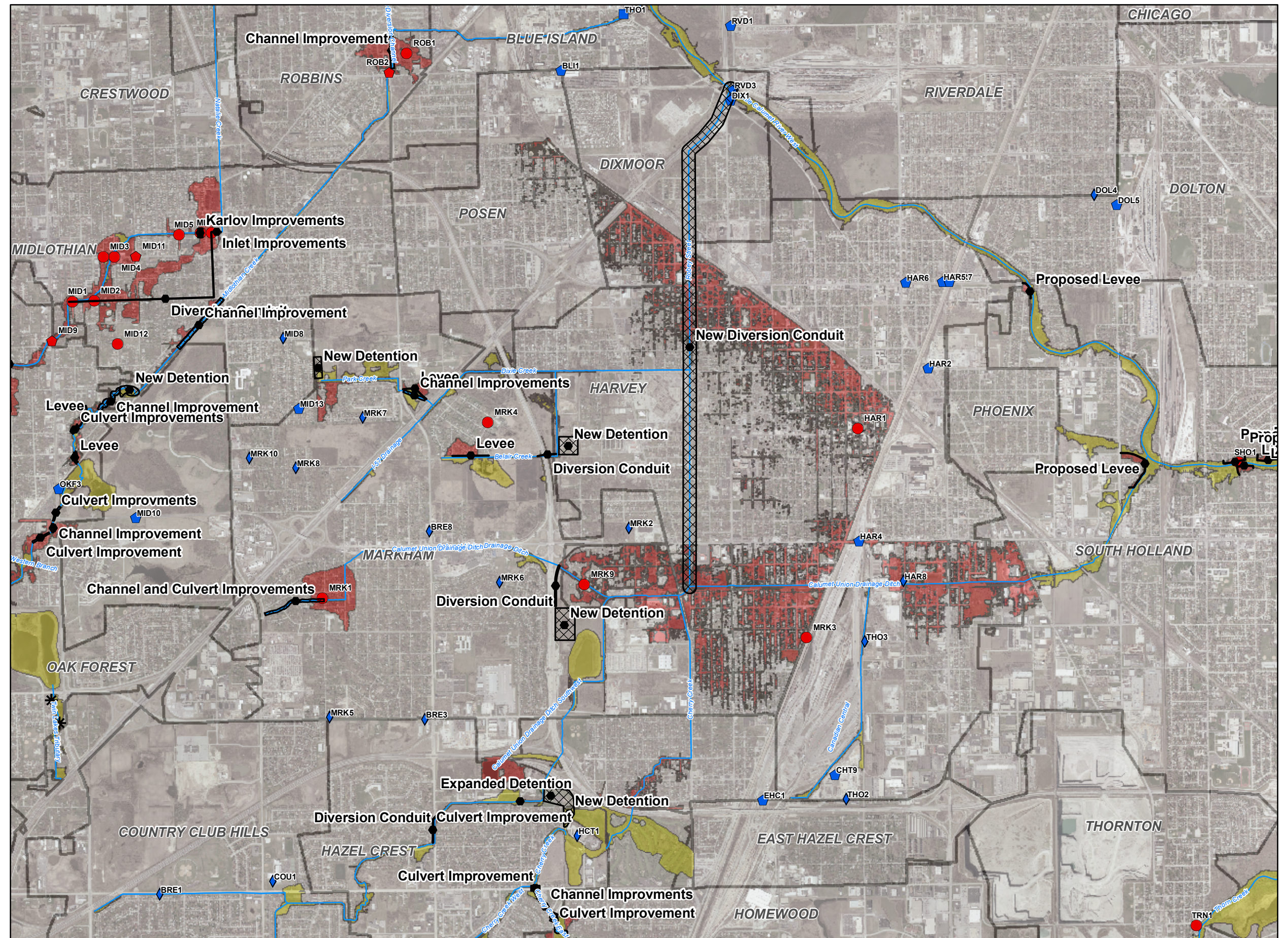
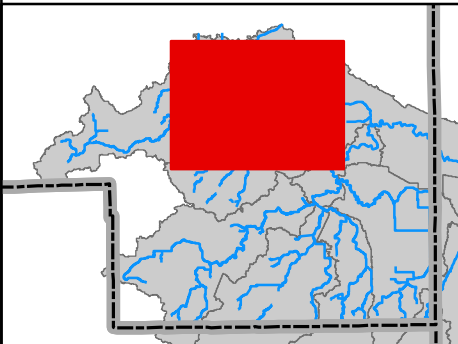


Figure 3.2.3

**CAL UNION DRAINAGE DITCH
ALTERNATIVE
CUDD-G2**
Little Calumet River DWP

Alternative Description:
Construct a 450 ac-ft detention facility and a new diversion conduit from Tri-State Tollway

Conceptual Level Cost:

\$50,406,000

Benefit: **B/C Ratio:**
\$3,377,000 0.07

* Candidate Structures for Floodproofing/Acquisition

Regional Problems

- Bank Erosion
- ▲ Maintenance
- Overbank Flooding
- ◆ Pavement Flooding

Local Problems

- Bank Erosion
- ▲ Maintenance
- ◆ Pavement Flooding
- ◆ Storm Sewer Flow Restriction

— River/Stream

▭ Municipalities

▭ County Boundary

▭ Project Alternative Location

■ 100-year Inundation Area With Project

■ 100-year Inundation Area Without Project

0 1 2 Inches

1 inch = 400 feet



CDM

December, 2009

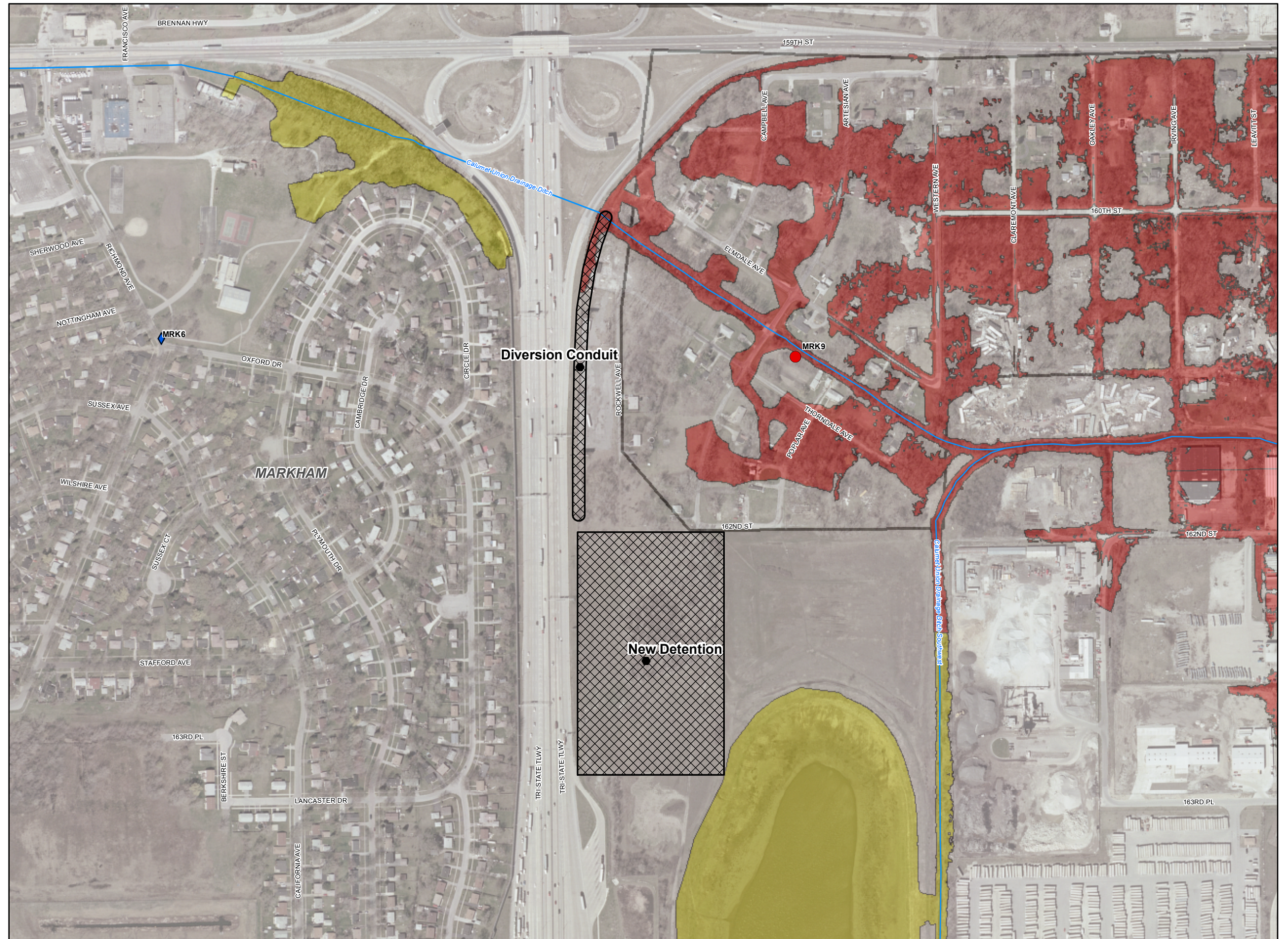
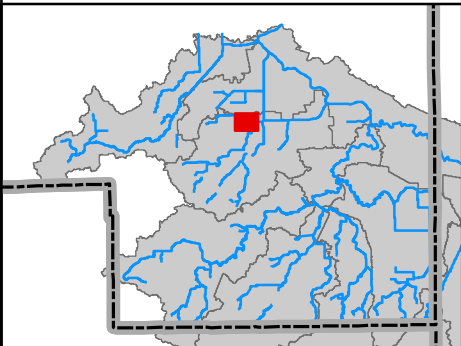


Figure 3.2.4

**CAL UNION DRAINAGE DITCH
ALTERNATIVE
CUDD-G3**
Little Calumet River DWP

Alternative Description:
Construct a floodwall from Hamlin to Central Park Avenue and streambank stabilization from Sunset to Central Park Avenue

Conceptual Level Cost:
\$2,852,000
Benefit: \$1,144,000 **B/C Ratio:** 0.40

* Candidate Structures for Floodproofing/Acquisition

Regional Problems

- Bank Erosion
- ▲ Maintenance
- Overbank Flooding
- ◆ Pavement Flooding

Local Problems

- Bank Erosion
- ▲ Maintenance
- ◆ Pavement Flooding
- ◆ Storm Sewer Flow Restriction

— River/Stream

▭ Municipalities

▭ County Boundary

▨ Project Alternative Location

■ 100-year Inundation Area With Project

■ 100-year Inundation Area Without Project

0 1 2 Inches

1 inch = 250 feet



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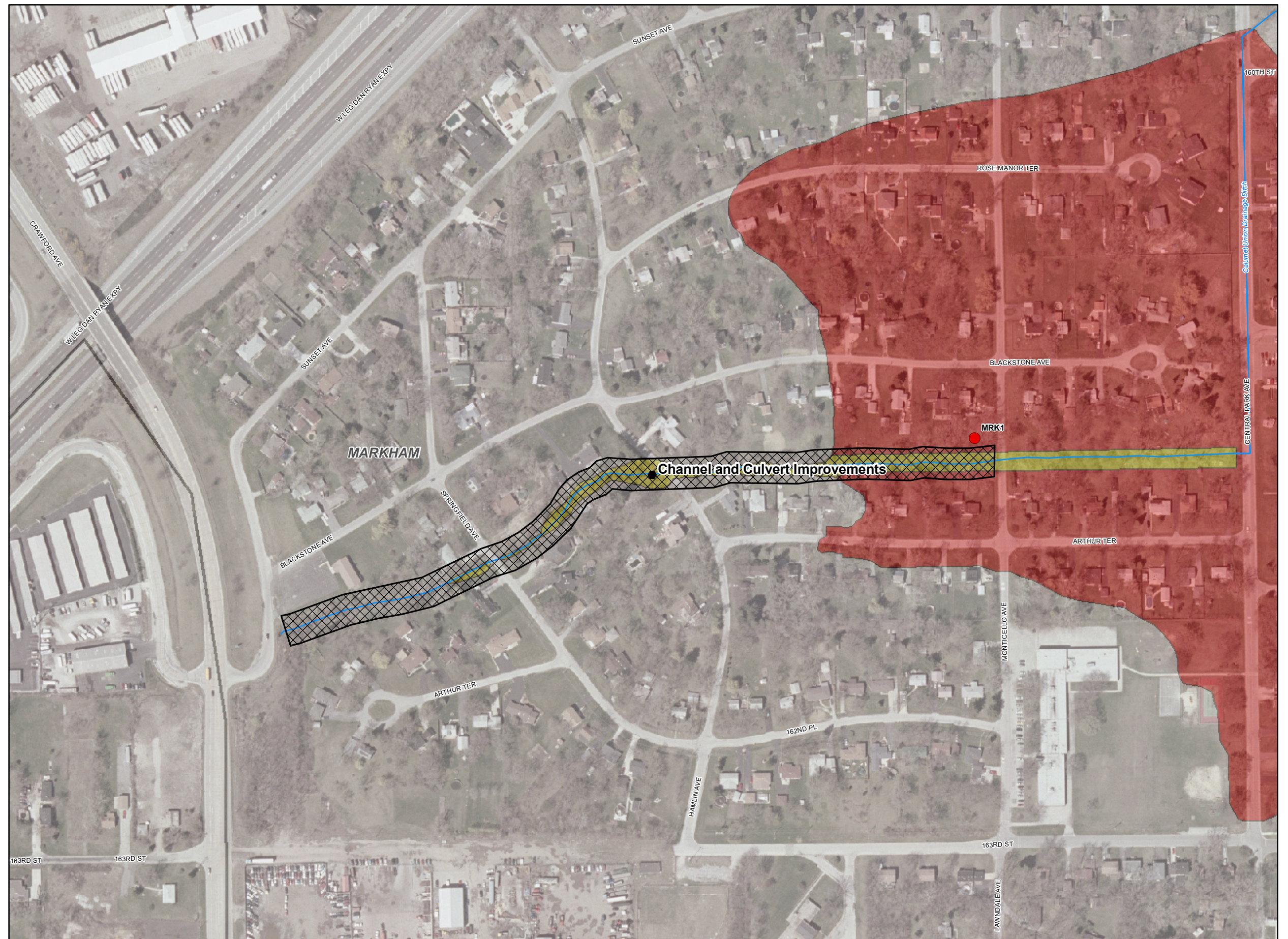
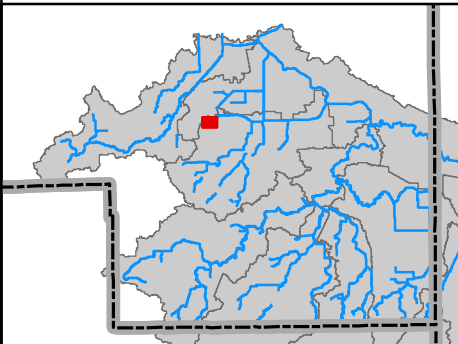


Figure 3.2.5

**CAL UNION DRAINAGE DITCH
ALTERNATIVE
CUSW-G1**
Little Calumet River DWP

Alternative Description:
Repalce California Avenue culvert

Conceptual Level Cost:

\$536,000

Benefit: **B/C Ratio:**
\$15,000 0.03

* Candidate Structures for
Floodproofing/Acquisition

Regional Problems

- Bank Erosion
- ▲ Maintenance
- Overbank Flooding
- ◆ Pavement Flooding

Local Problems

- Bank Erosion
- ▲ Maintenance
- ◆ Pavement Flooding
- ◆ Storm Sewer Flow Restriction

— River/Stream

▭ Municipalities

▭ County Boundary

▭ Project Alternative Location

■ 100-year Inundation Area With Project

■ 100-year Inundation Area Without Project

0 1 2
Inches

1 inch = 250 feet



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December, 2009

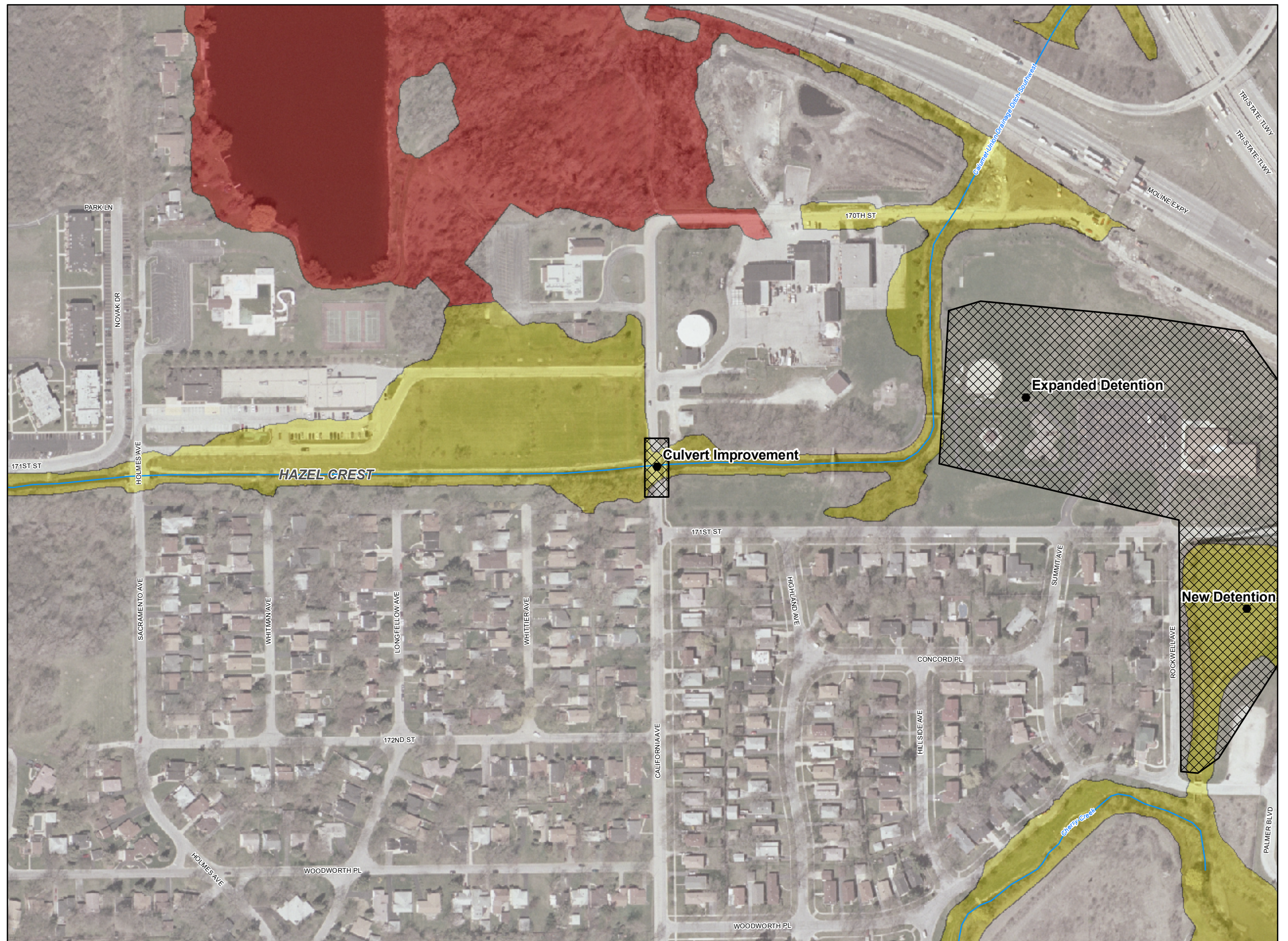
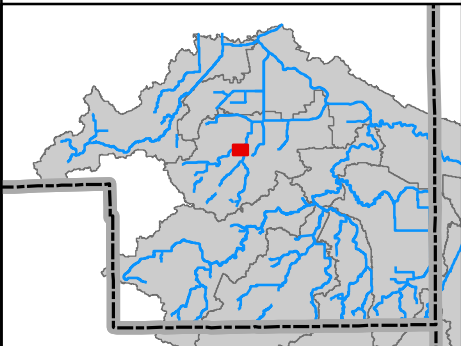


Figure 3.2.6

**CAL UNION DRAINAGE DITCH
ALTERNATIVE
CUSW-G2
Little Calumet River DWP**

Alternative Description:
Construct a 860 LF diversion conduit parallel to
Kedzie Avenue

Conceptual Level Cost:

\$1,206,000

Benefit: **B/C Ratio:**
\$6,000 <0.01

* Candidate Structures for
Floodproofing/Acquisition

Regional Problems

- Bank Erosion
- ▲ Maintenance
- Overbank Flooding
- ◆ Pavement Flooding

Local Problems

- Bank Erosion
- ▲ Maintenance
- ◆ Pavement Flooding
- ◆ Storm Sewer Flow Restriction

— River/Stream

▭ Municipalities

▭ County Boundary

▭ Project Alternative Location

■ 100-year Inundation Area With Project

■ 100-year Inundation Area Without Project

0 1 2
Inches

1 inch = 250 feet



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December, 2009

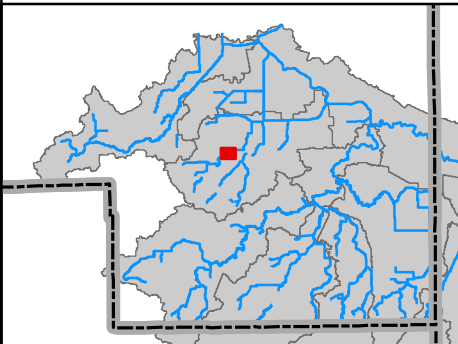


Figure 3.2.7

**CAL UNION DRAINAGE DITCH
ALTERNATIVE
CUTS-G1**
Little Calumet River DWP

Alternative Description:
Construct a 945 LF levee along Baker Avenue

Conceptual Level Cost:

\$2,917,000

Benefit: **B/C Ratio:**
\$62,900 0.02

* Candidate Structures for
Floodproofing/Acquisition

Regional Problems

- Bank Erosion
- ▲ Maintenance
- Overbank Flooding
- ◆ Pavement Flooding

Local Problems

- Bank Erosion
- ▲ Maintenance
- ◆ Pavement Flooding
- ◆ Storm Sewer Flow Restriction

— River/Stream

□ Municipalities

□ County Boundary

▨ Project Alternative Location

■ 100-year Inundation Area With Project

■ 100-year Inundation Area Without Project

0 1 2
Inches

1 inch = 400 feet



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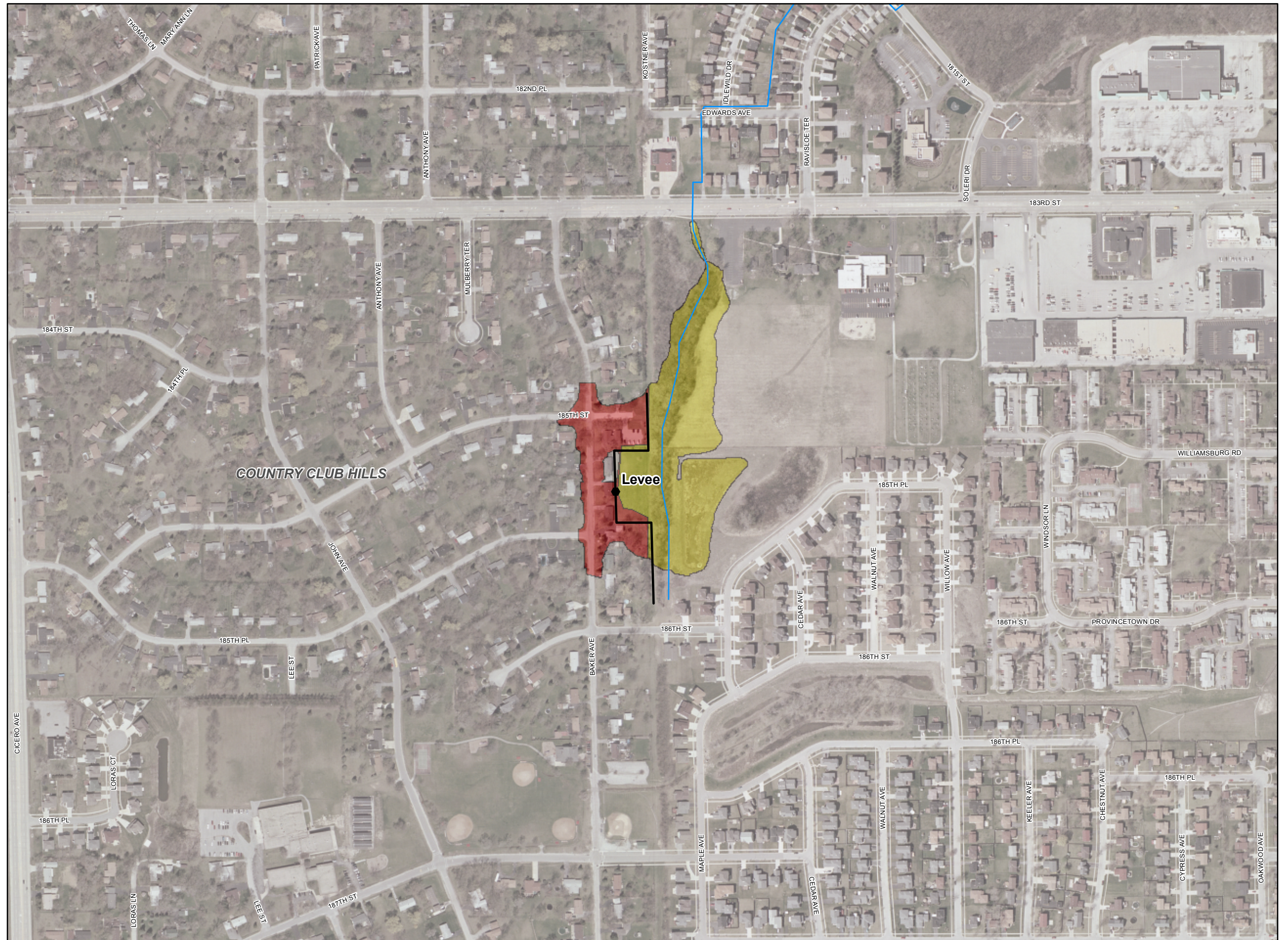
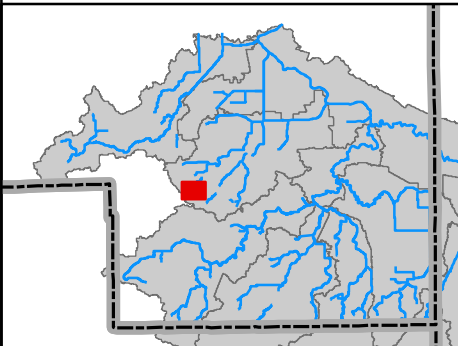


Figure 3.2.8

**CAL UNION DRAINAGE DITCH
ALTERNATIVE
CHEB-G1
Little Calumet River DWP**

Alternative Description:
Replace Governors Highway and 175th Street Crossings, channel improvements from Ravisole Country Club to 175th Street and Provide overbank storage at Hillcrest Park

Conceptual Level Cost:
\$3,300,000
Benefit: \$170,000
B/C Ratio: 0.05

- * Candidate Structures for Floodproofing/Acquisition
- Regional Problems**
 - Bank Erosion
 - ▲ Maintenance
 - Overbank Flooding
 - ◆ Pavement Flooding
- Local Problems**
 - Bank Erosion
 - ▲ Maintenance
 - ◆ Pavement Flooding
 - ◆ Storm Sewer Flow Restriction
- River/Stream
- ▭ Municipalities
- ▭ County Boundary
- ▨ Project Alternative Location
- 100-year Inundation Area With Project
- 100-year Inundation Area Without Project

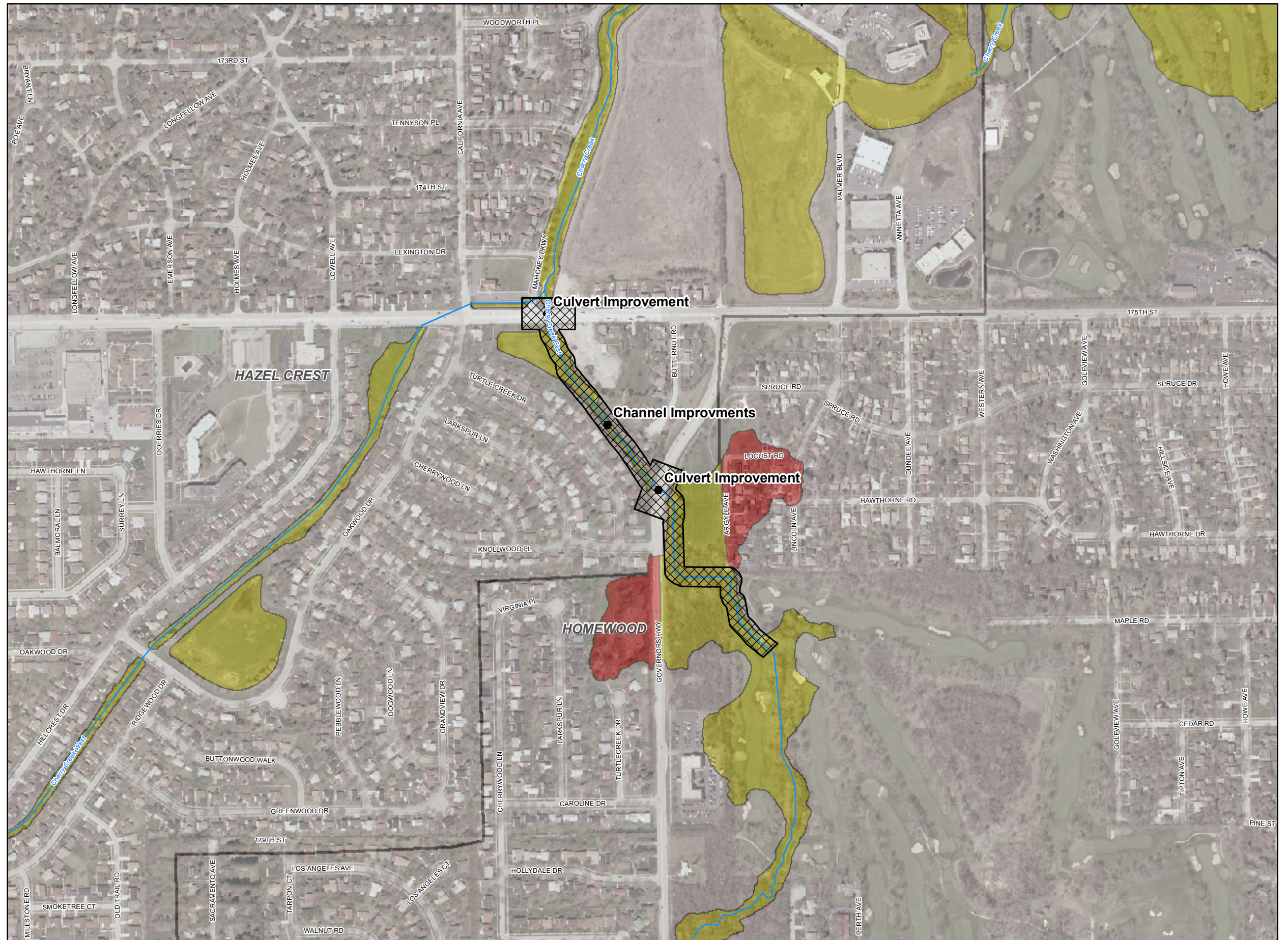
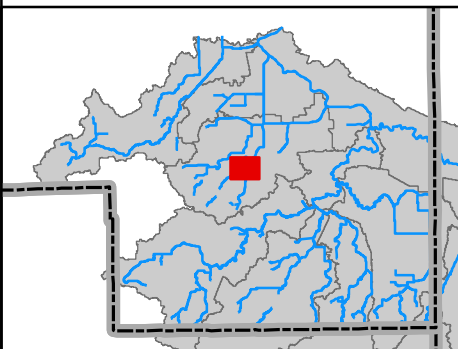
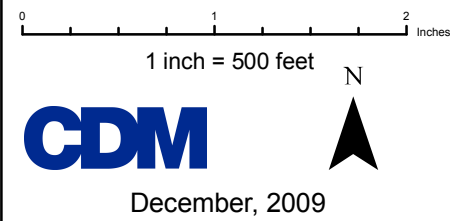


Figure 3.2.9

**CAL UNION DRAINAGE DITCH
ALTERNATIVE
CHEB-G3
Little Calumet River DWP**

Alternative Description:
Replace Governors Highway, Braemer Road
and channel improvements

Conceptual Level Cost:
\$2,282,000
Benefit: \$7,680,000
B/C Ratio: 3.37

- * Candidate Structures for Floodproofing/Acquisition
- Regional Problems**
 - Bank Erosion
 - ▲ Maintenance
 - Overbank Flooding
 - ◆ Pavement Flooding
- Local Problems**
 - Bank Erosion
 - ▲ Maintenance
 - ◆ Pavement Flooding
 - ◆ Storm Sewer Flow Restriction
- River/Stream
- ▭ Municipalities
- ▭ County Boundary
- ▭ Project Alternative Location
- 100-year Inundation Area With Project
- 100-year Inundation Area Without Project

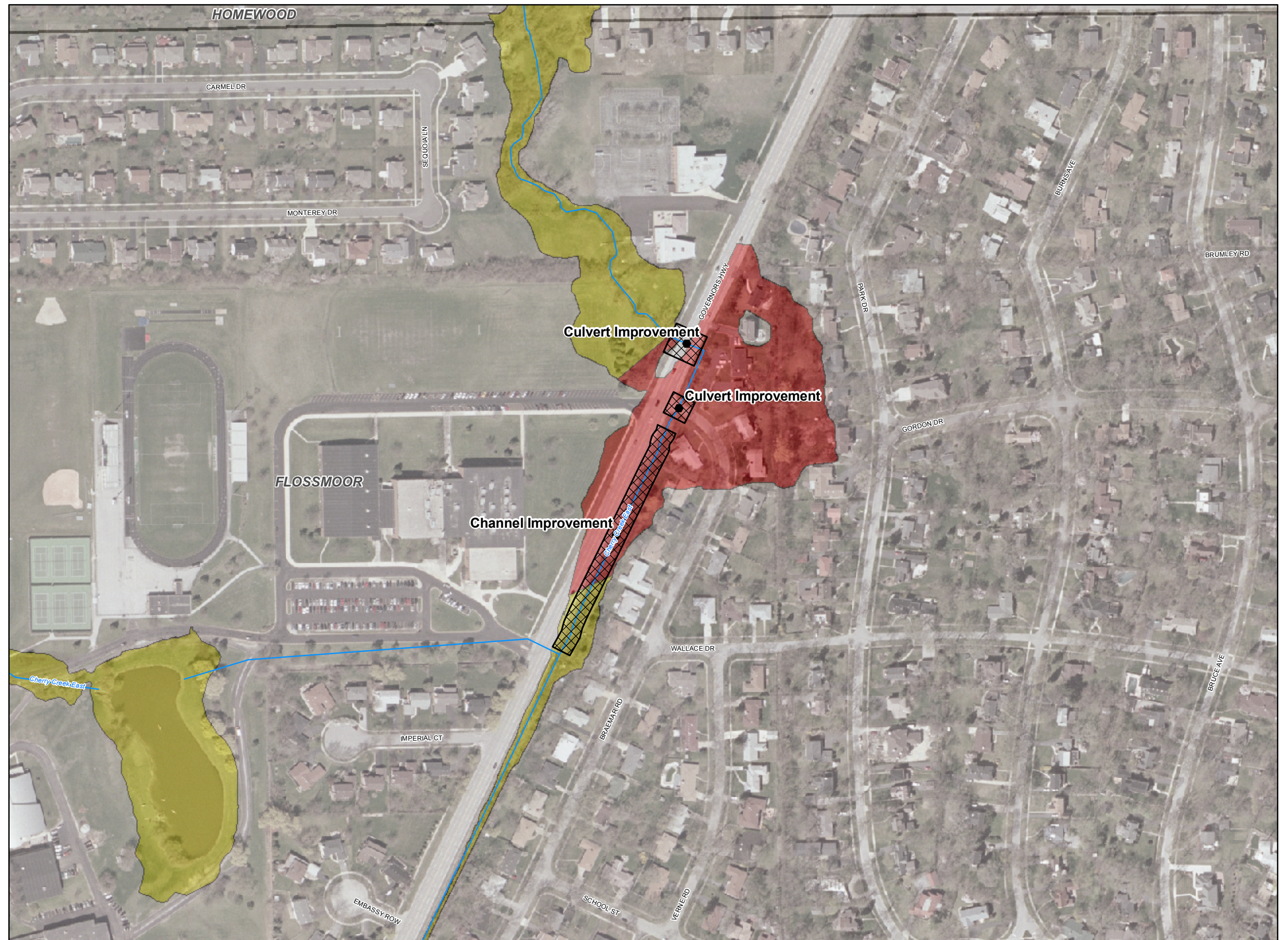
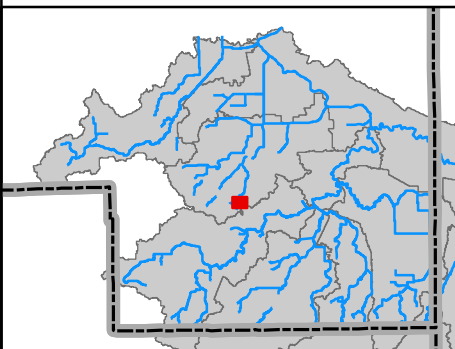
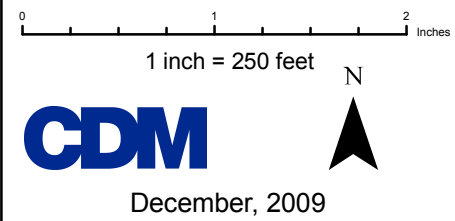


Figure 3.2.10

**CAL UNION DRAINAGE DITCH
ALTERNATIVE
BLCR-G1**
Little Calumet River DWP

Alternative Description:
Construct a levee along Belaire Creek from Albany to Afton Avenue, a new 125 ac-ft storage area and diversion conduit

Conceptual Level Cost:
\$13,842,000
Benefit: \$2,293,000 **B/C Ratio:** 0.17

- * Candidate Structures for Floodproofing/Acquisition
- Regional Problems**
- Bank Erosion
- ▲ Maintenance
- Overbank Flooding
- ◆ Pavement Flooding
- Local Problems**
- Bank Erosion
- ▲ Maintenance
- ◆ Pavement Flooding
- ◆ Storm Sewer Flow Restriction
- River/Stream
- ▭ Municipalities
- ▭ County Boundary
- ▭ Project Alternative Location
- 100-year Inundation Area With Project
- 100-year Inundation Area Without Project

0 1 2
Inches

1 inch = 400 feet



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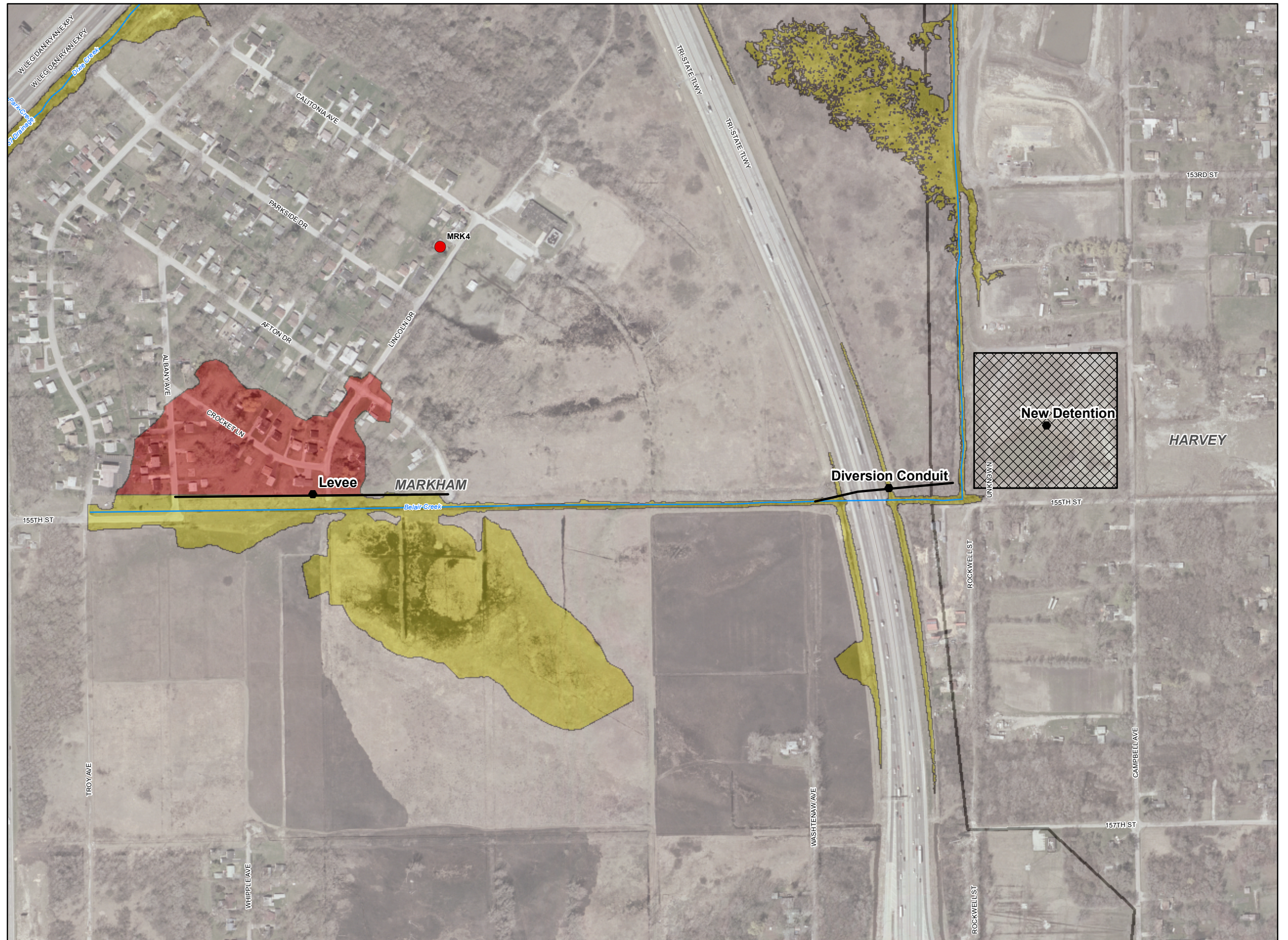
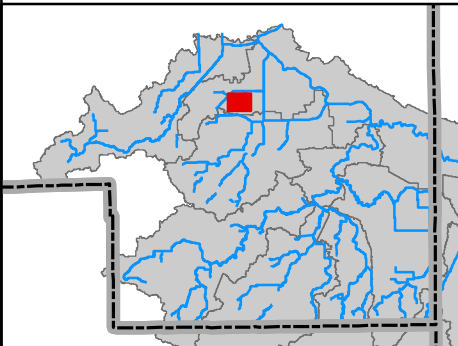


Figure 3.2.11


**CAL UNION DRAINAGE DITCH
ALTERNATIVE
PKCR-G1**
Little Calumet River DWP

Alternative Description:
Construct 200 ac-ft detention facility, implement channel and conveyance improvements from Kedzie Avenue to I-57 and 1000 LF levee between Kedzie Avenue and I-57 Interstate

Conceptual Level Cost:
\$20,327,000
Benefit: \$5,187,000 **B/C Ratio:** 0.26

- * Candidate Structures for Floodproofing/Acquisition
- Regional Problems**
 - Bank Erosion
 - ▲ Maintenance
 - Overbank Flooding
 - ◆ Pavement Flooding
- Local Problems**
 - Bank Erosion
 - ▲ Maintenance
 - ◆ Pavement Flooding
 - ◆ Storm Sewer Flow Restriction
- River/Stream
- ▭ Municipalities
- ▭ County Boundary
- ▭ Project Alternative Location
- 100-year Inundation Area With Project
- 100-year Inundation Area Without Project

0 1 2 Inches
1 inch = 400 feet

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December, 2009

