



Illinois Department of Transportation

2300 South Dirksen Parkway / Springfield, Illinois / 62764

March 12, 2021

CIRCULAR LETTER 2021-11

FY 2023 LOCAL HIGHWAY SAFETY IMPROVEMENT PROGRAM (HSIP) CALL FOR CANDIDATE PROJECTS

COUNTY ENGINEERS / SUPERINTENDENTS OF HIGHWAYS
MUNICIPAL ENGINEERS / PUBLIC WORKS DIRECTORS / MAYORS
METROPOLITAN PLANNING ORGANIZATIONS – DIRECTORS
TOWNSHIP HIGHWAY COMMISSIONERS
CONSULTING ENGINEERS

CALL FOR CANDIDATE PROJECTS (HSIP):

The Illinois Department of Transportation (IDOT) is requesting candidate projects for the Highway Safety Improvement Program (HSIP) that will be initiated in FY 2023. Applications for this funding program will be received through **Friday, May 7, 2021 at 5:00 PM CT**, and the announcement of the selected projects for funding will be made during the week of July 26th, 2021.

IDOT provided a Notice of Funding Opportunity ([NOFO](#)) on March 12th, 2021. This Funding Opportunity Number is 23-1004-01 and the program is listed in the Catalog of State Financial Assistance (CSFA) as 494-00-1004

In addition to the information contained within this Circular Letter, applicants are directed to visit and explore the [HSIP website](#) which contains additional information on the IDOT HSIP Policy and analysis tools which may be used to guide the applicant through the application process.

PROGRAM PURPOSE AND DETAILS OF HSIP:

HSIP has a goal of achieving a significant reduction in traffic fatalities and serious injuries on all public roads. Fatal and serious injury crashes associated with roadway departures, intersections, and pedestrians are high priority emphasis areas based on the current Illinois Strategic Highway Safety Plan.

HSIP funds may be used for a total reconstruction or also to address safety issues without completely reconstructing entire roadway segments or intersections to the latest policies and standards.

The anticipated funding level is approximately \$16.4 million for FY 2023. The federal funding level per project is a maximum 90 percent of the total eligible improvement cost for the project with the local public agency responsible for the ten (10) percent matching funds and any non-participating items. All phases of a safety improvement project are eligible for this program, including preliminary engineering, design, construction, and construction engineering. Right-of-way costs are typically not eligible to be covered by this funding

program. Local public agencies shall obligate these funds within two (2) years of the fiscal year for which they are announced, or funds will be rescinded.

The Department will consider system-wide, systemic, safety improvements, including guardrail improvement projects, for the FY23 Local HSIP. These may include items such as signage, pavement markings, rumble strips, chevrons, guardrail improvements / upgrades, guardrail end terminal upgrades, etc. The FHWA also provides guidance on systemic approach which can be found [here](#). The funding limitation on guardrail improvements / upgrades and guardrail end treatments will be a maximum of \$1,000,000 of federal HSIP funds (plus the ten (10) percent local match) per local public agency per fiscal year.

The Department intends to add a FY 2023 local increment to the HSIP when we develop the overall proposed FY2023- 2028 Multi-Year Highway Improvement Program.

IMPORTANCE CRITERIA:

With each application, a strong consideration must be articulated that should focus upon specific safety strategies that offer significant benefit to the reduction of fatal and serious injury crashes. A principle component of this Call is to identify the issue(s) contributing to the fatal and serious injury crashes, and how the safety strategy will address and resolve these issues. Please note if the roadway(s) you are improving is a rural major collector, rural minor collector, or rural local roads, they will potentially qualify as a High Risk Rural Road (HRRR) project and are encouraged to be submitted.. Please contact your applicable IDOT District Local Roads and Streets office for further assistance and to coordinate HSIP applications.

Projects with a benefit to cost ratio less than one (**B/C < 1**) may be submitted for consideration. These may be project locations that do not have a fatal crash, but the crash data would support the likelihood of a future fatal or serious injury crash. The project narrative should be used in these cases to explain the proactive countermeasures and safety benefits that will be used at the project location.

SUBMISSION REQUIREMENTS & RESOURCES:

The local HSIP application form is attached along with the benefit to cost ratio spreadsheet. Each candidate project must have a completed application form, benefit to cost ratio form, raw crash data in an Excel spreadsheet, project location map, photographs of the project location, estimated project cost breakdown (including contingencies and non-participating items), estimated project timeline, and a project narrative describing the details of the project.

The project narrative should be a brief one to two pages summary of the project history, crash locations, and desired safety improvements. The project narrative should not include information on every aspect of every crash on the project, every aspect of the desired improvement, or letters of support from other entities concerned about the project.

The application form should be completed with as much information as possible about the subject project. The crash table should be completely filled in with crash totals or zeros if no crash types were present. The estimated project cost should be the total cost for the completed project. If a lesser amount should be used to calculate the HSIP funding (due to contingencies and non-participating items), please indicate this reduced amount on the application form.

The project location map should include information as to where all crashes occurred within the project limits during the crash evaluation period. The estimated project timeline should include information on time requirements for Phase I engineering, Phase II design, a target letting date, and an estimated construction completion date.

In addition, under the Grant Accountability and Transparency Act (GATA), each candidate project must also complete the Uniform Application for State Grant Assistance, a Uniform Grant Budget Template, a Programmatic Risk Assessment Questionnaire, and a Conflict of Interest Form.

Several resources have been developed to aid local public agencies in identifying locations and emphasis areas. These include county emphasis area tables, heat maps, data trees, pedestrian corridors, top 50 curves, and the 2017 Local Safety Tier List. These resources are available to be used to develop your HSIP application. The Safety Tiers are broken out in different categories such as Critical/5%, High, Medium, Low and Minimal for both intersection and segment locations. Safety Tiers allow transportation officials to understand relative performance of a location compared to similar types of roadways or intersections. For example, a rural 2-lane roadway segment would be compared to other similar types of rural 2-lane roadways statewide and would not be compared to an urban multi-lane facility. The Safety Tiers allow more locations to be identified and analyzed for similar roadway features and potential crash trends. Attached is the memorandum entitled "*Guidelines for Local Agencies in Using the 2017 Local System Safety Tier Analysis Results.*"

To aid in the application process, an example of a concise, successfully completed application is attached. Please refer to this example as you complete the paperwork required for the FY 2023 HSIP application. ***Also note that the Bureau of Safety Programs & Engineering will be providing a webinar on March 31st from 10:00 AM to 11:30 AM to discuss how to submit a good quality application. Information on how to join the live webinar is available in the NOFO.***

March 12, 2021

In summary, each candidate application submittal should contain the following information:

1. Cover Letter
2. BSPE HS1 – Application form
3. Benefit to Cost Ratio form
4. Raw crash data in Excel spreadsheet
5. Project location map
6. Project photographs
7. Estimated project cost breakdown
8. Project timeline
9. Project narrative
10. Uniform Application for State Grant Assistance
11. Uniform Grant Budget Template
12. Programmatic Risk Assessment Questionnaire
13. Conflict of Interest Form

Again, completed applications should be sent electronically to the appropriate District Local Roads and Streets Engineer no later than 5:00 CT on Friday May 7, 2021.

Questions concerning the Local HSIP may be directed to Mr. Stephane B. Seck-Birhame, Local Program Development Engineer, by telephone at (217) 782-3972 or by email at Babilbile.Seck@illinois.gov

Sincerely,



George A. Tapas, P.E., S.E.
Engineer of Local Roads and Streets

Attachments

cc: Alan Ho, FHWA – Illinois Division
Cindy Watters, IDOT Bureau of Safety Programs and Engineering
Brian Otten, Illinois Association of County Engineers
Brad Cole, Illinois Municipal League
Bryan Smith, Township Officials of Illinois
Donald Goad, Township Highway Commissioners of Illinois

Guidelines for Local Agencies in Using the 2017 Local System Safety Tier Analysis Results

PREPARED FOR: Illinois Department of Transportation, Bureau of Safety Programs and Engineering
PREPARED BY: CH2M HILL, Inc. (CH2M)
DATE: January 19, 2018

1.0 Introduction

The Illinois Department of Transportation (IDOT) conducted a safety tier analysis for the local system in 2017, and assigned the safety road index (SRI) for roadway segments and intersections. The local system safety tier analysis focuses on segments under the jurisdiction of county, township, municipality, or private sector, and the intersected points between them. The safety tier categorizes roadway segments and intersections into different SRIs based on their potential for safety improvements, providing a rating for relative comparison. The safety tier analysis results can help local agencies incorporate safety into their transportation management process and be used to identify locations for safety improvements. The 2017 local system safety tier analysis results are provided in the following file formats:

- Microsoft Excel file for all local intersections
- Microsoft Excel file for local intersections with critical SRI ratings
- Microsoft Excel file for all local segments
- Microsoft Excel file for local segments with critical SRI ratings
- Microsoft Access file for all local intersections and local intersections with critical SRI ratings
- Microsoft Access file for all local segments and local segments with critical SRI ratings
- PDF files of maps by county for all local intersections
- PDF files of maps by county for all local segments
- KMZ file for local intersections with critical, high, and medium SRI ratings
- KMZ file for local segments with critical, high, and medium SRI ratings

The technical memorandum summarizes the local system safety tier analysis results provided in the above-listed files, and presents guidelines for local agencies on how to use the safety tier analysis results.

2.0 Safety Tier Analysis Results

The local system safety tier analysis results are provided as Microsoft Excel files, Microsoft Access files, PDF maps, and KMZ files for diversified application scenarios and personalized users. The following subsections summarize results provided by the different files, as well as instructions for using the analysis results.

2.1 Safety Tier Analysis Results in Microsoft Excel Files

The Microsoft Excel files provide the safety tier analysis results for local intersections and segments. The results are provided in separate rows for individual intersections and segments.

2.1.1 Intersections

For each intersection, the following information is provided in the Microsoft Excel spreadsheet:

- Roadway inventory number and intersection mile station

- Intersection X and Y coordinates
- Major and minor road average annual daily traffic
- Major and minor road name
- Intersection peer group (both code and text)
- Intersection number of legs
- County (both text and code) and IDOT district where the intersection is located
- Intersection SRI rating
- Intersection ID and SRI flag (only for intersections with critical SRI ratings)
- Intersection K (fatal) and KAB (fatal, incapacitating, and non-incapacitating) crash rate (per hundred million equivalent vehicles)
- Intersection weighted potential for safety improvements (PSI)
- Number of K, A (incapacitating), B (non-incapacitating), KAB and KA (fatal and incapacitating) crashes
- Number of KAB crashes by collision type, emphasis area, and surface condition at time of crashes

The SRI for local segments and intersections is categorized by peer group into critical, high, medium, low, or minimal, based on their PSI from high to low, where “critical” means the location has the highest potential for safety improvements, and “minimal” indicates the location is less likely to have safety benefits from treatments. Figure 2-1 is a screenshot of the safety tier analysis results for local intersections in the Microsoft Excel spreadsheet. Each row represents the analysis results for each local intersection. The same information is also provided for local intersections with critical SRI ratings in a separate Microsoft Excel file.

Intersection ID	Peer Group	County	District	Major Road	Minor Road	Number of Legs	SRI Rating	SRI Flag	K	KAB	KA	PSI	Crash Count	Crash Rate
1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
22
23
24
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29
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32
33
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48
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50

Figure 2-1. Screenshot of Safety Tier Analysis Results for Local Intersections in the Microsoft Excel Spreadsheet

2.1.2 Segments

The following information is provided for local segments in the Microsoft Excel spreadsheet:

- Roadway inventory number
- Roadway segment beginning and ending station
- Segment length
- Annual vehicle mileage travelled (VMT)
- Segment peer group (both text and code)
- County (both text and code) and IDOT district where the segment is located
- Road name
- Segment SRI rating
- Segment ID and SRI flag (only for segments with critical SRI ratings)
- K (per hundred million VMT) and KAB (per million VMT) crash rates
- Roadway segment weighted PSI
- Number of K, A, B, KAB, and KA crashes
- Number of KAB crashes by collision type, emphasis area, and surface condition at time of crashes

Figure 2-2 is a screenshot of safety tier analysis results for local segments in the Microsoft Excel spreadsheet. Each row represents the analysis results for one local segment. It should be mentioned that the safety tier analysis results are presented for the sliding windows created in the safety tier analysis, not the original roadway segments in the Illinois Roadway Information Systems database. Users interested in the sliding window analysis can refer to the IDOT technical memorandum *Network Screening Analysis for the Illinois Local Roadways (Local Safety Tier Process)* for more details. The same information is also provided for local segments with critical SRI ratings in a separate Microsoft Excel file.

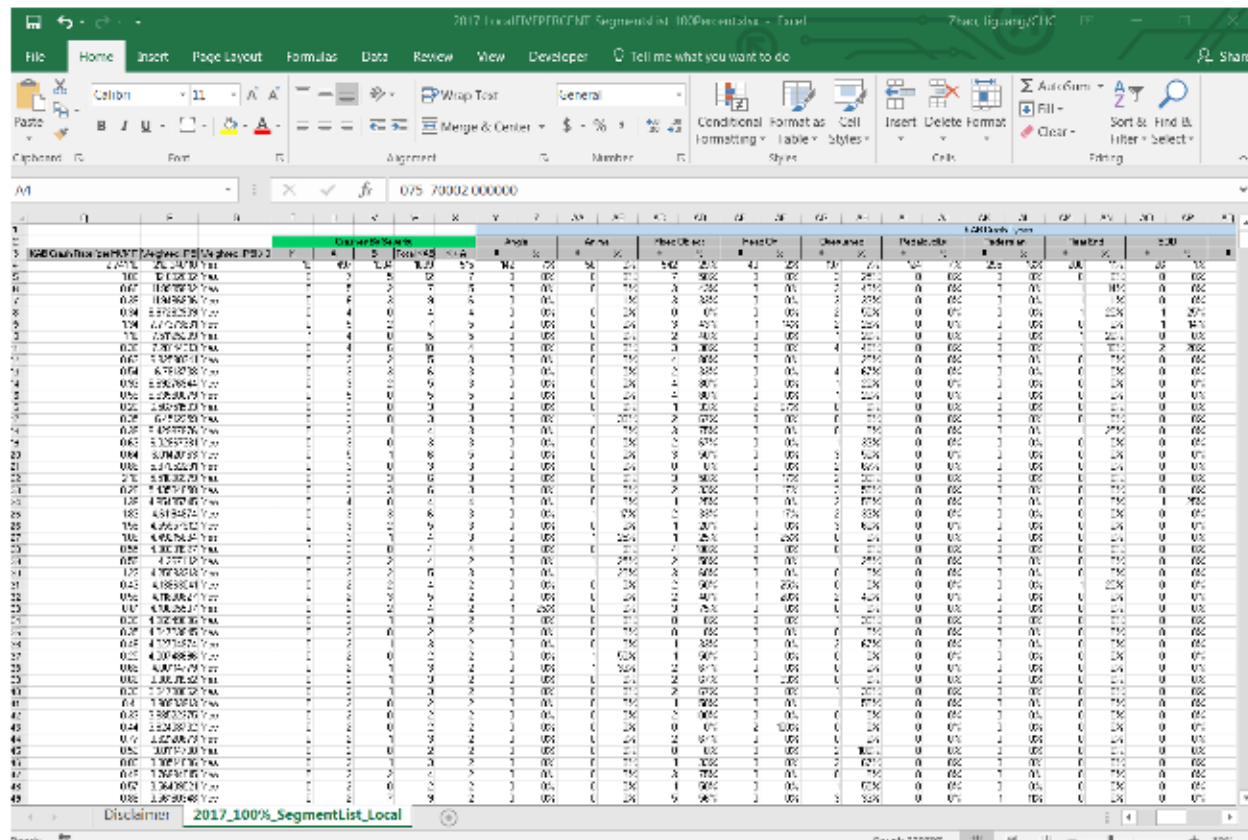


Figure 2-2. Screenshot of Safety Tier Analysis Results for Local Segments in the Microsoft Excel Spreadsheet

2.2 Safety Tier Analysis Results in Microsoft Access Files

The Microsoft Access files also provide the safety tier analysis results for local intersections and segments. The data items provided by the Microsoft Access files are the same items as in the Microsoft Excel spreadsheets. The benefit of Microsoft Access file is that geographic information for roadway segments and intersections can also be provided so that users can easily identify the roadway locations in a geographic information system (GIS) environment. Accordingly, a GIS platform (usually ArcGIS 10 or higher version) is required for reviewing the analysis results.

2.2.1 Intersections

Figure 2-3 is a screenshot of the safety tier analysis results for local intersections in a GIS environment. Users can find the safety tier analysis results for all local intersections in the corresponding attribute table, and they can even zoom to any intersections by clicking on the related row in that table. Two attribute tables are included in the Microsoft Access file, one for all local intersections and the other for local intersections with critical SRI ratings.

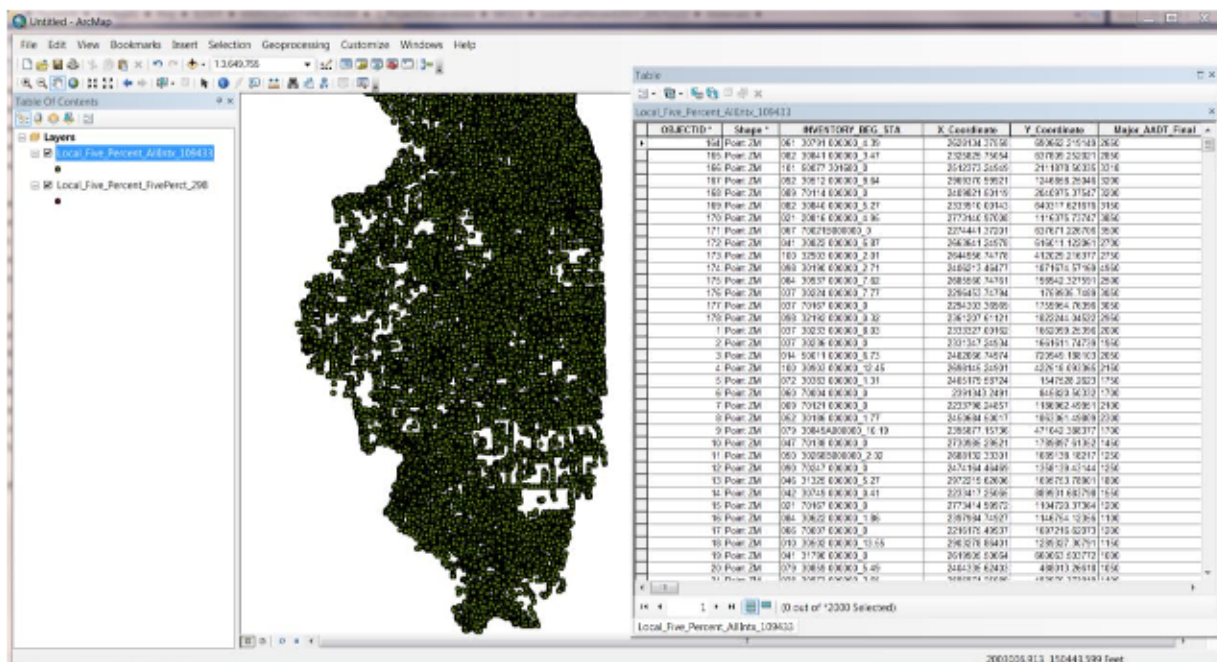


Figure 2-3. Screenshot of the Safety Tier Analysis Results for Local Intersections in the GIS Environment

2.2.2 Segments

Figure 2-4 is a screenshot of the safety tier analysis results for local segments in the GIS environment. As with local intersections, users can check the safety tier analysis results for all local segments in the attribute table. Again, two attribute tables are included in the Microsoft Access file, one for all local segments and the other for local segments with critical SRI ratings.

2.3 Safety Tier Analysis Results in KMZ Files

Many state and local agencies still do not have access to a GIS platform or are not experienced in applying the tool in their engineering practices. The provided KMZ files allow users to locate the local segments and intersections outside of a GIS platform. Google Earth is required to open the KMZ files.

2.3.1 Intersections

For file size limitation, only intersections with critical, high, and medium SRI ratings are included in the KMZ file. In the KMZ file, users are directed to the intersection after clicking the intersection ID on the left side. The detailed intersection safety tier information is visible in a pop-up view, as shown in

Figure 2-5. For convenience, users can place their cursors on the file name in the list on the left side of the screen, and sort the list from A to Z, to more easily locate the intersection under investigation.

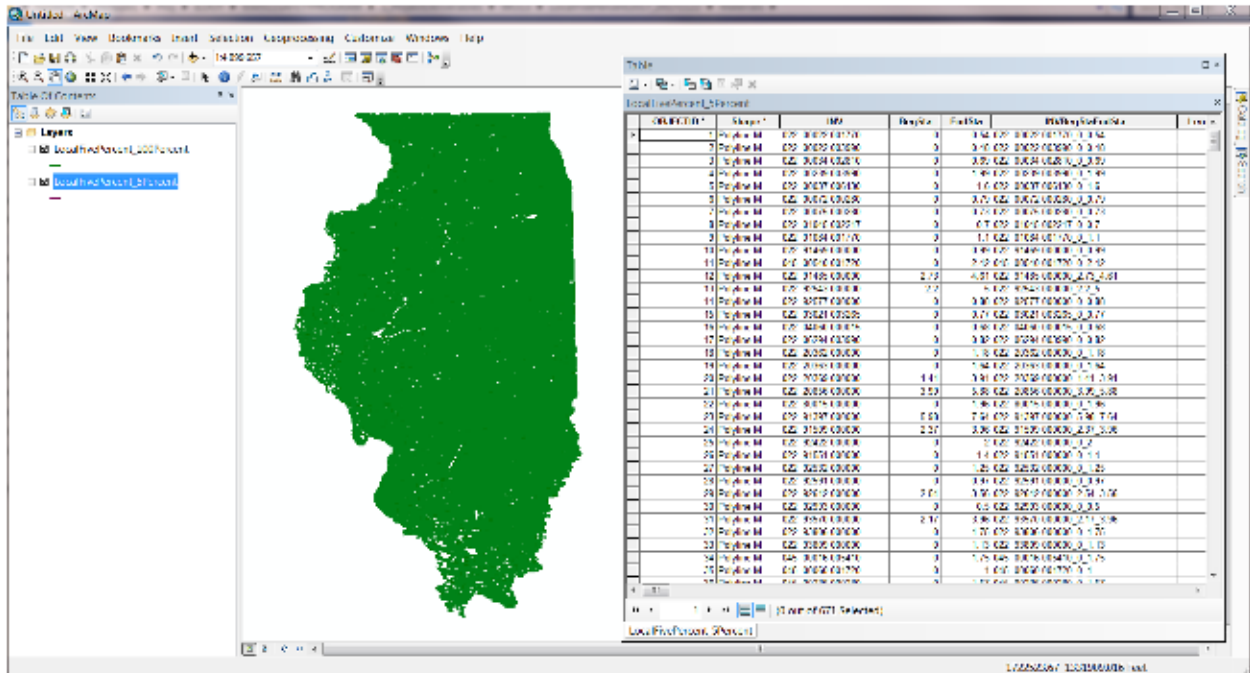


Figure 2-4. Screenshot of the Safety Tier Analysis Results for Local Segments in the GIS Environment

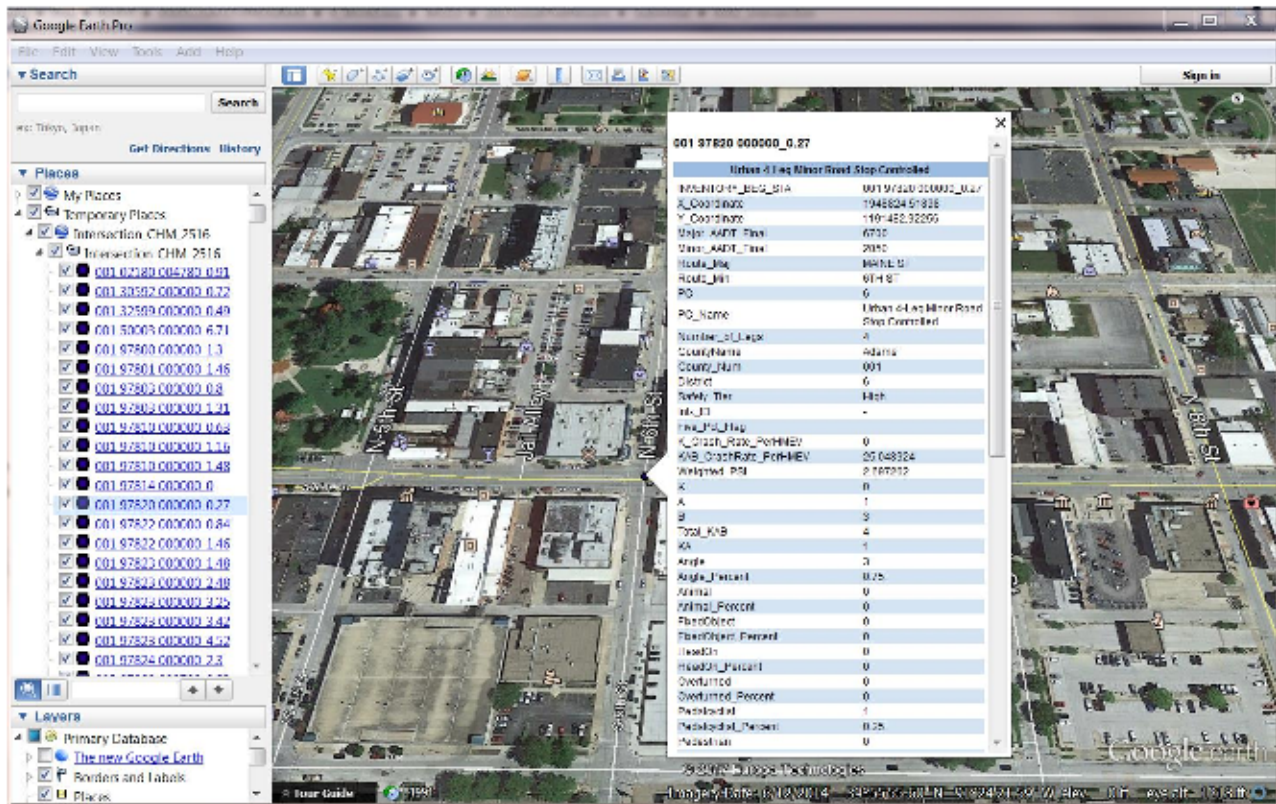


Figure 2-5. Screenshot of the Safety Tier Analysis Results for Local Intersections In KMZ File

2.3.2 Segments

Figure 2-6 is a screenshot of the safety tier analysis results for local segments in KMZ File. As a result of file size limitations, only segments with critical, high, and medium SRI ratings are included in the KMZ file. The KMZ file can help users locate the roadway segments and check relevant information. The data items shown alongside the segment are identical to the data items in the Microsoft Access file.

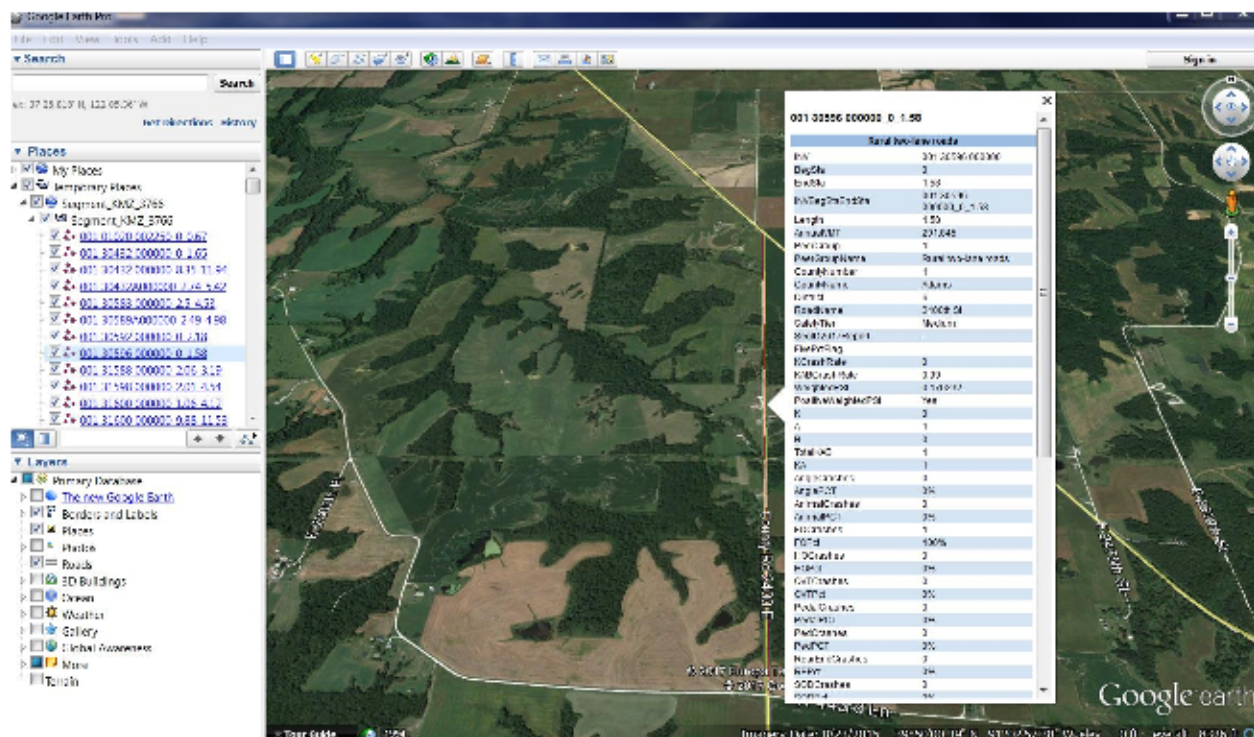


Figure 2-6. Screenshot of the Safety Tier Analysis Results for Local Segments in KMZ File

2.4 Safety Tier Analysis Results on Maps

To help local agencies use the local system safety tier analysis results, maps are created by county in ArcGIS and printed into PDF files. Two maps are created for each county, one for segments and the other for intersections. In each map, the local segments and intersections are color-coded by their safety tier, and major state routes are plotted on the map for reference. Specifically, IDs are provided for all locations with critical SRI ratings and printed in red. Local agencies can use the map to evaluate the safety performance of all facilities within their jurisdictions and pinpoint the locations with potential for safety improvements.

2.4.1 Intersections

Figure 2-7 is a screenshot of the safety tier analysis results map for local intersections in one county. It should be pointed out that the map is selected for illustration purpose only and does not necessarily indicate any safety concerns for that county. In the map, intersections with different SRI ratings are coded in different colors and point sizes. Specifically, intersections with critical SRI ratings are coded with big red points, and intersection IDs are printed alongside the intersections.

For the selected county, the SRI rating is “minimal” for the majority intersections. The traffic control information for many points is not available or the points are not intersections; therefore, those points are not included in the local intersection safety tier analysis. For those intersections, no SRI ratings are provided.

As with local intersections, roadway segments with different SRI ratings are coded in different colors. Local agencies can use the map to evaluate safety concerns within their jurisdiction and identify projects for safety improvement.

3.0 Guidelines for Local Agencies in Using the Analysis Results

IDOT provided local safety tier analysis result data in a number of document formats. Local agencies are encouraged to use the quantitative safety performance in their transportation project planning and programming process. The following guidelines are intended to facilitate local agency access to and use of results:

1. **Apply the analysis results to prioritize safety improvement projects.** The total number of intersections and overall mileage of segments for local system are high; therefore, the safety funding cannot address or alleviate the safety concerns for all of them. Local agencies can prioritize the locations for safety improvements based on the location's SRI rating and focus on those locations with high potential for safety improvements (specifically those locations with a critical SRI rating).
2. **Double-check roadway geometric, traffic control, and other data.** The local system safety tier analysis was conducted based on the data provided by IDOT. Numerous efforts have been endeavored to enhance accuracy of the analysis results. However, because sample sizes are very large, it is possible that some errors exist within the data and on the maps. As candidate safety improvement projects are identified by local agencies, they are encouraged to double-check peer group classifications, geometric features, and other aspects of the data. Please notify the IDOT Bureau of Safety Programs and Engineering (BSPE) if substantial concerns are identified with the data.
3. **Identify safety improvement projects with systemic approach.** Local segments with critical or high SRI ratings are sometimes short and sparsely distributed along a corridor. Under such circumstances, local agencies can apply the systemic approach to identify projects for safety improvements. The IDOT guideline *Systemic Safety Improvements: Analysis, Guidelines and Procedures* (2014) can be referred for more details.
4. **Use the analysis results to identify high risk rural roads.** A high-risk rural road (HRRR) is defined as any roadway functionally classified as a rural major or minor collector, or a rural local road with significant safety risks. Local agencies can use the local safety tier analysis results to identify HRRR locations for funding through the HRRR program.
5. **Refer to results from other safety analysis tool.** IDOT has developed a series of tools, such as Safety Portal, Data Trees, Heat Maps, Emphasis Area Tables and Top 50 Curves, to implement a data-driven roadway safety-management process in Illinois. Local agencies are recommended to check results from these tools and other references when using the local safety tier analysis results in the HSIP application.
6. **Conduct project-level safety analysis for short-list locations.** The local safety tier analysis assigned SRI ratings for segments and intersections. To maximize benefits for safety dollars, it is suggested that local agencies prioritize their investment on locations with critical or high SRI ratings. For the short-list locations with high potential for safety improvements, it is suggested that local agencies conduct project-level safety analysis to identify the crash-contributing factors and propose appropriate countermeasures for alleviating safety concerns. Local agencies can apply tools, such as the IDOT HSM Crash Prediction Tool and Benefit/Cost Tool that IDOT developed previously for the project-level safety analysis.
7. **Update the HSIP status in the response form.** IDOT has developed the "Local System Safety Tier Response Form" to track the HSIP status of locations with critical SRI ratings. It is suggested that

local agencies update the location's HSIP status and return the results back to IDOT annually. The information will be used to evaluate effectiveness of HSIP projects in future.

8. **Reach out to IDOT for additional guidance.** Local agencies are encouraged to reach out to IDOT District Local Roads Engineers, District Safety Committees and BSPE for guidance on HSIP application process. Local agencies can also contact IDOT BSPE by telephone at 217-782-3568 for technical guidance on application of local system safety tier analysis results. IDOT BSPE will guide the local agencies to the appropriate resources to help resolve their technical challenges.

EXAMPLE APPLICATION



MONTGOMERY COUNTY HIGHWAY DEPARTMENT

CODY A. GREENWOOD, COUNTY ENGINEER
1215 Seymour Avenue, Hillsboro, Illinois 62049
Phone 217-532-6109, Fax 217-532-6642

June 11, 2020

REGION 4/DISTRICT 6
Mr. Jeffrey Myers, P.E.
Deputy Director of Highways
Region Four Engineer
Illinois Department of Transportation
126 East Ash Street
Springfield, Illinois 62704-4792

Attention: Mr. Brian Wright, P.E., Local Roads Field Engineer

RE: 2020 HSIP Grant – Coffeen Rd. (CH 5) and Seven Sisters Ave. Intersection
Montgomery County

Dear Mr. Myers:

On behalf of Montgomery County, I am pleased to submit to you an application for HSIP funding to make safety improvements at the intersection of Coffeen Road (CH 5) and Seven Sisters Avenue located in Montgomery County.

Our staff reviewed County crash data for high crash locations and hot spots within our roadway network and recommends that this intersection be prioritized for safety improvements. The 2011 to 2017 crash data revealed high incidences of run-off-road crashes.

Montgomery County intends to use the HSIP funding to widen and decrease the skew/offset of the intersection with the corrective measures applied to Coffeen Road. We additionally intend to add additional paved shoulders to minimize the roadway departure crashes that have occurred at this intersection.

According to the cost-benefit tool provided by IDOT, the benefits significantly outweigh the costs of this project. I urge the State to award HSIP funding to improve the safety of this intersection.

If you have any questions or require additional information, please contact our office.

Sincerely,

Cody A. Greenwood, P.E.
County Engineer

FY 2020 Highway Safety Improvement Program Grant Application

Montgomery County, IL

HSIP Intersection Improvements

Prepared For: Montgomery County Highway Department

Prepared By:  Hurst-Rosche, Inc.

Table of Contents

1. HSIP BSPE HS1 Application Form
2. Project Narrative
3. Project Location Maps
4. Project Photographs
5. Crash Data & Heat Maps
6. Opinion of Costs & Benefit-Cost Analysis
7. Project Schedule
8. Uniform Grant Application
9. Uniform Grant Budget Template
10. Programmatic Risk Assessment
11. Uniform Grant Agreement Affidavit of Disclosure of
Conflicts of Interest-Grantee

Section 1

HSIP BSPE HS1 Application Form



FY 2020

ID:	Contract:	Award Date:	Completion Date:
District: 6	County: Montgomery	City: Irving Twp	
Key route: CH 5	Marked route: Coffeen Road		
Road Name: Coffeen Road	Intersecting Roadway: Seven Sisters Avenue N/A		<input type="checkbox"/>
Length: 0.25 Miles	<input type="checkbox"/> N/A	Mile station: N/A to N/A	

Location Description:

<input checked="" type="checkbox"/> Rural	<input type="checkbox"/> Urban	Lanes: 2
AADT(Segment):		Total Entering AADT (Intersection): 950
Friction Test Results:		Speed Limit: 55 mph
<input checked="" type="checkbox"/> N/A		Lighting Present: <input type="checkbox"/> Y <input checked="" type="checkbox"/> N
CHSP Emphasis Area(s): Roadway Departure		<input type="checkbox"/> District Documentation <input checked="" type="checkbox"/> Systematic Improvements <input type="checkbox"/> N/A
Peer Group: 1 - Rural, two-way street		<input type="checkbox"/> N/A

Other:

Crashes Details												
Year	Total Crashes	Fatal Crashes	Fatalities	A-Injury Crashes	A-Injuries	B-Injury Crashes	B-Injuries	C-Injury Crashes	C-Injuries	PDO	Wet-Weather Crashes	Darkness (Not lighted) Crashes
2011	1	0	0	1	1	0	0	0	0	0	0	3
2012	3	0	0	2	2	0	0	0	0	1	0	1
2015	1	0	0	0	0	0	0	0	0	0	0	0
2016	1	0	0	0	0	1	2	0	0	0	0	0
2017	2	0	0	0	0	1	1	0	0	0	0	2
Total	8	0	0	3	3	2	3	0	0	1	0	6

Location Description: Intersection of Coffeen Road and Seven Sisters Avenue where a sharp curve has poor visibility, see attached maps for locations.

Problem Description: The predominant rural crashes at this intersection are departure crashes caused by narrow roadway with an offset intersection. This project will realign the existing intersection, increase the pavement width and add additional pavement and shoulder widths to focus the improvements to reduce overturned crashes which relate to roadway departures that were observed.

Previous Safety Improvements: None known

Collision Diagram: Y N **Images:** Y N

Predominant Crash Types: Animal (50%), Overturned (38%), Angle (12%)

Proposed Improvement(s): Widening and Reconstruction of the Coffeen Road (CH 5) and Seven Sisters Avenue intersection. See attached maps.

Estimated Project Cost (\$000's): \$260 **Benefit-Cost Ratio:** 1.06

Local Projects:

Annual Fatal Crash Rate (Fatal Crashes/100 Miles): 0	Annual A-Injury Crash Rate (A-Injury Crashes/100 Miles): N/A
Local Roads Rural Functional Class: Major Collector	

Approved: **Central HSIP Approval Date:**

Signed: **State Safety Engineer** **Funding:** HSIP HRRR RAIL

Comment:

Distribution: OPP District BSPE LRS BDE

Section 2

Project Narrative

Project Narrative

In response to IDOT Circular letter 2020-07, the Montgomery County Highway Department wanted to pursue an improvement to address geometric deficiencies within the county. An analysis was performed based on existing crash data and heat maps provided through the IDOT Safety Portal. The existing intersection of Coffeen Road (CH 5) and Seven Sisters Avenue is stopped control along Seven Sisters Avenue and Coffeen Road is non-controlled with slight jog to the west that begins south of the intersection. The substandard horizontal curve exists for a 55-mph design speed roadway through the intersection.

The predominant rural crashes at this intersection are departure crashes caused by narrow roadway with an offset intersection. The existing crash data shows four (3) Type A crashes from the years 2011 through 2017 with roadway departures leading to overturned crash. Three (3) Type B crashes occurred within the same time period with (2) Animal and (1) Angle, and there was an additional Property Damage crash from a car being Overturned during this period. The animal crashes also led to the vehicles leaving the roadway. The intersection showed as a hot spot on the KAB Roadway departure Crashes Per Section Square from the period 2009-2013 as displayed on IDOT's safety portal. The map indicated 6-7 KAB roadway departures occurred in this area. The map and crash data are included in Section 5. The cluster of crashes indicate crash types that are considered Run-Off-Road collisions. We reviewed proper countermeasures for Run-Off-Road collisions and have introduced a project that recommends increasing the width of the traveled pavement, realigning the intersection and increasing the shoulder width within the intersection approaches. The intersection will be brought up to IDOT's Bureau of Local Roads standards.

This project will realign the existing intersection, increase the pavement width and add additional pavement and shoulder widths to focus the improvements to reduce overturned crashes which relate to roadway departures that were observed.

All improved improvements are safety-related items for a specific countermeasure to improve a sub-standard intersection. Included in Section 6 is an opinion of construction costs. It is anticipated that the total project construction costs will be \$193,000, consisting of \$173,700 HSIP grant and 10% local match of \$19,300. The PE and CE costs estimated at \$68,000 will be covered by other local funds by the County. The Total Project Cost is estimated at \$261,000. The benefit-cost ratio for these systematic upgrades has been calculated at 1.06 as shown in Section 6. These improvements are anticipated to reduce the number of Run-Off-Road collisions and improve the safety of intersection for Montgomery County's drivers.

Section 3

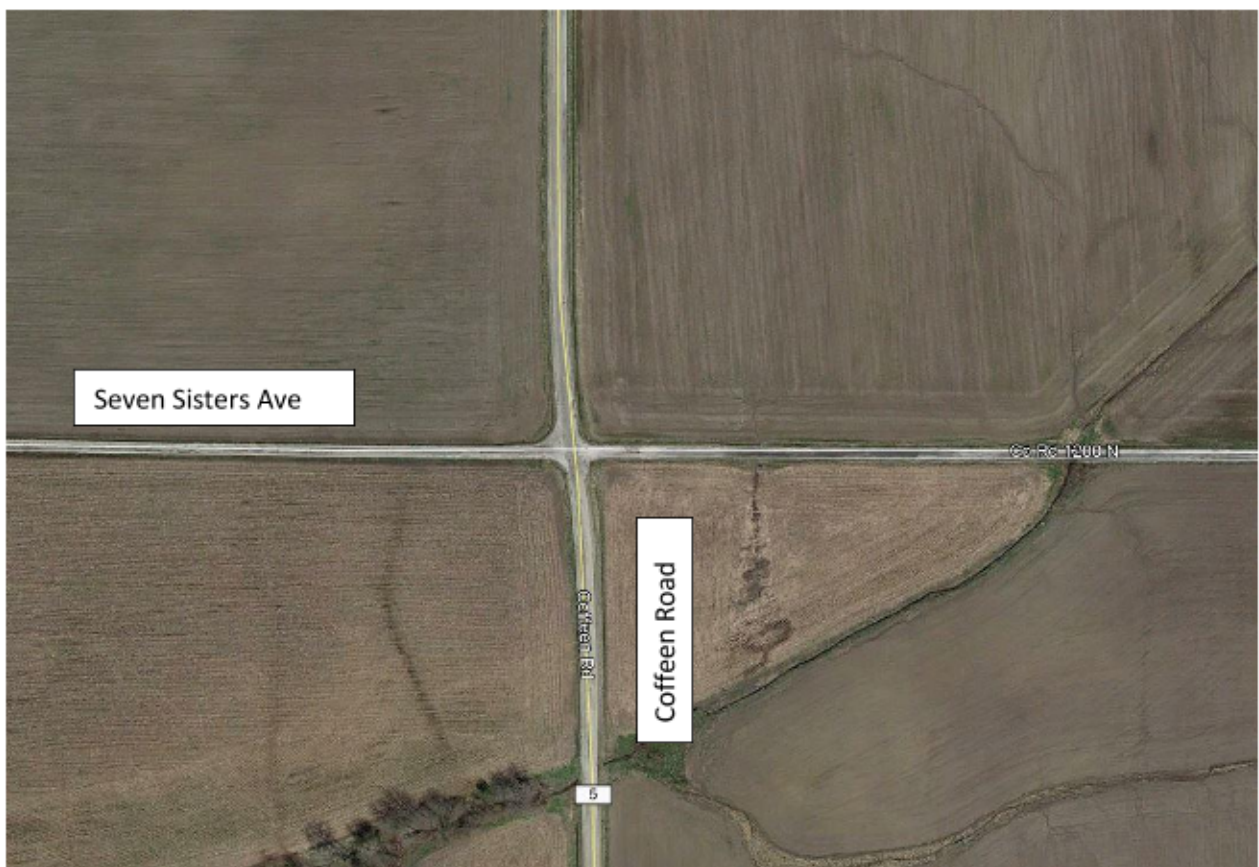
Project Location Maps

Seven Sisters Avenue



C
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Seven Sisters Ave

Coffeeen Road

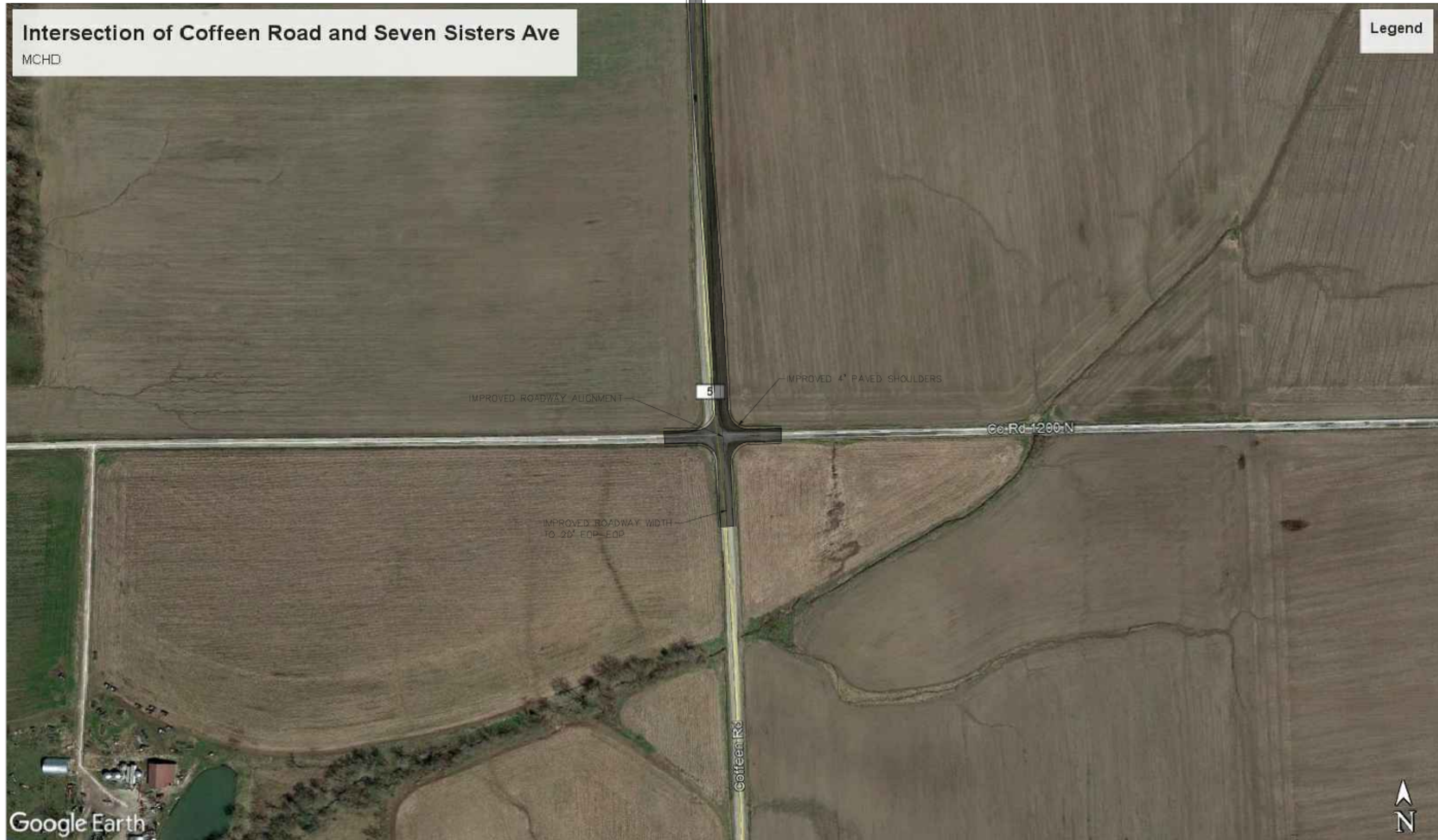
5

© 2016 RC-1200-N

Intersection of Coffeen Road and Seven Sisters Ave

MCHD

Legend



Google Earth



Section 4

Project Photographs

Coffeen Road northbound approaching Seven Sisters Avenue intersection



Coffeen Road at the intersection of Seven Sisters Avenue looking southbound



Coffeen Road southbound approaching Seven Sisters Avenue intersection



Coffeen Road at the intersection of Seven Sisters Avenue looking northbound



Seven Sisters Avenue eastbound approaching Coffeen Road intersection



Seven Sisters Avenue at the intersection of Coffeen Road looking westbound



Seven Sisters Avenue westbound approaching Coffeen Road intersection



Seven Sister Avenue at the intersection of Coffeen Road looking eastbound



Section 5

Crash Data & Heat Map

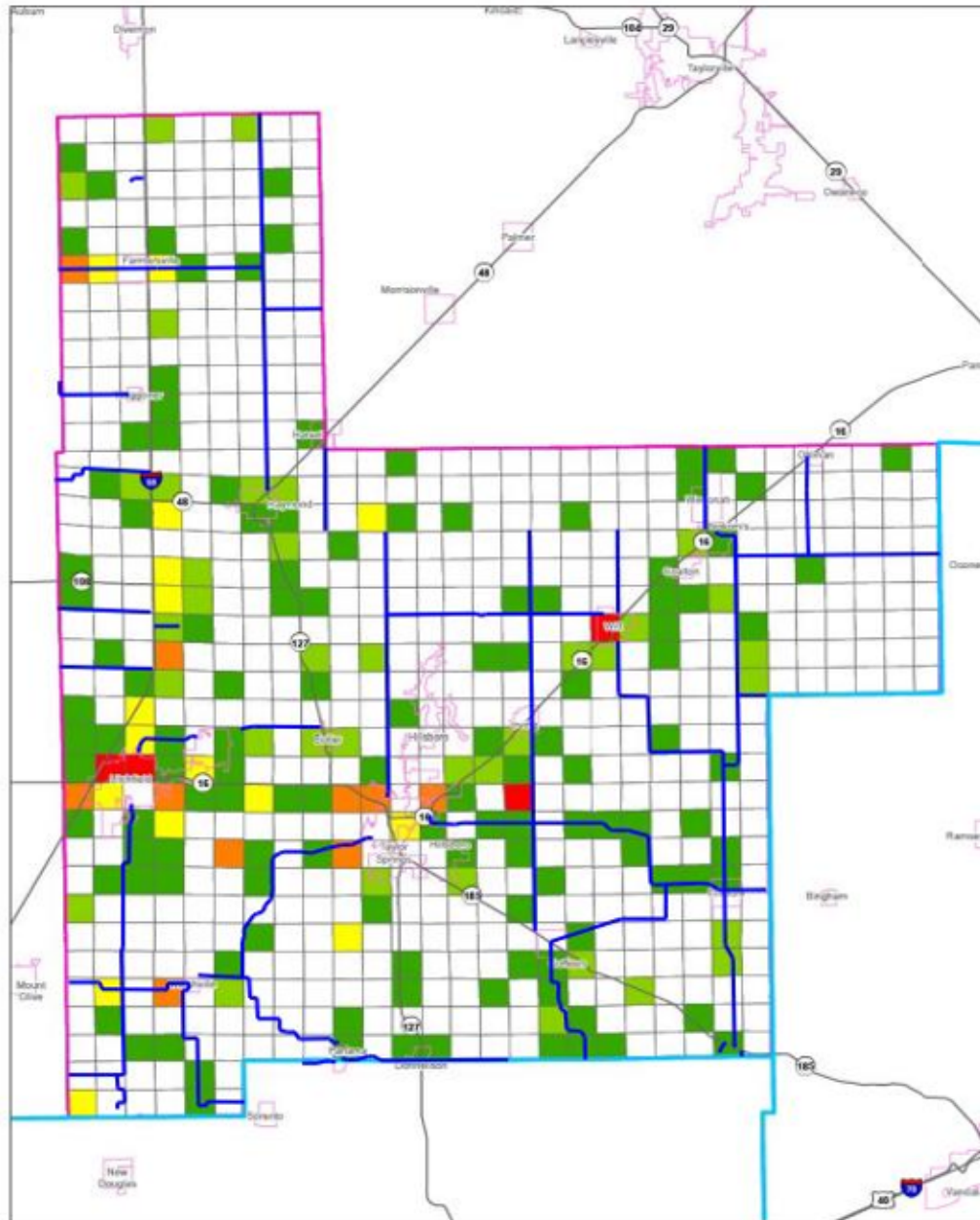
2011-2017 Crash Data Montgomery County (Local, rural)

Crash Data By Type of Collision		
Type	Number	Percentage
Animal	4	50%
Overturned	3	38%
Angle	1	12%
Total:	8	100%

Crashes & Injuries by Year							
Year	Total	Fatal Crashes	Fatalities	A-Injury Crashes	A-Injuries	B-Injury Crashes	B-Injuries
2011	1	0	0	1	1	0	0
2012	3	0	0	2	2	0	0
2015	1	0	0	0	0	0	0
2016	1	0	0	0	0	1	2
2017	2	0	0	0	0	1	1

Raw Crash Data										
Case_ID	Year	Month	Day	Hour	# Veh	Injuries	Rec_Type	Coll_Type	Veh1_Dir	Veh2_Dir
11201	11	12	31	23	1	1	A	Roadway Departure (OT)	South	
1121149	12	6	30	21	1	0	PD	Roadway Departure (OT)	South	
1121451	12	8	23	21	1	1	A	Roadway Departure (OT)	North	
1121935	12	11	22	20	1	1	A	Animal	South	
1150767	15	7	11	1	1	0	A	Animal	South	
1160649	16	5	2	8	2	2	B	Angle	South	East
1171278	17	11	7	5	1	1	B	Animal	West	
1170851	17	7	9	2	1	1	B	Animal - Roadway Departure	South	

In the picture below, the intersection of Coffeen Road and Seven Sisters Avenue is in the red shaded area a few squares east of Hillsboro. This area is the only rural area in Montgomery County to have 6-7 KAB crashes. We believe that reconstructing this intersection will lower these numbers.



Legend

- City Boundary
- County Boundary
- District Boundary

KAB Roadway Departure Crashes Per Section Square

- 0
- 1
- 2
- 3
- 4 - 5
- 6 - 7

*Legend intervals are based on KAB roadway departure crashes that occurred in this county.

County Road



FIGURE RD 68
MONTGOMERY COUNTY
KAB Roadway Departure Crashes Per Section Square
(All Routes Included)
Analysis Period: 2009-2013

Note: On average, section squares have an area of approximately 1 square mile.

DISCLAIMER: Results of the analyses shown in this map are based on data that was received from the Illinois Department of Transportation. Crash data represents years 2009 to 2013 and was obtained from the state police and other enforcement agencies. Crash data for 2009 to 2013 was received from IDOT on November 26, 2013. The roadway and intersection data was developed by IDOT and represents the end of the 2011 year conditions. The data was used "as is" for analysis purposes and should be interpreted accordingly.

Date: 3/6/2014

Section 6

Opinion of Costs & Benefit-Cost Analysis

Coffeen Road and Seven Sisters Avenue -- HSIP Application

ITEMS	UNIT	Quantity	Unit Price	Total Cost	HSIP Funds (90%)	Local Funds (10%)
EARTH EXCAVATION/PAVEMENT REMOVAL	CU YD	750.00	\$18.00	\$13,500.00	\$12,150.00	\$1,350.00
SEEDING, CLASS 2A	ACRE	0.50	\$5,000.00	\$2,500.00	\$2,250.00	\$250.00
AGGREGATE BASE COURSE, TYPE B 8"	TON	1200.00	\$18.00	\$21,600.00	\$19,440.00	\$2,160.00
HMA PAVEMENT (6")	TON	850.00	\$100.00	\$85,000.00	\$76,500.00	\$8,500.00
MOBILIZATION	L SUM	1.00	\$5,000.00	\$5,000.00	\$4,500.00	\$500.00
TRAFFIC CONTROL AND PROTECTION	L SUM	1.00	\$5,000.00	\$5,000.00	\$4,500.00	\$500.00
THERMOPLASTIC PAVEMENT MARKING - LINE 4"	FOOT	5000.00	\$1.00	\$5,000.00	\$4,500.00	\$500.00

TOTAL	\$137,600.00	\$124,000.00	\$13,600.00
20% Contingency	\$27,500.00	\$24,700.00	\$2,800.00
	\$165,100.00	\$148,700.00	\$16,400.00

ITEMS	UNIT	Quantity	Unit Price	Total Cost	HSIP Funds (90%)	Local Funds (10%)
EARTH EXCAVATION/SHLDR REMOVAL	CU YD	285.00	\$20.00	\$5,700.00	\$5,130.00	\$570.00
PAVED SHOULDER (6")	TON	170	\$100.00	\$17,000.00	\$15,300.00	\$1,700.00

TOTAL	\$23,400.00	\$21,000.00	\$2,400.00
20% Contingency	\$4,500.00	\$4,000.00	\$500.00
	\$27,900.00	\$25,000.00	\$2,900.00

CONSTRUCTION TOTAL	\$193,000.00	\$173,700.00	\$19,300.00
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* It is anticipated that Preliminary and Construction Engineering (\$68,000) will be funded by other sources by Montgomery County Highway Department

PROJECT COST	\$261,000.00
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PROJECT DESCRIPTION - PROJECT DATA INPUT (LOCAL INTERSECTIONS)

Project:	Seven Sisters and Coffeen Road Intersection			Prepared by:	JJC	
District:	6	County:	Montgomery	City:		
Key Route:	Coffeen Road	Market Route:	Coffeen Road	MDPost:		
Location:	Montgomery County			Current AADT:	Major Street Minor Street	
					400 175	
Crash data:	7	Years		Traffic Growth factor:	1.0%	
	From	2011	to	2017	Interest rate:	4.0%
Peer Group:	Peer Group 1 - Rural Minor Leg Stop Control Intersection					

Messages

Please provide a detailed cost estimation for all countermeasures along with this summary sheet.

LOCAL INTERSECTION CRASH SEVERITY DISTRIBUTION BY CRASH TYPE FOR ANALYSIS PERIOD

Crash Type	All Crashes (Aggregated crash input only)	CRASH TYPE																	SPECIAL CASE		Total
		Angle	Animal	Fixed Object	Head On	Left Turn	Other Noncollision	Other Object	Overtumed	Pedestrian	Pedalcyclist	Parked Vehicle	Rear End	Right Turn	Sideswipe Same Direction	Sideswipe Opposite Direction	Turning	Train	Night Time	Wet Pavement	
Crash Severity	ALL	AG	AN	FO	HO	LT	OtherNC	OtherO	OVT	PD	PDC	PKV	RE	RT	SSD	SOD	T	TR	NGT	W/P	TOT
Fatal Crashes									2										0	0	0
A-Injury Crashes			2																0	0	4
B-Injury Crashes		1	2																0	0	3
C-Injury Crashes																			0	0	0
PDO Crashes									1										0	0	1

LOCAL INTERSECTION BENEFIT COST ANALYSIS

BENEFIT CALCULATIONS			COUNTERMEASURE COST CALCULATIONS							
COUNTERMEASURE	CMF *	Crash Type affected by this improvement	Unit Cost	Quantity	Units	Total Cost	Service Life	Present Worth	EUAC **	
3.2.22.JR.1 - Pavement - Modify Lane Width	0.99	RDR, FO, HO, OVT, SOD, SSD	\$670,000	0.25	Miles	\$167,500	15	\$167,500	\$15,100	
3.2.21.JR.1 - Pavement - Increase Width of Paved Shoulder	0.95	All	\$110,000	0.25	Miles	\$27,500	15	\$27,500	\$2,500	
		All								
		All								
TOTAL BENEFIT		\$18,600								
						TOTAL COST			\$17,600	
BENEFIT/ COST		1.06								
		ANNUAL NUMBER OF FATALITIES POTENTIALLY PREVENTED		0.00						
		TOTAL FATALITIES PREVENTED		0.00						

***NOTE: IF THE NUMBER OF LEGS AFFECTED VARIES BY COUNTERMEASURES SELECTED, THEN CALCULATE THE BENEFIT-COST RATIO FOR EACH COUNTERMEASURE SEPARATELY (Use separate spreadsheets for each countermeasure applied).

* CMF = Crash Modification Factor

** EUAC = Estimated Uniform Annual Cost

Section 7

Project Schedule

Coffeen Road & Seven Sisters Avenue Intersection

		2020-2021												
	Start Date	Date of Completion	January	February	March	April	May	June	July	August	September	October	November	December
1	Notice to Proceed	9/1/2020												
2	Phase I Engineering & Project Report	9/2/2020												
3	Preliminary Engineering & Plan Development	12/3/2020												
	IDOT Review	2/11/2021												
4	Pre-Final Plan Development	4/13/2021												
	IDOT Review	5/7/2021												
5	Final PS&E Development	6/8/2021												
6	Letting	7/30/2021												
7	Construction	8/30/2021												

Date: 6/4/2020