CIRCULAR LETTER 2020-07

FY 2022 LOCAL HIGHWAY SAFETY IMPROVEMENT PROGRAM

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

The Illinois Department of Transportation is requesting candidate projects for the Highway Safety Improvement Program (HSIP) that will be initiated in FY 2022. Applications for this funding program will be received through Friday, May 8th, June 12th, 2020 at 5:00 PM ET, and announcement of the selected projects for funding will be made during the week of July 27th, August 17th, 2020.

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.

Strong consideration will be given to specific safety strategies that offer significant benefit to the reduction of fatal and serious injury crashes. The key is to identify the issue(s) contributing to the fatal and serious injury crashes and how the safety strategy will address 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.

HSIP funds may also be used for system-wide, systemic, safety improvements. These may include items such as signage, pavement markings, rumble strips, chevrons, guardrail improvements / upgrades, guardrail end terminal upgrades, etc. 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. Please note that more effective countermeasures other than guardrails are preferred and will be favorably considered.
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 that will be used at the project location.

The Department intends to add a FY 2022 local increment to the HSIP when we develop the FY2022-2027 proposed Multi-Year Highway Improvement Program.

The anticipated funding level is approximately $16 million for FY 2022. 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.

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. 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 should be used to develop your HSIP application.

Please also note the usefulness of the Safety Tiers. 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.”

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.

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 2022 HSIP application. Also note that the Bureau of Safety Programs & Engineering will be providing a webinar on April 8th-May 12th, 2020 from 9:30 AM to 10:30 AM to discuss how to submit a good quality application. Information on how to join the live webinar is available in the NOFO.

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 which are also attached.

The Illinois Department of Transportation (IDOT) provided a Notice of Funding Opportunity (NOFO) on March 13th, 2020. This Funding Opportunity Number is 22-1004-01 and the program is listed in the Catalog of State Financial Assistance (CSFA) as 494-00-1004.

The HSIP website contains additional information on the IDOT HSIP Policy and analysis tools which may be used to guide the applicant through the application process.
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

Completed applications should be sent electronically to the appropriate District Local Roads and Streets Engineer by Friday May 8th, June 12th, 2020. 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 Bablibile.Seck@illinois.gov

Sincerely,

Stephane B. Seck-Birhame, P.E., PTOE
Acting Engineer of Local Roads and Streets

SSB/
Attachments

cc: Alan Ho, FHWA – Illinois Division
    Matt Magalis, IDOT Office of Finance & Administration
    Cindy Watters, IDOT Bureau of Safety Programs and Engineering
    Duane Ratermann, Illinois Association of County Engineers
    Brad Cole, Illinois Municipal League
    Bryan Smith, Township Officials of Illinois
    Donald Goad, Township Highway Commissioners of Illinois
## HSIP Candidate Form

**ID:**

**Contract:**

**Award Date:**

**Completion Date:**

**District:**

**County:**

**City:**

**Key route:**

**Marked route:**

**Road Name:**

**Intersecting Roadway:**

**Length:**

**Mile station:**

### Location Description:

- Rural
- Urban

**Lanes:**

**AADT(Segment):**

**Total Entering AADT (Intersection):**

**Speed Limit:** mph

### Friction Test Results:

- N/A

### Lighting Present:

- Y
- N

### CHSP Emphasis Area(s):

- District Documentation
- Systematic Improvements
- N/A

### Peer Group:

- N/A

### Other:

### Crashes Details

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**Total**

### Location Description:

### Problem Description:

### Previous Safety Improvements:

**Collision Diagram:**

- Y
- N

**Images:**

- Y
- N

### Predominant Crash Types:

### Proposed Improvement(s):

**Estimated Project Cost ($000’s):** $

**Benefit-Cost Ratio:**

### Local Projects:

- Annual Fatal Crash Rate (Fatal Crashes/100 Miles):
- Annual A-Injury Crash Rate (A-Injury Crashes/100 Miles):

### Local Roads Rural Functional Class:

**Approved:**

**Signed:**

**State Safety Engineer**

**Funding:**

- HSIP
- HRRR
- RAIL

### Central HSIP Approval Date:

**Comment:**

**Distribution:**

- OPP
- District
- BSPE
- LRS
- BDE
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
GUIDELINES FOR LOCAL AGENCIES IN USING THE 2017 LOCAL SYSTEM SAFETY TIER ANALYSIS RESULTS

- 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.

![Figure 2-1. Screenshot of Safety Tier Analysis Results for Local Intersections in the Microsoft Excel Spreadsheet](image-url)
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.

![Screenshot of the Safety Tier Analysis Results for Local Intersections in the GIS Environment](image)

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
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.
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](image)

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.
GUIDELINES FOR LOCAL AGENCIES IN USING THE 2017 LOCAL SYSTEM SAFETY TIER ANALYSIS RESULTS

2.4.2 Segments

Figure 2-8 is a screenshot of the safety tier analysis results map for local segments in one county.
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.
Application Content

1. Cover letter
2. BSPE HS1 (application form)
3. Benefit to Cost Ratio form
4. Raw crash data
5. Project location map
6. Project location photographs
7. Estimated project cost breakdown
8. Project timeline
9. Project narrative
10. Uniform Application for State Grant Assistance
11. Uniform Grant Budget Template (GOMBGATU-3002)
12. Programmatic Risk Assessment Questionnaire
13. Conflict of Interest Forms (BoBS 2831)
14. Appendix
June 7, 2019

Mr. Steve Travia
Bureau of Local Roads and Streets
Illinois Department of Transportation
201 West Center Court
Schaumburg, Illinois 60196-1096

Re: Roselle Road and Hartford Drive
2019 HSIP Application

Dear Mr. Travia:

On behalf of Cook County, I am pleased to submit to you an application for HSIP funding to make safety improvements at the intersection of Roselle Road and Hartford Drive located in the Village of Schaumburg.

Our staff reviewed County crash data for high crash locations within our roadway network and recommends that this intersection be prioritized for safety improvements. The 2012 to 2016 crash data revealed high incidences of rear-end and turning collisions while also showing one fatality and one serious injury crash.

Cook County intends to use the HSIP funding to replace the traffic signal at the intersection of Roselle Road and Hartford Drive, upgrading the mast arms and signal heads so there are one per lane. Left turn lane alignments will be increased to provide positive offsets and improve sight distance along the Roselle Road approaches. Additionally, the installation of new pedestrian countdown timers, push-buttons, and ADA-compliant ramps will make the intersection safer for pedestrians and bicyclists.

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, please contact Tara Orbon, Bureau Chief, Project Development, at 312-603-1745 or Tara.Orbon@cookcountyil.gov.

Sincerely,

John Yonan, P.E.
Superintendent
Department of Transportation and Highways
Cook County, Illinois

cc: Zubair Haider – IDOT
HSIP Candidate Form

FY 2021

ID:  
Contract:  
Award Date:  
Completion Date:  
District: 1 
County: Cook 
City: Schaumburg 
Key route: 0364 
Marked route: Cook County Route V60 (Roselle Road) 

Road Name: Roselle Road 
Intersecting Roadway: Hartford Drive 
N/A 

Length: N/A 
Mile station: to 

Location Description: This is a 4-way signalized intersection between Roselle Road and Hartford Drive. Roselle Rd. is a 4-lane Other Principal Arterial with a mountable median and left turn channelization for turning onto Hartford. Hartford is a 2-lane local road. 

AADT(Segment): Total Entering AADT (Intersection): 30700 
Speed Limit: 40 mph 

Fring Test Results: N/A 
Lighting Present: Y 
N 

CHSP Emphasis Area(s): Intersections 
District Documentation: N/A 
Systematic Improvements: N/A 

Other: 

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Location Description: See above 

Problem Description: This intersection has a high frequency of rear end and turning crashes. Outdated traffic signals and negative left turn lane offsets may contribute to the frequency and severity of crashes. See Project Narrative for additional information. 

Previous Safety Improvements: None known 

Collision Diagram: Y 
N 

Images: Y 
N 

Predominant Crash Types: Rear End - 53%; Turning - 22%; Angle - 10% 

Proposed Improvement(s): Installation of a modernized traffic signal with longer mast arms and one signal head per lane, increased left turn offsets to create positive offset and improved sight distance, and improve pedestrian accommodations by including countdown pedestrian signals and new ADA ramps. 

Estimated Project Cost ($000’s): $799,200 
Benefit-Cost Ratio: 9.03 

Local Roads Rural Functional Class: 

Approved: Central HSIP Approval Date: 

Signed: 
State Safety Engineer 

Comment: 

Distribution: OPP 
District 
BSPE 
LRS 
BDE 

Printed 6/5/2019 
BSPE HS1 (Rev. 10/07/16) 
Formerly BSE HS1
Please provide a detailed cost estimation for all countermeasures along with this summary sheet.

### Project Description - Project Data Input (Local Intersections)

**Project:** Roselle Road & Hartford Drive HSP Application  
**Prepared by:** Civiltech Engineering  
**District:**  
**County:**  
**City:**  
**Date:** 5/29/2019

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

#### Key Route:
- **Marked Route:**
- **MilePost:** Major Street 27700

#### Minor Street 3000

- **Location:** The combined effect of multiple countermeasures is limited to 0.60 or the smallest CMF

#### Crash Data:
- **5 Years 1.0%**  
- **From 2012 to 2016 4.0%**

#### Peer Group:
- **Peer Group 7 - Urban Signalized Intersection**

### Local Intersection Crash Severity Distribution by Crash Type for Analysis Period

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<th>Crash Type</th>
<th>All Crashes</th>
<th>Angle</th>
<th>Animal</th>
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<th>Head On</th>
<th>Left Turn</th>
<th>Other Noncollision</th>
<th>Other Object</th>
<th>Overhead</th>
<th>Pedestrian</th>
<th>Pedalcyclist</th>
<th>Parked Vehicle</th>
<th>Rear End</th>
<th>Right Turn</th>
<th>Right of Way</th>
<th>Sideswipe Same Direction</th>
<th>Sideswipe Opposite Direction</th>
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#### Benefit Calculations

**Countermeasure Cost Calculations**

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<th>Countermeasure</th>
<th>Crash Type Affected by Improvement</th>
<th>Unit Cost</th>
<th>Quantity</th>
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<th>Total Cost</th>
<th>Service Life</th>
<th>Present Worth</th>
<th>EUAC **</th>
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<tr>
<td>3.4.11.I7.1 - Signalization - Add signal (additional primary head)</td>
<td>All</td>
<td>$724,200</td>
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**Total Benefit:** $640,450  
**Total Cost:** $71,950

### Notes:
- **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**

**Local Intersection Benefit Cost Analysis**

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**Traffic Growth factor:** 1.0%  
**Interest rate:** 4.0%
# Raw Crash Data
## Roselle Road and Hartford Drive HSIP Application

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</tbody>
</table>
Above: Roselle Road at Hartford Drive facing north

Below: Roselle Road approaching Hartford Drive facing north
Above: Roselle Road at Hartford Drive facing south

Below: Roselle Road approaching Hartford Drive facing south
Above: Hartford Drive at Roselle Road facing east

Below: Hartford Drive approaching Roselle Road facing east
Above: Hartford Drive at Roselle Road facing west

Below: Hartford Drive approaching Roselle Road facing west
### Cost Estimate

**Roselle Road and Hartford Drive HSIP Application**

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<th>Item</th>
<th>HSIP Funds (90%)</th>
<th>Local Funds (10%)</th>
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* This item includes removal and replacement of all existing signal equipment with modern equipment including longer mast arms, one LED signal indication per lane, pedestrian countdown signals, and illuminated street name signs.

** It is anticipated that Phase I and II engineering will be funded by the Cook County Department of Transportation and Highways.
Project Timeline

Roselle Road at Hartford Drive HSIP Application

August 30, 2019 – HSIP funds awarded

December, 2019 – Phase I and Phase II engineering (Funded by Cook County Department of Transportation and Highways)

October, 2020 – Design is complete and project is approved for letting

December, 2020 – Project letting

April, 2021 – Construction begins
Roselle Road at Hartford Drive

Roselle Road (County Highway V60) is part of the Cook County Highway System and is under the jurisdiction of the Cook County Department of Transportation and Highways. Roselle Road is a north-south Other Principal Arterial that runs south into DuPage County and the Village of Roselle while traversing Schaumburg and connecting to the Jane Addams Tollway (I-90) to the north. This roadway carries approximately 27,700 vehicles per day (2018 Annual Average Daily Traffic) in four 12-foot lanes and has a center mountable median that transitions to left turn lanes approaching the intersection. The posted speed limit is 40 miles per hour.

Hartford Drive is a two-lane local roadway which is under the jurisdiction of the Village of Schaumburg. Both the east and west legs of Hartford serve single-family residential neighborhoods while also carrying traffic coming to and from strip mall shopping centers. While traffic count data on Hartford is not available, we have estimated that it carries 3,000 vehicles per day. The speed limit on Hartford is posted at 25 miles per hour.

The intersection of Roselle Road and Hartford Drive is controlled by an actuated traffic signal that provides left turn phasing for northbound and southbound traffic. This signal is interconnected to the Roselle Road/Wise Road traffic signal, which is 1,000 feet to the south. The closest signal to the north is at Roselle/Weathersfield, which is about half a mile away. There is street lighting on all four legs of the intersection.

Crashes at and near the intersection of Roselle Road and Hartford Drive were analyzed for a five-year period beginning from 2012 through 2016. A total of 68 crashes occurred during the five-year period. The most common crash type at the intersection was rear-end, accounting for 53% of the total crashes. There was also a high frequency of turning (22%) and angle (10%) collisions. 19 of the 68 crashes (28%) resulted in injuries. One of these crashes was a fatality that occurred when a driver turning left from southbound Roselle was struck by a motorists who was traveling northbound through the intersection. Additionally, a serious injury collision happened when a northbound driver was traveling too fast for conditions, couldn’t stop in time at a red light, and skidded into the southbound traffic lanes, striking oncoming traffic. The appendix at the end of the application contains collision diagrams that illustrate the location and types of the crashes.

The intersection of Roselle Road and Hartford Drive was selected for the FY 2021 Local Highway Safety Improvement Program based on a review of crash data at signalized intersections within the Cook County highway system. The crash rate at this location was determined to be quite high, especially when considering that the cross-street is a lower-volume road. Given the analysis with the Benefit-Cost tool, the B-C ratio comes out to 9.03, which shows that appropriate countermeasures can significantly improve safety. Additionally, the Benefit-Cost analysis shows that approximately 0.45 fatalities could be prevented.

Various countermeasures are recommended to improve intersection safety and reduce the most common crash types. These include traffic signal modernization, replacing the mast arms on Roselle Road with longer ones that incorporate one signal head per lane. The modernized traffic signal will include 12” LED indications with visors and reflective backplates. These upgrades will improve the visibility of the signal to oncoming traffic, which should improve safety. The new traffic signal will also
include pedestrian countdown signals, ADA compliant pedestrian push-buttons, and new ADA ramps to improve safety and accessibility for pedestrians. An additional improvement will include removing the four-foot corrugated median that separates the left turn lanes from the opposing travel lanes so the turn lanes can be shifted to the left, which will provide a positive offset and improve sight distance for drivers making permitted left turns during the green ball phase.
Appendix A

Collision Diagrams