Appendix P

Safety and Security Technical Memorandum

- Final EIS Addendum P, Safety and Security Technical Memorandum, July 2022

Chicago Red Line Extension Project

Safety and Security

Final EIS Addendum P

July 2022

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Abbreviations

ADT	Average Daily Traffic
API	area of potential impact
CDOT	Chicago Department of Transportation
CHA	Chicago Housing Authority
CMAP	Chicago Metropolitan Agency for Planning
CN/MED	Canadian National/Metra Electric District
CTA	Chicago Transit Authority
EA	Environmental Assessment
ECF	Expected Crash Frequency
EIS	Environmental Impact Statement
FTA	Federal Transit Administration
ICC	Illinois Commerce Commission

IDOT	Illinois Department of Transportation
IHB	Indiana Harbor Belt Railroad
MUTCD	Manual on Uniform Traffic Control Devices
MWRD	Metropolitan Water Reclamation District of Greater Chicago
NEPA	National Environmental Policy Act
NS	Norfolk Southern Railway
PHA	Preliminary Hazard Analysis
RLE	Red Line Extension
TIP	Transportation Improvement Program
TVA	Threat and Vulnerability Assessment
UPRR	Union Pacific Railroad
VMT	vehicle miles traveled

Section 1 - Summary

This technical memorandum analyzes the potential safety and security impacts and mitigation measures for the Red Line Extension (RLE) Project. Subsequent to the publication of the Draft Environmental Impact Statement (EIS), continued design and outreach by the Chicago Transit Authority (CTA) resulted in the selection of the Preferred Alignment of the Union Pacific Railroad (UPRR) Rail Alternative, announced to the public on January 26, 2018. The Preferred Alignment is a hybrid of the East and West Options of the UPRR Rail Alternative presented in the Draft EIS, which follows the general path of the West Option north of 107th Place, and the East Option south of 107th Place.

This technical memorandum provides updates to the analysis for safety and security and provides an update to the potential impacts and mitigation measures based on the additional engineering that has been completed since the publication of the Draft EIS. CTA has also prepared a Threat and Vulnerability Assessment (TVA) and has conducted a Preliminary Hazard Analysis (PHA) as part of the ongoing work for the RLE Project. The analysis, conclusions, and mitigation measures presented in this technical addendum are in keeping with the TVA and PHA prepared for the RLE Project. While the information was considered, no specific information was brought forward from the documents due to their sensitive security status. The documents contain sensitive security information controlled under 49 CFR Parts 15 and 1520. No part of the documents may be disclosed to persons without a "need to know," as defined in 49 CFR Parts 15 and 1520, except with the written permission of the Administrator of the Transportation Security Administration or the Secretary of Transportation.

Consistent with the conclusions outlined in the Draft EIS, **Appendix P**, the RLE Project would result in adverse and beneficial safety and security impacts in the area of potential impact (API).

1.1 Safety and Security Defined

The definitions of safety and security remain the same as those outlined in **Appendix P** of the Draft EIS.

1.2 Key Findings

The following sections summarize the identified adverse impacts for the No Build Alternative and the Preferred Alignment, mitigation measures to address the adverse impacts, and the impacts remaining after mitigation.

1.2.1 No Build Alternative

There would be no expected permanent impacts, construction impacts, or cumulative impacts on safety and security associated with the No Build Alternative. Therefore, there would be no mitigation measures and no impacts remaining after mitigation. This is consistent with **Appendix P** in the Draft EIS.

1.2.2 Union Pacific Railroad Alternative - Preferred Alignment

The Preferred Alignment would have the following impacts, consistent with **Appendix P** in the Draft EIS:

- Pedestrian Safety – An adverse impact was identified at the 103rd Street, 111th Street, Michigan Avenue, and 130th Street stations because a large number of pedestrians would need to cross major streets without traffic controls or other pedestrian safety treatments. This impact would be mitigated in coordination with Chicago Department of Transportation (CDOT)to implement the additional improvements to enhance safety for crossing pedestrians, as applicable. The impact would not be adverse after mitigation.
- Station Security – All stations would be designed and constructed in compliance with the standards and guidelines in CTA's Design and Rehabilitation Criteria Manual and other design guidelines. Stations would be well lit, and the final design would consider lines of sight for surveillance by station personnel. There would be no adverse impacts on station security.
- Parking Security – All parking facilities and pedestrian access routes would be designed, constructed, and operated with security features. There would be no adverse impacts on parking security.
- Neighborhood Security – New train stations would be unlikely to have much impact on neighborhood crime (Ridgeway and MacDonald 2015). However, some studies have found a correlation between train service and higher crime rates, particularly in low-income areas (Ihlanfeldt 2003). The impact would not be adverse. Mitigation measures would include lighting under the elevated structure in station, parking, and on CTA right-of-way to contribute to improved safety and security, and to improve surveillance visibility. The remaining impacts would not be adverse after mitigation.
- Highway-Rail Crossings – An increase in UPRR train volumes (not associated with the RLE Project), pedestrian volumes, and motor vehicle volumes near the RLE stations would have cumulative and permanent adverse impacts on safety. At the crossings directly adjacent to stations, CTA would include the implementation of at-grade warning device enhancements

including pedestrian gates and improvements for Americans with Disabilities Act compliance in the final design of the RLE Project in coordination with the UPRR. Illinois Commerce Commission, CDOT, and Cook County Department of Transportation and Highways. The impact would not be adverse after mitigation.

- Emergency Services – Emergency services would be able to access construction sites at all times in the same way contractors access the sites, and detours would be needed at times due to roadway closures. The impacts would not be adverse with mitigation.

Section 2 - Project Description and Background

CTA, as project sponsor to the FTA, proposes to extend the existing Red Line heavy rail transit service 5.6 miles south from the existing 95th/Dan Ryan terminal to Chicago's Far South Side. This project is one part of the Red Ahead Program to extend and enhance the entire Red Line. The Red Line provides rapid transit services 24/7 and is the most heavily traveled rail line in the CTA System.

The RLE Project would reduce commute times for residents, improve mobility and accessibility, and provide connection to other transportation modes. The RLE Project could also foster economic development, where new stations may serve as catalysts for neighborhood revitalization and help reverse decades of disinvestment in local business districts.

CTA undertook an extensive Alternatives Analysis process from 2006 to 2009 that considered multiple modes and corridor options for the RLE Project. The Chicago Transit Board designated the UPRR Rail Alternative as the Locally Preferred Alternative on August 12, 2009. Based on further technical analysis and public input, CTA selected the UPRR Rail Alternative as the NEPA Preferred Alternative in August 2014. The Draft EIS, published on October 6, 2016, disclosed the environmental benefits and impacts of the No Build Alternative and the two UPRR Rail Alternative options: the East Option and the West Option shown in **Figure 2-1**.

Subsequent to the publication of the Draft EIS, continued design and outreach by CTA resulted in the selection of the Preferred Alignment for the RLE Project. The Preferred Alignment was announced to the public on January 26, 2018. The Preferred Alignment is a hybrid of the East and West Options of the UPRR Rail Alternative presented in the Draft EIS. CTA reviewed multiple locations for a cross-over area that would maximize the benefits and reduce the impacts of the East and West Options.

The UPRR provided comments on the Draft EIS where they expressed their preference for the West Option due to concerns for the proximity of the East Option to their tracks. UPRR noted that the location of the Roseland Pumping Station could not accommodate UPRR's requested clearance of 25 feet between the centerlines of the UPRR's potential tracks and the proposed East Option. Therefore, all hybrid options considered in selecting the Preferred Alignment started with the West Option and crossed over from the west to the east side of the UPRR tracks south of the pumping station and north of 115th Street to minimize property impacts. Comparative analysis of parcel impacts and alignment with the goals of the RLE Project identified the vicinity of 108th Place as the cross-over location that would provide the greatest benefit. A cross-over in the vicinity of 108th Place would preserve viable businesses; minimize impacts on schools, residences, and the historic Roseland Pumping Station; and preserve properties slated for future development surrounding the station areas. However, additional engineering refined the alignment further, which moved the

UPRR crossing north from 108th Place to 107th Place. The refinement would lower the 111th Street station platform height and would lower the profile of the elevated structure.

After the announcement of the Preferred Alignment in 2018, CTA continued to conduct stakeholder coordination and further develop design plans. Norfolk Southern Railway (NS) shared their plans for future potential access to Canadian National/Metra Electric District (CN/MED) tracks to the north of Kensington Yard and the national freight rail network at that location. This access would allow restoration of a former connection that the Michigan Central Railroad had with the CN/MED tracks, which were then owned by the Illinois Central Railroad. The 120th Street yard and shop presented in the Draft EIS would have precluded future potential access to those tracks as well as access to All American Recycling located west of the railroad tracks (11900 S. Cottage Grove Avenue). The All American Recycling facility is served by the NS via its joint ownership of Conrail and the Indiana Harbor Belt Railroad (IHB). This coordination with NS resulted in additional adjustments to the Preferred Alignment near the 120th Street yard and shop. The 120th Street yard and shop and the tracks south to 130th Street were shifted approximately 100 feet to the west to accommodate NS railroad access to the All American Recycling and potential improvements to the national freight rail network, namely a future connection from the NS track to CN tracks along the MED corridor. In addition, this design refinement would provide a rail connection to facilitate rail delivery of ballast, ties, and other material to support CTA operations.

In 2019, CTA began exploring an opportunity to relocate the 130th Street station, the terminating station of the RLE Project, to a location south of 130th Street. The Draft EIS had originally proposed the station location north of 130th Street. In 2017, after publication of the Draft EIS, the Chicago Housing Authority (CHA) demolished Blocks 11, 12, and 13 of the Altgeld Gardens neighborhood, creating an opportunity to relocate the station south of 130th Street to the area of the demolished blocks. The demolition of Blocks 11, 12, and 13 of Altgeld Gardens was an activity completed by CHA and was independent and unrelated to the RLE Project. CTA evaluated the station relocation for feasibility. Meetings were held with partner agencies and stakeholder groups of residents in the station area with these agencies and groups expressing support for the station relocation. The design refinement relocated the station from north of 130th Street, as presented in the Draft EIS, to south of 130th Street, adjacent to the Altgeld Gardens neighborhood.

Since the publication of the Draft EIS and selection of the Preferred Alignment, three design refinements were made as discussed above: (1) the location of the 107th Place cross-over between UPRR East and West alignment options evaluated in the Draft EIS required for selection of a hybrid Preferred Alignment; (2) refinement of the 120th Street yard and shop location; and (3) relocation of the 130th Street station to extend the Preferred Alignment farther south so the 130th Street station would be within the Altgeld Gardens neighborhood. These design refinements were evaluated in a Supplemental Environmental Assessment (EA). The agency coordination and outreach associated

with the Supplemental EA have influenced the design refinements incorporated into the Preferred Alignment and that is analyzed in this Final EIS.

Additional details about the Preferred Alignment may be found in **Appendix E**.

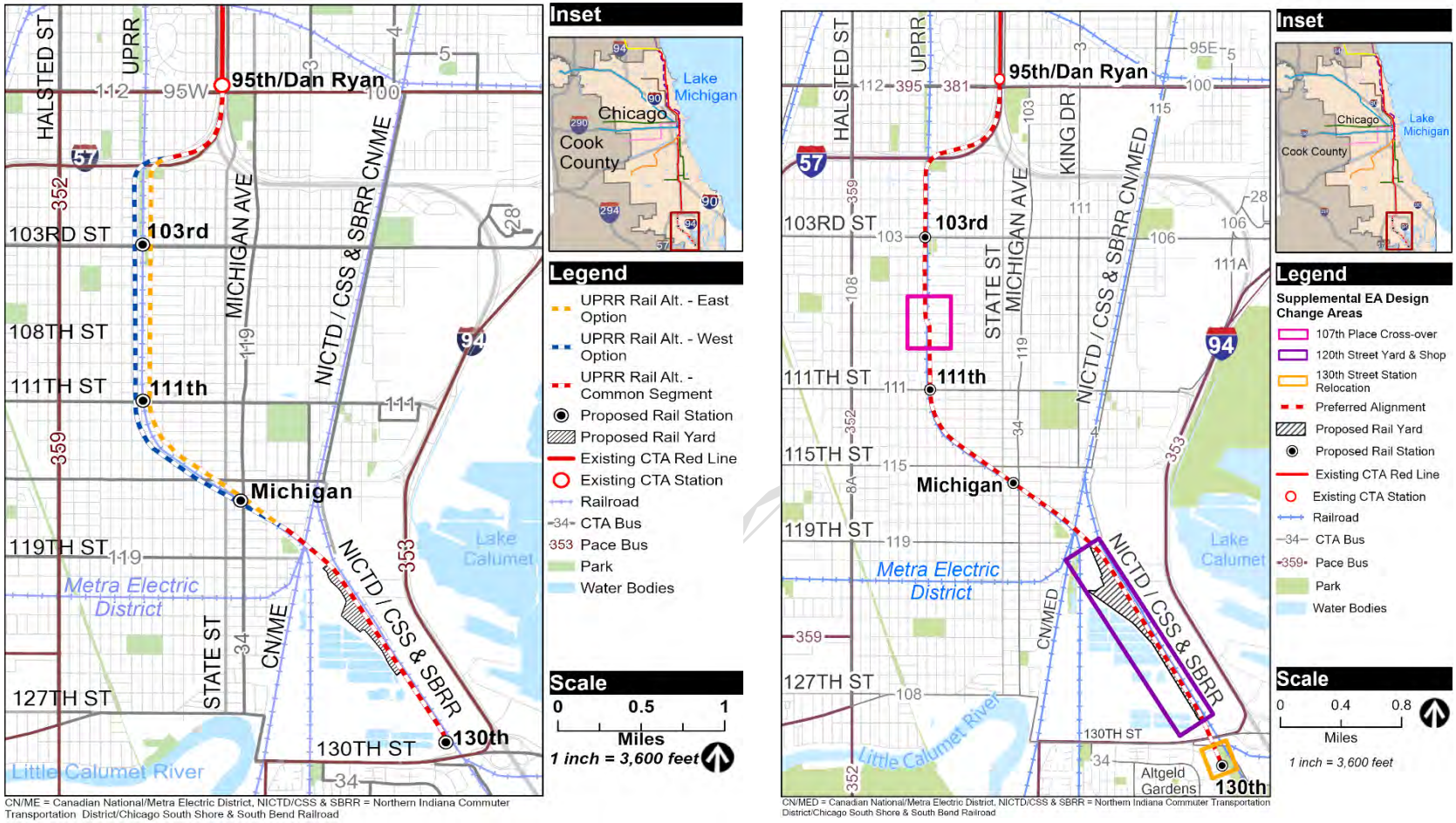

Figure 2-1: Left - East and West Options of the UPRR Rail Alternative (Draft EIS), Right - Preferred Alignment (Final EIS)

Section 3 - Methods for Impact Evaluation

Methods presented in **Appendix P** for the Draft EIS analysis have been carried forward to evaluate Safety and Security. This section documents the methodology for evaluating this resource, consistency with the methodology used in the Draft EIS, and any methodological changes.

3.1 Regulatory Framework

There are no changes to the applicable federal or state regulations referenced in **Appendix P** of the Draft EIS.

3.2 Impact Analysis Thresholds

There are no specific thresholds for safety and security identified under the National Environmental Policy Act (NEPA). The definition of an adverse safety and security impact in the Draft EIS **Appendix P** is still applicable.

3.3 Area of Potential Impact

The Draft EIS used an API of ½ mile radius from each of the proposed stations as well as the existing 95th/Dan Ryan terminal. This document takes the same approach as that outlined in **Appendix P** of the Draft EIS.

3.4 Methods

The analysis of safety and security of the Preferred Alignment was performed using the same methods as were documented in the Draft EIS consistent with **Appendix P**.

Section 4 - Affected Environment

This section describes any updates to the existing safety and security conditions near the RLE Project since the publication of the Draft EIS. This section documents updates to the baseline data and planning horizon, as well as any changes to safety and security planning and policy framework in the communities and jurisdictions affected by the Preferred Alignment.

4.1 Major Safety and Security Incidents on CTA Rail System

As stated in the Draft EIS, CTA is required to report major safety and security incidents, such as fires and fatalities, to the FTA. **Tables 4-1** and **4-2** show a summary of these incidents for the most recent 3 years (2018-2020) of complete data for the CTA bus and rail systems, respectively. From 2018-2020, there were 969 incidents on the bus system, including 6 fatalities and 1,584 injuries requiring immediate off-site medical attention. From 2018 to 2020, there were 513 incidents on the rail system, including 51 fatalities and 525 injuries requiring immediate off-site medical attention. Additional details about the incidents are not provided in the available data (National Transit Database, 2021).

Table 4-1: Safety and Security Incident Summary for Entire CTA Bus System

Year	Major Incident Type						Vehicle Revenue Hours	Major Incidents per Million Vehicle Revenue Hours
	Collisions	Derailments	Fires	Security	Not Otherwise Classified	Total		
2018	214	0	2	75	7	298	5,794,197	51.43
2019	255	0	0	91	5	351	5,814,122	60.37
2020	215	0	0	100	5	320	5,814,122	55.04
Total	684	0	2	266	17	969	17,422,441	55.62

Source: National Transit Database 2021

Table 4-2: Safety and Security Incident Summary for Entire CTA Rail System

Year	Major Incident Type						Vehicle Revenue Hours	Major Incidents per Million Vehicle Revenue Hours
	Collisions	Derailments	Fires	Security	Not Otherwise Classified	Total		
2018	29	1	2	109	14	155	4,068,066	38.10
2019	33	4	1	152	28	218	4,065,132	53.63
2020	31	1	0	85	23	140	4,065,132	34.44
Total	93	6	3	346	65	513	12,198,330	42.05

Source: National Transit Database 2021

4.2 Crime Summary

Table 4-3 shows the number and percent of reported crime types occurring on CTA trains; on CTA platforms; and at garages, parking lots, and other property throughout the City of Chicago. Over the 3-year period, there was an average (calculated as total crimes per location/days in 3 years) of 2.8 incidents per day reported on CTA trains, 1.3 incidents per day reported on CTA train platforms, 1.5 incidents per day on CTA stations, and 0.4 per day at CTA garages and other property.

Table 4-3: Crimes on CTA Trains, Platforms and Other Property in Chicago

Type of Crime	Crimes on CTA Trains in Chicago		Crimes on CTA Platforms in Chicago		Crimes on CTA Stations in Chicago		Crimes at CTA Garages and Other Property in Chicago	
	2018-2020	Percent	2018-2020	Percent	2018-2020	Percent	2018-2020	Percent
Arson	0	0	1	0.1	0	0	0	0
Assault	63	2.1	81	5.6	121	7.5	14	3.1
Battery	342	11.3	332	22.9	252	15.7	17	3.8
Burglary	0	0	0	0	0	0	1	0.2
Concealed Carry License Violation	0	0	0	0	0	0	0	0
Criminal Damage	342	11.3	37	2.5	75	4.7	204	45.8

Type of Crime	Crimes on CTA Trains in Chicago		Crimes on CTA Platforms in Chicago		Crimes on CTA Stations in Chicago		Crimes at CTA Garages and Other Property in Chicago	
	2018-2020	Percent	2018-2020	Percent	2018-2020	Percent	2018-2020	Percent
Criminal Sexual Assault	0	0	0	0	0	0	0	0
Criminal Trespassing	21	0.7	61	4.2	212	13.2	36	8.1
Deceptive Practice	200	6.6	129	8.9	331	20.6	23	5.2
Gambling	0	0	0	0	1	0.1	1	0.2
Homicide	0	0	0	0	0	0	0	0
Human Trafficking	0	0	0	0	0	0	0	0
Interference with Public Officer	5	0.2	21	1.4	16	1.0	1	0.2
Intimidation	0	0	0	0	0	0	0	0
Kidnapping	0	0	0	0	2	0.1	0	0
Liquor Law Violation	0	0	2	0.1	2	0.1	0	0
Motor Vehicle Theft	0	0	0	0	2	0.1	11	2.5
Narcotics	27	0.9	55	3.8	71	4.4	13	2.9
Non-Criminal	0	0	0	0	0	0	0	0
Obscenity	0	0	1	0.1	0	0	0	0
Offense Involving Children	2	0.1	1	0.1	1	0.1	1	0.2
Other Offense	10	0.3	15	1.0	16	1.0	8	1.8
Prostitution	0	0	0	0	0	0	0	0
Public Indecency	1	0	0	0	0	0	0	0
Public Peace Violation	17	0.6	27	1.9	20	1.2	5	1.1
Robbery	251	8.3	161	11.1	86	5.3	8	1.8
Sex Offense	40	1.3	16	1.1	16	1.0	0	0
Stalking	0	0	0	0	2	0.1	0	0
Theft	1,717	56.5	504	34.7	375	23.3	101	22.7
Weapons Violation	2	0.1	8	0.6	9	0.6	1	0.2
Total	3,040	100*	1,452	100*	1,610	100*	445	100*

Source: City of Chicago 2021a

Note: Percentage totals do not add up to 100 percent because individual percentages for each type of crime have been rounded up to the nearest decimal.

Over 95 percent of the CTA-related crimes fell into eight categories: assault, battery, criminal damage, criminal trespassing, deceptive practice, narcotics, robbery, and theft. Theft was the most commonly reported CTA-related crime. Robbery is similar to theft but involves violence or the threat of violence. Assault and battery are similar crimes with differing levels of severity. Assault is the threatening of a victim, while battery is the actual harm of an individual. Criminal trespassing can occur from CTA platforms or elsewhere along the track. The intent of criminal trespassing is often to cause damage.

Figure 4-1 is a bar chart comparing the percentages of different types of crimes on the CTA trains; platforms; stations; and garages, parking lots, and other property. Theft, battery, and criminal damage were more common on trains than on train platforms. Narcotics crimes were more common at train stations and platforms than on trains. Deceptive practice and robbery were the next most common crime reported. The definitions of narcotics crimes and unfair or deceptive acts or practices are the same as those described in the Draft EIS **Appendix P**. These crimes occurred on CTA trains, on train platforms and stations, or at CTA property such as garages.

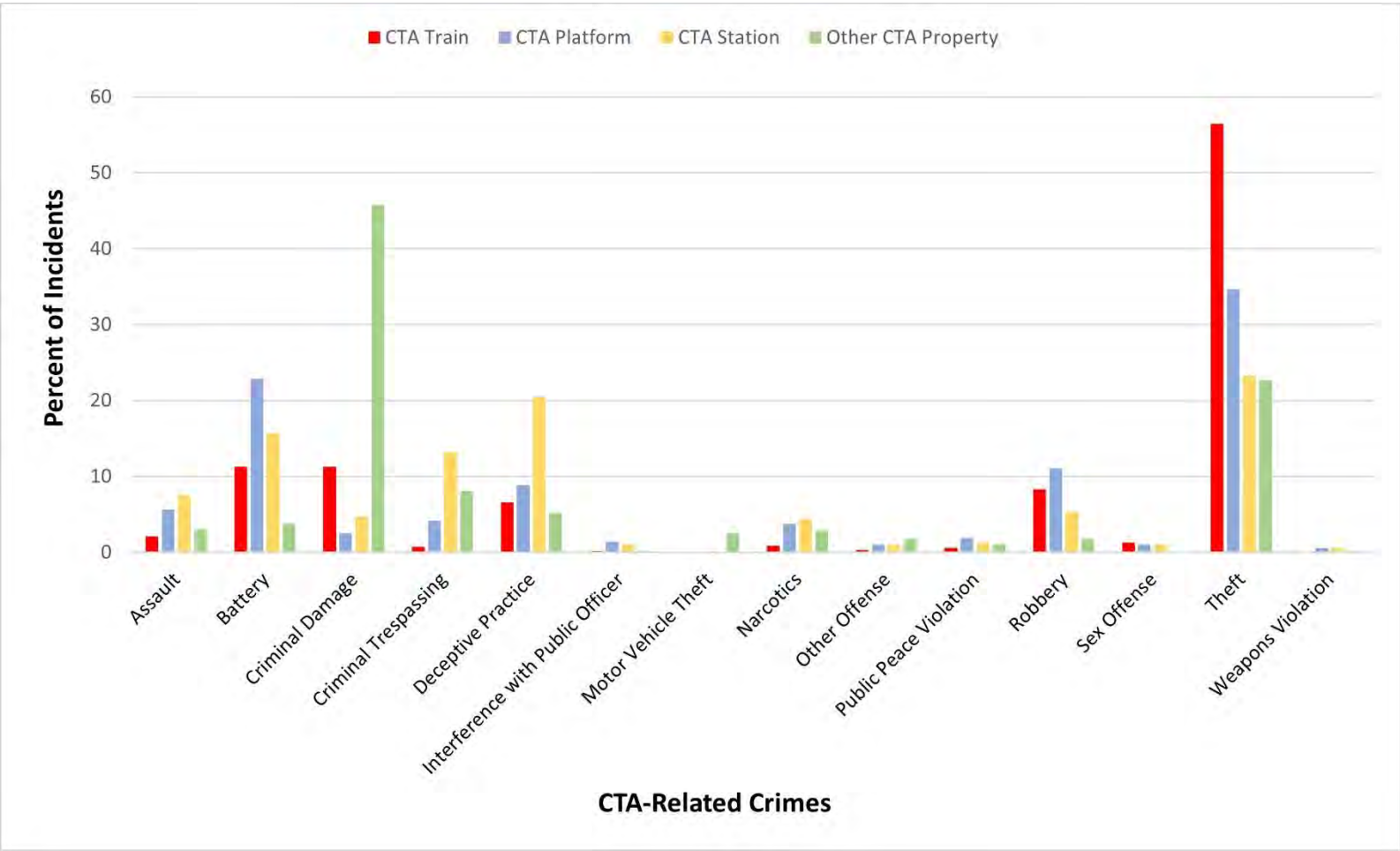

Figure 4-1: Reported CTA-Related Crimes in Chicago (2018-2020)

Note: Crime types with 0 percent reported are not shown.

Source: City of Chicago 2021a

4.3 Pedestrian Safety

The primary station entrances for the Preferred Alignment would be at 103rd Street, 111th Street, Michigan Avenue, and from Greenwood Avenue. Because the primary entrances would be on major through streets, the safety of pedestrians crossing these streets to access stations or nearby destinations would be a concern, as discussed in the Draft EIS.

Table 4-4 shows the frequencies of traffic crashes involving pedestrians in the immediate vicinity of proposed stations. There were six pedestrian crashes within ⅛ mile of the station entrances in the 5-year period (2016-2020).

Table 4-4: Pedestrian Crashes within 1/8 Mile of Proposed Station Locations

Station	2016	2017	2018	2019	2020	Total
103rd Street	0	0	0	1	0	1
111th Street	0	0	0	1	1	2
Michigan Avenue	0	0	1	2	0	3
130th Street	0	0	0	0	0	0

Source: City of Chicago 2021b

The existing pedestrian environments around proposed stations are discussed qualitatively in **Sections 4.3.1** through **4.3.4**.

4.3.1 103rd Street Station

The primary entrance for the 103rd Street station would be on the north side 103rd Street with an auxiliary entrance on the south side of 103rd Street. The existing pedestrian environment presented in **Appendix P** of the Draft EIS for the 103rd Street station remains the same with the exception of the bus route in the vicinity of the station. Bus route #103 traverses the station area as opposed to route #111 in the Draft EIS. Eastbound and westbound bus stops remain unchanged from those reported in the Draft EIS.

Existing land uses along 103rd Street have not changed from those outlined in the Draft EIS.

4.3.2 111th Street Station

The primary entrance for the 111th Street station would be at 111th Street, with an auxiliary exit only at 110th Street. The existing pedestrian environment presented in **Appendix P** of the Draft EIS for the 111th Street station remains the same with the exception of the bus stops for route #111 in the vicinity of the station. Eastbound bus stops for route #111 are at Normal Avenue, Stewart Avenue, and Princeton Avenue. Westbound bus stops for route #111 are at Princeton Avenue, the west side of the UPRR tracks, and Normal Avenue.

Existing land uses along 111th Street have not changed from those outlined in the Draft EIS, which include residential, an auto repair business, religious facilities, and vacant land. The Agape Community Center is east of the UPRR railroad tracks.

4.3.3 Michigan Avenue Station

The entrances for the Michigan Avenue station would be located at both the east and west sides of Michigan Avenue. The existing pedestrian environment presented in the Draft EIS **Appendix P** for the Michigan Avenue station remains the same.

4.3.4 130th Street Station

The 130th Street station access would be from the east side of Greenwood Avenue. The crossing of 130th Street at the Conrail railroad tracks is grade separated, whereas the crossings of Old 130th Street and 132nd Street at the track are at grade. Old 130th Street is classified as a local road or street. Average Daily Traffic (ADT) for Old 130th Street is 200 (IDOT 2021). Old 130th Street has one lane in each direction and is under CDOT jurisdiction.

The nearest controlled intersection to the 130th Street station location is a stop sign along Greenwood Avenue at its intersection with Ellis Avenue. A sidewalk is present on the south side of Old 130th Street between Ellis Avenue and the at-grade crossing. There are no bus stops along Old 130th Street.

The land uses near the 130th Street station include residential (Altgeld Gardens neighborhood) to the west; parks and open space (Beaubien Woods Forest Preserve and George Washington Park) to the east and southwest of the station; institutional (George Washington Carver Primary School and Carver Military Academy High School) southwest and east of the station; and transportation, communications, and utility (Metropolitan Water Reclamation District of Greater Chicago (MWRD) Calumet Reclamation Plant) to the north.

4.4 Pedestrian Security

The areas with the highest crime density for 2020 are clustered at the existing 95th/Dan Ryan terminal and in the area west of the 130th Street station. Another area with high crime density is south of the Michigan Avenue station, near 119th Street (City of Chicago 2021c).

4.5 Highway-Rail Grade Crossings

There are six existing highway-rail at-grade crossings near the proposed stations. Two crossings are where the UPRR tracks intersect 103rd Street and 111th Street, as discussed in the Draft EIS. Four additional crossings are where UPRR tracks intersect 115th Street and State Street and where the Conrail tracks intersect Old 130th Street and 132nd Street. The Conrail crossings were not described in the Draft EIS because they are near the relocated 130th Street station. The Conrail track, operated by IHB, typically has one train per week in each direction with a speed under 10 miles per hour.

The most current available ADT volumes for the roadways near the proposed stations are from 2010-2015. The reported ADT on 103rd Street is 11,600 and 9,000 on 111th Street. The ADT volume for 115th Street is 10,500 whereas ADT for State Street is 3,100. The ADT volume for Old 130th Street is 200. ADT volumes were not reported for 132nd Street (IDOT 2021); however, based on field observations, the ADT volume for 132nd Street is similar to that of Old 130th Street.

The additional automobile and pedestrian traffic crossing the rail line could create a safety concern. Crash histories for the past 25 years (1995 through 2020) at five of the six grade crossings are shown in **Tables 4-5** through **4-9**. The crossings at 103rd Street and Old 130th Street each had one recorded crash in the 25-year period whereas the crossings at 111th Street and State Street each had two recorded crashes in the same period. There have been six crashes at the 115th Street at-grade crossing. There have been no crashes at the 132nd Street at-grade crossing. For comparison, the most recent crash data for Cook County shows 185 collisions at 860 public grade crossings from 2015 to 2020 (Illinois Commerce Commission (ICC) 2021a).

Table 4-5: Crashes at 103rd Street and UPRR Grade Crossing

Date	Time	Crash Type	Warning Devices	Weather	Fatalities	Injuries
10/15/2006	12:30 PM	Freight-Pedestrian	Cantilever Signals and Gates	Cloudy	0	1

Source: ICC 2020b

Table 4-6: Crashes at 111th Street and UPRR Grade Crossing

Date	Time	Crash Type	Warning Devices	Weather	Fatalities	Injuries
4/11/2009	11:15 PM	Train-Auto	Cantilever Signals and Gates	Clear	0	0
6/5/2000	12:52 AM	Train-Auto	Cantilever Signals and Gates	Rain	0	0

Source: ICC 2020c

Table 4-7: Crashes at 115th Street and UPRR Grade Crossing

Date	Time	Crash Type	Warning Devices	Weather	Fatalities	Injuries
2/1/2020	7:40 AM	Train-Auto	Cantilever Signals and Gates	Cloudy	0	0
2/1/2020	6:30 AM	Train-Auto	Cantilever Signals and Gates	Clear	0	1
9/12/2019	2:30 AM	Train-Pedestrian	Cantilever Signals and Gates	Cloudy	1	0
9/29/2011	4:59 PM	Other-Pedestrian	Cantilever Signals and Gates	Rain	1	0
4/9/2005	8:15 PM	Train-Auto	Cantilever Signals and Gates	Clear	0	0
8/26/1999	8:33 PM	Train-Pedestrian	Cantilever Signals and Gates	Clear	0	1

Source: ICC 2020d

Table 4-8: Crashes at State Street and UPRR Grade Crossing

Date	Time	Crash Type	Warning Devices	Weather	Fatalities	Injuries
5/16/2013	5:30 PM	Other-Pedestrian	Gates	Clear	1	0
1/20/2002	1:50 PM	Other-Auto	Cantilever Signals and Gates	Cloudy	0	1

Source: ICC 2020e

Table 4-9: Crashes at Old 130th Street and UPRR Grade Crossing

Date	Time	Crash Type	Warning Devices	Weather	Fatalities	Injuries
9/14/2000	6:45 AM	Yard/Switching Train -Truck	Flash	Rain	0	0

Source: ICC 2020f

4.6 Emergency Services

Figure 4-2 and **Figure 4-3** show the police, fire, healthcare centers, and hospital facilities in the area of the Preferred Alignment. This has not changed from the Draft EIS. The UPRR tracks form the border of the 5th Police District to the east and the 22nd Police District to the west, from 95th Street to 111th Street. There are no police stations along or near the Preferred Alignment.

Three fire stations are near the Preferred Alignment: Engine 93 (330 W. 104th Street), Engine 62 (34 E. 114th Street) and Engine 80 (12701 S. Doty Avenue). The only hospital near the Preferred Alignment is Roseland Community Hospital, three blocks east of the Preferred Alignment along 111th Street.

CN/MED = Canadian National/Metra Electric District, NICTD/CSS & SBRR = Northern Indiana Commuter Transportation District/Chicago South Shore & South Bend Railroad

Figure 4-2: Police, Fire, Healthcare Centers, and Hospital Facilities near the Preferred Alignment (1 of 2)

CN/MED = Canadian National/Metra Electric District, NICTD/CSS & SBRR = Northern Indiana Commuter Transportation District/Chicago South Shore & South Bend Railroad

Figure 4-3: Police, Fire, Healthcare Centers, and Hospital Facilities near the Preferred Alignment (2 of 2)

Section 5 - Impacts and Mitigation

Consistent with the Draft EIS, the impacts and mitigation summaries are organized into three impact categories—permanent, construction and cumulative—with references to affected communities.

- Permanent impacts relate to system operations after the project has been constructed, as well as land acquisitions necessary for the permanent right-of-way.
- Construction impacts are temporary and are anticipated to occur for the construction phase of the project, up to five years, including construction staging and utility relocations.
- Cumulative impacts are those of the project combined with other past, present or near future projects within the API.

This section also documents any new or revised mitigation measures for project impacts identified under the Draft EIS, where applicable. If there is no change in the mitigation, this section indicates where there is no change when compared to the East or West Options of the UPRR Alternative evaluated in the Draft EIS. Likewise, this section indicates what additional (or fewer) measures apply to the Preferred Alignment.

5.1 No Build Alternative

The No Build Alternative is defined as the existing transportation system plus any committed transportation improvements that are already in the current Chicago Metropolitan Agency for Planning (CMAP) Transportation Improvement Program (TIP). No new infrastructure would be built as part of the RLE Project under the No Build Alternative. The No Build Alternative is a required alternative as part of the NEPA environmental analysis and is used for comparison purposes to assess the relative benefits and impacts of implementing the Preferred Alignment.

As described in **Appendix P** in the Draft EIS, there would be no impacts on safety and security from the No Build Alternative.

5.2 Union Pacific Railroad Alternative - Preferred Alignment

The impacts and mitigation for the Preferred Alignment are the same as described in **Appendix P** of the Draft EIS except as noted below.

5.2.1 Permanent Impacts and Mitigation – Preferred Alignment

5.2.1.1 Major Incidents

Consistent with the Draft EIS, the Preferred Alignment would be expected to increase the frequency of major incidents on the rail system and decrease the frequency of major incidents on the bus system compared to existing conditions. Incident rates for each mode would not be expected to change considerably. CTA also attempts to minimize incidents by continuously upgrading bus and rail fleets and through extensive operator training. The impact on major incidents would not be adverse.

5.2.1.2 Motor Vehicle Safety

The Preferred Alignment would be expected to cause a small shift in travel modes from automobiles and buses to rail transit, thus decreasing automobile and bus vehicle miles traveled (VMT), and slightly increasing rail VMT. Overall, this would be expected to lead to a small decrease in fatalities and injuries. Impacts and mitigation for motor vehicle safety remain the same as described in **Appendix P** of the Draft EIS.

5.2.1.3 Pedestrian Safety

The new train stations at 103rd Street, 111th Street, Michigan Avenue, and 130th Street would generate a large amount of pedestrian activity, causing a large increase in the number of pedestrians crossing the through streets near stations compared to the No Build Alternative. The nearest controlled intersections (signals or all-way stops) to proposed station locations are approximately one block away in most cases. However, many pedestrians would want to cross the streets immediately adjacent to the station entrances, particularly to access the nearest available bus stops (assumed to be adjacent to stations). Therefore, a large volume of pedestrians would be expected to cross the major streets without positive traffic control, which would be an adverse impact on pedestrian safety. This conclusion is consistent with that in the Draft EIS. Mitigation for pedestrian access is described in **Addendum H**. In addition, lighting would be provided under the elevated structure in station, parking, and on CTA right-of-way to contribute to improved safety and security, and to improve surveillance visibility.

The potential for an increase in crash frequencies at the UPRR at-grade rail crossings adjacent to the RLE stations would be mitigated as described in **Addendum H**. Impacts and mitigation for pedestrian safety remain the same as described in **Appendix P** of the Draft EIS.

5.2.1.4 Parking Security

Security impacts for parking facilities at the 103rd Street, 111th Street, and Michigan Avenue stations on the Preferred Alignment are the same as those described in **Appendix P** of the Draft EIS. In addition, a park & ride facility would be located adjacent to the 130th Street station location. Various design elements would be incorporated to improve security in the park & ride facility, which would result in no adverse impact.

5.2.1.5 Neighborhood Security

Overall, it appears that new train stations would be unlikely to have much, if any, impact on neighborhood crime (Ridgeway and MacDonald 2015). Although research indicates that some risk would remain, particularly in low-income areas (Ihlanfeldt 2003), the impact would not be adverse, consistent with the conclusions of **Appendix P** of the Draft EIS. Impacts and mitigation for neighborhood security remain the same as described in **Appendix P** of the Draft EIS. CTA would continue the Threat and Vulnerability Assessment and Preliminary Hazard Analysis through final design of the RLE Project to determine appropriate security measures in the public right-of-way, such as security surveillance cameras and/or lighting at cross-street areas in the vicinity of the four RLE Project stations. CTA would coordinate the implementation of any improvements in the City right-of-way with the City of Chicago.

5.2.1.6 Terrorism and Homeland Security

As discussed in the Draft EIS, it is unlikely that the RLE Project would be a primary target of terrorists. Based on the Risk Assessment Matrix in **Appendix P** in the Draft EIS, impacts remain the same as the East and West Options.

CTA prepares for acts of terrorism by updating various safety and security plans on a regular basis and coordinating with law enforcement and other agencies as described in **Appendix P** in the Draft EIS. Impacts and mitigation for terrorism and homeland security remain the same as described in the Draft EIS.

5.2.1.7 Highway-Rail Grade Crossings

The Preferred Alignment would directly increase the number of vehicles and pedestrians crossing the UPRR tracks. **Table 5-1** shows the Expected Crash Frequency (ECF) for the 103rd Street, 111th Street, 115th Street, and State Street crossings using Equation 7-3.1 in the Illinois Department of Transportation (IDOT) Bureau of Design and Environmental Manual (IDOT 2010). The ECF was not calculated for Old 130th Street or 132nd Street because the Old 130th Street would be closed to through traffic as part of the project and because of the limited use of the Conrail tracks at this

location. Currently, there is one train per week on this line. **Table 5-1** presents the ECF for the grade crossings near 103rd Street, 111th Street, and Michigan Avenue stations.

Future ADT volumes have not been forecasted, but a modest 2 percent annual growth in vehicle traffic between the construction year (2025) and the planning horizon year (2050) was assumed for the build conditions. Future freight train volumes on the UPRR tracks have not been forecasted for the No Build Alternative and Preferred Alignment (2050). However, the number of freight trains on the UPRR tracks was assumed to increase 2 percent annually.

This increase in traffic volume would result in an approximately 16 percent increase in ECF for the 111th Street crossing and 18 percent increase in ECF for the 103rd Street and State Street crossings under the Preferred Alignment as compared to the No Build Alternative. ECF at the 115th Street crossing would increase by 27 percent under the Preferred Alignment as compared to the No Build Alternative.

At the 103rd Street crossing, a crash would be expected once every 21.7 years under the Preferred Alignment (calculated as 1/ECF) instead of every 25.6 years under the No Build Alternative. At 111th Street, a crash would be expected once every 27.8 years instead of every 32.3 years. At 115th Street, a crash would be expected every 23.8 years instead of 30.3 years, whereas at State Street a crash would be expected every 76.9 years instead of every 90.9 years. Consistent with the Draft EIS, this frequency would be considered an occasional risk with critical severity, which is classified as adverse.

Table 5-1: Calculated Expected Crash Frequency (ECF) at UPRR Grade Crossings

Scenario	Item	103rd Street	111th Street	115th Street	State Street
Existing (2020)	Average Daily Traffic	11,600	9,000	10,500	3,100
	Daily Train Volume	14	14	14	14
	Expected Crash Frequency (ECF)	0.016	0.013	0.015	0.005
	Existing Crash Frequency	0.04	0.08	0.24	0.08
No Build Alternative (2050)	Average Daily Traffic	15,800	12,300	13,300	4,200
	Daily Train Volume	25	25	25	25
	Expected Crash Frequency (ECF)	0.039	0.031	0.033	0.011
Preferred Alignment (2050)	Average Daily Traffic	19,000	14,800	17,200	5,100
	Daily Train Volume	25	25	25	25
	Expected Crash Frequency (ECF)	0.046	0.036	0.042	0.013

As discussed in the Draft EIS, the new CTA stations would be expected to generate additional pedestrian volume crossing the UPRR tracks. However, as discussed in Addendum H, parking would be located on the same side of the UPRR tracks as the proposed stations. It is anticipated that bus stops would be relocated adjacent to the station entrances, eliminating the need for passengers making bus-rail connections to cross the UPRR tracks on foot.

Given that transit passengers are often in a hurry and given the likely delays to pedestrians due to the expected increase in freight volumes over existing conditions, it is reasonable to think that some pedestrians may choose to take unacceptable safety risks by crossing the tracks while the signals are flashing. Mitigation measures for this adverse impact are discussed in the Draft EIS.

5.2.2 Construction Impacts and Mitigation - Preferred Alignment

Consistent with the Draft EIS, the contractors performing primary construction activities would need to have an approved Construction Safety and Security Plan in place before any construction work begins. Contractors would perform job safety analysis, monitor safety and security activities, and comply with other relevant aspects of CTA's *Safety and Security Management Plan* (CTA 2011) or CTA's other manuals and policies. Contractors would be contractually committed to take prompt and decisive corrective action on safety deficiencies identified at the work sites. For example, CTA would require contractors performing work on, above, or adjacent to the CTA rail system to follow CTA's Safety Manual for Contract Construction On, Above, or Adjacent to the CTA Rail System (Construction Safety Manual) to protect themselves, their employees, sub-contractors, CTA passengers, employees, and the public.

5.2.2.1 Emergency Services

The elevated structure would cross over six arterial or collector streets (103rd Street, 107th Street, 111th Street, Wentworth Avenue, 115th Street, and Michigan Avenue) and multiple local residential streets on the Preferred Alignment. All but four of the streets (Michigan Avenue, 116th Street, Indiana Avenue, and Prairie Avenue) currently have at-grade crossings with the UPRR.

Appendix P in the Draft EIS discusses the approximate time roads and streets would need to be closed for at-grade crossings or if the profile of the roadway were to be reconstructed.

Consistent with **Appendix P** in the Draft EIS, emergency services would be able to access construction sites at all times in the same way contractors access the sites. Emergency services wishing to cross the tracks would have to use recommended detours, just as with a typical roadway construction project. In addition, an access road for the MWRD would also be constructed prior to

commencing operation on the new CTA tracks, if necessary, to maintain access to the MWRD facility. This roadway would also be used by emergency services. The impacts would not be adverse.

5.2.3 Cumulative Impacts and Mitigation - Preferred Alignment

There would be an expected increase in automobile and pedestrian traffic volumes as a result of the RLE Project compared to the No Build Alternative. In addition, the number of freight trains using the UPRR tracks has been projected to increase 2 percent annually. The UPRR reported 14 freight trains per day currently within the API, although multi-day data collection efforts conducted on May 20, 21, 22, and 28 and June 4, 2021 indicate a current average of only 8 to 10 trains per day. In addition, Amtrak runs two passenger trains three times a week on the UPRR tracks within the API. The proposed Metra Southeast Service Line would increase the number of passenger trains per day on the line.

Based on Equation 7-3.1 in the IDOT Bureau of Design and Environment Manual, increases in train volume proportionally increase the ECF at highway-rail grade crossings (IDOT 2010). This increase in crash potential would be an adverse impact at the existing highway-rail grade crossings along the UPRR tracks at 101st Street, 103rd Street, 107th Street, 109th Street, Wentworth Avenue, 115th Street, and State Street. All these crossings currently have gates on both roadway approaches and flashing lights. As discussed in **Section 5.2.1**, ECF was not calculated for Old 130th Street and 132nd Street.

The potential for an increase in crash frequencies at the UPRR at-grade rail crossings adjacent to the RLE stations (103rd Street, 111th Street, 115th Street, and State Street) would be mitigated by creating parking on the same side of the tracks as proposed stations, improved fencing, cantilever and post mounted at-grade crossing warning devices (currently in place), four quadrant gates, pedestrian gates with skirts, and anti-trespass panels. These proposed at-grade crossing improvements are indicative of the level of protection expected. As coordination with the railroad and CDOT take place, details may change, but the protection level would be similar. This is consistent with **Appendix P** in the Draft EIS.

Section 6 - Impacts Remaining after Mitigation

This section describes the permanent impacts of the RLE Project remaining after mitigating for impacts as described in **Section 5**.

6.1 No Build Alternative

Consistent with the findings of the Draft EIS, there would be no permanent, construction, or cumulative impacts on safety and security associated with the No Build Alternative. Therefore, there would be no impacts remaining after mitigation.

6.2 Union Pacific Railroad Alternative - Preferred Alignment

Table 6-1 summarizes the impacts, mitigation measures, and impacts remaining after mitigation for seven topic areas for the Preferred Alignment. There would be no remaining adverse impacts after mitigation. See **Section 5** for details about the impacts.

Table 6-1: Impacts Remaining After Mitigation

Topic	Impact before Mitigation	Mitigation	Impact Remaining after Mitigation
Permanent Impacts			
Major Incidents	Not Adverse	None necessary	Not Adverse
Motor Vehicle Safety	Beneficial	None necessary	Beneficial
Pedestrian Safety	Adverse	Mitigation measures	Beneficial
Parking Security	Not Adverse	Consider pedestrian access routes (i.e., sidewalks) through or adjacent to surface lots, consistent with those discussed in **Appendix P** of the Draft EIS.	Not Adverse
Neighborhood Security	Not Adverse	Coordinate with the City of Chicago to install sidewalk lighting and surveillance cameras along commercial streets within one block (660 feet) of station entrances, as discussed in **Appendix P** of the Draft EIS.	Not Adverse

Topic	Impact before Mitigation	Mitigation	Impact Remaining after Mitigation
Terrorism and Homeland Security	Not Adverse	Continue to update safety and security plans and coordination with law enforcement, homeland security and other agencies. Mitigation measures would be the same as those discussed in **Appendix P** of the Draft EIS.	Not Adverse
Highway-Rail Crossings	Adverse	Mitigation measures would be the same as those discussed in **Appendix P** of the Draft EIS, including installation of safety protection technologies for vehicles and pedestrians at crossings.	Not Adverse
Construction Impacts			
Emergency Services	Not Adverse	Neither adjacent roadways nor adjacent parallel through streets would be closed simultaneously. Traffic management plans would be created that would identify recommended detour routes. Contractors would follow MUTCD standards for temporary traffic control and would obtain required local permits. A new access road to the MWRD plant would be constructed prior to the new CTA rail alignment, if necessary, to maintain access.	Not Adverse
Cumulative Impacts			
Highway-Rail Crossings	Adverse	Install safety protection technologies for vehicles and pedestrians at 103rd Street, 111th Street and State Street crossings.	Not Adverse

Section 7 - References Cited

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