CREATE

Chicago Region Environmental and Transportation Efficiency Program

ENVIRONMENTAL CLASS OF ACTION DETERMINATION

Project WA1

P-30-005-09

Prepared for:

July 2009

CLASS OF ACTION DETERMINATION

CREATE WA1

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Illinois Department of Transportation

Class of Action Determination Document

Route: WA1 **City**: Chicago
Section: **County**: Cook
Location/Termini: **Job No**: P-30-005-09 (WA1)
UPRR-Geneva Subdivision: From just west of Kedzie Avenue, then heading east towards Western Ave.; then south along the Western Avenue railroad corridor, from Fulton Street to the BNSF-Chicago Subdivision, near 18th Street

Purpose and Need:

The CREATE PROGRAM
The overall goals of the Chicago Region Environmental and Transportation Efficiency (CREATE) Program are to improve freight and passenger rail operations, and to improve highway operations in the Chicago metropolitan area while reducing the environmental – impacts of rail operations on the general public. The CREATE Program includes the development of five freight and passenger rail transportation corridors in the Chicago metropolitan area, and also includes rail-highway grade separation projects (over- or under-passes to grade-separate railroads and highways) on existing rail lines outside the five corridors.

Chicago area freight and passenger rail traffic suffers from congestion, low operating speeds and delays due to traffic demands that exceed the capacity of the Chicago Rail System. The development of the five rail corridors includes the upgrading of existing track structure, the double-tracking or triple-tracking of certain lines, the construction of rail-highway grade separations and rail-rail flyovers, the installation of new or improved signaling, and various other additions and improvements. These improvements will significantly improve freight and passenger rail operations.

In addition, the CREATE Program proposes re-routing existing Metra service in order to assist Metra in increasing their capacity and ability to adequately serve the region. Many stations do not have the capacity to handle additional trains which limits the ability for Metra to expand their services. Other stations, conversely, are under-utilized and represent a potential solution. The CREATE Program includes the installation of connections that will shift service to the under-utilized stations thereby enabling Metra to expand their system. The Program also benefits some Amtrak intercity trains.

Additionally, there are many rail-highway at-grade intersections throughout the Chicago metropolitan area that cause vehicular delays and congestion, and contribute to air pollution in the region. The construction of the rail-highway grade separations will improve traffic operations and air quality in the Chicago metropolitan area.

CREATE PROJECT WA1
The purpose of this project is to improve rail operations at and approaching Ogden Junction, between the Kedzie interlocking and the BNSF-Chicago Subdivision near 18th Street.

There is no Amtrak service within the limits of this project; however, Metra operates the Union Pacific-West Line on the Geneva Subdivision through a portion of the project corridor.

Ogden Junction is an important component of the Western Avenue corridor, where three Class I railroads converge: UPRR, B&OCT (CSX), and NS. The current layout of Ogden Junction does not allow for the efficient movement of through trains between the UPRR and the CSX and NS mains. In addition, the east legs of Ogden Junction feed into the UPRR's Global One intermodal facility (See Project Location Map). The current layout also does not allow efficient movement of trains into and out of Global One. Many of the existing switches must be hand-thrown. As a result, the junction suffers from congestion, delays and low operating speeds. The low speed and inefficient train flows also limit the capacity in this corridor.

There is currently no train control system between the Kedzie Interlocking and the northern end of Ogden Junction. Train hand-offs, or switching from one railroad property to another, are currently made verbally between the various railroad yardmasters and dispatchers, resulting in slow train movements. Actual train speed is often much less than the maximum authorized timetable speed of 15 mph, because without a signal system the train speed is limited to being able to stop within half of the range of vision. In many locations along this section, when a train occupies the adjacent track, this range of vision is very limited. The low speed results in poor train flow, delay, congestion, and limited capacity.

The proposed project is needed to address existing congestion and delays, low speeds, and limited capacity that results from the current layout of Ogden Junction and the lack of signaling between the Kedzie Interlocking and Ogden Junction.

Project Alternatives:

The No-Action Alternative involves maintaining the existing infrastructure (tracks, signals, and bridges) at their current level and does not address the purpose and need for the project. Train operating speed will continue to be negatively affected without direct connections between the UPRR and the CSX and NS mains, resulting in continued congestion, slow operating speeds, and delay. Similarly, the continued use of hand-thrown switches and verbal authority for hand-offs will result in more delay and congestion as rail traffic continues to increase in the future. Operating schedules will continue to suffer and capacity will remain limited as a result of these issues.

The proposed Build Alternative involves the construction of several components, which address the project's needs, as described below. The Project Location Map indicates the locations of the various railroad subdivisions, interlockings, and junctions that are discussed in the Build Alternative.

- Installation of train control system with visibility and electronic requests between the Kedzie Interlocking and Ogden Junction, to reduce need for verbal communications, improve operating speeds, and enhance capacity
- Replacement of hand-thrown switches with power-operated switches, to improve operating speeds, reduce delay and enhance capacity
- Re-alignment of UPRR main to make direct connections between the UPRR and CSX and NS mains, to improve operating efficiency and speeds and enhance capacity
- Construction of a new third track bridge at Taylor Street and rehabilitation of the bridges at Roosevelt Road, Ogden Avenue, 15th Street and 16th Street to enhance capacity, improve operating speeds, and reduce delay.

Environmental Consequences:

The following issue areas were identified as having "Impacts Present." See the ECAD Record for the impacts/mitigation discussion.

- Social/Economic-Changes in Travel Patterns

- Social/Economic-Public Facilities and Services
- Social/Economic-Title VI and Other Projected Groups
- Social/Economic-Environmental Justice
- Social/Economic-Pedestrian & Bicycle Facilities
- Noise & Vibration
- Special Waste (lead-based paint)

Environmental Commitments:

- The UPRR, their consultants and/or contractors, will be responsible for coordination with Chicago Department of Transportation (CDOT), Chicago Transit Authority (CTA), Illinois Department of Transportation-District One (IDOT-D1), and Office of Emergency Management and Communications (OEMC) prior to and during construction to obtain necessary permits, and determine vehicle, pedestrian, and bicycle detour routes, as required.

  The project will require full street closure for a limited timeframe during construction at the Taylor Street bridge, and lane closures for a limited time during construction at the Ogden Avenue, Roosevelt Road, 15th Street, and 16th Street bridges. One travel lane shall remain open on each of these roadways (except Taylor Street) during construction. Traffic detours and re-routes will be required in the event of full street closures at the proposed construction locations. One sidewalk shall be maintained for pedestrian access during temporary lane closures on Ogden Avenue, Roosevelt Road, 15th Street and 16th Street. One on-street, striped bicycle lane shall be maintained during temporary lane closure on Roosevelt Road. Any sidewalks that are removed or damaged during construction of the project would be replaced as part of the project, and will be compliant with the Americans with Disabilities Act (ADA) and other permit requirements.

- The noise and vibration analysis for this project will need to be reassessed if: a) the project is revised in a manner in which impacts of the project may change due to the project revisions (e.g., a new track alignment is moved closer to a receptor), or b) the CREATE Program's train model is updated due to projects being removed or added to the CREATE Program.

- The project includes trackside (elevated) bridge work at Roosevelt Road, 15th Street, and 16th Street. There are nearby LUST sites that may be impacted if at-grade excavation is proposed at any of these locations. The special waste assessment for this project will need to be reassessed if the project is revised in a manner which potentially impacts these special waste sites (e.g. at-grade excavation for abutments).

- Due to the presence of lead-based paint on the bridges over Taylor Street, Ogden Avenue, Roosevelt Road, 15th Street and 16th Street, precautions shall be taken to contain the lead during reconstruction. UPRR, their consultants and/or contractors, will include lead paint mitigation/abatement specifications for all bridge work.

- Procurement and compliance with all federal, state, and local permits (NPDES, 404, etc.), required for this proposed improvement, will be the responsibility of the individual railroad(s), or their consultants or contractors, as applicable.

Conclusion:

The attached Class of Action Determination Record(s) documents the analyses and results accomplished to determine the appropriate level of environmental documentation for this project.

(A separate Class of Action Determination Record shall be prepared for each alternative under consideration.)

Based on the analyses of environmental consequences as documented in the attached Class of Action Determination Record(s), this project has been determined to meet the Categorical Exclusion definition contained in 23 CFR 771.117. The project will not induce significant impacts to planned growth or land use for the area; will not require the relocation of significant numbers of people; will not have a significant impact on any natural, cultural, recreational, historic or other resource; will not involve significant air, noise, or water quality impacts; will not have significant impacts on travel patterns; and will not otherwise, either individual or cumulatively, have any significant environmental impact.

Chief, IDOT Bureau of Railroads — Date: 8-11-09

Environment Section Representative - IDOT, Bureau of Design and Environment — Date: 7/30/09

CREATE Program Manager, FHWA — Date: 8/17/09

Illinois Department of Transportation

Class of Action Determination Record

Route: WA1 (Union Pacific Railroad)

Section:

Location/Termini: Chicago – Kedzie Interlocking, near Kinzie Street to the BNSF-Chicago Subdivision, near 18th Street

County: Cook County

Job Number: P-30-05-09 (WA1)

Date of Field Review: September 5, 2007

Date of Initial Presentation: October 3, 2007

Date of Latest Revision: July 29, 2009

Resource & Issues	Potential Involvement (MM,DD,YY)		Analysis and Results		Impacts Present (MM,DD,YY)		Status
	Yes	No	Date	Use Journal Type of Description	Yes	No	
I. Social/Economic							
1. Relocations - Business and Residential	9/05/07		9/05/07	FIELD REVIEW: It is anticipated that no businesses or residences will be displaced, as improvements are expected to take place within railroad right-of-way. This will be confirmed upon receipt of railroad right-of-way and project conceptual design.			
			5/14/08	There will be no right-of-way impacts as a result of the project. No businesses or residences will be displaced. (JR)		5/21/08	C
2. Changes in Travel Patterns	9/05/07		9/05/07	FIELD REVIEW: Awaiting scope of work for bridges to determine possible impacts to travel patterns.			
			3/11/09	The project does not require any permanent road closure. The project will require temporary lane and/or street closures at five locations, as described below. **Taylor Street:** Taylor Street is a two-lane arterial with parking along both sides of the street. A new third track bridge at Taylor Street will be constructed, which will require full road closure for a period of 60 days and a detour route during the proposed bridge work. There are nearby streets, including Western Avenue, Ogden Avenue, Roosevelt Road, and California Avenue, that could potentially be used as a detour route for automobiles during construction of the Taylor Street bridge. **Roosevelt Road:** Roosevelt Road is a four lane arterial State Route with parking along both sides, except under the railroad bridge. CTA bus route 12 (Roosevelt) also travels along Roosevelt Road. The rehabilitation of the bridge at Roosevelt Road will require partial lane closures for a limited timeframe. During the proposed work only one lane will be closed at a time along Roosevelt Road. **Ogden Avenue:** Ogden Avenue is a four lane arterial that also carries CTA bus route 38 (Ogden/Taylor). One-way Frontage roads are located on both sides of Ogden Avenue and parking is provided on both sides of the Frontage Roads. The rehabilitation of the bridge at Ogden Avenue will require partial lane closures for a limited timeframe. During the proposed work only one lane will be closed at a time along Ogden Avenue. **15th Street:** 15th Street is a two lane arterial with parking along both sides of the street. The rehabilitation of the 15th Street bridge will require partial lane closures for a limited timeframe. During the proposed bridge work, one lane will remain open and impacts will be temporary. **16th Street:** 16th Street is a two lane arterial with parking along both sides of the street and carries CTA bus route 18 (16th – 18th) within the project area. The rehabilitation of the 16th Street bridge will require partial lane closures for a limited timeframe. During the proposed bridge work, one lane will remain open and impacts will be temporary.			
			4/13/09	IDOT sent a letter to CTA informing them of the project and the potential delays to CTA service as a result of the temporary lane closures on Roosevelt Road, Ogden Avenue, and 16th Street. As part of the design and permitting process with CDOT, the UP will coordinate with CTA regarding the project prior to construction. See Appendix E.			
			6/10/09	The proposed bridge work at Roosevelt Road has been reviewed by IDOT. IDOT has indicated that resurfacing of I-290 from Thorndale Ave. to downtown Chicago is planned for the same construction period. Work on the Roosevelt Road bridge will need to be coordinated with IDOT District One at the time of permit request. Prior to construction, a Traffic Control Plan will need to be submitted to IDOT-District One in order to obtain the Letter of Authority from the IDOT Traffic Permits Office, and associated permissions from OEMC required to initiate work on the bridge. See Appendix E.			
			7/1/09	OEMC and CDOT have reviewed the project with regards to impacts of proposed street and lane closures. Roadway traffic signal timing changes should be considered as part of the Taylor Street detour route. Use of Ogden Avenue's frontage roads should be considered to limit the duration of the closure. The timing of closures on all of the roads would have to be staged, as they are in close proximity to each other. A permit for the temporary closures will be required from the City of Chicago, and			

Resource & Issues	Potential Involvement (MM,DD,YY)		Analysis and Results		Impacts Present (MM,DD,YY)		Status
	Yes	No	Date	Use Journal Type of Description	Yes	No	
				further coordination with CDOT, OEMC, IDOT and CTA will be required prior to and during construction. (JR)	7/22/09		C
3. Economic Impacts	9/05/07		9/05/07	FIELD REVIEW: It is anticipated that the proposed improvement will have no adverse economic impacts. No businesses are expected to be affected as a result of the proposed improvements. This will be confirmed upon receipt of railroad right-of-way and project conceptual design.			
			5/14/08	There will be no right-of-way impacts as a result of the project. No businesses will be displaced or adversely affected. (JR)		5/21/08	C
4. Change in Land Use & Economic Development	9/05/07		9/05/07	FIELD REVIEW: It is anticipated that the proposed improvement requires no right-of-way acquisition and will not cause a change in land use or economic development. This will be confirmed upon receipt of railroad right-of-way and project conceptual design. Land use in the area is primarily industrial and railroad.			
			5/14/08	There will be no changes to land use as a result of this project. There will be no right-of-way impacts as a result of the project. No businesses will be displaced. (JR)		5/21/08	C
5. Community Cohesion	9/05/07		9/05/07	FIELD REVIEW: It is anticipated that the proposed improvements will be confined to existing rail facilities. The proposed improvement does not intersect or adjoin any existing roads at grade.			
			4/15/09	There will be no permanent road closures as a result of this project. The proposed project would not alter the existing access along the roadway network. Therefore, there will be no impacts to community cohesion. (JR)		4/22/09	C
6. Public Facilities and Services	9/05/07		9/05/07	FIELD REVIEW: The impact of permanent or temporary road closures on access to public services and facilities will be evaluated.			
			9/24/07	The following CTA bus routes intersect the project: Route 7 (Harrison) via Harrison, Route 12 (Roosevelt) via Roosevelt, Route 18 (16^{th}-18^{th}) via 18^{th}, Route 20 (Madison - OWL) via Madison, Route X20 (Washington/Madison Express) via Washington and Warren, Route 38 (Ogden/Taylor) via Ogden, and Route 126 (Jackson) via Jackson. These routes travel under the railroad property. The following CTA train routes intersect the project: Green Line (Harlem Branch) just north of Washington Boulevard, and Blue Line (Forest Park Branch) at Interstate 290. These routes travel over and under the railroad property. One station serving the Blue Line is located at Western Avenue/Interstate 290, just east of the project. Metra operates the BNSF-Chicago to Aurora Service on the BNSF Chicago Subdivision, at the south end of the project. One station is located at 18^{th} Street/Western Avenue, southeast of the project.			
			4/13/09	The proposed scope of work for bridges over CTA bus routes (Roosevelt Road, Ogden Avenue, and 16^{th} Street) will involve only temporary roadway lane closures, and one travel lane will remain open during construction. IDOT sent a letter to CTA informing them of the project and the potential delays to CTA service as a result of the temporary lane or roadway closures on Roosevelt Road, Ogden Avenue, and 16^{th} Street. As part of the design and permitting process with CDOT, the UPRR will coordinate with CTA regarding the project prior to construction. See Appendix E. (JR)	4/22/09		C
7. Title VI and Other Protected Groups	9/05/07		9/05/07	FIELD REVIEW: Relocations of or property acquisitions from any Title VI or other protected population groups are not anticipated. This will be confirmed upon receipt of railroad right-of-way and project conceptual design. Census data will be further evaluated to determine the potential for indirect impacts.			
			12/14/07	Examination of the US Year 2000 Census data indicate a high percentage of Hispanic, African American, and disabled populations within the census tracts adjoining the project area, when compared with percentages for Cook County and the State			

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				of Illinois (see Appendix A). The percentage of elderly population in the census tracts is comparable to percentages for Cook County and the State of Illinois. Groups of racial minorities and disabled populations are present in the project area. No groups or individuals have been, or will be, excluded from participation in public involvement activities, denied the benefit of the project, or subjected to discrimination in any way on the basis of race, color, age, sex, national origin, or religion. A noise and vibration analysis will be conducted to evaluate potential impacts (see Section V below). 7/28/09 Regarding compliance with the Americans with Disability Act, there are no facilities or buildings relevant to ADA that would be impacted by the project. All sidewalks and ramps that may be impacted will be replaced with ADA-compliant facilities. Noise and vibration assessments were completed for the project (See Section V. Noise & Vibration for more detail). The noise assessment indicates that there will be no noise impacts that affect minority population groups. The vibration assessment indicates that there are Ground-borne Vibration impacts that do affect minority or disabled population groups. Avoidance is not an option to addressing these impacts since most tracks in the CREATE project WA1 are existing tracks, and there is no alternate alignment possible. Planning and design of special trackwork and/or buffer zones are not viable mitigation measures to reduce the project's vibration impacts to the extent that would result in the project having no vibration impacts. However, the following maintenance procedures will be accomplished by the rail industry to mitigate vibration impacts through minimizing vibration sources: regularly scheduled rail grinding; wheel truing programs; vehicle reconditioning programs; and use of wheel-flat detectors. (MM)	7/28/09		C
8. Environmental Justice	9/05/07		9/05/07 12/14/07 7/23/09	FIELD REVIEW: Relocations of, or property acquisitions from, any minority or low income groups are not anticipated. This will be confirmed upon receipt of railroad right-of-way and project conceptual design. Census data will be further evaluated to determine the potential for indirect impacts. As noted in Item 7 above, there is a large minority population within the census tracts adjoining the project area. In aggregate in the tracts surrounding the project, approximately 25% - 30% of the overall population falls below the poverty level. All but four of the census tracts (2428, 2843, 2901, and 3111) have high percentages of families below poverty, compared to Cook County and the State of Illinois. A breakdown of the income and racial characteristics of the areas surrounding the project is included in Appendix A. A noise and vibration analysis will be conducted to evaluate potential impacts (see Section V below). Noise and vibration assessments were completed for the project (See Section V. Noise & Vibration for more detail). The noise assessment indicates that there will be no disproportionate noise impacts that affect minority population and low income groups. The vibration assessment indicated that there are Ground-borne Vibration impacts that do affect minority population and low income groups. Avoidance is not an option to addressing these impacts since most tracks in the CREATE project WA1 are existing tracks, and there is no alternate alignment possible. Planning and design of special trackwork and/or buffer zones are not viable mitigation measures to reduce the project's vibration impacts to the extent that would result in the project having no vibration impacts. However, the following maintenance procedures will be accomplished by the rail industry to mitigate vibration impacts through minimizing vibration sources: regularly scheduled rail grinding; wheel truing programs; vehicle reconditioning programs; and use of wheel-flat detectors. (MM)	7/28/09		C
9. Pedestrian & Bicycle Facilities	9/05/07		9/05/07	FIELD REVIEW: There are no pedestrian or bicycle facilities within the railroad right of way. Sidewalks: Visual inspection of roadways intersecting the railroad at bridge locations where work may occur indicate that sidewalks are present on both sides of the street in the following locations: 16th Street; 15th Street; Ogden Avenue; Roosevelt			

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	Yes	No	Date	Use Journal Type of Description	Yes	No	
				Road. The potential for impacts to sidewalks, either permanent or temporary, will be confirmed upon receipt of the scope of bridge improvements.			
			9/24/07	Bicycle facilities: The City of Chicago Bike Trail Map indicates that on-street, striped bicycle lanes exist on Roosevelt Road, Washington Boulevard, and Warren Boulevard crossing under the railroad property at existing bridge locations. Additional bicycle lanes (including marked shared lanes) are indicated as "recommended" for Washington Boulevard, Warren Boulevard, and Ogden Avenue near the project area. The potential for impacts to bicycle facilities, either permanent or temporary, will be evaluated upon receipt of the scope of bridge improvements.			
			7/1/09	The project will have temporary impacts to cyclists and pedestrians during construction. During temporary lane closures due to bridge rehabilitation at Roosevelt Road, Ogden Avenue, 15th Street, and 16th Street, one sidewalk would be maintained along each of the impacted streets. Coordination with CDOT prior to construction will be required. In addition, any sidewalks that are removed or damaged during construction would be replaced as part of the project, and will be compliant with the Americans with Disabilities Act (ADA) and other permit requirements.			
				The project will require temporary roadway and bicycle lane closures. One bicycle lane on Roosevelt Road will be maintained during construction. Coordination with CDOT prior to construction will be required. (KM)	7/22/09		C
II. Agricultural							
		9/05/07	9/05/07	FIELD REVIEW: The project area is within the corporate limits of the City of Chicago. There is no agriculture land production involved with or within the limits of this project. No agri-business has been identified or is known to exist within the area involved with this project. The adjacent lands are either developed and/or zoned for purposes other than agriculture. Coordination is not required with the USDA Natural Resource Conservation Service (NRCS) and/or the Illinois Department of Agriculture in accordance with the IDOT cooperative working agreement because the project lies within the limits of a corporate boundary or planning area. (JR)			C
III. Cultural							
1. Archaeological Sites	9/05/07		9/05/07	FIELD REVIEW: The area is entirely disturbed ground. Upon receipt of approved railroad right-of-way, ESRF will be submitted for cultural resource for evaluation.			
			12/18/07	ESRF submitted to IDOT.			
			12/21/07	No archaeological sites will be affected by the project. The project is clear for Cultural Resources under agreements ratified by FHWA, the SHPO, and IDOT. See Exhibit 5.			
			3/25/09	ESRF Addendum submitted to IDOT due to a revision of the ESR limit near 15th Street to accommodate the geometric design in this location that is shown outside of the original ESR limit.			
			4/15/09	No archaeological sites will be affected by the project. The project is clear for Cultural Resources under agreements ratified by FHWA, the SHPO, and IDOT. See Exhibit 5. (KM)		4/22/09	C
2. Historic Bridges	9/05/07		9/05/07	FIELD REVIEW: The project crosses numerous roadways on existing bridge structures. The IDOT historic bridge list was reviewed. None of the bridges in the project area are included on the historic list. Upon receipt of approved project limits and railroad right-of-way ESRF will be submitted for cultural resource evaluation.			
			12/18/07	ESRF submitted to IDOT.			

Resource & Issues	Potential Involvement (MM,DD,YY)		Analysis and Results		Impacts Present (MM,DD,YY)		Status
	Yes	No	Date	Use Journal Type of Description	Yes	No	
			12/21/07	No historic bridges will be affected by the project. The project is clear for Cultural Resources under agreements ratified by FHWA, the SHPO, and IDOT. See Exhibit 5.			
			3/25/09	ESRF Addendum submitted to IDOT due to a revision of the ESR limit near 15th Street to accommodate the geometric design in this location that is shown outside of the original ESR limit.			
			4/15/09	No historic bridges will be affected by the project. The project is clear for Cultural Resources under agreements ratified by FHWA, the SHPO, and IDOT. See Exhibit 5. (KM)		4/22/09	C
3. Historic Districts and Buildings	9/24/07		9/24/07	A review of the IHPA Historic Architectural/Archaeological Resources GIS (HAARGIS) web page did not indicate any nationally or state listed historic sites near the project area. Review of the City of Chicago Landmark map indicated that the only listed Chicago Landmark near the project area is the Waller Apartments, located at 2840-58 W. Walnut Street.			
			12/18/07	ESRF submitted to IDOT.			
			12/21/07	The project has been reviewed and cleared for Cultural Resources under agreements ratified by FHWA, the SHPO, and IDOT. See Exhibit 5. The Waller Apartments (City of Chicago Landmark) were identified to be located outside the noise and vibration screening distance as defined by the CREATE Noise and Vibration Assessment Methodology and therefore, are not included in the noise and vibration assessment.			
			3/25/09	A preliminary noise and vibration General Assessment has been conducted, which indicates that the project will have vibration impacts at the R4 receptor (See Section V). An ESRF Addendum for cultural clearance of buildings within the R4 cluster, which are potentially eligible for the National Register of Historic Places and will have vibration impacts, was submitted to IDOT.			
			4/15/09	No historic buildings will be affected by the project. The project is clear for Cultural Resources under agreements ratified by FHWA, the SHPO, and IDOT. See Exhibit 5.			
			7/23/09	The final noise and vibration General and Detailed Assessment has confirmed that only the R4 receptor cluster will have vibration impacts. No historic buildings will be affected by the project. (MM)		7/28/09	C
IV. Air Quality							
1. Attainment/Non-attainment Status	9/18/07		9/18/07	A General Conformity Analysis will be undertaken for this project.			
			1/3/08	Locomotive fuel consumption and equipment data received.			
			4/10/08	<u>General Conformity</u> A General Conformity analysis was undertaken on this proposed improvement for Hydrocarbons (HC), Particulate Matter with a diameter less than 2.5 microns ($PM_{2.5}$), and Nitrogen Oxides (NO_x). In addition to the General Conformity pollutants, the remaining criteria air pollutants were analyzed to provide a complete assessment of air emissions Project related emissions were analyzed for the construction year with the greatest construction activity and emissions, and for the project's design year. The project-related emissions for the conformity-related pollutants for these two time-frames were then compared to the 100 ton per year per pollutant thresholds that apply for these pollutants in the Chicago area. For the construction year with the greatest construction emissions, construction equipment type and associated operations hours required to accomplish the construction activities in that year were estimated. Equipment types with their associated horsepower were then cross-referenced to emission factors generated from USEPA's "NonRoad2005" model. The emission factors are based on an average fleet age for the specific year being analyzed. Emission factors for haul trucks associated with construction emissions were generated from USEPA's "MOBILE62" model. In some cases, the equipment's exact horsepower was not included on the emission factor table for that type of equipment. In			

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<tr><th rowspan="2">Resource & Issues</th><th colspan="2">Potential Involvement (MM,DD,YY)</th><th colspan="2" rowspan="2">Analysis and Results</th><th colspan="2">Impacts Present (MM,DD,YY)</th><th rowspan="2">Status</th></tr>
<tr><th>Yes</th><th>No</th><th>Yes</th><th>No</th></tr>
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those cases, the closest horsepower was utilized to obtain emission factors. If the equipment's horsepower was not specified, the horsepower and associated emission factor that would most likely produce the worst case scenario for emissions was utilized. In cases where the equipment type was not included in the construction equipment table, emission factors for representative pieces of equipment with the specified horsepower were utilized.

Operation emissions were not included in the emissions calculations for the construction year with the greatest construction emissions. This is a worst case scenario because it assumes that operations would essentially remain unchanged during the construction operations. It is more likely that some train operations would be diverted to avoid the construction activities in which case operational emissions would actually be lower during construction than if construction was not occurring, and the calculations do not include the emission reduction due to reduced operations during construction.

Emissions resulting from the change in operations in the design year are calculated from fuel consumption information based on a train traffic simulation model that projects operations for the design year in both a no-build and a build scenario. An average number of locomotives and railcars for each train were assumed. Only the additional emissions resulting from the implementation of the project are included in the analysis.

The General Conformity and other pollutant emissions analysis is presented in the attached table. The analysis demonstrated that the project emissions for all pollutants are less than the applicable 100 ton/year DeMinimis threshold level for General Conformity pollutants. For this reason, this project is not required by the Illinois' General Conformity regulations to complete a full General Conformity determination.

Table IV-1
<table>
<tr><th colspan="5">Construction Year Analysis</th></tr>
<tr><td></td><td colspan="4">Tons/YR</td></tr>
<tr><td></td><td>HC</td><td>PM</td><td>PM2.5</td><td>NOx</td></tr>
<tr><td>Construction Emissions 2010</td><td>0.35</td><td>0.26</td><td>0.25</td><td>2.8</td></tr>
<tr><td>Threshold</td><td>100</td><td>100</td><td>100</td><td>100</td></tr>
<tr><td>Does Design YR Total Emissions Exceed Threshold?</td><td>N</td><td>N</td><td>N</td><td>N</td></tr>
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Table IV-2
<table>
<tr><th colspan="5">Design Year Analysis</th></tr>
<tr><td></td><td colspan="4">Tons/YR</td></tr>
<tr><td></td><td>HC</td><td>PM</td><td>PM2.5</td><td>NOx</td></tr>
<tr><td colspan="5">Operation Emissions 2015</td></tr>
<tr><td>No-Build</td><td>0.077</td><td>0.048</td><td>0.044</td><td>1.4</td></tr>
<tr><td>Build</td><td>0.036</td><td>0.023</td><td>0.021</td><td>0.64</td></tr>
<tr><td>Delta due to build</td><td>-0.040</td><td>-0.025</td><td>-0.023</td><td>-0.72</td></tr>
<tr><td>Threshold</td><td>100</td><td>100</td><td>100</td><td>100</td></tr>
<tr><td>Does Design YR Delta Exceed Threshold?</td><td>N</td><td>N</td><td>N</td><td>N</td></tr>
</table>

Additional detailed information is available in Appendix B. (SZ)
</td><td></td><td>4/22/09</td><td>C</td></tr>
<tr><td>2. Micro-scale Analysis</td><td>9/18/07</td><td></td><td>9/18/07

1/2/08</td><td>An air quality analysis based upon total emissions from locomotives will be completed for this project.

Locomotive fuel consumption data received.</td><td></td><td></td><td></td></tr>
</table>

Resource & Issues	Potential Involvement (MM,DD,YY)		Analysis and Results		Impacts Present (MM,DD,YY)		Status
	Yes	No	Date	Use Journal Type of Description	Yes	No	
			3/9/09	As there are no permanent road closures or lane additions associated with the proposed project, a microscale carbon monoxide analysis will not be performed, in accordance with an agreement with the Illinois Environmental Protection Agency. An air quality analysis based upon total emissions from locomotives was completed for this project. Air emissions were estimated using locomotive emission factors developed by the U.S. Environmental Protection Agency for hydrocarbons (HC), carbon monoxide (CO), nitrogen oxide (NO_x), particulate matter (PM), particulate matter with a diameter less than 2.5 microns ($PM_{2.5}$), and sulfur dioxide (SO_2). Annual air emissions were compared for Existing conditions (2004), 2015 Build Alternative and 2015 No-Build Alternative. Based on these estimates, the annual emissions of the 2015 Build Alternative are 53% lower than the 2015 No-Build condition due to the decrease in fuel usage. The differences between the Existing Condition and the 2015 Build Alternative are also attributed to lower fuel usage. The SO_2 reduction between the Existing Condition and the 2015 conditions is attributed to the reformulation of fuel. The results of the analysis are: **Table IV-3** HC (tons per year) / CO (tons per year) / PM (tons per year) / PM2.5 (tons per year) / NOx (tons per year) / SO2 (tons per year) 2004 Existing: 0.058 / 0.15 / 0.037 / 0.034 / 1.2 / 0.017 2015 Build: 0.036 / 0.12 / 0.023 / 0.021 / 0.64 / 0.00041 2015 No-Build: 0.077 / 0.25 / 0.048 / 0.044 / 1.4 / 0.00087 Additional detailed information is available in Appendix B. (SZ)		4/22/09	C
3. Construction-Related Particulate Matter	9/05/07		9/05/07	Demolition and construction activities can result in short-term increases in fugitive dust and equipment-related particulate emissions in and around the project area. (Equipment-related particulate emissions can be minimized if the equipment is well maintained.) The potential air quality impacts will be short-term, occurring only while demolitions and construction work is in progress and local conditions appropriate. The potential for fugitive dust emissions typically is associated with building demolition, ground clearing, site preparation, grading, stockpiling of materials, on-site movement of equipment, and transportation of materials. The potential is greatest during dry periods, periods of intense construction activity, and during high wind conditions. The contractor shall maintain the construction site to minimize dust conditions that would adversely affect construction or railroad operations, including equipment operation and worker safety. The contractor shall maintain the construction site to minimize spreading of dust to adjacent land and property owners including homes and businesses. The contractor shall also ensure the operating safety of adjacent highways and roadways is not adversely affected by spreading of dust from the construction site. Dust or dirt from the construction site, which accumulates on adjacent public or private streets, highways, or roads, shall be swept or washed off the roadway surface. Special care shall be taken during sweeping or washing of the roadway surface to adequately expose traffic markings and striping. The contractor shall immediately advise the railroad project engineer of any pending or actual exceptions taken by inspectors, citations issued or legal action taken by government agencies concerning cleanliness, sweeping and dust control. Complaints made directly to contractor by neighbors, businesses and others in vicinity of the construction shall be handled in the same manner. Water shall not be used to limit the spread of dust or dirt when it may create a hazardous or objectionable condition such as electrification, ice, flooding, or pollution, or contribute to inferior quality construction. (JR)		10/03/07	C

Resource & Issues	Potential Involvement (MM,DD,YY)		Analysis and Results		Impacts Present (MM,DD,YY)		Status
	Yes	No	Date	Use Journal Type of Description	Yes	No	
V. Noise & Vibration							
	9/05/07		9/05/07	FIELD REVIEW: Existing residential and institutional receptors are located both east and west of the project limits. The June 2007, Version 2 CREATE Noise and Vibration Assessment Methodology will be used to evaluate potential noise and vibration impacts.			
			11/30/07	Noise screening information submitted to CTCO.			
			12/19/07	Train count data received from CTCO. Receptors are present in the screening distance. A general noise assessment will be prepared. The December 2007, Version 2 CREATE Noise and Vibration Assessment Methodology will be used to evaluate potential noise and vibration impacts.			
			7/23/09	The CREATE Noise and Vibration Assessment Methodology (December 2007) was utilized in performing the noise and vibration assessments. A noise screening was conducted to identify sensitive receptors (see Appendix C for receptor locations, screening limits, and further details of the evaluation). In accordance with the methodology, a general noise assessment of potential noise impacts to those receptors was conducted. The general noise assessment indicated that there are potential noise impacts to receptor R3 for the WA1 project. (See Table V-1).			

Table V-1: General Noise Assessment Summary – Noise Levels

Receptor	Land Use Type (descriptor)	Overall Noise Levels (dBA)			Impact Indicated
		Existing	No-build	Build	
WA1-R2	SFR (L_{dn})	60	61	61	No
WA1-R3	MFR/SFR (L_{dn})	65	68	68	Moderate
WA1-R3a	SFR (L_{dn})	57	58	58	No
WA1-R3b	SFR (L_{dn})	67	67	67	No
WA1-R4	SFR (L_{dn})	71	73	70	No
WA1-R4a	School (L_{eq})	64	64	63	No
WA1-R4b	SFR (L_{dn})	67	68	66	No
WA1-R5	SFR (L_{dn})	73	74	72	No
WA1-R5a	School (L_{eq})	65	66	65	No
WA1-R5b	Park (L_{eq})	69	70	69	No
WA1-R5c	SFR (L_{dn})	65	66	65	No
WA1-R6	SFR (L_{dn})	77	78	76	No
WA1-R7	SFR (L_{dn})	72	72	71	No
WA1-R7a	School (L_{eq})	69	70	69	No
WA1-R7b	School (L_{eq})	68	69	68	No

Note: Land use type is schools, parks, single-family residential (SFR) or multi-family residential (MFR).

In accordance with the methodology, a detailed noise assessment for receptor WA1-R3 was conducted, following the FTA Transit Noise and Vibration Impact Assessment manual. The detailed assessment indicates there are no noise impacts as a result of the CREATE WA1 project. The detailed assessment for R3 is as follows:

Resource & Issues	Potential Involvement (MM,DD,YY)		Analysis and Results		Impacts Present (MM,DD,YY)		Status
	Yes	No	Date	Use Journal Type of Description	Yes	No	

Table V-2: Detailed Noise Assessment Summary – R3

Receptor	Land Use Type (descriptor)	Overall Noise Levels (dBA)			Impact Indicated
		Existing	No-build	Build	
WA1-R3	MFR/SFR (L_{dn})	71	74	72	No

Note: Land use type is single-family residential (SFR) or multi-family residential (MFR).

L_{max} is a measure of the maximum sound level for a single passby event and is reported to more fully describe noise impacts. The existing L_{max} is 76 dBA (source is locomotives). The no-Build L_{max} is also 76 dBA (source is locomotives) and the Build L_{max} is 80 (source is locomotives).

Per the CREATE Noise and Assessment Methodology, a screening was conducted to identify sensitive receptors for Ground-borne Vibration (GBV) and Ground–borne Noise (GBN). After these were identified, a general assessment of potential GBV was conducted (see Appendix C for receptor locations, screening limits, and further details of the evaluation). GBV is separately assessed for vibration caused by locomotives and vibration caused by freight cars. Potential GBV impacts were identified for receptor R4 (single family residential), as shown in Table V-3.

GBN is directly related to GBV, but with different impact assessment criteria. No potential GBN impacts have been identified (see Table V-4).

Table V-3: Ground-borne Vibration (GBV) Analysis Summary

Receptor	Source	GBV Levels (VdB)			Impact Indicated
		Existing	No-build	Build	
WA1-R3 (MFR)	Locomotive	65	65	69	No
	Rail Car	65	65	69	No
WA1-R4 (SFR)	Locomotive	70	70	72	No
	Rail Car	70	70	72	Yes
WA1-R5 (SFR)	Locomotive	72	72	74	No
	Rail Car	72	72	74	No
WA1-R5b (Park)	Locomotive	69	69	71	No
	Rail Car	69	69	71	No
WA1-R6 (SFR)	Locomotive	85	84	86	No
	Rail Car	85	84	86	No

Note: Single-family residential (SFR) multi-family residential (MFR), or parks. Receptors WA1-R2, WA1-R3a, WA1-R3b, WA1-R4a, WA1-R4b, WA1-R5a, WA1-R5c, WA1-R7, WA1-R7a and WA1-R7b are outside the vibration screening limit.

Table V-4: Ground-borne Noise (GBN) Analysis Summary

Receptor	Source	GBN Levels (dBA)			Impact Indicated
		Existing	No-build	Build	
WA1-R3 (MFR)	Locomotive	15	15	19	No
	Rail Car	15	15	19	No
WA1-R4 (SFR)	Locomotive	20	20	22	No

Resource & Issues	Potential Involvement (MM,DD,YY)		Analysis and Results		Impacts Present (MM,DD,YY)		Status
	Yes	No	Date	Use Journal Type of Description	Yes	No	

	Rail Car	20	20	22	No	
WA1-R5 (SFR)	Locomotive	22	22	24	No	
	Rail Car	22	22	24	No	
WA1-R5b (Park)	Locomotive	19	19	21	No	
	Rail Car	19	19	21	No	
WA1-R6 (SFR)	Locomotive	35	34	36	No	
	Rail Car	35	34	36	No	

Note: Single-family residential (SFR) multi-family residential (MFR), or parks. Receptors WA1-R2, WA1-R3a, WA1-R3b, WA1-R4a, WA1-R4b, WA1-R5a, WA1-R5c, WA1-R7, WA1-R7a and WA1-R7b are outside the vibration screening limit.

See Appendix C for further details.

Avoidance is not an option to addressing the GBV impacts since most tracks in the CREATE project WA1 are existing tracks, and there is no alternate alignment possible. Planning and design of special trackwork and/or buffer zones are not viable mitigation measures to reduce the project's vibration impacts to the extent that would result in the project having no vibration impacts. Maintenance is considered a viable mitigation option where GBV or GBN impacts are indicated. The following maintenance procedures will be accomplished by the rail industry to mitigate vibration impacts through minimizing vibration sources:

- Regularly scheduled rail grinding
- Wheel truing programs
- Vehicle reconditioning programs
- Use of wheel-flat detectors.

Construction Noise and Vibration

The construction of the proposed project could result in temporary noise and vibration increases within and adjacent to the project area. The noise and vibration will be generated primarily from trucks and heavy machinery used during construction. Any anticipated noise and vibration impacts will likely be confined to normal working hours, which are generally considered to be "noise and vibration tolerant" periods. Construction contractors need to be aware of the City of Chicago's noise ordinances to assure compliance. No adverse noise and vibration impacts are anticipated during the construction phase of the project. (TC)

7/28/09 — C

VI. Energy

9/05/07 — 9/05/07

Construction of the proposed improvement will require indirect consumption of energy for processing materials, construction activities and maintenance for the track to be added within the project limits.

Construction of the proposed improvement will reduce rail congestions and delays thereby reducing idling and slowing conditions. In the long term, post-construction operational energy requirements should offset construction and maintenance energy requirements and result in a net savings in energy usage. (JR)

C

VII. Natural Resources

9/05/07 — 9/5/07

FIELD REVIEW: There are no natural areas or nature preserves in the project vicinity that will be impacted by this project. Trees and vegetation within the right-of-way will be cleared for this project. An estimate of the number and species of trees will be developed and submitted to IDOT. Upon receipt of railroad right-of-way, an ESRF will be submitted for biological review. (JR)

Resource & Issues	Potential Involvement (MM,DD,YY)		Analysis and Results		Impacts Present (MM,DD,YY)		Status
	Yes	No	Date	Use Journal Type of Description	Yes	No	
			10/24/07	Tree survey conducted.			
			12/18/07	ESRF submitted to IDOT.			
			12/27/07	The BDE Natural Resources Unit and the Illinois Department of Natural Resources (IDNR) have screened the project area and determined that there are no state or federally listed species, natural areas, or nature preserves that will be impacted by the project. IDNR has closed consultation. See Exhibit 6.			
			1/24/08	Trees were identified within and adjacent to the existing right-of-way, and tree impacts are anticipated. An assessment of the impacted trees, including estimated quantity, was performed on October 24, 2007. All trees are considered volunteer species and are located within railroad right-of-way. The WA1 project site contains very few patches of woody vegetation that meet the diameter requirements of a tree. Many areas of the project site corridor currently maintain sparse areas of herbaceous vegetation and are devoid of trees; while, other areas within the project site contain remnant stands of native prairie species. Additionally, several sections along the project site corridor contain dense thickets of woody vegetation; however, it is all relatively young and does not meet the diameter requirements to be considered a tree. These thickets are dominated by species such as smooth sumac, Siberian elm and Tree-of-Heaven. There is one stand of trees that will be removed for the project. It is located near Ogden Avenue adjacent to the UP tracks and contains Siberian Elm, Quaking Aspen, and Tree-of-Heaven. It is approximately 0.39 acres, and approximately 314 trees will be removed as part of this project. (JR)			
			3/25/09	ESRF Addendum submitted to IDOT due to a revision of the ESR limit near 15th Street to accommodate the geometric design in this location that is shown outside of the original ESR limit.			
			4/20/09	The BDE Natural Resources Unit and the Illinois Department of Natural Resources (IDNR) have screened the project area and determined that there are no state or federally listed species, natural areas, or nature preserves that will be impacted by the project. IDNR has closed consultation. See Exhibit 6. (KM)		6/17/09	C
VIII. Water Quality							
1. Surface Water Resources/Quality		9/05/07	9/5/07	FIELD REVIEW: There are no surface bodies of water located in or near the project area.			
			12/28/07	A review of the aerial photos, ground photos (Exhibit 2), Flood Insurance Rate Maps (Exhibit 3) and National Wetland Inventory Maps (Exhibit 4) indicate no surface water resources will be impacted by the project. Drainage will not be impacted by the project. (JR)			C
2. Permits	9/05/07		9/05/07	FIELD REVIEW: No water-based permits are required. Geometrics are required to determine if the project will disturb more than one acre of total land area and the need for an NPDES permit.			
			4/10/08	The project will result in the disturbance of one or more acres of total land area. Accordingly, it is subject to the requirements for a National Pollutant Discharge Elimination System (NPDES) permit for stormwater discharges from the construction sites. Permit coverage for the project will be obtained either under the IEPA General Permit for Stormwater Discharges from Construction Site Activities (NPDES Permit No. ILR10) or under an individual NPDES permit. Requirements applicable to such a permit will be followed, including the preparation of a Stormwater Pollution Prevention Plan. Such a plan shall identify potential sources of pollution which may reasonably be expected to affect the quality of stormwater discharges from the construction site and shall describe and ensure the implementation of practices which will be used to reduce the pollutants in discharges associated with construction site activity and to assure compliance with the terms of the permit.			

Resource & Issues	Potential Involvement (MM,DD,YY)		Analysis and Results		Impacts Present (MM,DD,YY)		Status
	Yes	No	Date	Use Journal Type of Description	Yes	No	
			7/6/09	A permit for the temporary roadway closures will be required from the City of Chicago, and coordination with CDOT, OEMC and CTA will be required. The WA1 project will require structural restoration and repair of the bridge that crosses Roosevelt Road, which is a State route. The proposed bridge work will require authorization from the IDOT Traffic Permits Office and OEMC. (JR)	7/22/09		C
3. Groundwater Resources/ Quality		9/05/07	9/05/07	FIELD REVIEW: This project will take place in an established urban railroad corridor. It will not create any new potential "routes" for groundwater pollution or any new potential "sources" of groundwater pollution as defined in the Illinois Environmental Protection Act (415 ILCS 5/3, et seq.). Accordingly, the project is not subject to compliance with the minimum setback requirements for community water supply wells or other potable water supply wells, as set forth in 415 ILCS 5/14, et seq. (JR)			C
IX. Flood Plains							
1. 100-year Flood Plain		9/05/07	9/05/07	FIELD REVIEW: Review of the Flood insurance rate maps (FIRM) do not indicate any floodplains in the project area. See Exhibit 3. (JR)			C
2. Regulatory Floodway		9/05/07	9/05/07	FIELD REVIEW: Review of the FIRM maps do not indicate any floodways in the project area. See Exhibit 3. (JR)			C
X. Wetlands							
	9/05/07		9/05/07	FIELD REVIEW: Review of the National Wetlands Inventory reveals no wetland involvement. The field review indicated no previously undisturbed areas will be affected by the project. Upon receipt of railroad right-of-way, ESRF will be submitted.			
			12/18/07	ESRF submitted to IDOT. (JR)			
			12/27/07	The BDE Natural Resources Unit and the Illinois Department of Natural Resources have screened the project area and determined that no jurisdictional wetlands will be impacted by the project. See Exhibits 4 and 6.			
			3/25/09	ESRF Addendum submitted to IDOT due to a revision of the ESR limit near 15th Street to accommodate the geometric design in this location that is shown outside of the original ESR limit. (KM)			
			4/20/09	The BDE Natural Resources Unit and the Illinois Department of Natural Resources (IDNR) have screened the project area and determined that there are no wetlands that will be impacted by the project. See Exhibit 6. (KM)		6/17/09	C
XI. Special Waste							
	9/05/07		9/05/07	FIELD REVIEW: Acquisition of right-of-way is not anticipated for this project. This will be confirmed upon receipt of project conceptual plans and right-of-way. The FHWA/FRA CREATE Railroad Property Special Waste Procedures, (July 2006) will be followed.			
			7/20/09	It has been determined that Project WA1 work will disturb areas outside the ballast and is expected to generate excavated materials in excess of seven cubic yards at proposed signal bridges, cantilevers and certain bridges. Five new signal bridges or cantilevers at stations 112+01, 115+94, 121+87, 129+75, and 141+82 are proposed. Bridge improvements are also planned at Taylor Street and Ogden Avenue that would require over seven cubic yards of excavation at the bridge abutments. Trackside bridge work will occur at Roosevelt Road, 15th Street and 16th Streets; however, at grade excavation is not required at these three locations. A screening of the properties affected by this project in accordance with the *CREATE Railroad Property Special Waste Procedures, (July 2006)*, was completed. No obvious signs of contamination, open dumping, or unresolved spills were identified for the work areas, based on observations from the site screening visits and information received from the railroads (UPRR, NS			

Resource & Issues	Potential Involvement (MM,DD,YY)		Analysis and Results		Impacts Present (MM,DD,YY)		Status
	Yes	No	Date	Use Journal Type of Description	Yes	No	
				and CSX). The UPRR has confirmed the presence of lead-based paint on all bridges. There are no CERCLIS, CORRACTS, LUST or UST sites in the vicinity of at-grade excavation locations. Bridge work in the vicinity of such sites will occur trackside (elevated, on railroad embankment); therefore, there is low risk for potential migratory impacts from adjacent commercial properties. The application of the Special Waste Assessment (SWA) screening process has determined that a PESA is not recommended for the WA1 proposed signal locations or proposed bridge renovations (see Appendix D). Due to the presence of lead-based paint on the bridges, precautions must be taken to contain the lead during reconstruction. Lead based paint remediation/abatement is required prior to the reconstruction of all of the bridges, including Taylor Street, Ogden Avenue, Roosevelt Road, 15th Street, and 16th Street. (JR)	7/22/09		C
XII. Special Lands							
1. 4(f)	9/05/07		9/05/07 9/18/07 3/25/09 4/15/09 7/23/09	FIELD REVIEW: Altgeld Park is located adjacent to the project to the west, between Congress Parkway and Harrison Street in Chicago, Illinois. Sites of national, state or local historical significance as identified in Section III.3 include the Waller Apartments located at 2840-58 W. Walnut Street, Chicago, Illinois. No 4(f) properties will need to be acquired for this project. A noise and vibration assessment will be conducted to determine if there are any indirect impacts to Altgeld Park (Receptor WA1-R5a). A preliminary noise and vibration General Assessment has been conducted. The analysis indicates that there will be no direct or indirect noise or vibration impacts to listed historic sites, local landmarks or Altgeld Park. The project will have vibration impacts at the R4 receptor (See Section V). The Waller Apartments (City of Chicago Landmark) were identified to be located outside the noise and vibration screening distance as defined by the CREATE Noise and Vibration Assessment Methodology and therefore, were not included in the assessment. An ESRF Addendum for cultural clearance of buildings within the R4 cluster, which are potentially eligible for the National Register of Historic Places and will have vibration impacts, was submitted to IDOT. No historic buildings will be affected by the project. The project is clear for Cultural Resources under agreements ratified by FHWA, the SHPO, and IDOT. See Exhibit 5. (MM) The final noise and vibration General and Detailed Assessment has confirmed that only the R4 receptor cluster will have vibration impacts. No historic buildings will be affected by the project. (MM)		7/28/09	C
2. 6(f)		9/05/07	9/18/07	FIELD REVIEW: No recreational facilities will be acquired for this project. (JR)			C
3. Open Space Lands Acquisition and Development (OSLAD) Act Lands		9/05/07	9/18/07	FIELD REVIEW: No outdoor recreational land will be acquired for this project. (JR)			C
XIII. Other Issues							

Resource & Issues	Potential Involvement (MM,DD,YY)		Analysis and Results		Impacts Present (MM,DD,YY)		Status
	Yes	No	Date	Use Journal Type of Description	Yes	No	

XIV. Permits Required (Check each that applies.)

404 - Individual		See Resource and Issues #
404 - Nationwide		See Resource and Issues #
NPDES	X	See Resource and Issues # VIII.2
Coast Guard		See Resource and Issues #
IDNR - Office of Water Resources		See Resource and Issues #
CDOT/OEMC	X	See Resource and Issues # I.2, I.6, I.9, VIII.2
IDOT Traffic	X	See Resource and Issues #I.2
		See Resource and Issues #

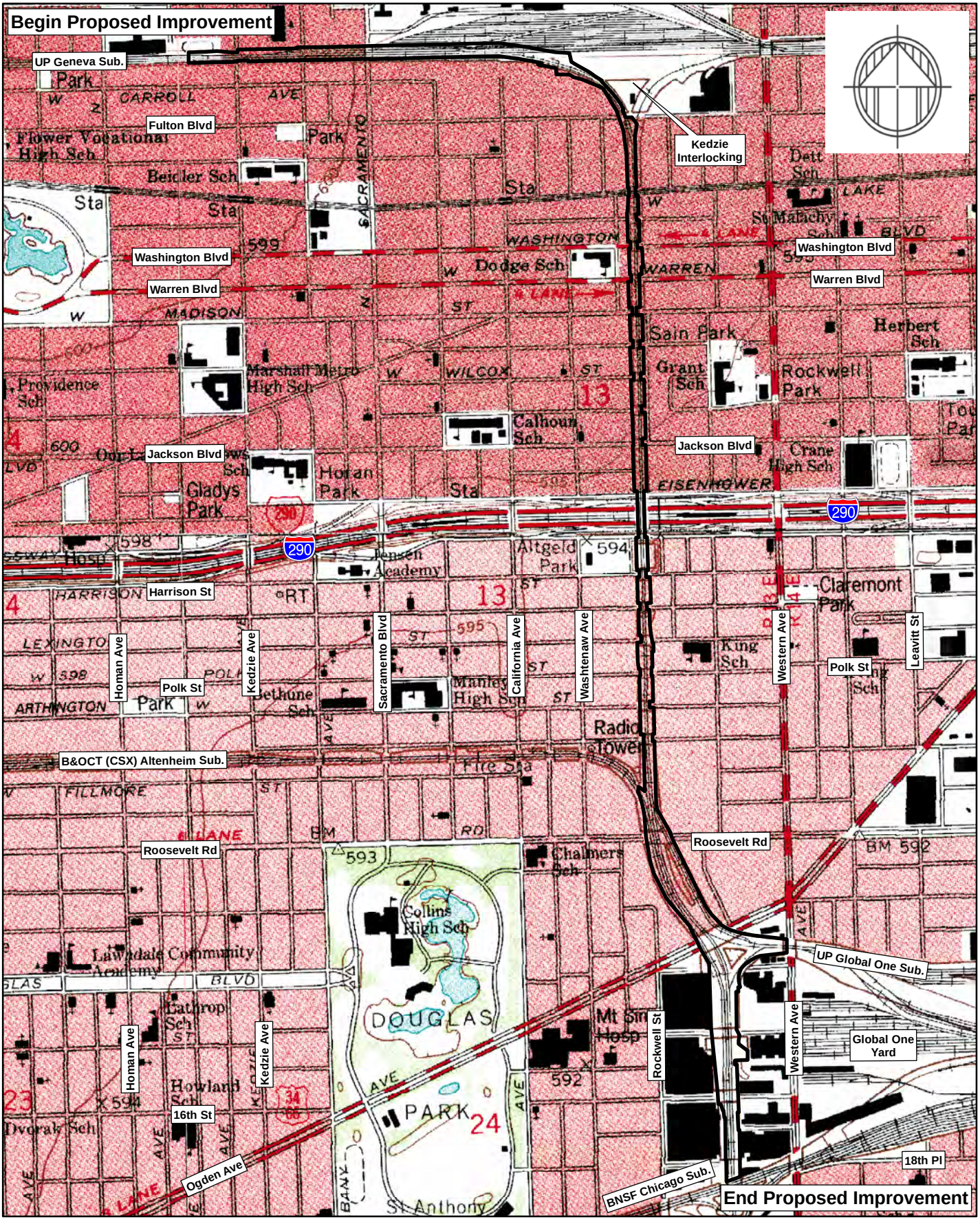
XV. List of Preparers

Initials	Name	Organization
JR	Janice Reid	HDR
MM	Michael Marchyshyn	HDR
SZ	Scott Zilka	HDR
KM	Kirsten Mawhinney	HDR
TC	Tim Casey	HDR

EXHIBITS

Exhibit 1

Location Map

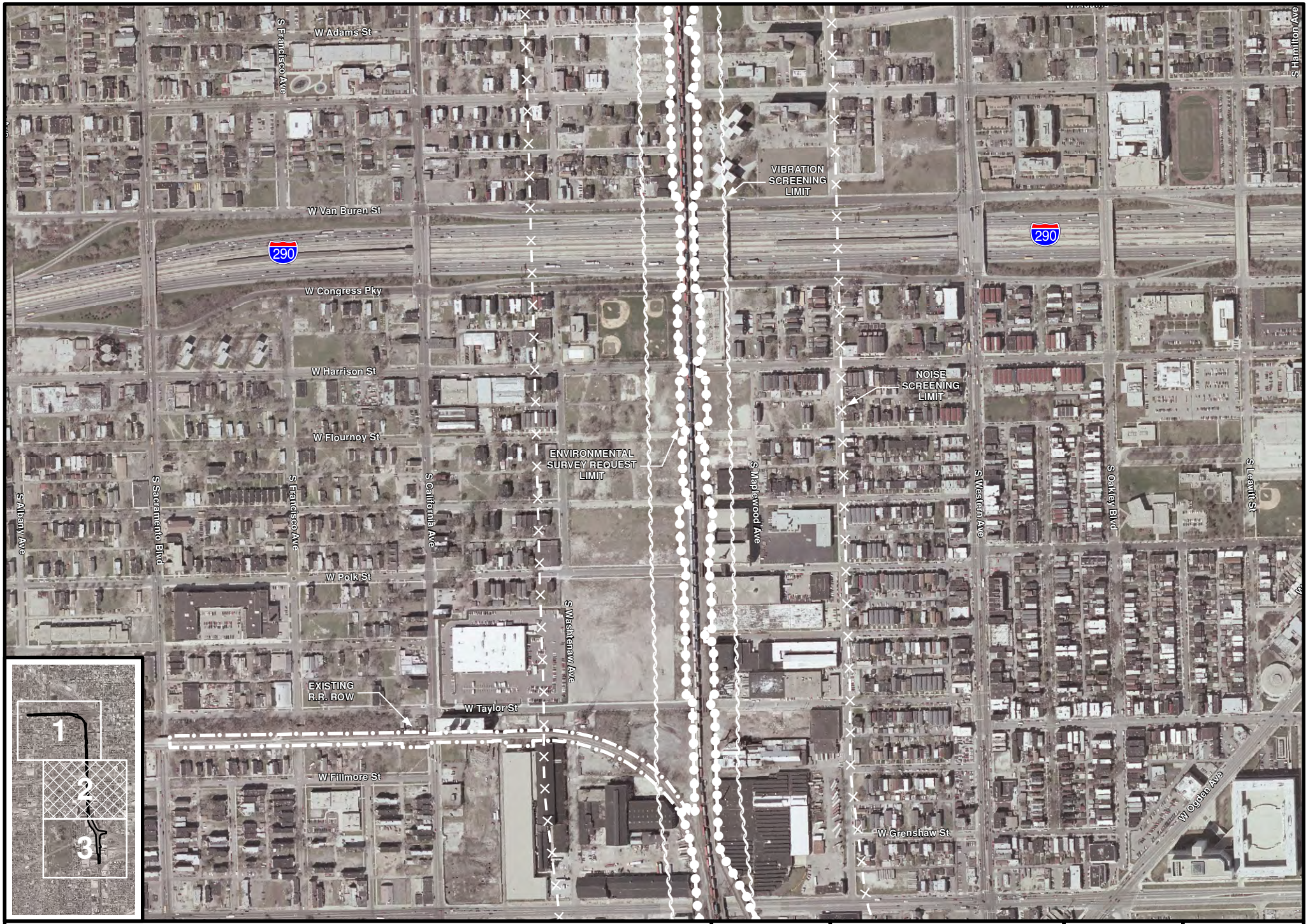


Source: USGS Base Map Englewood Quadrangle, USGS Base Map Chicago Loop Quadrangle	CREATE WA1	LOCATION MAP	EXHIBIT 1

Exhibit 2

Aerial Photo Plan


196+22 PROJECT LIMIT
W Franklin Blvd
VIBRATION SCREENING LIMIT
NOISE SCREENING LIMIT
ENVIRONMENTAL SURVEY REQUEST LIMIT
W Fulton Blvd
W Walnut St
N Kedzie Ave
N Albany Ave
N Sacramento Blvd
N Francisco Ave
N California Ave
N Talman Ave
N Maplewood Ave
N Campbell Ave
W Washington Blvd
W Warren Blvd
W Madison St
S Washtenaw Ave
W Monroe St
W Wilcox St
EXISTING R.R. ROW
1
2
3
LEGEND
Project Limit
Noise Screening Limit
Vibration Screening Limit
Existing/Proposed R.R. ROW
Environmental Survey Limit
Floodplain
Wetland
N
W
E
S
0
300
600
Feet
CREATE WA1
AERIAL PHOTO PLAN
EXHIBIT 2
1 OF 3



LEGEND

Project Limit
Noise Screening Limit
Vibration Screening Limit
Existing/Proposed R.R. ROW

Environmental Survey Limit
Floodplain
Wetland

N
W E
S

0 300 600 Feet

CREATE WA1

AERIAL PHOTO PLAN

EXHIBIT 2

2 OF 3

LEGEND

Project Limit
Noise Screening Limit
Vibration Screening Limit
Existing/Proposed R.R. ROW

Environmental Survey Limit
Floodplain
Wetland

N
W E
S

0 300 600 Feet

CREATE WA1

AERIAL PHOTO PLAN

EXHIBIT 2

3 OF 3

Exhibit 3

Flood Insurance Rate Map

NFIP NATIONAL FLOOD INSURANCE PROGRAM

FIRM

FLOOD INSURANCE RATE MAP

COOK COUNTY, ILLINOIS

AND INCORPORATED AREAS

PANELS 415, 418, 506

(SEE MAP INDEX FOR FIRM PANEL LAYOUT)

CONTAINS:

COMMUNITY	NUMBER	PANEL	SUFFIX
CHICAGO, CITY OF	170074	0415	J
CHICAGO, CITY OF	170074	0418	J
CHICAGO, CITY OF	170074	0506	J

Notice to User: The **Map Number** shown below should be used when placing map orders; the **Community Number** shown above should be used on insurance applications for the subject community.

MAP NUMBER
17031C0415J
17031C0418J
17031C0506J

MAP REVISED
AUGUST 19, 2008

Federal Emergency Management Agency

This map is an official copy of a portion of the above referenced flood map. It was extracted using F-MIT On-Line. This map does not reflect changes or amendments which may have been made subsequent to the date on the title block. For the latest product information about National Flood Insurance Program flood maps check the FEMA Flood Map Store at www.msc.fema.gov.

SPECIAL FLOOD HAZARD AREAS (SFHAs) SUBJECT TO INUNDATION BY THE 1% ANNUAL CHANCE FLOOD

The 1% annual chance flood (100-year flood), also known as the base flood, is the flood that has a 1% chance of being equaled or exceeded in any given year. The Special Flood Hazard Area is the area subject to flooding by the 1% annual chance flood. Areas of Special Flood Hazard include Zones A, AE, AH, AO, AR, A99, V, and VE. Base Flood Elevation is the water-surface elevation of the 1% annual chance flood.

ZONE A	No Base Flood Elevations determined.
ZONE AE	Base Flood Elevations determined.
ZONE AH	Flood depths of 1 to 3 feet (usually areas of ponding); Base Flood Elevations determined.
ZONE AO	Flood depths of 1 to 3 feet (usually sheet flow on sloping terrain); average depths determined. For areas of alluvial fan flooding, velocities also determined.
ZONE AR	Special Flood Hazard Areas formerly protected from the 1% annual chance flood by a flood control system that was subsequently decertified. Zone AR indicates that the former flood control system is being restored to provide protection from the 1% annual chance or greater flood.
ZONE A99	Area to be protected from 1% annual chance flood by a Federal flood protection system under construction; no Base Flood Elevations determined.
ZONE V	Coastal flood zone with velocity hazard (wave action); no Base Flood Elevations determined.
ZONE VE	Coastal flood zone with velocity hazard (wave action); Base Flood Elevations determined.

FLOODWAY AREAS IN ZONE AE

The floodway is the channel of a stream plus any adjacent floodplain area that must be kept free of encroachment so that the 1% annual chance flood can be carried out without substantial increases in flood heights.

OTHER FLOOD AREAS

ZONE A	Areas of 0.2% annual chance flood; areas of 1% annual chance flood with average depths of less than 1 foot or with drainage areas less than 1 square mile; and areas protected by levees from 1% annual chance flood

OTHER AREAS

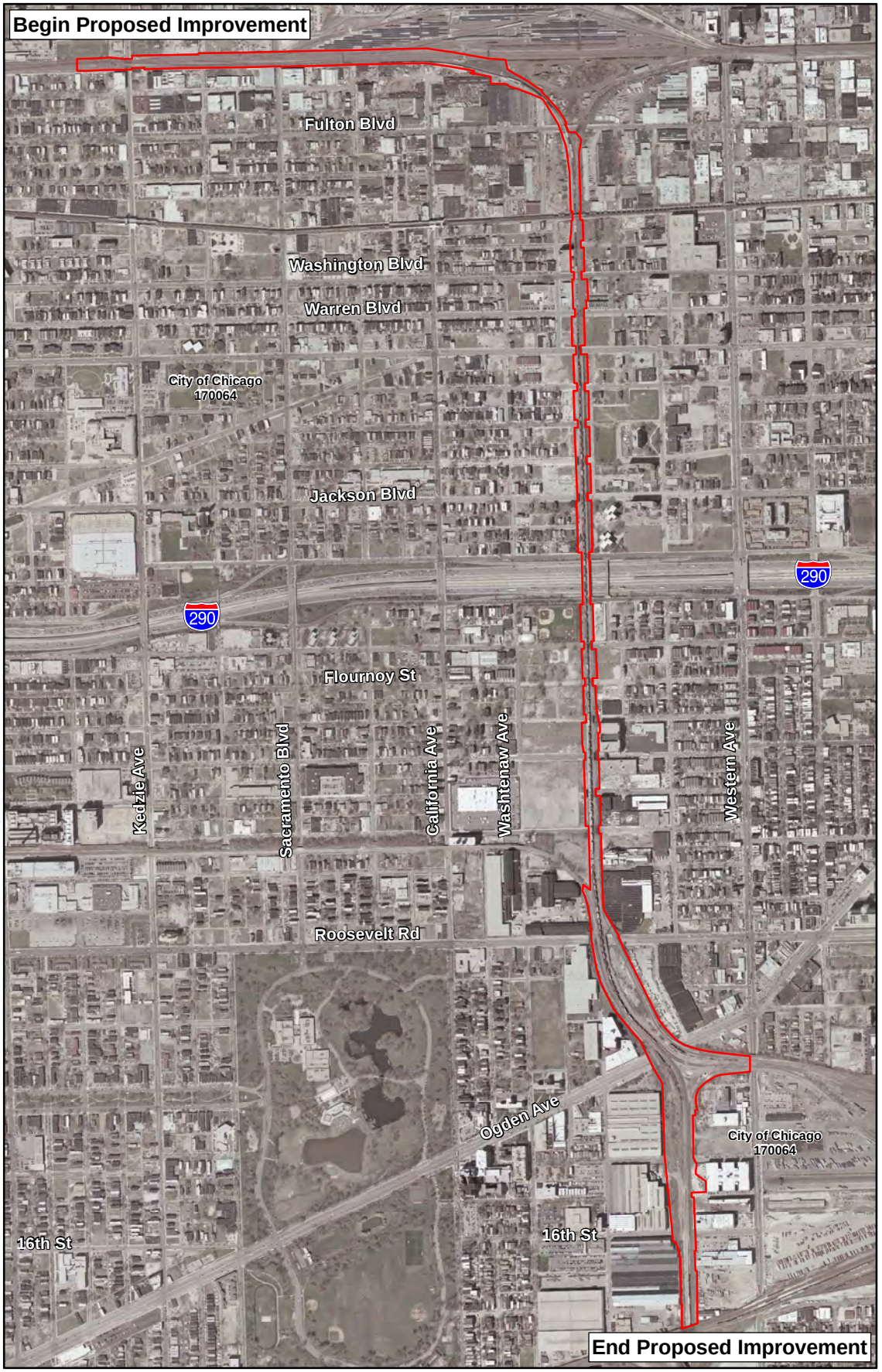
ZONE X	Areas determined to be outside the 0.2% annual chance floodplain.
ZONE D	Areas in which flood hazards are undetermined, but possible.

ESR Limit

Municipal Boundary

N
W E
S

0 500 1,000 Feet



Source: Federal Emergency Management Agency

Chicago, Cook County, IL

This map is a user generated static output from an internet mapping site and is for general reference only. Data layers that appear on this map may or may not be accurate, current, or otherwise reliable. THIS MAP IS NOT TO BE USED FOR NAVIGATION.	CREATE WA1	FLOOD INSURANCE RATE MAPS	EXHIBIT 3

Exhibit 4

National Wetland Inventory Map

Source: U.S. Fish & Wildlife Service Webpage - Wetlands Mapper

Chicago Loop Quadrangle & Englewood Quadrangle, IL

Freshwater Emergent Wetland
Freshwater Forested/Shrub Wetland
Freshwater Pond
Lake
Other
Riverine

N W E S

0 250 500 Feet

CREATE WA1	NATIONAL WETLAND INVENTORY MAP	EXHIBIT 4

Exhibit 5

Cultural Resources Sign-Off

Illinois Department of Transportation

Memorandum

To:	George Weber
From:	Charles Ingersoll By: J. A. Walthall
Subject:	Cultural Resource Clearance
Date:	April 15, 2009

CREATE WA-1
Cook County
CREATE WA-1, Addendum A
Job No. P-30-005-09
Seq. 11755A

Attached is a copy of the "Environmental Survey Request Form" submitted for the above project. It is the opinion of our professional staff that no Cultural Resource survey is required for this project. This determination follows the stipulations of the joint agreement for the Exclusion of Classes of "No Effect" from Illinois SHPO Coordination ratified by FHWA, the SHPO, and IDOT on July 17, 1995. The signed request form attached is your evidence of coordination.

J. A. Walthall

Attachment

JAW:km

Attention: Central Office BD&E
Environment Section
Room 330

Chicago Region Environmental & Transportation Efficiency (CREATE) Project

Environmental Survey Request Addendum

A. Project Information ☑ Bio ☑ Cultural ☑ Wetlands ☐ Special Waste

Submittal Date: 03/25/2009 Sequence No: 11755 A
District: 1 Requesting Agency: Other BRR Project Identifier: WA-1
Contract #: Job No.: P- 30-005-09
Counties: Cook
Route: Union Pacific Railroad (UPRR) Marked:
Street: West of Western Avenue Section:
Municipality(ies): Chicago Project Length: 1.6093 km 1 miles
FromTo (At): UPRR-Geneva Subdivision: From just west of Kedzie Ave., then heading east toward **
Quadrangle: Chicago Loop, Englewood Township-Range-Section: T39N R13E 3rd PM Sect. 11,12,13, 24

Anticipated Design Approval: 08/01/2009

B. Reason for Submittal: (Check all that apply)

☐ Acquisition of additional ROW or easement Addendum: acres Total Project: acres
☐ In-Stream Work Stream Name: Chi Sanitary & Shi
☑ Other: The proposed geometric design near 15th St. shows the geometrics outside of the submitted ESR limits. ESR limit near 15th St was revised to accommodate the geometric, ****

☐ Field Sign Off (Bio & Cultural Only)

C. Addendum Description: Reconfigure & signalize Ogden Junction for double-track connection from Union Pacific (UP) to B&OCT (CSX) and Norfolk Southern (NS) mains. ******

D. Tree Removal?: Yes Number?: ha/ acres

Wetland delineation performed by: End. Species Consultation performed by:

E.
Contact Person: George Ryan
Telephone #: (312) 793-4222 ext.
Env.Contact:
Telephone #:

Local Contact Person: Janice Reid
Telephone #: (773) 380-7919 ext.
E-Mail: Janice.reid@hdrinc.com
Title/Company:

F. ☐ Update Entire Project
☑ Addendum Only

☐ Field Sign Off (Bio & Cultural Only) ☑ Received in CO 03/25/2009

CULTURAL RESOURCES:
NO SURVEY OR FURTHER COORDINATION REQUIRED

SIGNED DATE 4/15/09

Illinois Department of Transportation

Memorandum

To:	George Weber	
From:	Eric Harm	By: J. A. Walthall
Subject:	Cultural Resource Clearance	
Date:	December 21, 2007	

CREATE WA-1
Cook County
WA-1 Union Pacific Railroad
Job No. P-30-016-07

Attached is a copy of the "Environmental Survey Request Form" submitted for the above project. It is the opinion of our professional staff that no Cultural Resource survey is required for this project. This determination follows the stipulations of the joint agreement for the Exclusion of Classes of "No Effect" from Illinois SHPO Coordination ratified by FHWA, the SHPO, and IDOT on July 17, 1995. The signed request form attached is your evidence of coordination.

Attachment

JAW:km

Attention: Central Office BD&E
Environment Section
Room 330

Chicago Region Environmental & Transportation Efficiency (CREATE) Project

Environmental Survey Request

A. Project Information ☑ Bio ☑ Cultural ☐ Wetlands ☐ Special Waste

Submittal Date: 12/18/2007 Sequence No: 11755

District: 1 Requesting Agency: Other BRR Project Identifier: WA-1

Contract #: Job No.: P- 30-016-07

Counties: Cook

Route: Union Pacific Railroad (UPRR) Marked:

Street: West of Western Avenue Section:

Municipality(ies) Chicago Project Length: 1.609 km 1 miles

FromTo (At): UPRR-Geneva Subdivision: From just west of Kedzie Ave., then heading east toward **

Quadrangle: Chicago Loop, Englewood Township-Range-Section: T39N R13E 3rd PM Sect. 11,12,13, 24

Anticipated Design Approval: 05/01/2007

B. Reason for Submittal: (Check all that apply)

☐ Acquisition of additional ROW or easement ha/ acres

☐ In-Stream Work Stream Name:

☑ Other: Unknown whether wetlands survey is needed.

C. Project Description: Reconfigure & signalize Ogden Junction for double-track connection from Union Pacific (UP) to B&OCT(CSX) and Norfolk Southern (NS) mains. Improve signal/communication system with visibility & electronic. Request technology between Kedzie Interlocking ***

Proposed Work: ☐ Highway ☑ Bridge ☐ Bike Trail ☑ Other Railroad

D. Tree Removal?: Yes Number?: ha/ acres

Existing Bridge(s) Structure Number: On Historic Bridge List: No

Historic District Involved? No Historic Buildings Involved? No

Section 4(f) Lands Involved? No Section 6(f) Lands Involved? No

Wetland delineation performed by: End. Species Consultation performed by:

E. Funding: ☐ Federal ☐ State ☐ TBP ☐ MFT ☐ Local Non-MFT

☐ 404 Permit Required Anticipated Processing: ECAD

F.

Contact Person:		Local Contact Person:	Janice Reid
Telephone #:		Telephone #:	(773) 380-7919 ext.
Env.Contact:		E-Mail:	Janice.reid@hdrinc.com
Telephone #:		Title/Company:	HDR Engineering, Inc.

☐ Field Sign Off (Bio & Cultural Only) ☑ Received in CO 12/19/2007 ☐ SW Received

CULTURAL RESOURCES:
NO SURVEY OR FURTHER COORDINATION REQUIRED
SIGNED 12/21/07 DATE

Exhibit 6

Wetland and Biological Resources Sign-Off

Illinois Department of Transportation

Memorandum

To:	George E. Weber		
From:	Charles J. Ingersoll	By:	Thomas C. Brooks Thomas C Brooks
Subject:	Biological Resources Review		
Date:	April 20, 2009		

*CREATE
WA-1 (UPRR)
UPRR-Geneva Subdivision: from just west of Kedzie Ave,. then heading east toward Western Ave., then south along the Western Ave. railroad corridor, from Fulton St. to the BNSF-Chicago Subdivision, near 18th St.
Job No.: P-30-016-07 (BDE Seq. No.: 11755 and 11755 A)
City of Chicago
Cook County

The Natural Resources Unit and the Illinois Department of Natural Resources has reviewed this project. The project, as described on the Environmental Survey Request Form, does not require biological or wetland surveys.

The IDNR Natural Heritage Database has no records of state or federally listed species, natural areas or nature preserves within the project corridor (IDNR EcoCAT Response letter dated April 20, 2009).

Attachment: IDNR EcoCAT Response letter

JMV

Illinois Department of
Natural Resources

One Natural Resources Way Springfield, Illinois 62702-1271
http://dnr.state.il.us

Pat Quinn, Governor
Marc Miller, Acting Director

April 20, 2009

Janel Veile
Illinois Department of Tranportation-Central Office
2300 South Dirksen Parkway
Room 330
Springfield, IL 62764

Re: CREATE* Union Pacific Railroad
Project Number(s): 0909196 [11755 & 11755 A, 0807300]
County: Cook

Dear Applicant:

This letter is in reference to the project you recently submitted for consultation. The natural resource review provided by EcoCAT identified protected resources that may be in the vicinity of the proposed action. The Department has evaluated this information and concluded that adverse effects are unlikely. Therefore, consultation under 17 Ill. Adm. Code Part 1075 is terminated.

This consultation is valid for two years unless new information becomes available that was not previously considered; the proposed action is modified; or additional species, essential habitat, or Natural Areas are identified in the vicinity. If the project has not been implemented within two years of the date of this letter, or any of the above listed conditions develop, a new consultation is necessary.

The natural resource review reflects the information existing in the Illinois Natural Heritage Database at the time of the project submittal, and should not be regarded as a final statement on the site being considered, nor should it be a substitute for detailed site surveys or field surveys required for environmental assessments. If additional protected resources are encountered during the project's implementation, you must comply with the applicable statutes and regulations. Also, note that termination does not imply IDNR's authorization or endorsement of the proposed action.

Please contact me if you have questions regarding this review.

Steve Hamer
Division of Ecosystems and Environment
217-785-5500

Illinois Department of Transportation

Memorandum

To:	George E. Weber		
From:	Eric E. Harm	By:	Thomas C. Brooks Thomas C. Brooks
Subject:	Biological Resources Review		
Date:	December 27, 2007		

*CREATE
WA-1 (UPRR)
UPRR-Geneva Subdivision: from just west of Kedzie Ave,. then heading east toward Western Ave., then south along the Western Ave. railroad corridor, from Fulton St. to the BNSF-Chicago Subdivision, near 18th St.
Job No.: P-30-016-07 (BDE Seq. No.: 11755)
City of Chicago
Cook County

The BDE Natural Resources Unit and the Illinois Department of Natural Resources have reviewed this project. The project, as described on the Environmental Survey Request Form, does not require biological or wetland surveys.

The IDNR Natural Heritage Database has no records of any state or federally listed species, natural areas or nature preserves within the project corridor (IDNR EcoCAT Response letter dated December 24, 2007).

By agreement, no coordination with the Illinois Department of Natural Resources and the U.S. Fish and Wildlife Service is necessary.

Attachment: IDNR EcoCAT Response letter

JMV

Illinois Department of
Natural Resources
One Natural Resources Way • Springfield, Illinois 62702-1271
http://dnr.state.il.us

Rod R. Blagojevich, Governor
Sam Flood, Acting Director

December 24, 2007

Janel Veile
Illinois Department of Transportation-Central Office
2300 South Dirksen Parkway
Springfield, IL 62764

Re: CREATE* Union Pacific Railroad
Project Number(s): 0807300
County: Cook

Dear Applicant:

This letter is in reference to the project you recently submitted for consultation. The natural resource review provided by EcoCAT identified protected resources that may be in the vicinity of the proposed action. The Department has evaluated this information and concluded that adverse effects are unlikely. Therefore, consultation under 17 Ill. Adm. Code Part 1075 is terminated.

This consultation is valid for two years unless new information becomes available that was not previously considered; the proposed action is modified; or additional species, essential habitat, or Natural Areas are identified in the vicinity. If the project has not been implemented within two years of the date of this letter, or any of the above listed conditions develop, a new consultation is necessary.

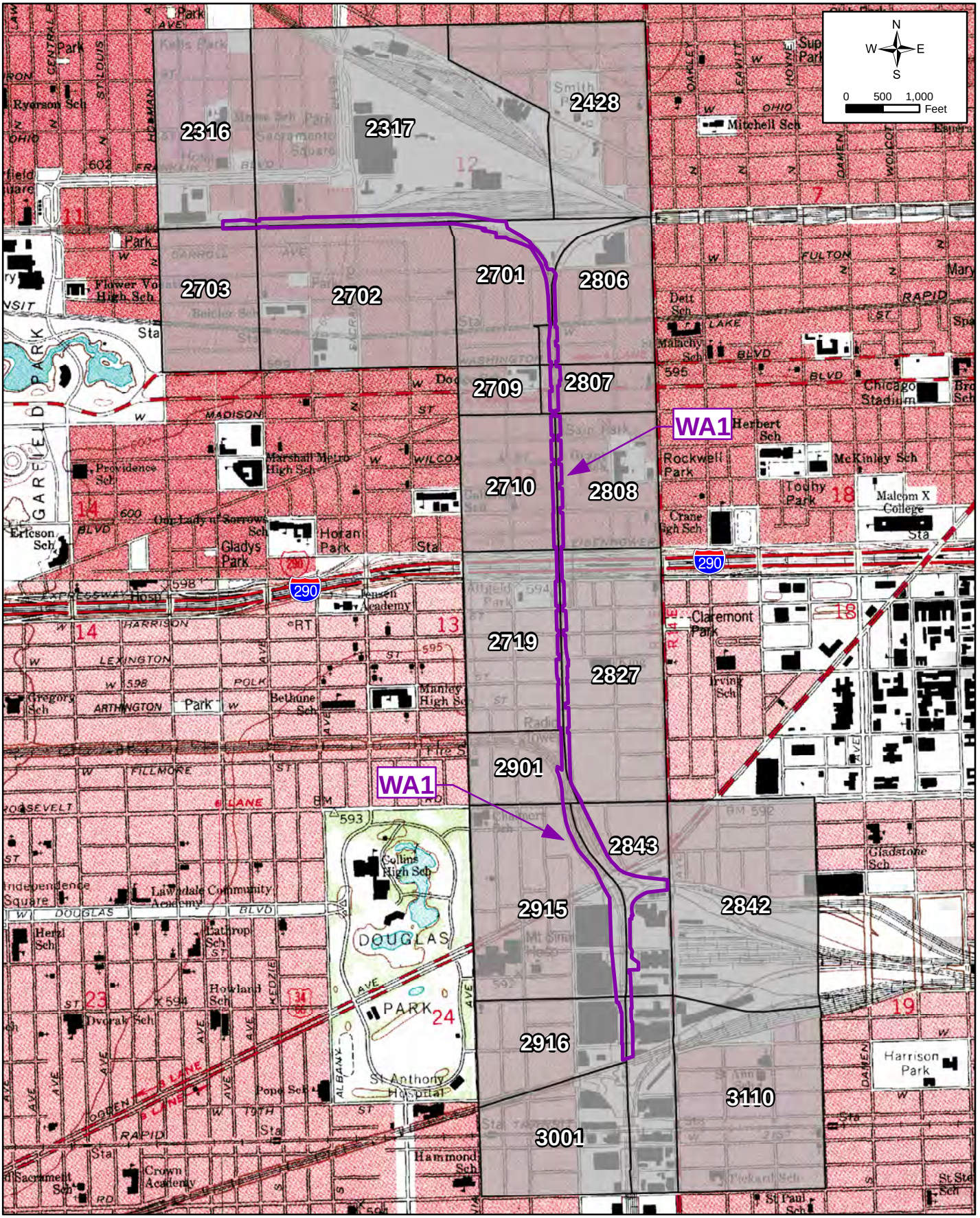
The natural resource review reflects the information existing in the Illinois Natural Heritage Database at the time of the project submittal, and should not be regarded as a final statement on the site being considered, nor should it be a substitute for detailed site surveys or field surveys required for environmental assessments. If additional protected resources are encountered during the project's implementation, you must comply with the applicable statutes and regulations. Also, note that termination does not imply IDNR's authorization or endorsement of the proposed action.

Please contact me if you have questions regarding this review.

Steve Hamer
Division of Ecosystems and Environment
217-785-5500

Appendix A

Income and Racial Characteristics



THIS MAP IS NOT TO BE USED FOR NAVIGATION.

Chicago, IL

CREATE	Source: U.S. Census TIGER Data USGS Base Map Englewood Quadrangle, USGS Base Map Chicago Loop Quadrangle	CENSUS TRACT MAP	WA1

2000 Income and Racial Characteristics - CREATE Project WA1

Census Tract #	Population	Median Household Income	% Families Below Census Poverty Level**	Minority*					
				Black or African American	Total Non-White Population	Hispanic or Latino	% Black or African American	% Non-White	% Hispanic or Latino
2316	1795	$24,095	29.1%	1774	1784	11	98.8%	99.4%	0.6%
2317	824	$23,194	22.6%	769	788	20	93.3%	95.6%	2.4%
2428	1522	$41,719	6.3%	43	334	354	2.8%	21.9%	23.3%
2701	454	$35,096	14.5%	440	442	3	96.9%	97.4%	0.7%
2702	1557	$28,233	17.8%	1529	1547	29	98.2%	99.4%	1.9%
2703	1773	$12,192	48.2%	1749	1762	11	98.6%	99.4%	0.6%
2709	247	$20,313	47.3%	240	240	0	97.2%	97.2%	0.0%
2710	1054	$28,750	15.4%	1044	1048	12	99.1%	99.4%	1.1%
2719	725	$24,286	20.2%	634	654	33	87.4%	90.2%	4.6%
2806	407	$34,844	28.6%	352	358	25	86.5%	88.0%	6.1%
2807	143	$26,667	23.5%	129	139	3	90.2%	97.2%	2.1%
2808	2376	$6,267	76.7%	2361	2367	28	99.4%	99.6%	1.2%
2827	1753	$26,250	25.9%	613	1356	908	35.0%	77.4%	51.8%
2842	428	$15,179	39.3%	414	419	8	96.7%	97.9%	1.9%
2843	45	$73,750	0.0%	40	42	4	88.9%	93.3%	8.9%
2901	8	$0	0.0%	8	8	0	100.0%	100.0%	0.0%
2915	1943	$23,125	39.0%	1431	1778	467	73.6%	91.5%	24.0%
2916	1226	$36,513	23.6%	195	706	996	15.9%	57.6%	81.2%
3001	2446	$26,645	38.0%	79	1369	2298	3.2%	56.0%	93.9%
3110	6436	$26,420	27.6%	151	3186	5890	2.3%	49.5%	91.5%
3111	19	$8,750	0.0%	9	16	8	47.4%	84.2%	42.1%

Source: US Census 2000.

* The percentages may exceed 100% as the Census allowed the reporting of more than one race per person. Non-White was defined as those not reporting as exclusively white.

** The 2000 Census Poverty Level for a family of four is $17,029. The Health and Human Services 2009 Poverty Guideline for a family of four is $22,050.

Appendix B

Air Quality Technical Documentation

CREATE Project WA1
Air Quality Technical Documentation

Prepared by HDR Engineering, Inc.

April 3, 2008

WA1 ECAD Air Quality

Changes in air quality due to the CREATE program were evaluated for carbon monoxide (CO), particulate matter (PM), and nitrogen oxides (No_x). The overall CREATE project will result in the maintenance of Ambient Air Quality Standards (NAAQS) in the Chicago region.

Air emissions were estimated using locomotive emission factors developed by the U.S. Environmental Protection Agency for hydrocarbons (HC), carbon monoxide (CO), nitrogen oxide (NO_x), particulate matter (PM), particulate matter with a diameter less than 2.5 microns ($PM_{2.5}$), and sulfur dioxide (SO_2). The 2015 USEPA emission factors account for improved locomotive emission standards for newly manufactured and remanufactured locomotives and the reformulation of fuel. Annual air emissions were compared for Existing conditions (2004), 2015 Build Alternative and 2015 No-Build Alternative. The results of the analysis are:

Year	HC (tons per year)	CO (tons per year)	PM (tons per year)	PM2.5 (tons per year)	NOx (tons per year)	SO2 (tons per year)
2004 Existing	0.058	0.15	0.037	0.034	1.2	0.017
2015 Build	0.036	0.12	0.023	0.021	0.64	0.00041
2015 No-Build	0.077	0.25	0.048	0.044	1.4	0.00087

Based on these estimates, the annual emissions of the 2015 Build Alternative are 53% lower than the 2015 No-Build condition due to the decrease in fuel usage. The differences between the Existing Condition and the 2015 Build Alternative are also attributed to lower fuel usage. The SO_2 reduction between the Existing Condition and the 2015 conditions is attributed to the reformulation of fuel.

CREATE Project WA1
12/27/07
Air Quality Results
96 Hours

Options	**Fuel (Gallons)**
Current Operation	4,895
CREATE Build Option - Year 2015	3,875
No Build Option – Year 2015	8,197

CREATE COMPONENT PROJECT EQUIPMENT REQUIREMENTS FOR EMISSIONS CALCULATIONS
PROJECT: WA1
YEAR OF GREATEST CONSTRUCTION ACTIVITY 2010
PROVIDED BY: UPRR / Freimuth
DATE: 1/3/2008

Please identify on this sheet each piece of railroad or construction equipment to be used and the total hours that this type of equipment will be operated during the year of greatest construction activity. If exact piece is not shown, pick one with an equal or nearly equal horsepower. Note: all equipment is Diesel powered unless otherwise shown.

EQUIPMENT	HORSEPOWER	HOURS/YEAR ALL PIECES
Specialized Railroad Equipment		
Ballast Compactors	94	
Ballast Regulators	83	
	92	
	104	
	117	
	185	160
	200	
	232	
	275	
	300	
Ballast Tampers (all types)	28	
	76	
	83	
	105	
	118	
	125	
	140	
	155	160
	158	
	174	
	232	
	240	
	250	
	260	
	350	
	385	
	425	
	466	
On Track Tie Handlers	47	
	64	
	80	
	100	
	125	
Portable Rail Drills	3	80
Portable Rail Grinders (gas)	1	80
Portable Rail Grinders (gas)	7	
Portable Rail Saws (gas)	1	60

EQUIPMENT	HORSEPOWER	HOURS/YEAR ALL PIECES
Rail Lifters (gas)	8	
	23	
Self-Propelled Adzers	42	
Self-Propelled Anchor Applicators	23	
	38	
	47	
	70	
Self-Propelled Applicators	38	
	100	
Self-propelled Driver/Setters	36	
	42	
	100	
Self-Propelled Pullers	17	
	27	
	30	
	42	
	70	
	80	
Self-Propelled Rail Saws	30	
	88	
Self-Propelled Track Brooms	48	
	100	
	117	
	185	
Tie Remover/Inserters	74	
	76	
	85	
	125	
	170	
	175	
	185	
Work trains	1500	24
Brandt Power Units	200	
	250	
	300	
Car Movers	150	
Electric Welders	40	200
Other - not listed (enter below)		
General Construction Eqpt		
Augurs - Truck Mounted	50	
Backhoes	100	150
	400	
Backhoes/Loaders	250	300
Bulldozers	300	50
Drilling Equipment	500	
Compactors	8	

EQUIPMENT	HORSEPOWER	HOURS/YEAR ALL PIECES
	15	
	25	
Compressors - Air	100	200
Compressors - Hydraulic	150	
Cranes	100	
	130	
	150	
	155	
	200	
	210	
	250	
	270	
	275	
	300	
	400	
	600	
	750	
Excavators	250	200
	300	
	500	
	100	
Generators	100	100
	200	
Graders	200	100
	500	
Loaders	150	100
	250	
Lowboys	500	80
Miscellaneous Equipment	150	75
Mixers	20	
	50	
Pumps	25	
	120	
	500	
Rollers/Compactors	110	
	350	
Saws - Concrete/Pavement	50	
Scrapers	300	
	500	
Sheet Pile Driving Equipment	250	
Speed Swings (specify HP)		
Trucks - Construction	300	400
	400	
	500	
Haul Trucks	Off-Site	400
Light Duty Vehciles	Off-Site	
	On-Site	
Buses	On-Site	
Non-road vehicles	On-Site	

Project WA1
Construction Year 2010

Emission Calculations for Hydrocarbons

Equipment	HP	HR/YR	EF g/hp-hr[a]	Grams/YR	Tons/YR
Specialized Railroad Equipment					
Ballast Regulators	185	160	1.006	29776	0.033
Ballast Tampers	155	160	1.083	26865	0.030
Portable Rail Drills	3	80	1.818	436	0.000
Portable Rail Grinders	1	80	22.458	1797	0.002
Portable Rail Saws	1	60	22.458	1347	0.001
Work Trains	1500	24	1.152	41468	0.046
Electric Welders	40	200	1.937	15492	0.017
General Construction Equipment					
Backhoes	100	150	1.417	21252	0.023
Backhoes/Loaders	250	300	0.919	68947	0.076
Bulldozers	300	50	0.264	3962	0.004
Air Compressors	100	200	0.484	9673	0.011
Excavators	250	200	0.253	12650	0.014
Generators	100	100	0.686	6863	0.008
Graders	200	100	0.262	5245	0.006
Loaders	150	100	1.004	15065	0.017
Lowboys	500	80	0.347	13884	0.015
Miscellaneous Equipment	150	75	0.348	3912	0.004
Construction Trucks	300	400	0.222	26594	0.029

	mph[b]	HR/YR	EF g/mi[c]	Grams/YR	Tons/YR
Haul Trucks (Off-site)	55	400	0.406	8932	0.010

Total Tons/Yr Construction Emissions **0.346**

[a] Emission factor taken from EPA's NONROAD model.
[b] Traveling speed assumed to be 55 miles per hour for off-site haul trucks.
[c] Emission factor taken from EPA's MOBILE62 model.

Project WA1
Construction Year 2010

Emission Calculations for Nitrogen Oxides

Equipment	HP	HR/YR	EF g/hp-hr[a]	Grams/YR	Tons/YR
Specialized Railroad Equipment					
Ballast Regulators	185	160	6.409	189701	0.209
Ballast Tampers	155	160	6.626	164319	0.181
Portable Rail Drills	3	80	6.510	1562	0.002
Portable Rail Grinders	1	80	2.286	183	0.000
Portable Rail Saws	1	60	2.286	137	0.000
Work Trains	1500	24	7.805	280963	0.310
Electric Welders	40	200	6.065	48521	0.053
General Construction Equipment					
Backhoes	100	150	6.293	94399	0.104
Backhoes/Loaders	250	300	6.006	450461	0.497
Bulldozers	300	50	3.586	53790	0.059
Air Compressors	100	200	4.995	99901	0.110
Excavators	250	200	3.377	168869	0.186
Generators	100	100	5.771	57707	0.064
Graders	200	100	3.555	71095	0.078
Loaders	150	100	6.244	93659	0.103
Lowboys	500	80	5.215	208607	0.230
Miscellaneous Equipment	150	75	4.449	50049	0.055
Construction Trucks	300	400	2.960	355165	0.391

	mph[b]	HR/YR	EF g/mi[c]	Grams/YR	Tons/YR
Haul Trucks (Off-site)	55	400	7.278	160116	0.176

Total Tons/Yr Construction Emissions **2.810**

[a] Emission factor taken from EPA's NONROAD model.
[b] Traveling speed assumed to be 55 miles per hour for off-site haul trucks.
[c] Emission factor taken from EPA's MOBILE62 model.

Project WA1
Construction Year 2010

Emission Calculations for Particulate Matter

Equipment	HP	HR/YR	EF g/hp-hr[a]	Grams/YR	Tons/YR
Specialized Railroad Equipment					
Ballast Regulators	185	160	0.716	21193	0.023
Ballast Tampers	155	160	0.794	19700	0.022
Portable Rail Drills	3	80	1.265	304	0.000
Portable Rail Grinders	1	80	0.156	12	0.000
Portable Rail Saws	1	60	0.156	9	0.000
Work Trains	1500	24	0.727	26178	0.029
Electric Welders	40	200	1.113	8902	0.010
General Construction Equipment					
Backhoes	100	150	1.151	17262	0.019
Backhoes/Loaders	250	300	0.601	45038	0.050
Bulldozers	300	50	0.234	3513	0.004
Air Compressors	100	200	0.459	9183	0.010
Excavators	250	200	0.226	11300	0.012
Generators	100	100	0.586	5856	0.006
Graders	200	100	0.233	4662	0.005
Loaders	150	100	0.689	10328	0.011
Lowboys	500	80	0.339	13577	0.015
Miscellaneous Equipment	150	75	0.341	3836	0.004
Construction Trucks	300	400	0.233	27904	0.031

	mph[b]	HR/YR	EF g/mi[c]	Grams/YR	Tons/YR
Haul Trucks (Off-site)	55	400	0.208	4576	0.005

Total Tons/Yr Construction Emissions **0.257**

[a] Emission factor taken from EPA's NONROAD model.
[b] Traveling speed assumed to be 55 miles per hour for off-site haul trucks.
[c] Emission factor taken from EPA's MOBILE62 model.

Project WA1
Construction Year 2010

Emission Calculations for Particulate Matter 2.5

Equipment	HP	HR/YR	EF g/hp-hr[a]	Grams/YR	Tons/YR
Specialized Railroad Equipment					
Ballast Regulators	185	160	0.695	20558	0.023
Ballast Tampers	155	160	0.771	19109	0.021
Portable Rail Drills	3	80	1.227	294	0.000
Portable Rail Grinders	1	80	0.143	11	0.000
Portable Rail Saws	1	60	0.143	9	0.000
Work Trains	1500	24	0.705	25393	0.028
Electric Welders	40	200	1.079	8635	0.010
General Construction Equipment					
Backhoes	100	150	1.116	16744	0.018
Backhoes/Loaders	250	300	0.582	43687	0.048
Bulldozers	300	50	0.227	3408	0.004
Air Compressors	100	200	0.445	8908	0.010
Excavators	250	200	0.219	10961	0.012
Generators	100	100	0.568	5680	0.006
Graders	200	100	0.226	4522	0.005
Loaders	150	100	0.668	10019	0.011
Lowboys	500	80	0.329	13170	0.015
Miscellaneous Equipment	150	75	0.331	3721	0.004
Construction Trucks	300	400	0.226	27067	0.030

	mph[b]	HR/YR	EF g/mi[c]	Grams/YR	Tons/YR
Haul Trucks (Off-site)	55	400	0.208	4576	0.005

Total Tons/Yr Construction Emissions **0.250**

[a] Emission factor taken from EPA's NONROAD model.
[b] Traveling speed assumed to be 55 miles per hour for off-site haul trucks.
[c] Emission factor taken from EPA's MOBILE62 model.

Project WA1
Construction Year 2010

Emission Calculations for Carbon Monoxide

Equipment	HP	HR/YR	EF g/hp-hr[a]	Grams/YR	Tons/YR
Specialized Railroad Equipment					
Ballast Regulators	185	160	4.207	124538	0.137
Ballast Tampers	155	160	4.616	114465	0.126
Portable Rail Drills	3	80	10.284	2468	0.003
Portable Rail Grinders	1	80	654.374	52350	0.058
Portable Rail Saws	1	60	654.374	39262	0.043
Work Trains	1500	24	5.125	184495	0.203
Electric Welders	40	200	7.505	60042	0.066
General Construction Equipment					
Backhoes	100	150	7.627	114409	0.126
Backhoes/Loaders	250	300	3.618	271346	0.299
Bulldozers	300	50	1.237	18561	0.020
Air Compressors	100	200	2.699	53983	0.060
Excavators	250	200	1.222	61120	0.067
Generators	100	100	3.211	32113	0.035
Graders	200	100	1.233	24651	0.027
Loaders	150	100	4.071	61066	0.067
Lowboys	500	80	2.567	102670	0.113
Miscellaneous Equipment	150	75	1.712	19266	0.021
Construction Trucks	300	400	1.240	148799	0.164

	mph[b]	HR/YR	EF g/mi[c]	Grams/YR	Tons/YR
Haul Trucks (Off-site)	55	400	1.854	40788	0.045

Total Tons/Yr Construction Emissions **1.683**

[a] Emission factor taken from EPA's NONROAD model.
[b] Traveling speed assumed to be 55 miles per hour for off-site haul trucks.
[c] Emission factor taken from EPA's MOBILE62 model.

Project WA1
Construction Year 2010

Emission Calculations for Sulfur Dioxide

Equipment	HP	HR/YR	EF g/hp-hr[a]	Grams/YR	Tons/YR
Specialized Railroad Equipment					
Ballast Regulators	185	160	4.207	124538	0.137
Ballast Tampers	155	160	4.616	114465	0.126
Portable Rail Drills	3	80	10.284	2468	0.003
Portable Rail Grinders	1	80	654.374	52350	0.058
Portable Rail Saws	1	60	654.374	39262	0.043
Work Trains	1500	24	5.125	184495	0.203
Electric Welders	40	200	7.505	60042	0.066
General Construction Equipment					
Backhoes	100	150	7.627	114409	0.126
Backhoes/Loaders	250	300	3.618	271346	0.299
Bulldozers	300	50	1.237	18561	0.020
Air Compressors	100	200	2.699	53983	0.060
Excavators	250	200	1.222	61120	0.067
Generators	100	100	3.211	32113	0.035
Graders	200	100	1.233	24651	0.027
Loaders	150	100	4.071	61066	0.067
Lowboys	500	80	2.567	102670	0.113
Miscellaneous Equipment	150	75	1.712	19266	0.021
Construction Trucks	300	400	1.240	148799	0.164
	mph[b]	**HR/YR**	**EF g/mi[c]**	**Grams/YR**	**Tons/YR**
Haul Trucks (Off-site)	55	400	1.854	40788	0.045
Total Tons/Yr Construction Emissions					**1.683**

[a] Emission factor taken from EPA's NONROAD model.
[b] Traveling speed assumed to be 55 miles per hour for off-site haul trucks.
[c] Emission factor taken from EPA's MOBILE62 model.

Project: **WA1**
Construction Year: **2010**

Construction Year Analysis				
	Tons/YR			
	HC	PM	PM2.5	NOx
Construction Emissions 2010	0.35	0.26	0.25	2.8
Threshold	100	100	100	100
Does Construction YR Total Emissions Exceed Threshold?	N	N	N	N

Design Year Analysis				
	Tons/YR			
	HC	PM	PM2.5	NOx
Operation Emissions 2015				
No-Build	0.077	0.048	0.044	1.4
Build	0.036	0.023	0.021	0.64
Delta due to build	-0.040	-0.025	-0.023	-0.72
Threshold	100	100	100	100
Does Design YR Delta Exceed Threshold?	N	N	N	N

Appendix C

Noise and Vibration Technical Documentation

CREATE PROJECT – WA1

IDOT Job No. P-30-005-09

NOISE AND VIBRATION ASSESSMENT

Cook County, Illinois

Prepared by:

HDR

July 2009

CREATE Project WA1 Noise and Vibration Assessment

A noise and vibration screening assessment was performed according to the CREATE Noise and Vibration Assessment Methodology, December 2007 (CREATE N&V Methodology). From this screening assessment, noise and vibration-sensitive land uses and representative receptors were identified. See the Noise & Vibration Exhibits for screening limits and receptor cluster locations.

Train traffic data were provided by CTCO for each of the representative receptors. Traffic data were counted and averaged for the existing-, build- and no-build-scenario.

Noise Assessment

HDR performed a general noise assessment following the guidance in the CREATE N&V Methodology. General assessment results indicate there is a moderate impact at one receptor as a result of the CREATE project WA1. Table 1 shows the assessment results.

Table 1 – General Noise Assessment Results

Receptor	Land Use Type (descriptor)	Overall Noise Levels (dBA)			Impact Indicated
		Existing	No-build	Build	
WA1-R2	SFR (L_{dn})	60	61	61	No
WA1-R3	MFR/SFR (L_{dn})	65	68	68	Moderate
WA1-R3a	SFR (L_{dn})	57	58	58	No
WA1-R3b	SFR (L_{dn})	67	67	67	No
WA1-R4	SFR (L_{dn})	71	73	70	No
WA1-R4a	School (L_{eq})	64	64	63	No
WA1-R4b	SFR (L_{dn})	67	68	66	No
WA1-R5	SFR (L_{dn})	73	74	72	No
WA1-R5a	School (L_{eq})	65	66	65	No
WA1-R5b	Park (L_{eq})	69	70	69	No
WA1-R5c	SFR (L_{dn})	65	66	65	No
WA1-R6	SFR (L_{dn})	77	78	76	No
WA1-R7	SFR (L_{dn})	72	72	71	No
WA1-R7a	School (L_{eq})	69	70	69	No
WA1-R7b	School (L_{eq})	68	69	68	No

Note: Land use type is schools, parks, single-family residential (SFR) or multi-family residential (MFR).

HDR performed a detailed noise assessment for receptor WA1-R3 following the guidance in the FTA Transit Noise and Vibration Impact Assessment manual, as directed by the CREATE N&V Methodology. The detailed assessment indicates there are no noise impacts as a result of the CREATE project WA1. Table 2 shows the assessment results.

Table 2 – Detailed Noise Assessment Results

Receptor	Land Use Type (descriptor)	Overall Noise Levels (dBA)			Impact Indicated
		Existing	No-build	Build	
WA1-R3	MFR/SFR (L_{dn})	71	74	72	No

Note: Land use type is single-family residential (SFR) or multi-family residential (MFR).

L_{max} is a measure of the maximum sound level for a single passby event. It is not used as a basis for assessing noise impact, but the L_{max} metric can provide additional description of the noise effects. The existing L_{max} is 76 dBA (source is locomotives). The no-Build L_{max} is also 76 dBA (source is locomotives) and the Build L_{max} is 80 (source is locomotives).

Vibration Assessment

HDR performed a general vibration assessment for ground-borne vibration (GBV) and ground-borne noise (GBN) following the guidance in the CREATE N&V Methodology. Analysis results indicate a potential GBV impact at one receptor, due to rail cars, but no GBN impacts as a result of the CREATE project WA1. Table 3 presents GBV Assessment results.

Table 3 – GBV Assessment Results

Receptor	Source	GBV Levels (VdB)			Impact Indicated
		Existing	No-build	Build	
WA1-R3 (MFR)	Locomotive	65	65	69	No
	Rail Car	65	65	69	No
WA1-R4 (SFR)	Locomotive	70	70	72	No
	Rail Car	70	70	72	Yes
WA1-R5 (SFR)	Locomotive	72	72	74	No
	Rail Car	72	72	74	No
WA1-R5b (Park)	Locomotive	69	69	71	No
	Rail Car	69	69	71	No
WA1-R6 (SFR)	Locomotive	85	84	86	No
	Rail Car	85	84	86	No

Note: Single-family residential (SFR) multi-family residential (MFR), or parks. Receptors WA1-R2, WA1-R3a, WA1-R3b, WA1-R4a, WA1-R4b, WA1-R5a, WA1-R5c, WA1-R7, WA1-R7a and WA1-R7b are outside the vibration screening limit.

Table 4 presents GBN Assessment results.

Table 4 – GBN Assessment Results

Receptor	Source	GBN Levels (dBA)			Impact Indicated
		Existing	No-build	Build	
WA1-R3 (MFR)	Locomotive	15	15	19	No
	Rail Car	15	15	19	No
WA1-R4 (SFR)	Locomotive	20	20	22	No
	Rail Car	20	20	22	No
WA1-R5 (SFR)	Locomotive	22	22	24	No

Receptor	Source	GBN Levels (dBA)			Impact Indicated
		Existing	No-build	Build	
	Rail Car	22	22	24	No
WA1-R5b (Park)	Locomotive	19	19	21	No
	Rail Car	19	19	21	No
WA1-R6 (SFR)	Locomotive	35	34	36	No
	Rail Car	35	34	36	No

Note: Single-family residential (SFR) multi-family residential (MFR), or parks. Receptors WA1-R2, WA1-R3a, WA1-R3b, WA1-R4a, WA1-R4b, WA1-R5a, WA1-R5c, WA1-R7, WA1-R7a and WA1-R7b are outside the vibration screening limit.

Where GBV or GBN impacts are indicated in the Methodology, a *Detailed Vibration Assessment* is required only when planning and design of special trackwork or buffer zones are viable mitigation measures. Planning and design of special trackwork is not a viable mitigation option, since most tracks in the CREATE project WA1 are existing tracks. Similarly, additional buffer zones are not viable mitigation options in the existing CREATE project WA1 corridor. Maintenance is considered a viable mitigation option where GBV or GBN impacts are indicated.

The following maintenance procedures will be accomplished by the rail industry to mitigate vibration impacts through minimizing vibration sources:

- Regularly scheduled rail grinding
- Wheel truing programs
- Vehicle reconditioning programs
- Use of wheel-flat detectors.

Construction Noise and Vibration

The construction of the proposed project could result in temporary noise and vibration increases within and adjacent to the project area. The noise and vibration will be generated primarily from trucks and heavy machinery used during construction. Any anticipated noise and vibration impacts will likely be confined to normal working hours, which are generally considered to be “noise and vibration tolerant” periods. Construction contractors need to be aware of the City of Chicago’s noise ordinances to assure compliance. No adverse noise and vibration impacts are anticipated during the construction phase of the project.

Exhibits

- L_{max} Calculations for WA1-R3
- General Noise Assessment Summary
- Detailed Noise Assessment Summary
- General Vibration Assessment Calculations
- Screening Distance and Receptor Clusters

Summary of L_{max} Evaluation

CREATE Project WA1

		Existing		No-build		Build	
Receptor	Track	L_{max} Loco's	L_{max} Cars	L_{max} Loco's	L_{max} Cars	L_{max} Loco's	L_{max} Cars
WA1-R3	1	76	60	76	60	77	60
	2	76	64	76	66	78	63
	3	76	68	76	68	80	72
	4	76	63	76	63	80	67
	5					79	61
	Max	**76**		**76**		**80**	

CREATE NOISE ANALYSIS SUMMARY

Project: WA1

Date: June 30, 2009

Assessment Level: **General Assessment**

Receptor ID	FTA Land Use/Noise Metric[1]	No. of Buildings Within Cluster	Existing Land Use[2]	Background Noise Level, dBA[3]	Predicted Overall Noise Levels, dBA[4]			Build Increase Over Existing, dBA	FTA Allowable Increase, dBA Moderate/Severe	FTA Impact Level
					Existing	No-Build	Build			
WA1-R2	2/L_{dn}	5	SFR	58	60	61	61	1	2/5	No Impact
WA1-R3	2/L_{dn}	71	MFR/SFR	54	65	68	68	3	1/4	**Moderate**
WA1-R3a	2/Ldn	9	SFR cluster	54	57	58	58	1	3/6	No Impact
WA1-R3b	2/Ldn	39	SFR cluster	54	67	67	67	0	1/3	No Impact
WA1-R4	2/Ldn	51	SFR cluster	63	71	73	70	-1	1/3	No Impact
WA1-R4a	3/Leq	8 classrooms	School	63	64	64	63	-1	4/8	No Impact
WA1-R4b	2/Ldn	67	SFR cluster	63	67	68	66	-1	1/3	No Impact
WA1-R5	2/Ldn	149	SFR cluster	65	73	74	72	-1	1/2	No Impact
WA1-R5a	3/Leq	8 classrooms	School	65	65	66	65	0	3/7	No Impact
WA1-R5b	3/Leq	1	Park	65	69	70	69	0	3/6	No Impact
WA1-R5c	2/Ldn	18	SFR cluster	65	65	66	65	0	1/4	No Impact
WA1-R6	2/Ldn	142	SFR cluster	62	77	78	76	-1	0/2	No Impact
WA1-R7	2/Ldn	21	SFR cluster	62	72	72	71	-1	1/3	No Impact
WA1-R7a	3/Leq	24 classrooms	School	62	69	70	69	0	3/6	No Impact
WA1-R7b	3/Leq	5 classrooms	School	62	68	69	68	0	3/6	No Impact

Notes: (1) FTA Noise Impact Criteria apply the 24-hour Ldn for residences and nursing homes (Land Use Category 2) and the hourly Leq for schools, parks and churches (Land Use Category 3).

(2) SFR = single-family residence; MFR = multi-family residence.

(3) Background noise levels determined from one-hour measurement data at a representative location.

(4) Overall noise levels are the logarithmic addition of the background noise level (without trains) and predicted train noise under the existing, no-build and build conditions. Existing, no-build and build train noise levels were predicted using the FTA General Assessment spreadsheet (CREATE Version).

CREATE NOISE ANALYSIS SUMMARY

Project: WA1

Date: March 10, 2009

Assessment Level: **Detailed Assessment**

Receptor ID	FTA Land Use/Noise Metric[1]	No. of Buildings Within Cluster	Existing Land Use[2]	Background Noise Level, dBA[3]	Predicted Overall Noise Levels, dBA[4]			Build Increase Over Existing, dBA	FTA Allowable Increase, dBA Moderate/Severe	FTA Impact Level
					Existing	No-Build	Build			
WA1-R3	2/L_{dn}	71	MFR/SFR	54	71	74	72	1	1/3	No Impact

Notes: (1) FTA Noise Impact Criteria apply the 24-hour Ldn for residences and nursing homes (Land Use Category 2) and the hourly Leq for schools, parks and churches (Land Use Category 3).

(2) SFR = single-family residence; MFR = multi-family residence.

(3) Background noise levels determined from one-hour measurement data at a representative location.

(4) Overall noise levels are the logarithmic addition of the background noise level (without trains) and predicted train noise under the existing, no-build and build conditions. Existing, no-build and build train noise levels were predicted using the FTA General Assessment spreadsheet (CREATE Version).

Vibration General Assessment Report Form For Source Calculations:
CREATE Project WA1

Heavily Used Rail Corridor (existing train volume >12 trains/day)
Freight Rail Car

Receptors	Peak Day Existing Volumes	Peak Day Predicted Build Volumes	Existing Impact Frequency Category [1]	Build Impact Frequency Category [1]	Distance[2] Existing Track 1 (feet)	Distance[2] Existing Track 2 (feet)	Distance[2] Existing Track 3 (feet)	Distance[2] Existing Track 4 (feet)	Distance[2] Existing Track 5 (feet)	Distance[2] Proposed Track 1 (feet)	Generalized Vibration Curve[3] Existing Track 1 (VdB)	Generalized Vibration Curve[3] Existing Track 2 (VdB)	Generalized Vibration Curve[3] Existing Track 3 (VdB)	Generalized Vibration Curve[3] Existing Track 4 (VdB)	Generalized Vibration Curve[3] Existing Track 5 (VdB)	Generalized Vibration Curve[3] Proposed Track 1 (VdB)	Highest[4] Predicted Existing Vibration Level at Each Receptor (VdB)	Highest[4] Predicted Build Vibration Level at Each Receptor (VdB)
WA1-R3	44	46	frequent	frequent	135	150	165	180		190	75	74	73	72		72	75	75
WA1-R4	40	31	frequent	frequent	80	95					80	79					80	80
WA1-R5	40	31	frequent	frequent	64	79					82	81					82	82
WA1-R5b	40	31	frequent	frequent	101	116					78	77					78	78
WA1-R6	106	97	frequent	frequent	35	50	65	80	95		87	85	82	80	79		87	87

Notes:

[1] Determine if event is frequent; occasional or infrequent event. Refer to Table 7-1 for definition.

[2] Distances measured from centerlines of existing and proposed tracks to faces of buildings.

[3] Generalized Ground Surface Vibration Curve (Figure 10-1) for rapid transit or light rail vehicles at 50 mph.

[4] Highest vibration level, from the Generalized Vibration Curve (Figure 10-1), of either Track 1 or Track 2 at each receptor. The example project assumes the same adjustments are applied to both tracks. If the same adjustments cannot be applied to all tracks, the analyst may have to apply adjustments to the tracks individually to determine the highest predicted vibration at each receptor.

The "Predicted Build" is the same as the "Build Scenario CREATE Program Train Vibration Level (Design Year)" as referenced in the Noise and Vibration Methodology Section 7.2.2 except when analyzing moved existing tracks. When analyzing moved existing tracks, the "Predicted Build" considers the total number of trains using those tracks in the design year to determine the frequency category (frequent, occasional or infrequent) and impact level in Table 7-1, as well as the vibration level.

Vibration General Assessment Report Form For
Vibration Adjustment Factors
CREATE Project WA1

Heavily Used Rail Corridor (existing train volume >12 trains/day)
Freight Rail Car

	Unadjusted		Existing Adjustments									Predicted Build Adjustments									Adjusted	
			Speed Adjustments		Source Adjustments		Path Adjustments			Receiver Adjustments		Speed Adjustments		Source Adjustments		Path Adjustments			Receiver Adjustments			
Receptors	Highest[1] Vibration Level @ 50 mph at Each Receptor Existing (VdB)	Highest[1] Vibration Level @ 50 mph at Each Receptor Predicted Build (VdB)	Average Track Speed - Existing (mph)	Speed Adjustment - Existing (VdB)	Vehicle[2] Condition Existing (VdB)	Elevated Structure[3] Adjustment Existing (VdB)	Propagation Geology[4] Adjustment Existing (VdB)	1-2 Story Masonry Structure (VdB)	Wood Frame Structure (VdB)	1-5 Floors Above Grade (VdB)	Floor Amplifi-cation (VdB)	Average Track Speed - Predicted Build (mph)	Speed Adjustment - Predicted Build (VdB)	Vehicle[2] Condition Existing (VdB)	Elevated Structure[3] Adjustment - Predicted Build (VdB)	Propagation Geology[4] Adjustment Existing (VdB)	1-2 Story Masonry Structure (VdB)	Wood Frame Structure (VdB)	1-5 Floors Above Grade (VdB)	Floor Amplifi-cation (VdB)	Predicted Existing Vibration (VdB)	Predicted Build Vibration (VdB)
WA1-R3	75	75	9.8	-14.2		-5	10		-5	-2	6	16.1	-9.9		-5	10		-5	-2	6	65	69
WA1-R4	80	80	9.9	-14.0		-5	10		-5	-2	6	12.8	-11.8		-5	10		-5	-2	6	70	72
WA1-R5	82	82	10.0	-14.0		-5	10		-5	-2	6	12.5	-12.0		-5	10		-5	-2	6	72	74
WA1-R5b	78	78	10.0	-14.0		-5	10					12.5	-12.0		-5	10					69	71
WA1-R6	87	87	24.9	-6.0		-5	10		-5	-2	6	27.3	-5.3		-5	10		-5	-2	6	85	86

Notes:

[1] Highest Vibration Level, from the Generalized Vibration Curve (Figure 10-1), of either the Southbound (Track 1) or Northbound (Track 2) at each receptor.

[2] Worn wheel adjustment made for Freight Rail Car. For locomotives assume no worn wheel adjustment

[3] Existing and proposed tracks are elevated structure/embankment, because both the existing and proposed tracks would be at least 1 feet higher than the base elevation at all receptors

[4] Existing and proposed geological conditions assumed to have "efficient" vibration propagation.

The "Predicted Build" is the same as the "Build Scenario CREATE Program Train Vibration Level (Design Year)" as referenced in the Noise and Vibration Methodology Section 7.2.2 except when analyzing moved existing tracks. When analyzing moved existing tracks, the "Predicted Build" considers the total number of trains using those tracks in the design year to determine the frequency category (frequent, occasional or infrequent) and impact level in Table 7-1, as well as the vibration level.

Vibration General Assessment Report Form For
Vibration Impact Summary
CREATE Project WA1

Heavily Used Rail Corridor (existing train volume >12 trains/day)
Freight Rail Car

Ground-borne Vibration (GBV) Impacts													
1	2	3	4	5	6	7	8	9	10	11	12	13	14
Receptors	FTA [2] Vibration Land Use Category	Existing Vibration Frequency event [1]	Existing-FTA Vibration Impact Criteria [3] (VdB)	Predicted Build Vibration Frequency event [1]	Proposed FTA Vibration Impact Criteria [3] (VdB)	Predicted Existing Vibration (VdB)	Predicted Build Vibration (VdB)	Difference between Predicted Existing vibration and Predicted Build vibration (VdB)	Does the Predicted Existing vibration equal or exceed the FTA impact criteria in Column 4? If Yes, go to Column 11. If No, go to Column 13.	Does the ratio of Predicted Build train impact events to Existing equal or exceed 2? If Yes, go to Column 14 and indicate "Yes". If No, go to column 12 [4]	Does the Predicted Build vibration exceed the Predicted Existing vibration by 3 VdB or greater? If Yes, go to Column 14 and indicate "Yes" - there is a Potential Impact. If No, go to Column 14 and indicate "No" - there is No Potential Impact. [4]	Does the Predicted Build vibration equal or exceed the FTA impact criteria in Column 6? If Yes, go to Column 14 and indicate "Yes" - there is a Potential Impact. If No, go to Column 14 and indicate "No" - there is No Potential Impact. [4]	Potential Impact? If Yes, proceed to Detailed Analysis if mitigation measures are viable.
WA1-R3	2	frequent	72	frequent	72	65	69	4	No	NA	NA	No	No
WA1-R4	2	frequent	72	frequent	72	70	72	2	No	NA	NA	Yes	Yes
WA1-R5	2	frequent	72	frequent	72	72	74	2	Yes	No	No	NA	No
WA1-R5b	3	frequent	75	frequent	75	69	71	2	No	NA	NA	No	No
WA1-R6	2	frequent	72	frequent	72	85	86	1	Yes	No	No	NA	No

Notes:

[1] Determine if event is frequent; occasional or infrequent event. Refer to Table Table 7-1 for definition.

[2] FTA Vibration Land Use Category #2 includes residences and other buildings where people normally sleep, and Category Land Use #3 includes institutional land uses with primarily daytime uses, such as schools and churches.

[3] Source Table 7-1

[4] See Source Calculations for existing and build volumes and refer to Section 7.2.2 item #3

NA = Not applicable

The "Predicted Build" is the same as the "Build Scenario CREATE Program Train Vibration Level (Design Year)" as referenced in the Noise and Vibration Methodology Section 7.2.2 except when analyzing moved existing tracks. When analyzing moved existing tracks, the "Predicted Build" considers the total number of trains using those tracks in the design year to determine the frequency category (frequent, occasional or infrequent) and impact level in Table 7-1, as well as the vibration level.

Vibration General Assessment Report Form For GBN Impact Summary
CREATE Project WA1

Heavily Used Rail Corridor (existing train volume >12 trains/day)
Freight Rail Car

Ground-borne Noise (GBN) Impacts

1	2	3	4	5	6	7	8	9	10	11	12	13	14
Receptors	FTA [2] Vibration Land Use Category	Existing GBN Frequency event [1]	Existing-FTA GBN Impact Criteria [3] (dBA)	Predicted Build GBN Frequency event [1]	Proposed FTA GBN Impact Criteria [3] (dBA)	Predicted Existing GBN (dBA) [5]	Predicted Build GBN (dBA) [5]	Difference between Predicted Existing GBN and Predicted Build GBN (dBA)	Does the Predicted Existing GBN equal or exceed the FTA impact criteria in Column 4? If Yes, go to Column 11. If No, go to Column 13.	Does the ratio of Predicted Build train impact events to Existing equal or exceed 2? If Yes, go to Column 14 and indicate "Yes." If No, go to column 12. [4]	Does the Predicted Build GBN exceed the Predicted Existing GBN by 3 dBA or greater? If Yes, go to Column 14 and indicate "Yes" - there is a Potential Impact. If No, go to Column 14 and indicate "No" - there is No Potential Impact. [4]	Does the Predicted Build GBN equal or exceed the FTA impact criteria in Column 6? If Yes, go to Column 14 and indicate "Yes" - there is a Potential Impact. If No, go to Column 14 and indicate "No" - there is No Potential Impact. [4]	Potential Impact? If Yes, proceed to Detailed Analysis if mitigation measures are viable.
WA1-R3	2	frequent	35	frequent	35	15	19	4	No	NA	NA	No	No
WA1-R4	2	frequent	35	frequent	35	20	22	2	No	NA	NA	No	No
WA1-R5	2	frequent	35	frequent	35	22	24	2	No	NA	NA	No	No
WA1-R5b	3	frequent	40	frequent	40	19	21	2	No	NA	NA	No	No
WA1-R6	2	frequent	35	frequent	35	35	36	1	Yes	No	No	NA	No

Notes:

[1] Determine if event is frequent; occasional or infrequent event. Refer to Table 7-1 for definition.

[2] FTA Vibration Land Use Category #2 includes residences and other buildings where people normally sleep, and Category Land Use #3 includes institutional land uses with primarily daytime uses, such as schools and churches.

[3] Source Table 7-1

[4] See Source Calculations for existing and build volumes and refer to Section 7.2.2 item #3

[5] Assumes adjustment of -50 dB for low frequency vibration sources (FTA Manual Table 10-1).

NA = Not applicable

The "Predicted Build" is the same as the "Build Scenario CREATE Program Train Vibration Level (Design Year)" as referenced in the Noise and Vibration Methodology Section 7.2.2 except when analyzing moved existing tracks. When analyzing moved existing tracks, the "Predicted Build" considers the total number of trains using those tracks in the design year to determine the frequency category (frequent, occasional or infrequent) and impact level in Table 7-1, as well as the vibration level.

Vibration General Assessment Report Form For Source Calculations:
CREATE Project WA1

Heavily Used Rail Corridor (existing train volume >12 trains/day)
Locomotives

Receptors	Peak Day Existing Volumes	Peak Day Predicted Build Volumes	Existing Impact Frequency Category [1]	Predicted Build Impact Frequency Category [1]	Distance[2] Existing Track 1 (feet)	Distance[2] Existing Track 2 (feet)	Distance[2] Existing Track 3 (feet)	Distance[2] Existing Track 4 (feet)	Distance[2] Existing Track 5 (feet)	Distance[2] Proposed Track 1 (feet)	Generalized Vibration Curve[3] Existing Track 1 (VdB)	Generalized Vibration Curve[3] Existing Track 2 (VdB)	Generalized Vibration Curve[3] Existing Track 3 (VdB)	Generalized Vibration Curve[3] Existing Track 4 (VdB)	Generalized Vibration Curve[3] Existing Track 5 (VdB)	Generalized Vibration Curve[3] Proposed Track 1 (VdB)	Highest[4] Predicted Existing Vibration Level at Each Receptor (VdB)	Highest[4] Predicted Build Vibration Level at Each Receptor (VdB)
WA1-R3	44	46	occasional	occasional	135	150	165	180		190	75	74	73	72		72	75	75
WA1-R4	40	31	occasional	occasional	80	95					80	79					80	80
WA1-R5	40	31	occasional	occasional	64	79					82	81					82	82
WA1-R5b	40	31	occasional	occasional	101	116					78	77					78	78
WA1-R6	106	97	frequent	frequent	35	50	65	80	95		87	85	82	80	79		87	87

Notes:

[1] Determine if event is frequent; occasional or infrequent event. Refer to Table 7-1 for definition.

[2] Distances measured from centerlines of existing and proposed tracks to faces of buildings.

[3] Generalized Ground Surface Vibration Curve (Figure 10-1) for locomotive-powered passenger or freight trains at 50 mph.

[4] Highest vibration level, from the Generalized Vibration Curve (Figure 10-1), of either Track 1 or Track 2 at each receptor. The example project assumes the same adjustments are applied to both tracks. If the same adjustments cannot be applied to all tracks, the analyst may have to apply adjustments to the tracks individually to determine the highest predicted vibration at each receptor.

The "Predicted Build" is the same as the "Build Scenario CREATE Program Train Vibration Level (Design Year)" as referenced in the Noise and Vibration Methodology Section 7.2.2 except when analyzing moved existing tracks. When analyzing moved existing tracks, the "Predicted Build" considers the total number of trains using those tracks in the design year to determine the frequency category (frequent, occasional or infrequent) and impact level in Table 7-1, as well as the vibration level.

Vibration General Assessment Report Form For Vibration Adjustment Factors
CREATE Project WA1

Heavily Used Rail Corridor (existing train volume >12 trains/day)
Locomotives

	Unadjusted		Existing Adjustments									Predicted Build Adjustments									Adjusted	
			Speed Adjustments		Source Adjustments		Path Adjustments			Receiver Adjustments		Speed Adjustments		Source Adjustments		Path Adjustments			Receiver Adjustments			
Receptors	Highest[1] Vibration Level @ 50 mph at Each Receptor Existing (VdB)	Highest[1] Vibration Level @ 50 mph at Each Receptor Predicted Build (VdB)	Average Track Speed - Existing (mph)	Speed Adjustment Existing (VdB)	Vehicle[2] Condition - Existing (VdB)	Elevated Structure[3] Adjustment Existing (VdB)	Propagation Geology[4] Adjustment Existing (VdB)	1-2 Story Masonry Structure (VdB)	Wood Frame Structure (VdB)	1-5 Floors Above Grade (VdB)	Floor Amplifi-cation (VdB)	Average Track Speed - Predicted Build (mph)	Speed Adjustment - Predicted Build (VdB)	Vehicle[2] Condition - Existing (VdB)	Elevated Structure[3] Adjustment - Predicted Build (VdB)	Propagation Geology[4] Adjustment Existing (VdB)	1-2 Story Masonry Structure (VdB)	Wood Frame Structure (VdB)	1-5 Floors Above Grade (VdB)	Floor Amplifi-cation (VdB)	Predicted Existing Vibration (VdB)	Predicted Build Vibration (VdB)
WA1-R3	75	75	9.8	-14.2		-5	10		-5	-2	6	16.1	-9.9		-5	10		-5	-2	6	65	69
WA1-R4	80	80	9.9	-14.0		-5	10		-5	-2	6	12.8	-11.8		-5	10		-5	-2	6	70	72
WA1-R5	82	82	10.0	-14.0		-5	10		-5	-2	6	12.5	-12.0		-5	10		-5	-2	6	72	74
WA1-R5b	78	78	10.0	-14.0		-5	10					12.5	-12.0		-5	10					69	71
WA1-R6	87	87	24.9	-6.0		-5	10		-5	-2	6	27.3	-5.3		-5	10		-5	-2	6	85	86

Notes:

[1] Highest Vibration Level, from the Generalized Vibration Curve (Figure 10-1), of either the Southbound (Track 1) or Northbound (Track 2) at each receptor.

[2] Worn wheel adjustment made for Freight Rail Car. For locomotives assume no worn wheel adjustment

[3] Existing and proposed tracks are elevated structure/embankment, because both the existing and proposed tracks would be at least 1 feet higher than the base elevation at all receptors

[4] Existing and proposed geological conditions assumed to have "efficient" vibration propagation.

The "Predicted Build" is the same as the "Build Scenario CREATE Program Train Vibration Level (Design Year)" as referenced in the Noise and Vibration Methodology Section 7.2.2 except when analyzing moved existing tracks. When analyzing moved existing tracks, the "Predicted Build" considers the total number of trains using those tracks in the design year to determine the frequency category (frequent, occasional or infrequent) and impact level in Table 7-1, as well as the vibration level.

Vibration General Assessment Report Form For Vibration Impact Summary
CREATE Project WA1

Heavily Used Rail Corridor (existing train volume >12 trains/day)
Locomotives

Ground-borne Vibration (GBV) Impacts													
1	2	3	4	5	6	7	8	9	10	11	12	13	14
Receptors	FTA [2] Vibration Land Use Category	Existing Vibration Frequency event [1]	Existing FTA Vibration Impact Criteria [3] (VdB)	Predicted Build Vibration Frequency event [1]	Predicted Build FTA Vibration Impact Criteria [3] (VdB)	Predicted Existing Vibration (VdB)	Predicted Build Vibration (VdB)	Difference between Predicted Existing Vibration and Predicted Build Vibration (VdB)	Does Predicted Existing Vibration equal or exceed the FTA impact criteria in Column 4? If Yes, go to Column 11. If No, go to Column 13.	Does the ratio of Build Train Events to Existing Train Events equal or exceed 2? If Yes, go to Column 14 and indicate "Yes." If No, go to column 12 [4]	Does the Predicted Build vibration exceed the Predicted Existing vibration by 3 VdB or Greater? If Yes, go to Column 14 and indicate "Yes" - there is a Potential Impact. If No, go to Column 14 and indicate "No" - there is No Potential Impact. [4]	Does Predicted Build Ground-borne Vibration equal or exceed the FTA impact criteria in Column 6? If Yes, go to Column 14 and indicate "Yes" - there is a Potential Impact. If No, go to Column 14 and indicate "No" - there is No Potential Impact. [4]	Potential impact? If Yes, proceed to Detailed Analysis if mitigation measures are viable.
WA1-R3	2	occasional	75	occasional	75	65	69	4	No	NA	NA	No	No
WA1-R4	2	occasional	75	occasional	75	70	72	2	No	NA	NA	No	No
WA1-R5	2	occasional	75	occasional	75	72	74	2	No	NA	NA	No	No
WA1-R5b	3	occasional	78	occasional	78	69	71	2	No	NA	NA	No	No
WA1-R6	2	frequent	72	frequent	72	85	86	1	Yes	No	No	NA	No

Notes:

[1] Determine if event is frequent; occasional or infrequent event. Refer to Table 7-1 for definition.

[2] FTA Vibration Land Use Category #2 includes residences and other buildings where people normally sleep, and Category Land Use #3 includes institutional land uses with primarily daytime uses, such as schools and churches.

[3] Source Table 7-1

[4] See Source Calculations for existing and build volumes and refer to Section 7.2.2 item #3

NA = Not applicable

The "Predicted Build" is the same as the "Build Scenario CREATE Program Train Vibration Level (Design Year)" as referenced in the Noise and Vibration Methodology Section 7.2.2 except when analyzing moved existing tracks. When analyzing moved existing tracks, the "Predicted Build" considers the total number of trains using those tracks in the design year to determine the frequency category (frequent, occasional or infrequent) and impact level in Table 7-1, as well as the vibration level.

Vibration General Assessment Report Form For GBN Impact Summary
CREATE Project WA1

Heavily Used Rail Corridor (existing train volume >12 trains/day)
Locomotives

Ground-borne Noise (GBN) Impacts

1	2	3	4	5	6	7	8	9	10	11	12	13	14
Receptors	FTA [2] Vibration Land Use Category	Existing GBN Frequency event [1]	Existing-FTA GBN Impact Criteria [3] (dBA)	Predicted Build GBN Frequency event [1]	Predicted Build FTA GBN Impact Criteria [3] (dBA)	Predicted Existing GBN (dBA) [5]	Predicted Build GBN (dBA) [5]	Difference between Predicted Existing GBN and Predicted Build GBN (dBA)	Does the Predicted Existing GBN equal or exceed the FTA impact criteria in Column 4? If Yes, go to Column 11. If No, go to Column 13.	Does the ratio of Predicted Build train impact events to Existing equal or exceed 2? If Yes, go to Column 14 and indicate "Yes." If no, go to column 12 [4]	Does the Predicted Build GBN exceed the Predicted Existing GBN by 3 dBA or greater? If yes, go to Column 14 and indicate "Yes" - there is a Potential Impact. If No, go to Column 14 and indicate "No" - there is No Potential Impact. [4]	Does Predicted Build GBN equal or exceed the FTA impact criteria in Column 6? If Yes, go to Column 14 and indicate "Yes" there is a Potential Impact. If No, go to Column 14 and indicate "No" - there is No Potential Impact. [4]	Potential Impact? If Yes, proceed to Detailed Analysis if mitigation measures are viable.
WA1-R3	2	occasional	38	occasional	38	15	19	4	No	NA	NA	No	No
WA1-R4	2	occasional	38	occasional	38	20	22	2	No	NA	NA	No	No
WA1-R5	2	occasional	38	occasional	38	22	24	2	No	NA	NA	No	No
WA1-R5b	3	occasional	43	occasional	43	19	21	2	No	NA	NA	No	No
WA1-R6	2	frequent	35	frequent	35	35	36	1	Yes	No	No	NA	No

Notes:

[1] Determine if event is frequent; occasional or infrequent event. Refer to Table 7-1 for definition.

[2] FTA Vibration Land Use Category #2 includes residences and other buildings where people normally sleep, and Category Land Use #3 includes institutional land uses with primarily daytime uses, such as schools and churches.

[3] Source Table 7-1

[4] See Source Calculations for existing and build volumes and refer to Section 7.2.2 item #3

[5] Assumes adjustment of -50 dBA for low frequency vibration sources (FTA Manual Table 10-1).

NA = Not applicable

The "Predicted Build" is the same as the "Build Scenario CREATE Program Train Vibration Level (Design Year)" as referenced in the Noise and Vibration Methodology Section 7.2.2 except when analyzing moved existing tracks. When analyzing moved existing tracks, the "Predicted Build" considers the total number of trains using those tracks in the design year to determine the frequency category (frequent, occasional or infrequent) and impact level in Table 7-1, as well as the vibration level.

Vibration General Assessment Form For Source Calculations:
CREATE Project WA1

Moving Existing Tracks
Freight Cars

Receptors	Peak Day Existing Volumes	Existing Impact Frequency Category [1]	Distance[2] Existing Track 1 (feet)	Distance[2] Existing Track 2 (feet)	Distance[2] Existing Track 3 (feet)	Distance[2] Proposed Track 1 (feet)	Distance[2] Proposed Track 2 (feet)	Distance[2] Proposed Track 3 (feet)	Distance[2] Proposed Track 4 (feet)	Distance[2] Proposed Track 5 (feet)	Generalized Vibration Curve[3] Existing Track 1 (VdB)	Generalized Vibration Curve[3] Existing Track 2 (VdB)	Generalized Vibration Curve[3] Existing Track 3 (VdB)	Generalized Vibration Curve[3] Proposed Track 1 (VdB)	Generalized Vibration Curve[3] Proposed Track 2 (VdB)	Generalized Vibration Curve[3] Proposed Track 3 (VdB)	Generalized Vibration Curve[3] Proposed Track 4 (VdB)	Generalized Vibration Curve[3] Proposed Track 5 (VdB)	Highest[4] Predicted Pre-Move Vibration Level at Each Receptor (based on existing operations) (VdB)	Highest[5] Predicted Post-Move Vibration level at Each Receptor (based on existing operations) (VdB)
WA1-R3	44	frequent	155	170	185	135	150	165	180	190	74	73	72	75	74	73	72	72	74	75

Notes:

[1] Determine if event is frequent; occasional or infrequent event. Refer to Table 7-1 for definition.

[2] Distances measured from centerlines of existing and proposed tracks to faces of buildings.

[3] Generalized Ground Surface Vibration Curve (Figure 10-1) for rapid transit or light rail vehicles at 50 mph.

[4] Highest vibration level, from the Generalized Vibration Curve (Figure 10-1), of either Track 1 or Track 2 at each receptor. The example project assumes the same adjustments are applied to both tracks. If the same adjustments cannot be applied to all tracks, the analyst may have to apply adjustments to the tracks individually to determine the highest predicted vibration at each receptor.

[5] Potential vibration effects of moving tracks.

Vibration General Assessment Form For
Vibration Adjustment Factors
CREATE Project WA1

Moving Existing Tracks
Freight Cars

	Unadjusted		Existing Adjustments								Adjusted	
			Speed Adjustments		Source Adjustments		Path Adjustments		Receiver Adjustments			
Receptors	Highest[1] Vibration Level @ 50 mph at Each Receptor - Pre-move (based on existing operations) (VdB)	Highest[1] Vibration Level @ 50 mph at Each Receptor - Post-move (based on existing operations) (VdB)	Average Track Speed Existing (mph)	Speed Adjustment Existing (VdB)	Vehicle[2] Condition Existing (VdB)	Elevated Structure[3] Adjustment Existing (VdB)	Propagation Geology[4] Adjustment Existing (VdB)	Wood Frame Structure (VdB)	1-5 Floors Above Grade (VdB)	Floor Amplifi-cation (VdB)	Predicted Pre-Move Vibration (based on existing operations) (VdB)	Predicted Post-Move Vibration (based on existing operations) (VdB)
WA1-R3	74	75	9.8	-14.2		-5	10	-5	-2	6	64	65

Notes:

[1] Highest Vibration Level, from the Generalized Vibration Curve (Figure 10-1), of either the Southbound (Track 1) or Northbound (Track 2) at each receptor.

[2] Existing and proposed freight trains anticipated as having worn wheels based on worst-cast scenario.

[3] The existing and proposed tracks are both on elevated structure/embankment (they are at least 1 foot higher than the base elevation of all receptors), therefore, they both receive the same elevated structure adjustments. If the proposed tracks have different elevated structure adjustments than the existing tracks, the analyst would need to account for this difference by applying a different elevated structure adjustment to predict the Post-Move Vibration.

[4] Existing and proposed geological conditions assumed to have "efficient" vibration propagation.

Vibration General Assessment Report Form For **Moving Existing Tracks**
Vibration Impact Summary **Freight Cars**
CREATE Project WA1

Ground-borne Vibration (GBV) Impacts										
1	2	3	4	5	6	7	8	9	10	11
Receptors	FTA [2] Vibration Land Use Category	Pre-Move and Post-Move Vibration Frequency event [1] (based on existing operations)	Pre-Move and Post-Move FTA Vibration Impact Criteria [3] (based on existing operations) (VdB)	Predicted Pre-Move Vibration (VdB) (based on existing oeprations)	Predicted Post-Move Vibration (based on existing operations) (VdB)	Difference between Predicted Pre-Move Vibration and Predicted Post-Move Vibration (VdB)	Does the Predicted Pre-Move Vibration equal or exceed the FTA impact criteria in Column 4? If Yes, go to Column 9. If No, go to Column 10.	Is the difference between the Predicted Pre-Move Vibration and Predicted Post-Move Vibration 3 VdB or greater? If Yes, go to Column 11 and indicate "Yes" - there is a Potential Impact. If No, go to Column 10.	Use appropriate Infrequently-(I), Moderately-(M), or Heavily-Used (H) corridor criteria to determine if there is an Impact.	Potential Impact? If Yes, proceed to Detailed Analysis if mitigation measures are viable.
WA1-R3	2	frequent	72	64	65	1	No	NA	Use I, M or H Spreadsheet	

Notes:

[1] Determine if event is frequent; occasional or infrequent event. Refer to Table 7-1 for definition.

[2] FTA Vibration Land Use Category #2 includes residences and other buildings where people normally sleep, and Category Land Use #3 includes institutional land uses with primarily daytime uses, such as schools and churches.

[3] Source Table 7-1

NA = Not applicable

Vibration General Assessment Report Form For **Moving Existing Tracks**
GBN Impact Summary **Freight Cars**
CREATE Project WA1

Ground-borne Noise (GBN) Impacts										
1	2	3	4	5	6	7	8	9	10	11
Receptors	FTA [2] Vibration Land Use Category	Pre-Move and Post-Move Vibration Frequency event [1] (based on existing operations)	Pre-Move and Post-Move FTA GBN Impact Criteria [3] (based on existing operations) (dBA)	Predicted Pre-Move GBN (dBA) [4] (based on existing operations)	Predicted Post-Move GBN (Based on Existing Operations) (dBA)	Difference between Pre-Move GBN and Post-Move GBN (dBA)	Does the Pre-Move GBN equal or exceed the FTA impact criteria in Column 4? If Yes, go to Column 9. If No, go to Column 10.	Is the difference between the Predicted Pre-Move GBN and the Predicted Post-Move GBN 3 dBA or greater? If Yes, go to Column 11 and indicate "Yes" - there is a Potential Impact. If No, go to Column 10.	Use appropriate Infrequently-(I), Moderately-(M), or Heavily-Used (H) corridor criteria to determine if there is an Impact.	Potential Impact? If Yes, proceed to Detailed Analysis if mitigation measures are viable.
WA1-R3	2	frequent	35	14	15	1	No	NA	Use I, M or H Spreadsheet	

Notes:

[1] Determine if event is frequent; occasional or infrequent event. Refer to Table 7-1 for definition.

[2] FTA Vibration Land Use Category #2 includes residences and other buildings where people normally sleep, and Category Land Use #3 includes institutional land uses with primarily daytime uses, such as schools and churches.

[3] Source Table 7-1

[4] Assumes adjustment of -50 dB for low frequency vibration sources (FTA Manual Table 10-1).

NA = Not applicable

Vibration General Assessment Report Form For Source Calculations:
CREATE Project WA1

Moving Existing Tracks
Locomotives

Receptors	Peak Day Existing Volumes	Existing Impact Frequency Category [1]	Distance[2] Existing Track 1 (feet)	Distance[2] Existing Track 2 (feet)	Distance[2] Existing Track 3 (feet)	Distance[2] Proposed Track 1 (feet)	Distance[2] Proposed Track 2 (feet)	Distance[2] Proposed Track 3 (feet)	Distance[2] Proposed Track 4 (feet)	Distance[2] Proposed Track 5 (feet)	Generalized Vibration Curve[3] Existing Track 1 (VdB)	Generalized Vibration Curve[3] Existing Track 2 (VdB)	Generalized Vibration Curve[3] Existing Track 3 (VdB)	Generalized Vibration Curve[3] Proposed Track 1 (VdB)	Generalized Vibration Curve[3] Proposed Track 2 (VdB)	Generalized Vibration Curve[3] Proposed Track 3 (VdB)	Generalized Vibration Curve[3] Proposed Track 4 (VdB)	Generalized Vibration Curve[3] Proposed Track 5 (VdB)	Highest[4] Predicted Pre-Move Vibration Level at Each Receptor (based on existing operations) (VdB)	Highest[5] Predicted Post-Move Vibration level at Each Receptor (based on existing operations) (VdB)
WA1-R3	44	occasional	155	170	185	135	150	165	180	190	74	73	72	75	74	73	72	72	74	75

Notes:

[1] Determine if event is frequent; occasional or infrequent event. Refer to Table 7-1 for definition.

[2] Distances measured from centerlines of existing and proposed tracks to faces of buildings.

[3] Generalized Ground Surface Vibration Curve (Figure 10-1) for locomotive-powered passenger or freight trains at 50 mph.

[4] Highest vibration level, from the Generalized Vibration Curve (Figure 10-1), of either Track 1 or Track 2 at each receptor. The example project assumes the same adjustments are applied to both tracks. If the same adjustments cannot be applied to all tracks, the analyst may have to apply adjustments to the tracks individually to determine the highest predicted vibration at each receptor.

[5] Potential vibration effects of moving tracks.

Vibration General Assessment Report Form For Vibration Adjustment Factors
CREATE Project WA1

Moving Existing Tracks
Locomotives

	Unadjusted		Existing Adjustments								Adjusted	
			Speed Adjustments		Source Adjustments		Path Adjustments		Receiver Adjustments			
Receptors	Highest[1] Vibration Level @ 50 mph at Each Receptor - Pre-Move (based on existing operations) (VdB)	Highest[1] Vibration Level @ 50 mph at Each Receptor - Post-Move (based on existing operations) (VdB)	Average Track Speed Existing (mph)	Speed Adjustment Existing (VdB)	Vehicle[2] Condition Existing (VdB)	Elevated Structure[3] Adjustment Existing (VdB)	Propagation Geology[4] Adjustment Existing (VdB)	Wood Frame Structure (VdB)	1-5 Floors Above Grade (VdB)	Floor Amplifi-cation (VdB)	Predicted Pre-Move Vibration (based on existing operations) (VdB)	Predicted Post-Move Vibration (based on existing operations) (VdB)
WA1-R3	74	75	9.8	-14.2		-5	10	-5	-2	6	64	65

Notes:

[1] Highest Vibration Level, from the Generalized Vibration Curve (Figure 10-1), of either the Southbound (Track 1) or Northbound (Track 2) at each receptor.

[2] For locomotives assume no worn wheel adjustment

[3] The existing and proposed tracks are both on elevated structure/embankment (they are at least 1 foot higher than the base elevation of all receptors), therefore, they both receive the same elevated structure adjustments. If the proposed tracks have different elevated structure adjustments than the existing tracks, the analyst would need to account for this difference by applying a different elevated structure adjustment to predict the Post-Move Vibration.

[4] Existing and proposed geological conditions assumed to have "efficient" vibration propagation.

Vibration General Assessment Report Form For **Moving Existing Tracks**
Vibration Impact Summary **Locomotives**
CREATE Project WA1

Ground-borne Vibration (GBV) Impacts										
1	2	3	4	5	6	7	8	9	10	11
Receptors	FTA [2] Vibration Land Use Category	Pre-Move and Post-Move Vibration Frequency event [1] (based on existing operations)	Pre-Move and Post-Move FTA Vibration Impact Criteria [3] (based on existing operations) (VdB)	Predicted Pre-Move Vibration (VdB) (based on existing operations)	Predicted Post-Move Vibration (based on existing operations) (VdB)	Difference between Predicted Pre-Move vibration and Predicted Post-Move vibration (VdB)	Does the predicted Pre-Move Vibration equal or exceed the FTA impact criteria in Column 4? If Yes, go to Column 9. If No, go to Column 10.	Is the difference between the Predicted Pre-Move Vibration and Predicted Post-Move Vibration 3 VdB or greater? If Yes, go to Column 11 and indicate "Yes" - there is a Potential Impact. If No, go to Column 10.	Use appropriate Infrequently-(I), Moderately-(M), or Heavily-Used (H) corridor criteria to determine if there is an Impact.	Potential Impact? If Yes, Proceed to Detailed Analysis if mitigation measures are viable.
WA1-R3	2	occasional	75	64	65	1	No	NA	Use I, M or H Spreadsheet	

Notes:

[1] Determine if event is frequent; occasional or infrequent event. Refer to Table 7-1 for definition.

[2] FTA Vibration Land Use Category #2 includes residences and other buildings where people normally sleep, and Category Land Use #3 includes institutional land uses with primarily daytime uses, such as schools and churches.

[3] Source Table 7-1

NA = Not applicable

Vibration General Assessment Report Form For **Moving Existing Tracks**
GBN Impact Summary **Locomotives**
CREATE Project WA1

Ground-borne Noise (GBN) Impacts										
1	2	3	4	5	6	7	8	9	10	11
Receptors	FTA [2] Vibration Land Use Category	Pre-Move and Post-Move GBN Frequency event [1] (based on existing operations)	Pre-Move and Post-Move FTA GBN Impact Criteria [3] (based on existing operations) (dBA)	Predicted Pre-move GBN (dBA) [4] (based on existing operations)	Predicted Post-Move GBN (based on existing operations) (dBA)	Difference between Predicted Pre-Move GBN and Predicted Post-Move GBN (dBA)	Does the Predicted Pre-Move GBN equal or exceed the FTA impact criteria in Column 4? If Yes, go to Column 9. If No, go to Column 10.	Is the difference between the Predicted Pre-Move GBN and Predicted Post-Move GBN 3 dBA or greater? If Yes, go to Column 11 and indicate "Yes" - there is a Potential Impact. If No, go to Column 10.	Use appropriate Infrequently-(I), Moderately-(M), or Heavily-Used (H) Corridor Criteria to determine if there is an Impact.	Potential Impact? If Yes, proceed to Detailed Analysis if mitigation measures are viable.
WA1-R3	2	occasional	38	14	15	1	No	NA	Use I, M or H Spreadsheet	

Notes:

[1] Determine if event is frequent; occasional or infrequent event. Refer to Table 7-1 for definition.

[2] FTA Vibration Land Use Category #2 includes residences and other buildings where people normally sleep, and Category Land Use #3 includes institutional land uses with primarily daytime uses, such as schools and churches.

[3] Source Table 7-1

[4] Assumes adjustment of -50 dB for low frequency vibration sources (FTA Manual Table 10-1).

NA = Not applicable

Vibration General Assessment Report Form For
Source Calculations:
CREATE Project WA1

No-Build Alternative
Freight Rail Car

Receptors	Peak Day No-Build Volumes	No-Build Impact Frequency Category [1]	Distance[2] Existing Track 1 (feet)	Distance[2] Existing Track 2 (feet)	Distance[2] Existing Track 3 (feet)	Distance[2] Existing Track 4 (feet)	Distance[2] Existing Track 5 (feet)	Generalized Vibration Curve[3] Existing Track 1 (VdB)	Generalized Vibration Curve[3] Existing Track 2 (VdB)	Generalized Vibration Curve[3] Existing Track 3 (VdB)	Generalized Vibration Curve[3] Existing Track 4 (VdB)	Generalized Vibration Curve[3] Existing Track 5 (VdB)	Highest[4] Predicted No-Build Vibration Level at Each Receptor (VdB)
WA1-R3	63	frequent	135	150	165	180		75	74	73	72		75
WA1-R4	53	frequent	80	95				80	79				80
WA1-R5	53	frequent	64	79				82	81				82
WA1-R5b	53	frequent	101	116				78	77				78
WA1-R6	118	frequent	35	50	65	80	95	87	85	82	80	79	87

Notes:

[1] Determine if event is frequent; occasional or infrequent event. Refer to Table 7-1 for definition.

[2] Distances measured from centerlines of existing and proposed tracks to faces of buildings.

[3] Generalized Ground Surface Vibration Curve (Figure 10-1) for rapid transit or light rail vehicles at 50 mph.

[4] Highest vibration level, from the Generalized Vibration Curve (Figure 10-1), of either Track 1 or Track 2 at each receptor. The example project assumes the same adjustments are applied to both tracks. If the same adjustments cannot be applied to all tracks, the analyst may have to apply adjustments to the tracks individually to determine the highest predicted vibration at each receptor.

The "Predicted No-Build" is the "No-Build Scenario CREATE Program Train Vibration Level (Design Year)" which includes all train vibration from no-build scenario (design year) trains operating on tracks affected by the CREATE Program.

Vibration General Assessment Report Form For **No-Build Alternative**
Vibration Adjustment Factors **Freight Rail Car**
CREATE Project WA1

	Unadjusted	No-Build Adjustments									Adjusted	
		Speed Adjustments		Source Adjustments		Path Adjustments			Receiver Adjustments			
Receptors	Highest[1] Vibration Level @ 50 mph at Each Receptor Predicted No-Build (VdB)	Average Track Speed - No-Build (mph)	Speed Adjustment - No Build (VdB)	Vehicle[2] Condition Existing (VdB)	Elevated Structure[3] Adjustment Existing (VdB)	Propagation Geology[4] Adjustment Existing (VdB)	1-2 Story Masonry Structure (VdB)	Wood Frame Structure (VdB)	1-5 Floors Above Grade (VdB)	Floor Amplifi-cation (VdB)	No-Build Vibration (VdB)	No-Build GBN (dBA)
WA1-R3	75	9.9	-14.1		-5	10		-5	-2	6	65	15
WA1-R4	80	9.9	-14.1		-5	10		-5	-2	6	70	20
WA1-R5	82	9.9	-14.0		-5	10		-5	-2	6	72	22
WA1-R5b	78	9.9	-14.0		-5	10					69	19
WA1-R6	87	22.2	-7.1		-5	10		-5	-2	6	84	34

Notes:

(1) Highest Vibration Level, from the Generalized Vibration Curve (Figure 10-1), of either the Southbound (Track 1) or Northbound (Track 2) at each receptor.

(2) Worn wheel adjustment made for Freight Rail Car. For locomotives assume no worn wheel adjustment

(3) The existing tracks are on elevated structure/embankment (they are at least 1 feet higher than the base elevation at all receptors).

(4) Existing geological conditions assumed to have "efficient" vibration propagation.

The "Predicted No-Build" is the "No-Build Scenario CREATE Program Train Vibration Level (Design Year)" which includes all train vibration from no-build scenario (design year) trains operating on tracks affected by the CREATE Program.

Vibration General Assessment Report Form For
Source Calculations:
CREATE Project WA1

No Build Alternative
Locomotives

Receptors	Peak Day No-Build Volumes	No-Build Frequency Category [1]	Distance[2] Existing Track 1 (feet)	Distance[2] Existing Track 2 (feet)	Distance[2] Existing Track 3 (feet)	Distance[2] Existing Track 4 (feet)	Distance[2] Existing Track 5 (feet)	Generalized Vibration Curve[3] Existing Track 1 (VdB)	Generalized Vibration Curve[3] Existing Track 2 (VdB)	Generalized Vibration Curve[3] Existing Track 3 (VdB)	Generalized Vibration Curve[3] Existing Track 4 (VdB)	Generalized Vibration Curve[3] Existing Track 5 (VdB)	Highest[4] Predicted No-Build Vibration Level at Each Receptor (VdB)
WA1-R3	63	occasional	135	150	165	180		75	74	73	72		75
WA1-R4	53	occasional	80	95				80	79				80
WA1-R5	53	occasional	64	79				82	81				82
WA1-R5b	53	occasional	101	116				78	77				78
WA1-R6	118	frequent	35	50	65	80	95	87	85	82	80	79	87

Notes:

[1] Determine if event is frequent; occasional or infrequent event. Refer to Table 7-1 for definition.

[2] Distances measured from centerlines of existing tracks to faces of buildings.

[3] Generalized Ground Surface Vibration Curve (Figure 10-1) for locomotive-powered passenger or freight trains at 50 mph.

[4] Highest vibration level, from the Generalized Vibration Curve (Figure 10-1), of either Track 1 or Track 2 at each receptor. The example project assumes the same adjustments are applied to both tracks. If the same adjustments cannot be applied to all tracks, the analyst may have to apply adjustments to the tracks individually to determine the highest predicted vibration at each receptor.

The "Predicted No-Build" is the "No-Build Scenario CREATE Program Train Vibration Level (Design Year)" which includes all train vibration from no-build scenario (design year) trains operating on tracks affected by the CREATE Program.

Vibration General Assessment Report Form For **No Build Alternative**
Vibration Adjustment Factors **Locomotives**
CREATE Project WA-1

	Unadjusted	No Build Adjustments									Adjusted	
		Speed Adjustments		Source Adjustments		Path Adjustments			Receiver Adjustments			
Receptors	Highest[1] Vibration Level @ 50 mph at Each Receptor No-Build (VdB)	Average Track Speed - No-Build (mph)	Speed Adjustment No-Build (VdB)	Vehicle[2] Condition Existing (VdB)	Elevated Structure[3] Adjustment Existing (VdB)	Propagation Geology[4] Adjustment Existing (VdB)	1-2 Story Masonry Structure (VdB)	Wood Frame Structure (VdB)	1-5 Floors Above Grade (VdB)	Floor Amplifi-cation (VdB)	No-Build Vibration (VdB)	No-Build GBN (dBA)
WA1-R3	75	9.9	-14.1		-5	10		-5	-2	6	65	15
WA1-R4	80	9.9	-14.1		-5	10		-5	-2	6	70	20
WA1-R5	82	9.9	-14.0		-5	10		-5	-2	6	72	22
WA1-R5b	78	9.9	-14.0		-5	10					69	19
WA1-R6	87	22.2	-7.1		-5	10		-5	-2	6	84	34

Notes:

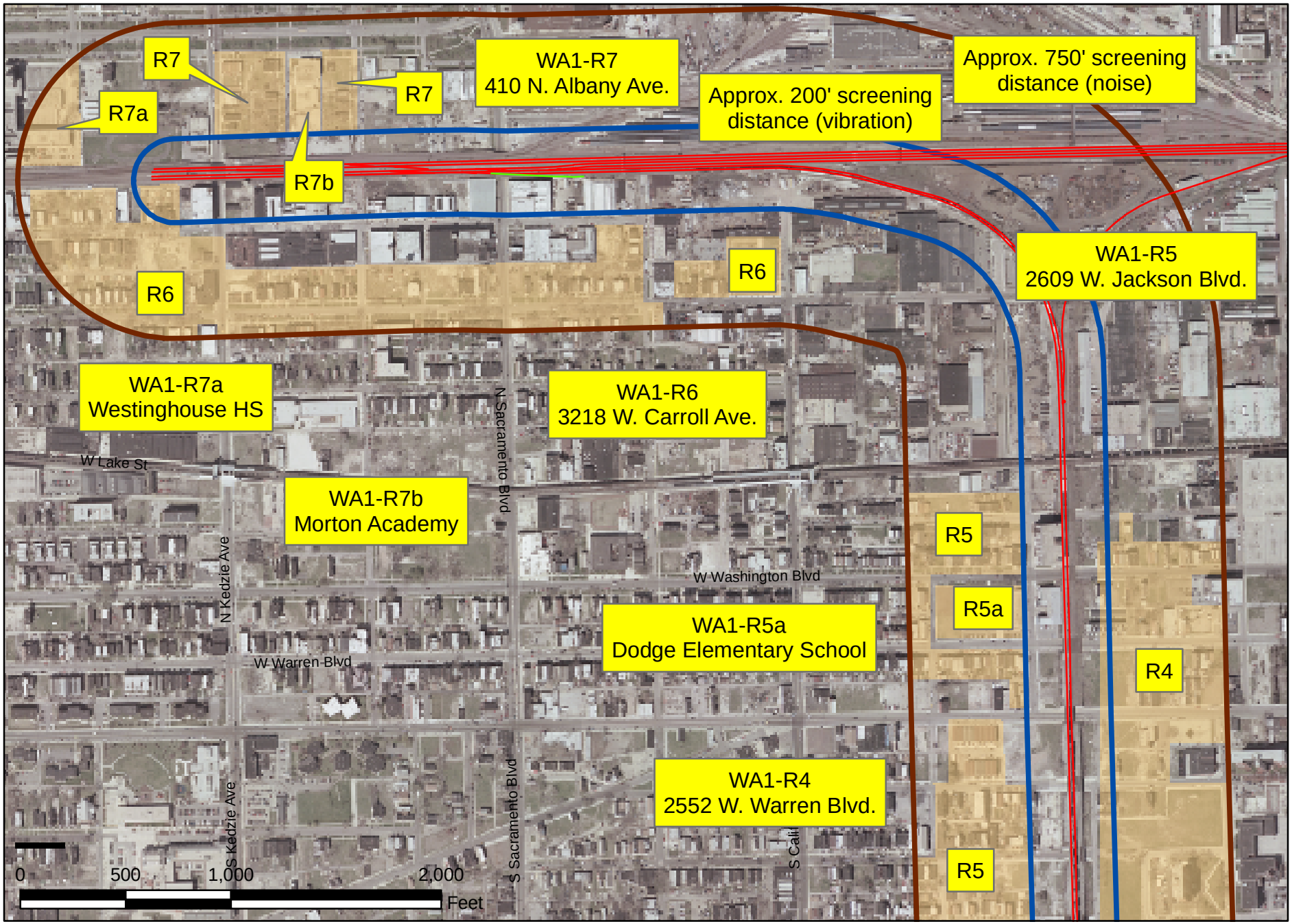
[1] Highest Vibration Level, from the Generalized Vibration Curve (Figure 10-1), of either the Southbound (Track 1) or Northbound (Track 2) at each receptor.

[2] For locomotives assume no worn wheel adjustment

[3] The existing tracks are on elevated structure/embankment (they are at least 1 feet higher than the base elevation at all receptors).

[4] Existing geological conditions assumed to have "efficient" vibration propagation.

The "Predicted No-Build" is the "No-Build Scenario CREATE Program Train Vibration Level (Design Year)" which includes all train vibration from no-build scenario (design year) trains operating on tracks affected by the CREATE Program.



MATCHLINE SHEET 2

CREATE
KEEPING THE GO IN CHICAGO

Existing Track
Track Work
Future Shoofly Track - not part of CREATE program
Vibration Screening Buffer
Noise Screening Buffer
Receptor Clusters

WA1

MATCHLINE SHEET 1

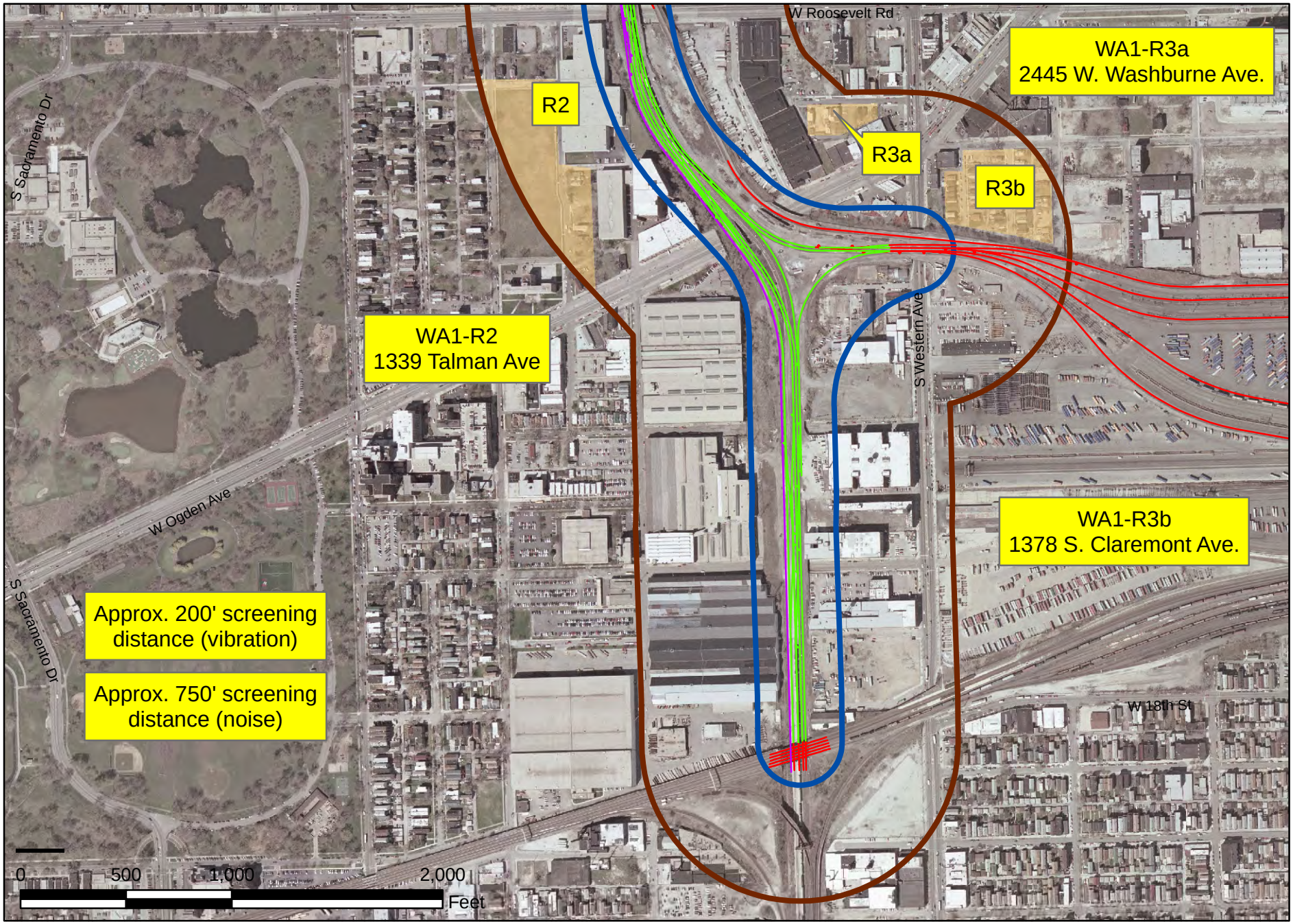
MATCHLINE SHEET 3

CREATE
KEEPING THE GO IN CHICAGO

Existing Track
Track Work
Future Shoofly Track - not part of CREATE program
Vibration Screening Buffer
Noise Screening Buffer
Receptor Clusters

WA1

MATCHLINE SHEET 2



CREATE
KEEPING THE GO IN CHICAGO

Existing Track
Track Work
Future Shoofly Track - not part of CREATE program
Vibration Screening Buffer
Noise Screening Buffer
Receptor Clusters

WA1

Appendix D

Special Waste Screening Form

July 2006

CREATE Railroad Property Special Waste Screening Form

CREATE Project ____WA1_____

Per the CREATE Railroad Property Special Waste Procedures prepared by Federal Highway Administration and Federal Railroad Administration dated July 2006, Environmental Design International inc. (EDI) is preparing this Special Waste Screening Form in accordance with the Special Waste Assessment Screening Flow Chart. A Special Waste Screening Report is attached summarizing the information for the proposed work areas. EDI conducted a site visit of the signal work areas and no obvious signs of contamination or evidence of open dumping were observed on June 12, 2008. EDI conducted a site visit of the bridge work areas on March 25, 2009.

STEP	Screening Criteria	Yes, No, Do Not Know	Comment Identify the next required step in the Special Waste Screening Process: 1. Determination of No Further Action Necessary; or 2. Continue to Step/Box "X" of the Screening Process; or 3. PESA Required. Attach any related documentation to this form.
1	Are there obvious signs of contamination, evidence of opening dumping, or a record of unresolved spills within the limits of construction?	No	2. Continue to next step.
	Does the project consist of only the following work types and no other: Replacement or reconfiguration of existing track structure (e.g., tie, rail, crossover, turnout installation/replacement), undercutting and re-ballasting on existing right-of-way, rail lubricator installation/replacement, switch heater installation/replacement, highway and railroad signal installation/replacement and ancillary improvements, grade-crossing warning device replacement/installation, cable installation/replacement, lighting replacement/installation, communication equipment replacement/installation or other work activities which disturb only the ballast?	No	2. Continue to next step.

STEP	Screening Criteria	Yes, No, Do Not Know	Comment Identify the next required step in the Special Waste Screening Process: 1. Determination of No Further Action Necessary; or 2. Continue to Step/Box "X" of the Screening Process; or 3. PESA Required. Attach any related documentation to this form.
2	Does the project include: 1. Building Demolition?	No	2. Continue to next step.
	2. Construction or modification of building which affects that land within limits of construction, in which people will work or where rail passengers will wait?	No	
	3. Individual excavation sites greater than 7 cubic yards of excavated materials?	Yes	
3	**BOX A** - Are there any CERCLIS or open LUST sites within 500 feet of the limits of construction, or UST or RCRA sites listed in the RCRA CORRACT list within the limits of construction? **If NO, proceed to Box B**	Yes	3. Continue to next step. Two LUST sites identified within 500 feet of proposed signal and bridge work. Railroad is on embankment, signal and bridge work will be on embankment, higher than the nearby LUST sites. No PESA required.

STEP	Screening Criteria	Yes, No, Do Not Know	Comment Identify the next required step in the Special Waste Screening Process: 1. Determination of No Further Action Necessary; or 2. Continue to Step/Box "X" of the Screening Process; or 3. PESA Required. Attach any related documentation to this form.
	BOX B - Will the project involve buildings or materials containing special waste other than asbestos? **IF NO, proceed to Box C**	Unknown	3. Lead-based paint is part of the bridge work renovation. Lead-based paint waste is considered a special or hazardous waste. The ECAD will identify lead-based paint mitigation requirements for the bridge work.
	BOX C - Does the current or previous land use type at or directly adjacent to the project include railroad shop maintenance activities, fueling facilities or high risk land uses? **If NO, proceed to Box D**	No	2. Continue to next step.
	BOX D - Using aerial photography, is there evidence of contaminating uses or contaminated sites/structures within the limits of construction including unlisted underground storage tanks, surface or partially buried tanks or drums, pits, depressions, ponds/lagoons, incinerators, landfills or piping?	No	
4	Are there unlisted underground storage tanks within the limits of construction?		
	Is there noticeable contamination in the form of discolored soil, seeping liquids, vegetation damage from other than vegetative control activities, dead animals, suspect odors, oil sheen, dead-end pipes or abnormal grading, fills or depression within the limits of construction?		

Prepared by: Patricia Feeley, P.G.
Signature: _____ **Date:** 6/24/09
For additional information, see Special Waste Screening Summary Letter dated June 2009.

Appendix E

Local Agency Coordination

HDR | ONE COMPANY *Many Solutions*℠

Meeting Notes

Subject: CREATE WA1 Temporary Street Closures	
Client: IDOT DPIT	
Project: CREATE WA1	Project No: 68399
Meeting Date: July 1, 2009	Meeting Location: CDOT
Notes by: Janice Reid	

Attendees:
Gani Williams, OEMC
Joe Alonzo, CDOT
Don Grabowski, HDR
Janice Reid, HDR

Topics Discussed:
The purpose of the meeting was to discuss temporary street closures that are required to construct the WA1 CREATE project. The project is in the NEPA/planning phase, and impacts are to be determined. It was understood that additional coordination with OEMC, CDOT and CTA would be required as the project progresses into the design phase.

The project is located just west of Western Avenue. Temporary street and/or lane closures are required at the following locations:
Taylor Street: Full Street closure for 60 days
Roosevelt Road: Lane closures for 30 days
Ogden Avenue: Lane closures for 30 days
15th Street: Lane closures for 30 days
16t Street: Lane closures for 30 days

Mr. Williams stated that the only work that would require a detour route is Taylor Street. The suggested route uses Ogden Avenue, Roosevelt Road, and California Avenue. Signal timing changes should also be considered as part of the detour.

It was noted that IDOT is planning improvements to I-290 during the WA1 construction period (2010), and that closure of Roosevelt Road would have to be coordinated with them as well.

It was noted that Ogden Avenue has a service road that could be used to limit the duration of the closures. This should be considered during the design.

The timing of closures of these routes would all have to be staged as they are in close proximity to each other.

The environmental document will reflect this discussion and a copy of the meeting notes will also be included. The environmental document will state that the railroad will continue coordination with OEMC, CDOT, and CTA during the design phase.

Creighton, Donna

From: Reid, Janice
Sent: Friday, April 10, 2009 12:27 PM
To: 'gwilliams@cityofchicago.org'
Attachments: WA1_Location_Map_11302007.pdf

Dear Mr. Williams:
You may recall that I spoke with you last year regarding temporary street closures that would result from a CREATE railroad project near Western Avenue. I am writing to you again at this time because HDR is preparing a similar study for another CREATE project, WA1. The WA1 project is planned for construction in 2010 by Union Pacific RR. The project is located west of Western Avenue, between Fulton Street and 18t Street (see attached map). The project requires bridge work which will have temporary impacts to four roadways, as described below. For the roadways which will require only lane closures, it is my understanding that as long as one lane remains open, no detours would be required. Additionally, because emergency services are located on both sides of the tracks, there should be no issues in this regard.

In any case, we are aware that UPRR will need to coordinate with CDOT and OEMC will be required to obtain the necessary permits for the work. For those routes which have CTA buses, the CTA will be notified of the proposed improvements and coordination with them prior to and during construction will also take place.

At this time, I am asking that you review the information, provide us with a recommended detour route for autos (and separately for trucks, if it is different), and also notify us of any other viaduct improvements that might be taking place in the area at the same time, which could impact traffic and detour routes. I would also like you to verify that emergency services would not be impacted by this work.

WA1 Bridge Work:

Full Street Closure: Taylor Street: *Taylor Street is a two-lane arterial with parking along both sides of the street. A new third track bridge at Taylor Street will be constructed, which will require full road closure for a period of 60 days and a detour route during the proposed bridge work.*

Lane Closures:
Roosevelt Road: *Roosevelt Road is a four lane arterial with parking along both sides, except under the railroad bridge. CTA bus route 12 (Roosevelt) also travels along Roosevelt Road. The rehabilitation of the bridge at Roosevelt Road will require partial lane closures for a limited timeframe. During the proposed work only one lane will be closed at a time along Roosevelt Road.*

Ogden Avenue: *Ogden Avenue is a four lane arterial that also carries CTA bus route 38 (Ogden/Taylor). One-way Frontage roads are located on both sides of Ogden Avenue and parking is provided on both sides of the Frontage Roads. The rehabilitation of the bridge at Ogden Avenue will require partial lane closures for a limited timeframe. During the proposed work only one lane will be closed at a time along Ogden Avenue.*

15th Street: *15th Street is a two lane arterial with parking along both sides of the street. The rehabilitation of the 15th Street bridge will require partial lane closures for a limited timeframe. During the proposed bridge work, one lane will remain open and impacts will be temporary.*

16th Street: *16th Street is a two lane arterial with parking along both sides of the street and carries CTA bus route 18 (16th – 18th) within the project area. The rehabilitation of the 16th Street bridge will require partial lane closures for a limited timeframe. During the proposed bridge work, one lane will remain open and impacts will be temporary.*

I would appreciate if you could respond to this request by Wednesday April 15. Please call me at 773-380-7919.

Thank you.

Janice L. Reid
Transportation Planning Project Manager
HDR | ONE COMPANY | *Many Solutions*
8550 West Bryn Mawr, Ste.900 | Chicago, IL | 60631
Phone: 773.380.7919 | Fax: 773.380.7979|
Email: janice.reid@hdrinc.com

Creighton, Donna

From: Stewart, Danielle E [Danielle.Stewart@illinois.gov]
Sent: Wednesday, June 10, 2009 2:01 PM
To: Pienton, Paula
Cc: Reid, Janice
Subject: FW: Roosevelt

Paula-
Per our discussion, this is in regards to WA1 review by District One. This should close out that item for now.

Danielle

-----Original Message-----
From: Fortmann, John A
Sent: Tuesday, June 09, 2009 12:38 PM
To: Stewart, Danielle E
Cc: Weitzel, William L; Gallenbach, Thomas G; Quigley, Anthony J
Subject: RE: Roosevelt

We will be letting 3 contracts+/- in January for resurfacing and bridge work on I290 from Thorndale to the Circle Interchange. The contractor will start around April 1 and will work through October 2010. Bridge work is planned so the traffic will need to be staged. The number of lanes will be reduced to two lane in each direction. We anticipate this being from April 1 to July 31st. However, the reductions in the number of lanes is why the Department is limiting work along parallel routes to I 290.

As plans are developed we will be in a better position to outline the duration of time need to complete the bridge work as well as staging.

Once bridge work is completed the resurfacing will be completed under night time lane closures and the impacts to parallel routes will go back to normal.

-----Original Message-----
From: Stewart, Danielle E
Sent: Tuesday, June 09, 2009 12:24 PM
To: Fortmann, John A
Cc: Weitzel, William L; Gallenbach, Thomas G
Subject: FW: Roosevelt

John-
Please see the e-mail below regarding coordination of CREATE work with I-290 resurfacing. Could you provide me with a tentative schedule so that I can compare it to CREATE projects to ensure that we do not have any conflicts?

Thanks.
Danielle

-----Original Message-----
From: Weitzel, William L
Sent: Tuesday, June 09, 2009 11:28 AM
To: Stewart, Danielle E
Cc: Gallenbach, Thomas G
Subject: RE: Roosevelt

Danielle...we have been informed by the front office to restrict Permits along (ILL 38) Roosevelt Rd. during next year's construction season due to the resurfacing of I-290 from Thorndale Ave. to downtown Chicago; you will need to contact John Fortmann for more details.

William L. Weitzel, P.E.
Illinois Department of Transportation
Traffic Permit Engineer - Chicago, Central Cook
(847) 705-4132 - Office Phone
(847) 705-5498 - Fax
William.Weitzel@Illinois.gov

-----Original Message-----
From: Stewart, Danielle E
Sent: Monday, June 08, 2009 8:40 AM
To: Weitzel, William L
Subject: FW: Roosevelt

Bill-
Any updates from John? I would like to close out this issue. Thanks.

Danielle

-----Original Message-----
From: Gallenbach, Thomas G
Sent: Wednesday, June 03, 2009 3:29 PM
To: Weitzel, William L
Cc: Stewart, Danielle E
Subject: RE: Roosevelt

Are we sure it is the same area?

-----Original Message-----
From: Weitzel, William L
Sent: Wednesday, June 03, 2009 9:15 AM
To: Gallenbach, Thomas G
Subject: Fw: Roosevelt

Tom....fyi

----- Original Message -----
From: Stewart, Danielle E
To: Weitzel, William L
Sent: Wed Jun 03 09:09:46 2009
Subject: RE: Roosevelt

Construction is planned to start late this year through next year.

From: Weitzel, William L
Sent: Tuesday, June 02, 2009 3:51 PM
To: Stewart, Danielle E
Subject: FW: Roosevelt

Danielle….see below the E-Mail Diane sent out regarding work on the Eisenhower in 2010; will the CREATE project be within that time frame and area?

William L. Weitzel, P.E.

Illinois Department of Transportation

Traffic Permit Engineer - Chicago, Central Cook

(847) 705-4132 - Office Phone

(847) 705-5498 - Fax

William.Weitzel@Illinois.gov

From: Gallenbach, Thomas G
Sent: Wednesday, May 27, 2009 11:45 AM
To: Weitzel, William L
Subject: FW: Roosevelt

Please be aware and let me know of issues of permits already issued so we can bring it to Diane's attention.

From: OKeefe, Diane M
Sent: Wednesday, May 27, 2009 11:32 AM
To: Holt, Christopher J; Tyszkiewicz, Jacek J
Cc: Travia, Steve M; Quigley, Anthony J; Gallenbach, Thomas G; Rosato, Steve L; Iacullo, Carmen W; Fortmann, John A
Subject: Roosevelt

Oak Park and Berwyn mentioned that they have a streetscaping planned for next year (CY 2010). We have a problem with this as we will be resurfacing the Eisenhower and do not want work on a parallel route at the same time so please make sure that they are aware of this. I am cc'ing everyone else because we need to avoid other permit lane blockages on Roosevelt Road to the extent possible in 2010. (Basically Ill 83 to Austin).

Illinois Department of Transportation
Division of Public and Intermodal Transportation
300 West Adams Street / 2nd Floor / Chicago, Illinois / 60606

April 13, 2009

Mr. Dorval Carter Jr.
Executive Vice President, Operations Support
Chicago Transit Authority
567 West Lake Street
Chicago, IL 60661

Dear Sir:

The Illinois Department of Transportation is currently engaged in Phase I planning/NEPA activities related to the proposed improvement of a railroad corridor (CREATE project WA1) located west of Western Avenue in Chicago, Illinois. (See enclosed Project Location Map). We are writing to notify you of this project as three CTA bus routes, Route 12, Route 18, and Route 38 intersect the project where construction is expected to occur.

The CREATE Program is being built in partnership between IDOT, City of Chicago, USDOT, Freight Railroads and Metra. CREATE is intended to improve freight and passenger rail operations, and to improve highway operations in the Chicago metropolitan area while reducing the environmental impacts of rail operations on the general public. It includes over 50 rail improvement projects, and 25 highway rail grade separation projects.

The purpose of the project is to improve rail operations at and approaching Ogden Junction, between the Union Pacific Kedzie interlocking and the BNSF-Chicago Subdivision near 18th Street. The project includes construction of new track, a train control system, switch replacements, track realignments, and bridge improvements within railroad right-of-way.

In order to achieve the goals of the CREATE program and safely facilitate the increased train traffic and frequency, the WA1 project requires rehabilitation of the Roosevelt Road bridge, which will require temporary lane closures and may require a full street closure and detour for a limited timeframe. This could result in temporary service delays and/or operational changes to CTA Route 12. It is not yet known when these bridge improvements will take place.

The rehabilitation of the 16th Street bridge included as part of the WA1 project will require temporary lane closures and may require a full street closure and detour for a limited timeframe. This could result in temporary service delays and/or operational changes to CTA Route 18. It is not yet known when construction will take place.

The WA1 project requires rehabilitation of the Ogden Avenue bridge, which will require temporary lane closures and may require a full street closure and detour for a limited timeframe. This could result in service delays and/or operational changes to CTA Route 38. It is not yet known when these bridge improvements will take place.

Discussions with the Chicago Department of Transportation (CDOT) and the Office of Emergency Management and Communication (OEMC) have begun regarding the street closures and potential detour routes. As the Phase II design is progressed by the UPRR, and prior to construction, permits from CDOT and the City of Chicago Office of Utility Coordination will be obtained by the UPRR or their consultants/contractors. As part of the design and permitting process, the UPRR will coordinate with CTA regarding the project.

Please contact me at (312) 793-3507 if you have any questions.

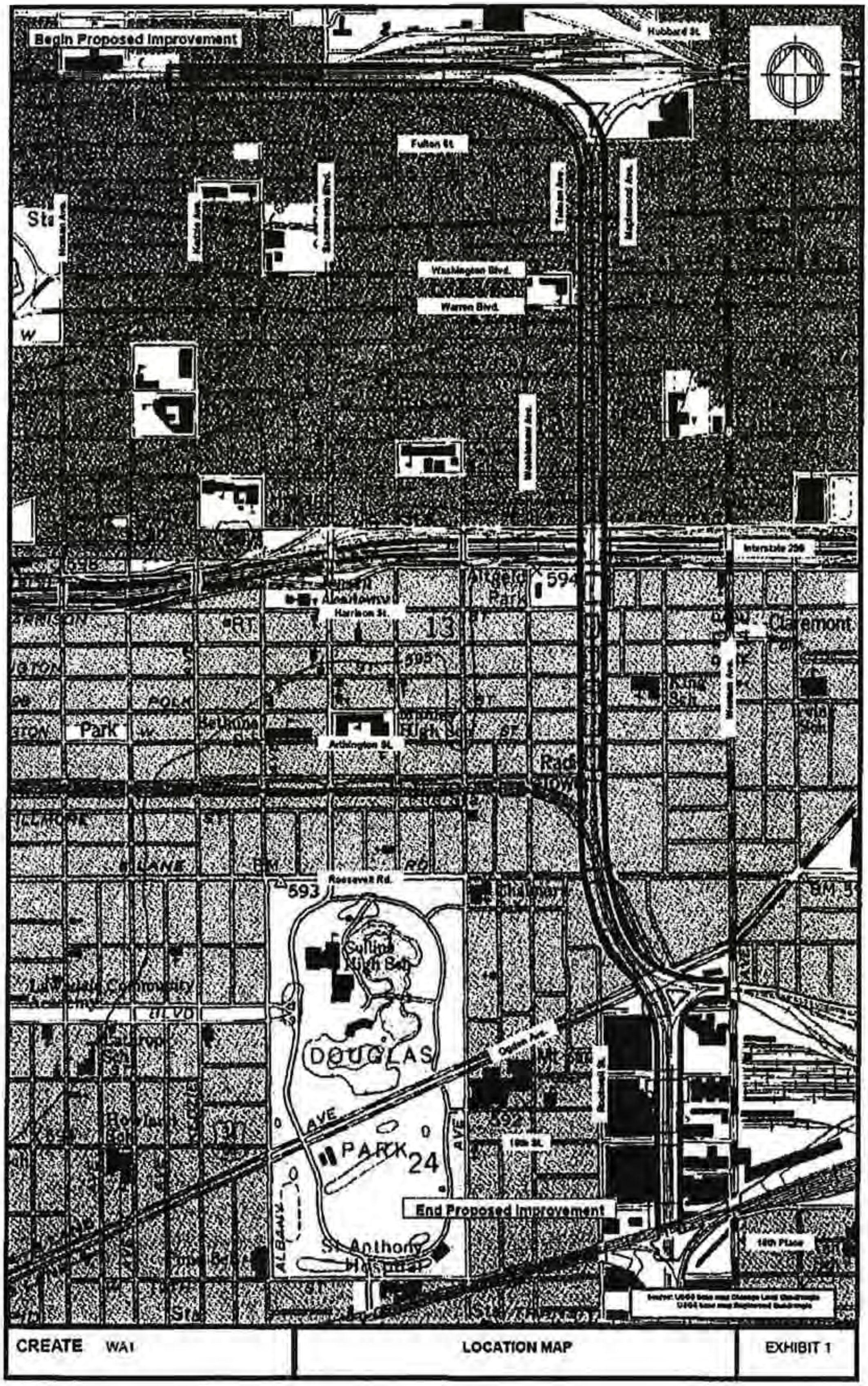
Sincerely,

Larry Wilson
Section Chief - Rail Program Planning

Enclosure (1)

C: Dave Grewe, UPRR

Mr. Dorval Carter Jr.
April 13, 2009
Page 3



EJSCREEN Report (Version 2020)

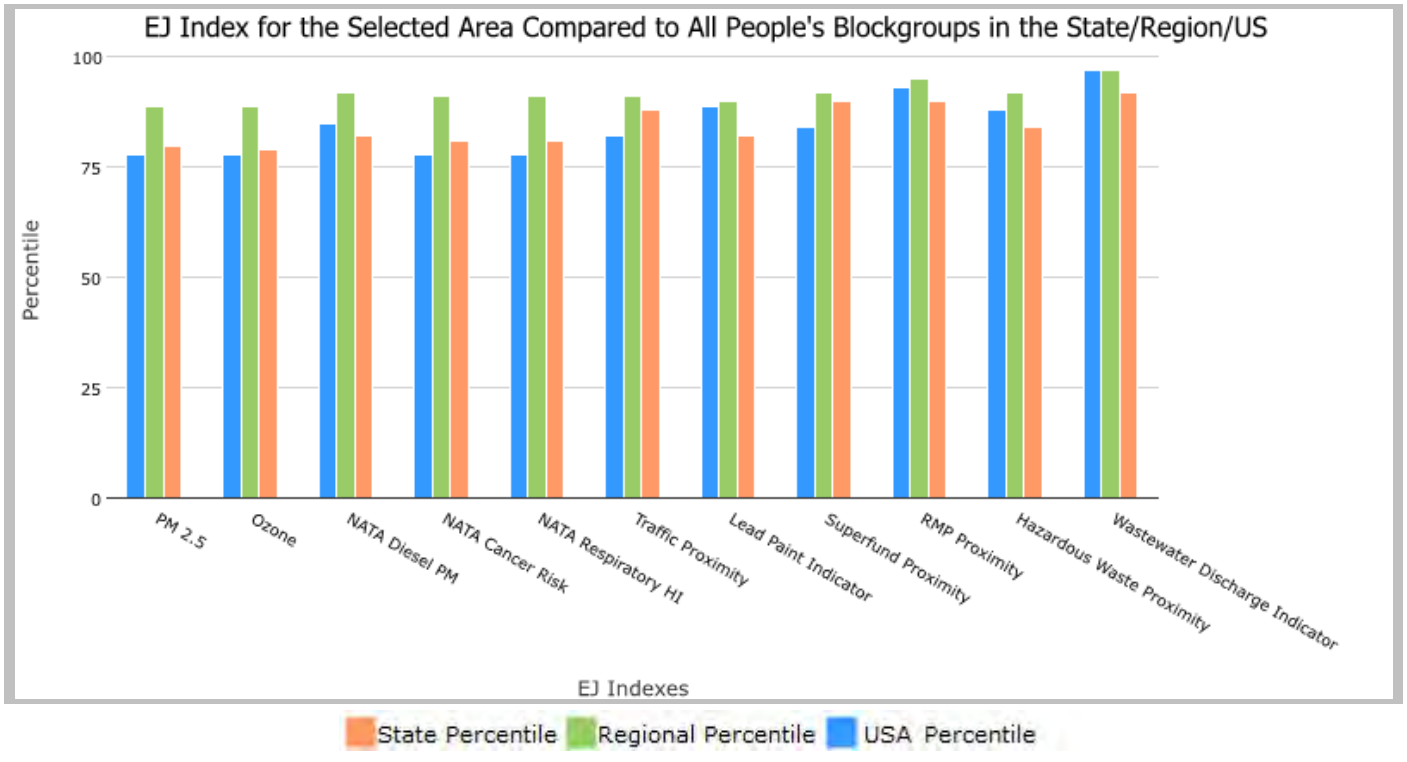
14 miles Ring Centered at 41.764183,-87.562298, ILLINOIS, EPA Region 5

Approximate Population: 2,625,361

Input Area (sq. miles): 615.57

EATE WA1 Ogden Junction Project (The study area contains 9 blockgroup(s) with zero populatic

Selected Variables	State Percentile	EPA Region Percentile	USA Percentile
EJ Indexes			
EJ Index for PM2.5	80	89	78
EJ Index for Ozone	79	89	78
EJ Index for NATA* Diesel PM	82	92	85
EJ Index for NATA* Air Toxics Cancer Risk	81	91	78
EJ Index for NATA* Respiratory Hazard Index	81	91	78
EJ Index for Traffic Proximity and Volume	88	91	82
EJ Index for Lead Paint Indicator	82	90	89
EJ Index for Superfund Proximity	90	92	84
EJ Index for RMP Proximity	90	95	93
EJ Index for Hazardous Waste Proximity	84	92	88
EJ Index for Wastewater Discharge Indicator	92	97	97



This report shows the values for environmental and demographic indicators and EJSCREEN indexes. It shows environmental and demographic raw data (e.g., the estimated concentration of ozone in the air), and also shows what percentile each raw data value represents. These percentiles provide perspective on how the selected block group or buffer area compares to the entire state, EPA region, or nation. For example, if a given location is at the 95th percentile nationwide, this means that only 5 percent of the US population has a higher block group value than the average person in the location being analyzed. The years for which the data are available, and the methods used, vary across these indicators. Important caveats and uncertainties apply to this screening-level information, so it is essential to understand the limitations on appropriate interpretations and applications of these indicators. Please see EJSCREEN documentation for discussion of these issues before using reports.

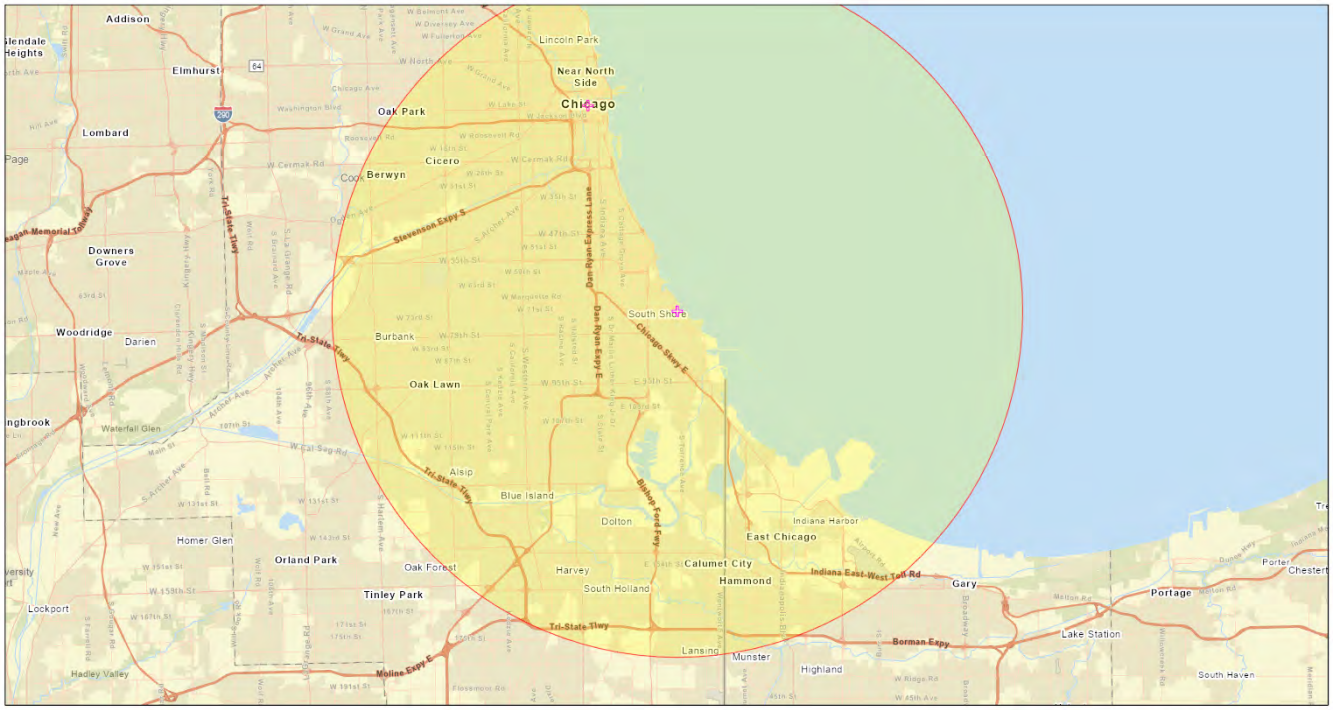
EJSCREEN Report (Version 2020)

14 miles Ring Centered at 41.764183,-87.562298, ILLINOIS, EPA Region 5

Approximate Population: 2,625,361

Input Area (sq. miles): 615.57

EATE WA1 Ogden Junction Project (The study area contains 9 blockgroup(s) with zero populatic



Sites reporting to EPA	
Superfund NPL	8
Hazardous Waste Treatment, Storage, and Disposal Facilities (TSDF)	239

EJSCREEN Report (Version 2020)

14 miles Ring Centered at 41.764183,-87.562298, ILLINOIS, EPA Region 5

Approximate Population: 2,625,361

Input Area (sq. miles): 615.57

EATE WA1 Ogden Junction Project (The study area contains 9 blockgroup(s) with zero populatio

Selected Variables	Value	State Avg.	%ile in State	EPA Region Avg.	%ile in EPA Region	USA Avg.	%ile in USA
Environmental Indicators							
Particulate Matter (PM 2.5 in µg/m^3)	9.46	9.13	75	8.4	89	8.55	80
Ozone (ppb)	47	46.5	70	43.8	91	42.9	82
NATA* Diesel PM (µg/m^3)	1.2	0.67	93	0.446	95-100th	0.478	95-100th
NATA* Cancer Risk (lifetime risk per million)	39	33	82	26	95-100th	32	80-90th
NATA* Respiratory Hazard Index	0.55	0.42	89	0.34	95-100th	0.44	70-80th
Traffic Proximity and Volume (daily traffic count/distance to road)	1500	630	92	530	92	750	87
Lead Paint Indicator (% Pre-1960 Housing)	0.59	0.41	67	0.38	74	0.28	82
Superfund Proximity (site count/km distance)	0.12	0.096	85	0.13	76	0.13	73
RMP Proximity (facility count/km distance)	2.5	1.2	87	0.83	92	0.74	93
Hazardous Waste Proximity (facility count/km distance)	10	4.1	90	2.4	96	5	93
Wastewater Discharge Indicator (toxicity-weighted concentration/m distance)	6.8	6.4	88	2.4	96	9.4	97
Demographic Indicators							
Demographic Index	56%	34%	79	28%	87	36%	79
People of Color Population	71%	38%	79	25%	89	39%	79
Low Income Population	41%	29%	73	30%	73	33%	69
Linguistically Isolated Population	6%	5%	75	2%	87	4%	76
Population With Less Than High School Education	16%	11%	76	10%	81	13%	71
Population Under 5 years of age	6%	6%	59	6%	60	6%	58
Population over 64 years of age	12%	15%	43	16%	36	15%	41

* The National-Scale Air Toxics Assessment (NATA) is EPA's ongoing, comprehensive evaluation of air toxics in the United States. EPA developed the NATA to prioritize air toxics, emission sources, and locations of interest for further study. It is important to remember that NATA provides broad estimates of health risks over geographic areas of the country, not definitive risks to specific individuals or locations. More information on the NATA analysis can be found at: https://www.epa.gov/national-air-toxics-assessment.

For additional information, see: www.epa.gov/environmentaljustice

EJSCREEN Report (Version 2020)

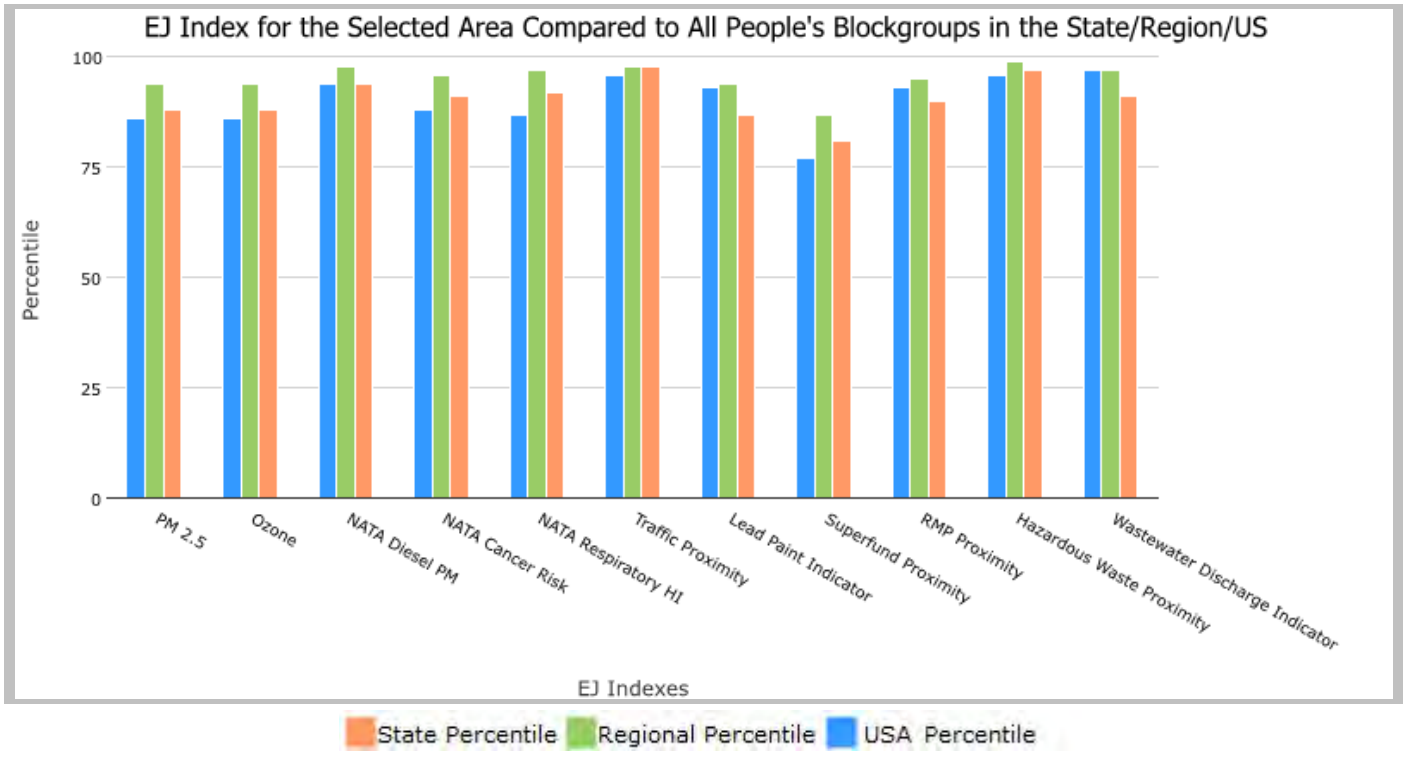
1.25 miles Ring Centered at 41.875227,-87.691502, ILLINOIS, EPA Region 5

Approximate Population: 40,649

Input Area (sq. miles): 4.91

CREATE WA1 Ogden Junction Project

Selected Variables	State Percentile	EPA Region Percentile	USA Percentile
EJ Indexes			
EJ Index for PM2.5	88	94	86
EJ Index for Ozone	88	94	86
EJ Index for NATA* Diesel PM	94	98	94
EJ Index for NATA* Air Toxics Cancer Risk	91	96	88
EJ Index for NATA* Respiratory Hazard Index	92	97	87
EJ Index for Traffic Proximity and Volume	98	98	96
EJ Index for Lead Paint Indicator	87	94	93
EJ Index for Superfund Proximity	81	87	77
EJ Index for RMP Proximity	90	95	93
EJ Index for Hazardous Waste Proximity	97	99	96
EJ Index for Wastewater Discharge Indicator	91	97	97



This report shows the values for environmental and demographic indicators and EJSCREEN indexes. It shows environmental and demographic raw data (e.g., the estimated concentration of ozone in the air), and also shows what percentile each raw data value represents. These percentiles provide perspective on how the selected block group or buffer area compares to the entire state, EPA region, or nation. For example, if a given location is at the 95th percentile nationwide, this means that only 5 percent of the US population has a higher block group value than the average person in the location being analyzed. The years for which the data are available, and the methods used, vary across these indicators. Important caveats and uncertainties apply to this screening-level information, so it is essential to understand the limitations on appropriate interpretations and applications of these indicators. Please see EJSCREEN documentation for discussion of these issues before using reports.

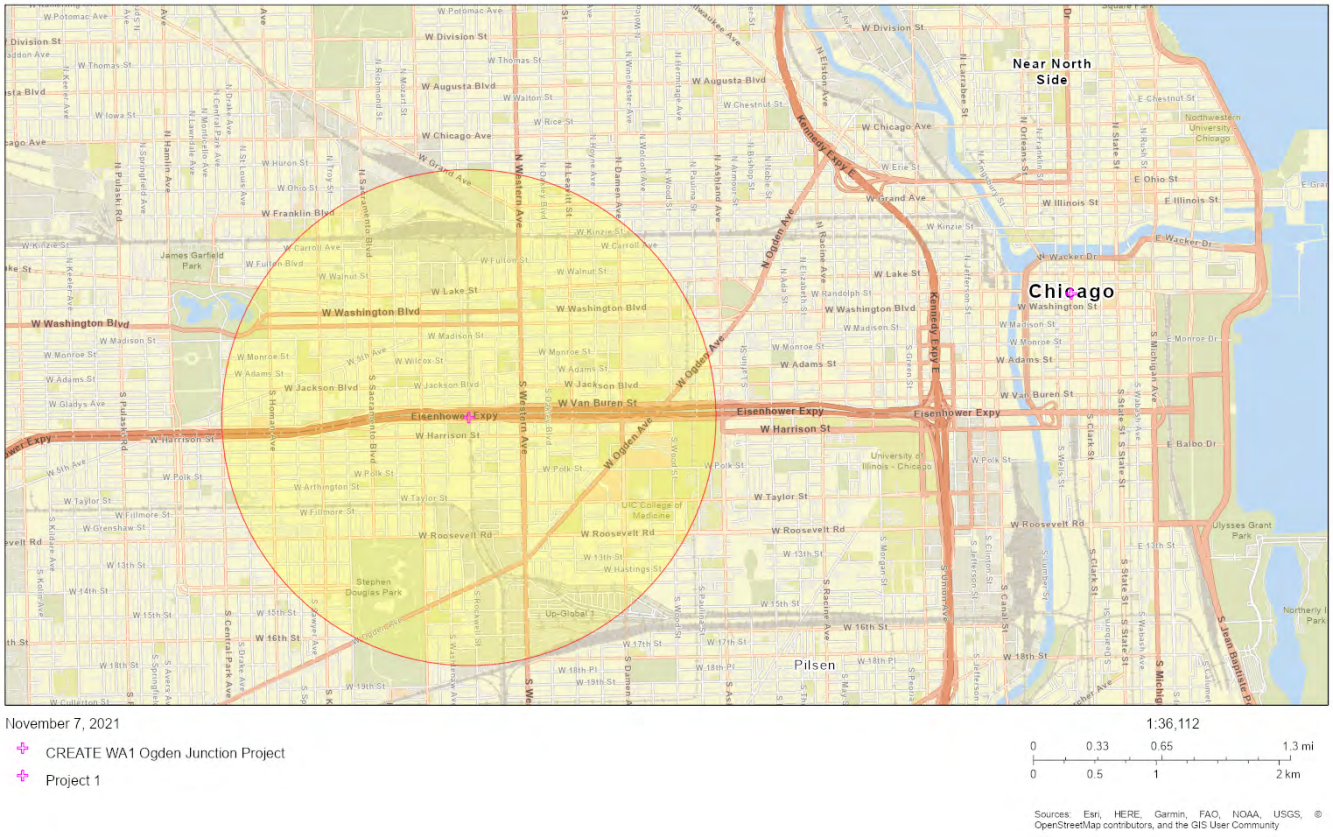
EJSCREEN Report (Version 2020)

1.25 miles Ring Centered at 41.875227,-87.691502, ILLINOIS, EPA Region 5

Approximate Population: 40,649

Input Area (sq. miles): 4.91

CREATE WA1 Ogden Junction Project



Sites reporting to EPA	
Superfund NPL	0
Hazardous Waste Treatment, Storage, and Disposal Facilities (TSDF)	5

EJSCREEN Report (Version 2020)

1.25 miles Ring Centered at 41.875227,-87.691502, ILLINOIS, EPA Region 5

Approximate Population: 40,649

Input Area (sq. miles): 4.91

CREATE WA1 Ogden Junction Project

Selected Variables	Value	State Avg.	%ile in State	EPA Region Avg.	%ile in EPA Region	USA Avg.	%ile in USA
Environmental Indicators							
Particulate Matter (PM 2.5 in µg/m^3)	9.5	9.13	78	8.4	90	8.55	81
Ozone (ppb)	46.4	46.5	42	43.8	81	42.9	79
NATA* Diesel PM (µg/m^3)	1.32	0.67	95	0.446	95-100th	0.478	95-100th
NATA* Cancer Risk (lifetime risk per million)	42	33	90	26	95-100th	32	90-95th
NATA* Respiratory Hazard Index	0.6	0.42	94	0.34	95-100th	0.44	80-90th
Traffic Proximity and Volume (daily traffic count/distance to road)	3100	630	95	530	97	750	94
Lead Paint Indicator (% Pre-1960 Housing)	0.57	0.41	65	0.38	73	0.28	81
Superfund Proximity (site count/km distance)	0.041	0.096	36	0.13	34	0.13	36
RMP Proximity (facility count/km distance)	1.9	1.2	82	0.83	88	0.74	89
Hazardous Waste Proximity (facility count/km distance)	16	4.1	96	2.4	98	5	96
Wastewater Discharge Indicator (toxicity-weighted concentration/m distance)	0.68	6.4	78	2.4	92	9.4	94
Demographic Indicators							
Demographic Index	75%	34%	92	28%	95	36%	93
People of Color Population	88%	38%	86	25%	93	39%	88
Low Income Population	62%	29%	91	30%	91	33%	90
Linguistically Isolated Population	3%	5%	59	2%	75	4%	61
Population With Less Than High School Education	18%	11%	78	10%	84	13%	74
Population Under 5 years of age	8%	6%	73	6%	74	6%	72
Population over 64 years of age	9%	15%	26	16%	20	15%	24

* The National-Scale Air Toxics Assessment (NATA) is EPA's ongoing, comprehensive evaluation of air toxics in the United States. EPA developed the NATA to prioritize air toxics, emission sources, and locations of interest for further study. It is important to remember that NATA provides broad estimates of health risks over geographic areas of the country, not definitive risks to specific individuals or locations. More information on the NATA analysis can be found at: https://www.epa.gov/national-air-toxics-assessment.

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