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MEMORANDUM

To: CMAP Freight Committee

From: CMAP Staff

Date: March 20, 2017

Re: Environmental justice and freight

Although freight generates significant local and regional economic benefits -- in terms of direct employment, tax revenue, and broader economic development -- it imposes significant impacts on quality of life for communities. Freight activity generates significant transportation and land use impacts, including congestion, condition of roads and bridges, safety, and nuisances like noise and vibrations. These costs are significant and, given the region's role as the nation's preeminent freight hub, are disproportionately borne by residents of northeastern Illinois.

Within the region, the negative externalities of goods movement are disproportionately borne by certain communities. As such, freight activity in northeastern Illinois raises environmental justice concerns. This memo first reviews the federal regulatory structural regarding environmental justice, specifically in the context of transportation planning, and then goes on to review examples of freight-environmental justice issues in the region. Finally, it suggests draft recommendations for consideration in the development of the regional Strategic Freight Direction.

Federal regulations and environmental justice

Federal mandates highlight the importance of addressing environmental justice -- which the U.S. Environmental Protection Agency defines as the "fair treatment and meaningful involvement of all people regardless of race, color, national origin, or income with respect to the development, implementation, and enforcement of environmental laws, regulations, and policies"¹ -- in all aspects of the transportation planning process, including freight planning. Federal law and regulations prohibit not only direct discrimination, but also the disparate impacts on protected groups such as minority populations or disabled persons.

¹ U.S. Environmental Protection Agency: <https://www.epa.gov/environmentaljustice>.

The U.S. Department of Transportation outlines three principles on how to incorporate environmental justice into its planning, programming, and policies²:

- Avoid, minimize, or mitigate disproportionately high and adverse human health and environmental effects, including social and economic effects, on minority populations and low-income populations.
- Ensure the full and fair participation by all potentially affected communities in the transportation decision-making process.
- Prevent the denial of, reduction in, or significant delay in the receipt of benefits by minority and low-income populations.

These three principles are put into practice through specific actions and policies, such as the following specified by the Federal Highway Administration³:

- Ensure any social impacts to environmental justice populations are identified early and continually throughout the planning process.
- Ensure participation from environmental justice communities in all programs or activities receiving financial assistance.
- Collect necessary data and conduct research to ameliorate any environmental justice concerns.
- Identify and evaluate environmental, public health, and social and economic effects of programs and policies on low-income and minority communities.
- Propose measures to avoid, minimize, or mitigate disproportionately high and adverse impacts or public health and interrelated social and economic effects on EJ communities.

Freight activity can have adverse impacts on neighboring communities, and these impacts are of particular concern in certain communities. As part of the ON TO 2050 process, CMAP has worked extensively with stakeholders to identify a draft set of “excluded communities” in northeastern Illinois⁴. Excluded communities are identified as census tracts that have a concentration of either (1) low-income and persons of color or (2) low-income and limited-English speaking. While excluded communities are found across the seven-county region, there are particularly large concentrations in major freight activity centers such as the O’Hare area, the south and west sides of the City of Chicago, the south Cook suburbs, and the Joliet area in Will County.

² U.S. Department of Transportation, Order 5610.2:

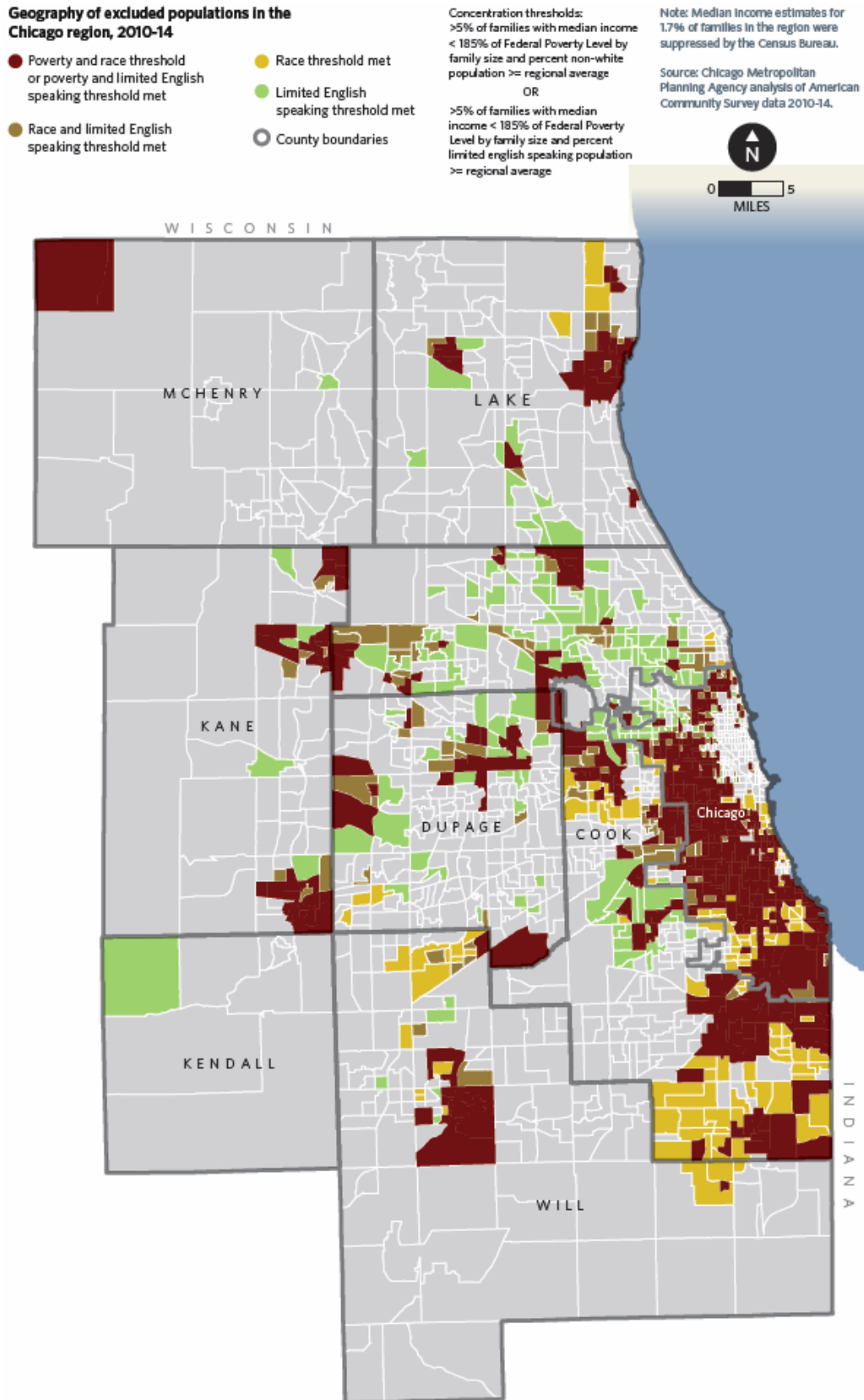
http://www.fhwa.dot.gov/environment/environmental_justice/ej_at_dot/orders/order_56102a/index.cfm.

³ Federal Highway Administration, Order 6640.23A:

<http://www.fhwa.dot.gov/legsregs/directives/orders/664023a.cfm>.

⁴ ON TO 2050 inclusive growth strategy paper: <http://www.cmap.illinois.gov/onto2050/strategy-papers/inclusive-growth>.

Figure 1. Locations of excluded populations, 2010-2014 (draft)



The close correspondence of freight activity centers and excluded communities is perhaps unsurprising. Freight is often a locally unwanted land use, due in large part to its negative externalities such as pollution and congestion. The result is often lower property values for neighboring residential areas, which in turn are more affordable to low-income populations.

Examples of environmental concerns related to freight and industrial activity

The Chicago region has already seen cases in which regional freight and broader industrial activity have raised conflicts with neighboring communities, often communities of color. For example, in 2013, local residents on Chicago's Southeast Side near the Port of Chicago raised concerns over the storage of oil refinery byproducts in their community.⁵ Specifically, the dispersion of dust produced by petroleum coke – or petcoke – storage piles can collect on nearby residential properties, decreasing property values and requiring costly cleanup expenses. More recently, another case has emerged on the Southeast Side, this time regarding significant levels of airborne manganese, a heavy metal used in steel production. City officials and the U.S. Environmental Protection Agency have raised concerns about the potential health effects that manganese dust may have on the roughly 20,000 individuals living near the site.⁶

The environmental justice concerns raised by communities in response to freight and broader industrial activity highlight the need to develop public policy responses for minimizing and mitigating freight activity's adverse impact on communities. Often, these policies are implemented at the local level. For example, in response to diesel-powered freight vehicles, the City of Chicago passed an anti-idling ordinance in 2009 that limits the idling of on-road diesel-powered vehicles to 3 minutes within a 60-minute period.⁷ In the manganese example on the Southeast Side, advocacy groups have urged the Chicago Department of Public Health to establish a zoning ordinance that would prevent companies from storing manganese and prohibiting firms from engaging in operations that produce manganese dust at sites near residential areas.⁸

In addition, individual projects had held to address freight-related environmental concerns. For example, the federally-funded Congestion Mitigation and Air Quality Improvement (CMAQ) programs has recently supported projects that reduce diesel emissions related to freight, which are a major contributor of fine particulate matter emissions. In federal FY2016, CMAP

⁵ U.S. Environmental Protection Agency: <https://www.epa.gov/petroleum-coke-chicago>

⁶ Chicago Tribune: [Who's responsible for manganese dust on Chicago's Southeast Side?](#)

⁷ City of Chicago, Conservation, Green Programs, and Sustainable Transportation: [Doing our Share for Cleaner Air: Idling Reduction.](#)

⁸ Letter from the Natural Resources Defense Council and Southeast Environmental Task Force to the City of Chicago Department of Public Health, January 11, 2017: [Re: Comments of NRDC, SETF, and SSCBP on S.H. Bell's December 2016 Variance Request.](#)

programmed funding to the Indiana Harbor Belt to convert to cleaner locomotives, as well as to Railserve Inc. to replace old models of switcher locomotives⁹.

In other regions, more substantial steps have been taken to mitigate freight's adverse impacts on communities. In the Port of Los Angeles and the Port of Long Beach, as part of the San Pedro Bay Ports Clean Air Action Plan (CAAP), the Clean Truck Program aims at reducing harmful emissions by promoting clean diesel trucks and creating community-friendly areas near the ports.¹⁰ The plan calls for replacing diesel trucks with clean or retrofitted vehicles, requiring all trucks meet the 2007 Federal Clean Truck Emissions Standards. Trucks that meet the federal 2007 emission standards are significantly cleaner, producing 80 percent less emissions relative to the previous truck models.¹¹ The Port of Los Angeles Clean Truck Program reduced truck emissions by 70 percent in its first year and by 80 percent during 2012, the first year of full program implementation. Similarly, at the Port of Long Beach, the Clean Truck Program has reduced harmful truck pollution by more than 90 percent in its first three years.

Draft recommendations for the Regional Strategic Freight Direction

The Regional Strategic Freight Direction could acknowledge that additional considerations are required for freight-related planning and development, given the high concentrations of low-income populations and persons of color in freight areas. It could further target its recommendations to actors at various scales. At the local level, these additional considerations include greater outreach, analysis, and mitigation strategies:

- First, additional outreach and community engagement efforts are necessary to ensure full and fair participation in excluded communities. This type of outreach may be somewhat unfamiliar to public agencies and private firms, which would require additional time and effort.
- Second, additional analysis above and beyond traditional transportation studies may be necessary to evaluate disparate or disproportionate impact in excluded communities. For example, health impact assessments are an emerging planning tool to assess how proposals such as new projects or regulations broadly affect the health of local communities. CMAP has experience in conducting health impact assessments through its Local Technical Assistance program¹².
- Third, public agencies and private firms alike should consider additional mitigation activities that may be more appropriate in excluded communities, given the confluence of negative externalities in those areas. Relatively low-cost approaches like cleaner or quieter trucks and locomotives, noise walls, and landscaping may go a long way toward mitigating local concerns. Higher-cost approaches like highway-rail grade separations

⁹ CMAP, December 22, 2016: [CMAQ Program Summary, 2017-2020](#).

¹⁰ Port of Los Angeles: [Clean Truck Program](#).

¹¹ Port of Long Beach: [Clean Trucks Program](#)

¹² Carpentersville Health Impact Assessment: <http://www.cmap.illinois.gov/programs-and-resources/hta/carpentersville-hia>.

may be more appropriate in some areas. Local hiring or training programs could also be an appropriate approach for some circumstances.

At the regional level, the above best practices could be further developed by CMAP into a toolkit and widely disseminated as a resource for local governments. In addition, CMAP could directly promote the implementation of these best practices and, more broadly, the importance of environmental justice in transportation planning and programming, through its management of federal transportation funding.

For example, projects applying for competitive Congestion Mitigation and Air Quality Improvement (CMAQ) or Transportation Alternatives Program (TAP) funding with the locations of excluded populations could receive greater weight in the scoring process. This preferential approach could be applied to all proposals located in those areas, or just a subset of project types (e.g., diesel engine retrofit projects) that are determined to have a closer nexus with environmental justice concerns. A similar lens could also be applied to the evaluation of regionally significant projects for fiscal constraint in ON TO 2050.

The Regional Strategic Freight Direction could recommend that CMAP staff initiate a conversation with the MPO Policy Committee on how to best incorporate environmental justice concerns into the transportation programming process.