Mitigating Freight Impacts on Nearby Communities

Requested by
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The Caltrans Division of Research, Innovation and System Information (DRISI) receives and evaluates numerous research problem statements for funding every year. DRISI conducts Preliminary Investigations on these problem statements to better scope and prioritize the proposed research in light of existing credible work on the topics nationally and internationally. Online and print sources for Preliminary Investigations include the National Cooperative Highway Research Program (NCHRP) and other Transportation Research Board (TRB) programs, the American Association of State Highway and Transportation Officials (AASHTO), the research and practices of other transportation agencies, and related academic and industry research. The views and conclusions in cited works, while generally peer reviewed or published by authoritative sources, may not be accepted without qualification by all experts in the field. The contents of this document reflect the views of the authors, who are responsible for the facts and accuracy of the data presented herein. The contents do not necessarily reflect the official views or policies of the California Department of Transportation, the State of California, or the Federal Highway Administration. This document does not constitute a standard, specification, or regulation. No part of this publication should be construed as an endorsement for a commercial product, manufacturer, contractor, or consultant. Any trade names or photos of commercial products appearing in this publication are for clarity only.

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Executive Summary

Background

Caltrans is interested in learning how transportation agencies improve freight efficiency while limiting the environmental health, social, economic and livability impacts on communities near freight facilities. Of particular interest to Caltrans are the community-focused activities and strategies practiced by state, regional and local agencies, and public ports to mitigate or avoid adverse impacts of freight-related land uses as well as the practices used to engage communities in identifying those mitigation strategies.

To support this effort, CTC & Associates gathered information about published research and in-process projects; federal grant programs; and recent relevant activities at the national, state and local levels. Topic areas included:

- Best practices used by government agencies to encourage and engage the participation of communities affected by freight to identify solutions.
- Grant funding or other planning funds that assist communities in mitigating freight impacts.
- Effective strategies to mitigate freight impacts and the role played by the affected communities in strategy development.
- Mitigation efforts associated with new freight-related projects as well as efforts undertaken to abate the negative impacts of existing freight facilities.

Summary of Findings

Through a literature search and limited follow-up contacts, we identified recent research and other publications that address the strategies used by government agencies to mitigate freight impacts and the methods used to engage affected communities in addressing these impacts.

National Resources

Federal Highway Administration

Two Federal Highway Administration (FHWA) handbooks provide information relevant to this investigation: The first guide, published in 2012, presents best practices to ensure freight land uses have a positive relationship with surrounding land uses; the second, published in 2010, includes case studies that illustrate effective ways to solve freight air quality problems. A 2009 urban freight case study of New York City offers effective strategies related to stakeholder involvement, and a 2014 (Volume 78, Number 1) article in *Public Roads* describes the formation and role of freight advisory committees. Finally, the Talking Freight seminar series offers presentations on a wide range of freight-related topics, including stakeholder and community engagement.

National Cooperative Freight Research Program

Three recent reports produced by the National Cooperative Freight Research Program (NCFRP) offer discussions of research areas that could potentially improve livability of communities affected by freight impacts (NCFRP Report 24); a synthesis of planning-related freight research that examines effective strategies for managing freight activities in urban areas

(NCFRP Report 23); and a guidebook that addresses the impacts of the movement of goods and possible solutions for addressing them (NCFRP Report 14).

(*Note:* Moving Ahead for Progress in the 21st Century Act (MAP-21), the bill reauthorizing surface transportation programs through fiscal year 2014, has not authorized funding for NCFRP. TRB will discontinue the program after all previously selected projects are completed.)

National Cooperative Highway Research Program (NCHRP)

A 2003 NCHRP report, though dated, provides a basis for more recent analyses of ensuring the livability of communities. The report examines the siting of facilities and modifications to freight operations to align with community needs and interests.

Strategic Highway Research Program 2

In a 2014 report published by the Strategic Highway Research Program 2 (SHRP 2), researchers used the results of a literature review, industry interviews and 11 case studies to develop a guide for engaging freight stakeholders. An online decision tool developed in conjunction with this project provides a stakeholder portal.

State, Regional and Local Plans and Practices

This section presents freight plans developed by regional planning agencies, reports, resource manuals, case studies and other publications that examine freight impacts and offer recommendations for addressing them. For this investigation, we examined resources and practices from California, Georgia, Illinois, Kansas, Maryland, New York, Oregon, Tennessee and Texas. Some of the cited documents also address a second topic area of this investigation: community impacts. A few highlights:

- A National Center for Freight and Infrastructure Research and Education (CFIRE) research study that is expected to conclude in the next two months examines the livability of freight-centric communities and considers how advanced technologies can make inroads in the livability of these communities.
- The Atlanta Regional Freight Mobility Plan includes a community and environmental impact scan and assessment that examines in detail a wide range of freight impacts and offers case studies and recommendations for prevention or mitigation.
- A health impact assessment of a proposed rail intermodal facility in Baltimore offers an extensive list of recommendations to address freight impacts at all stages of project development.

Impacts of Freight Operations on Communities

Resources for Engaging the Community

Journal articles, research results and resource guides cited in this section address impacts on communities affected by freight operations. Many of these publications address the ways in which affected communities can be engaged to mitigate these impacts. For example, a resource guide for the port region of New York and New Jersey provides links to public participation reports that offer guidance for engaging community members in freight decision-making.

Organizations Advocating for Communities Impacted by Freight

Many state, regional and local organizations are encouraging community involvement and public and private sector cooperation in managing the impacts of freight facilities and the movement of goods. This section provides a sampling of these organizations that, in addition to their advocacy activities, seek funding and publish research results about the impacts of freight. Included in this section are publications from the Center for Neighborhood Technology, Ditching Dirty Diesel Cooperative, Natural Resources Defense Council and Pacific Institute.

Funding Sources to Address Impacts on Freight-Centric Communities

We found little with regard to current federal funding programs specific to freight-related planning outside the traditional FHWA Surface Transportation Program funding. Two U.S. Environmental Protection Agency grant programs (Environmental Justice Small Grants and Environmental Justice Collaborative Problem-Solving Cooperative Agreement programs) offer funding to communities to address local environmental and public health issues. A previous source of planning-related funding that might be used to address freight issues—Transportation Investment Generating Economic Recovery (TIGER) grants—is no longer available. To illustrate funding opportunities outside of federal sources, we include an example of private funding for a health impact assessment that will "establish a framework for the consideration of health effects in freight planning."

Gaps in Findings

We found a dearth of available federal grant funding available for freight planning-related projects that examine impacts on freight-centric communities. Though we provided an example of a private funding source, this type of funding was not examined in detail in this investigation.

The final report for a research study that will likely be of significant interest to Caltrans (see "Defining Livability for Freight-Centric Communities: Identifying Priorities of Residents of the Lamar Avenue Corridor in Memphis, TN" on page 15 of this investigation) is not yet available. The final report is expected to be available on the project web site by the summer 2015.

The Memphis, TN, study highlights the relative lack of information about livability as defined by the residents experiencing the impacts of freight operations. The study authors note that it "may be the first study by planners and civil engineers of how freight operations affect the livability of nearby communities."

Next Steps

Moving forward, Caltrans could consider:

- Examining in detail the tabular displays of mitigation strategies that appear in several documents cited in this investigation. NCFRP Report 23 and the Community & Environmental Impact Scan and Assessment associated with the Atlanta Regional Freight Mobility Plan are good examples.
- Exploring the recommendations noted in the health impact assessment of a proposed Baltimore-Washington rail intermodal facility to assess how to more effectively engage the community when addressing the impacts of freight operations.
- Checking the CFIRE web site in the summer of 2015 for the final report on a project that examined livability in a freight-centric community.

- Reviewing the guidebooks and resource manuals developed to aid in community engagement to identify common themes.
- Investigating private sources of funding that could assist communities in mitigating freight impacts.

Detailed Findings

National Resources

National transportation research organizations and federal transportation agencies have produced many publications that address freight issues. Among the topics addressed are the ways in which communities are affected by freight operations and the strategies recommended to address those impacts. A few of the documents also address practices to engage the community. The citations in this section, which provide a sampling of the available publications, are categorized by the type of organization responsible for the publication:

- FHWA.
- NCFRP.
- NCHRP.
- SHRP 2.

FHWA

FHWA Freight and Land Use Handbook, Federal Highway Administration, April 2012.
http://www.ops.fhwa.dot.gov/publications/fhwahop12006/fhwahop12006.pdf

From Section 2.0, Freight as a Good Neighbor – Land Use, Transportation System, and Environmental Considerations (page 2-1 of the report, page 44 of the PDF):

> The purpose of this section is to review a range of strategies and tools that have been used successfully to ensure that freight land uses have a positive relationship with surrounding land uses. Throughout the section, "best practices" will be used to illustrate how other regional authorities and cities have successfully implemented freight uses into their land use fabric.

Freight and Air Quality Handbook, Federal Highway Administration, May 2010.
http://ntl.bts.gov/lib/34000/34400/34438/fhwahop10024.pdf

From the abstract:

> This handbook provides the background needed to understand how freight contributes to air quality issues, describes strategies to mitigate those freight-related pollutant emissions and improve air quality, and identifies funding and financing tools available for freight-related air quality projects. Case studies of freight projects and programs that seek to improve air quality and reduce freight-related emissions are presented. These case studies provide real-world examples of the operational, infrastructure, and technology solutions being used to solve freight air quality problems.

Urban Freight Case Studies: New York, Federal Highway Administration, November 2009.
http://ops.fhwa.dot.gov/publications/fhwahop10019/fhwahop10019.pdf
Major findings and conclusions from this case study, which is part of FHWA's "extensive review of freight-related projects and strategies that provide practical information and transferable solutions to the challenges that confront urban goods movement," include the following strategies related to stakeholder involvement:

- A stakeholder group should be set up early in the study. New York City DOT realized early in the study process that it could not implement solutions without the coordination and support of many regulatory agencies and stakeholders.
- Opposition to truck route restrictions may be overcome with simple educational tools. By developing an educational program that considers the issues raised by concerned stakeholders, freight planning and operations staff can help minimize resistance and even foster support for the truck route system.

Talking Freight Seminar Series, Office of Freight Management and Operations and the Office of Planning, Federal Highway Administration, updated February 17, 2015.
http://www.fhwa.dot.gov/planning/freight_planning/talking_freight/
Current and archived Talking Freight seminars are "aimed at providing technical assistance, training, tools, and information to help the freight and planning workforce meet the transportation challenges of tomorrow." Below are a few seminars that appear to be particularly relevant to stakeholder and community engagement:

> **Freight Advisory Committees: Overview from Committee Organizers**, December 17, 2014.
> http://www.fhwa.dot.gov/planning/freight_planning/talking_freight/december_2014/
>
> **Urban Goods Movement: Techniques to Improve Decision-Making and Freight Operations**, August 17, 2011.
> http://www.fhwa.dot.gov/planning/freight_planning/talking_freight/11talking.cfm
> (*Note:* Scroll down the page to find links to the appropriate date and the individual presentations.)
>
> **Freight and Livability**, June 15, 2011.
> http://www.fhwa.dot.gov/planning/freight_planning/talking_freight/11talking.cfm
> (*Note:* Scroll down the page to find links to the appropriate date and the individual presentations.)

"Shaping the Future of Freight," Tiffany Julien and Nicholas Kehoe, *Public Roads,* Vol. 78, No. 1, July/August 2014.
http://www.fhwa.dot.gov/publications/publicroads/14julaug/04.cfm
This article describes the formation of state freight advisory committees by the public sector to serve as a "mechanism that can assist in capturing and understanding input from private sector stakeholders." While not focusing on community engagement, the article may inform development of advisory committees with a community-focused composition.

NCFRP

While the NCFRP reports below address to some degree this Preliminary Investigation's area of inquiry, similar future reports will not be funded through this program. No funding was authorized for NCFRP in Moving Ahead for Progress in the 21st Century (MAP-21), the bill reauthorizing surface transportation programs through fiscal year 2014. After completion of all previously selected projects, TRB will discontinue the program.

NCFRP Report 24: Smart Growth and Urban Goods Movement, Alon Bassok, Chris Johnson, Matthew Kitchen, Rebeccah Maskin, Kris Overby, Daniel Carlson, Anne Goodchild, Edward McCormack and Erica Wygonik, April 2013.
http://onlinepubs.trb.org/onlinepubs/ncfrp/ncfrp_rpt_024.pdf
Using information gathered from a literature review and interviews, researchers identified five research areas that, if pursued, could have a significant impact on understanding the relationship between smart growth and the movement of urban goods. (*Note:* In this report, "smart growth" is described as "compact, transit-oriented, and walkable land use that has been proposed as an alternative to urban sprawl.") Researchers note that expanding the knowledge base in the following areas "has the potential to improve the livability of cities and reduce environmental impacts while maintaining or increasing economic vitality":

- Access, parking and loading zones.
- Road channelization, bicycle and pedestrian facilities.
- Land use mix.
- Logistics.
- Network system management.

See page 33 of the report (page 42 of the PDF) for examples of the gaps in these research areas and feedback from focus groups.

Related Resources:

Issues Identified and Lessons Learned from NCFRP 24 Case Studies, Envision Freight: A Roadmap to Freight Compatibility, undated.
http://www.envisionfreight.com/issues/pdf/Intro_and_Lessons_Learned.pdf
In addition to summarizing the case studies examined in NCFRP Report 24, this document provides a summary of lessons learned and recommendations for potential solutions to the critical issues identified in the report. Among the critical issues identified:

- The primary forum where conflicts between freight and other land uses are either avoided or created is the land use planning area.
- State and regional planning does not do much to fill the gap in freight planning.
- Regional visioning exercises generally do not deal adequately with freight.
- Funding is often lacking or insufficient for freight planning and preservation.
- There is a lack of effective communication among freight and land use/transportation planning stakeholders.

"Tools to Preserve and Protect Freight Corridors: NCFRP 24 Update," Lisa Loftus-Otway, Center for Transportation Research, The University of Texas at Austin, *National Grade Crossing Safety Conference*, November 8, 2011.
http://tti.tamu.edu/conferences/rail11/program/presentations/bo-preservation/loftus-otway.pdf
Slide 10 of this presentation provides a table of freight corridor and facilities protection and preservation strategies. While focused on freight preservation, the mitigation strategies appearing in this table will also be of interest to those advocating for the interests of residents living in proximity to freight facilities.

NCFRP Report 23: Synthesis of Freight Research in Urban Transportation Planning, Genevieve Giuliano, Thomas O'Brien, Laetitia Dablanc and Kevin Holliday, February 2013.
http://onlinepubs.trb.org/onlinepubs/ncfrp/ncfrp_rpt_023.pdf

From the foreword:

> This report synthesizes information about policies and practices for managing freight activity in metropolitan areas and is based on a comprehensive review of international literature. The primary focus is on "last-mile/first-mile" strategies, but the report also focuses on strategies affecting environmental issues and trading hubs or nodes. The research looked beyond the United States—mostly, but not exclusively, in Europe and the European BESTUFS (Best Urban Freight Solutions) program—for potentially relevant policies and practices that could be used in the United States.

Researchers' findings are summarized in Table 15, Summary of Strategies and Their Effectiveness and Applicability to the United States (page 80 of the report, page 88 of the PDF). Strategies are organized in three topic areas—last-mile, environment and trade node—with a designation of effectiveness (low, medium or high) and applicability to the United States.

NCFRP Report 14: Guidebook for Understanding Urban Goods Movement, Suzann S. Rhodes, Mark Berndt, Paul Bingham, Joe Bryan, Thomas J. Cherrett, Peter Plumeau and Roberta Weisbrod, 2012.
http://onlinepubs.trb.org/onlinepubs/ncfrp/ncfrp_rpt_014.pdf

From Chapter 1 of the report:

> The primary focus of this guidebook is on planning actions that if started today, can prevent goods movement from being an overly costly, hazardous, or polluting activity in the future. Moving goods and services within dense urban environments will always convey unwanted social costs upon citizens. However, cities that have recognized the social and economic benefits of accommodating freight through proper land-use planning, regulation, and public education have made advancements toward reducing the negative social impacts often associated with freight. This guidebook uses case studies to illustrate "how to" steps and share the knowledge gained by local planners and elected officials working to integrate city logistics into their future vision.

Elements of the report particularly relevant to this investigation include:

- Chapter 6, Putting It All Together: A Process for Evaluating and Addressing the Impacts, which begins on page 52 of the report (page 62 of the PDF). This chapter addresses the impacts of the movement of freight and presents possible solutions or strategies for addressing increased congestion, air pollution, noise pollution and other issues.
- Exhibit 6-3, Urban Goods Movement Problems and Potential Solutions (page 58 of the report, page 68 of the PDF). Topic areas in this summary of potential problems and solutions include truck routing, parking and loading zones, time-of-day delivery restrictions, building codes, infrastructure design requirements/operating structure, zoning, zoning/green initiatives and project prioritization processes.

NCHRP

NCHRP Synthesis 320: Integrating Freight Facilities and Operations with Community Goals, Anne Strauss-Wieder, 2003.
http://onlinepubs.trb.org/onlinepubs/nchrp/nchrp_syn_320.pdf
While somewhat dated, this NCHRP synthesis, provides a basis for more recent analyses of ensuring the livability of communities while advancing effective and efficient freight operations. The synthesis addresses water, truck, rail and air freight facilities and operations. It identifies practices used by private sector freight companies and public transportation agencies when siting facilities or modifying operations to align with community needs and interests. Also addressed are "good neighbor initiatives" and balancing practices used by planning and economic development organizations and local governments.

SHRP 2

Integrating Freight Considerations into Collaborative Decision Making for Additions to Highway Capacity, Cambridge Systematics, Inc., 2014.
http://onlinepubs.trb.org/onlinepubs/shrp2/SHRP2_S2-C15-RW-1.pdf
This project was designed to "improve the ability of transportation agencies to integrate freight considerations into the highway capacity planning process." Using the results of a literature review, industry interviews and 11 case studies, researchers developed a guide for engaging freight stakeholders.

Findings from the research appear in Chapter 3, which begins on page 14 of the report (page 23 of the PDF). In addition to identifying the most effective methods for outreach by stakeholder type, researchers provided a series of best practices:

- Engage a wide range of freight stakeholders, including public and private stakeholders and those that have not historically been highly engaged (e.g., the shipping community). Consider the range of issues and alternatives in a meaningful way.
- Engage stakeholders at the right time (i.e., not too early) so they understand the context and implications of the proposed project or alternatives.
- Ensure activities required of stakeholders are not too onerous; project leaders should be able to collect stakeholder input without exhausting the stakeholders.
- Develop an outreach program that leads to lasting relationships between the agency and stakeholders, not necessarily requiring their constant future involvement but ensuring the ability to work together constructively when needed in the future.

A decision tool developed with research findings appears on the Transportation for Communities—Advancing Projects through Partnerships web site, available online at http://transportationforcommunities.com/freight_application. The "Working with Freight Stakeholders" application component offers guidance about effective ways to form relationships and gather meaningful feedback from freight stakeholders. Also of interest will be the stakeholder portal, available at http://transportationforcommunities.com/stakeholder/2, which provides a stakeholder collaboration assessment and a stakeholder collaboration application.

State, Regional and Local Plans and Practices

This section highlights freight plans developed by regional planning agencies. It also includes reports, resource manuals, case studies and other publications that examine freight impacts and offer recommendations for addressing them. Some of the documents cited here also address a second topic area of this investigation: community impacts.

California

Summary Report: Community Collaboration for Sustainable Freight, Alameda County Transportation Commission, December 2014.
http://www.alamedactc.org/files/managed/Document/15282/AlamedaCTC-MTC_GMRoundtable2_Summary.pdf
This report highlights key themes and ideas from a Bay Area Goods Movement Collaborative roundtable convened in Oakland, CA, November 15, 2014. This two-hour community workshop was designed to collect community input about the local impacts created by goods movement activities as well as strategies to minimize those impacts.

"Building Tomorrow's Clean Freight System: The Potential Zero Emission Freight Corridor System In Southern California," Sophie Hartshorn, Annie Nam, Michael Fischer and Akiko Yamagami, *TRB 92nd Annual Meeting Compendium of Papers DVD*, Paper #13-4589, 2013.
http://docs.trb.org/prp/13-4589.pdf

From the abstract:

> The Southern California Association of Government's (SCAG)'s 2012 Regional Transportation Plan (RTP) includes a "Regional Clean Freight Corridor System" as a regional highway strategy. … This paper focuses on planning analysis part of this clean freight corridor – the portion that would connect I-710 in the west of the SCAG region, and I-15 in the east of the region- henceforth known as the "East West Freight Corridor (EWFC)". It summarizes the analytical and stakeholder outreach work completed since 2008 to advance the EWFC concept, including: a better understanding of markets served by the EWFC, the identification of non-freeway alignments that could help mitigate community impacts and create synergies with other public works projects, a better understanding of truck movement in the region and traffic impacts from an EWFC, and development of a plan for how the corridor could be used to help introduce new clean truck technologies to the region.

At a Crossroads in Our Region's Health: Freight Transport and the Future of Community Health in the San Francisco Bay Area, Pacific Institute and Ditching Dirty Diesel Collaborative, December 2011.
http://pacinst.org/wp-content/uploads/sites/21/2013/02/at-a-crossroads-for-health-full-report.pdf
This report closes with a series of recommendations to encourage land use decisions that protect community health in the San Francisco Bay Area (see page 32 of the report, page 33 of the PDF). These recommendations include:

- Require jurisdictions applying for One Bay Area Grant funds to require developers to identify mitigation measures and secure adequate funding to implement them to offset the impacts of building more housing in high health risk areas.

- Encourage local jurisdictions to require mitigation measures for proposed residential developments within portions of Priority Development Areas with the highest health risk from toxic air contaminants.
- Require mitigation measures in proposed developments within health-protective buffer zones around freight transport hazards in Priority Development Areas.
- Target mitigation-related funding and resources toward portions of Priority Development Areas with the highest health risk from toxic air contaminants, particularly in those Priority Development Areas that overlap with Community Air Risk Evaluation communities.

Georgia

Atlanta Regional Freight Mobility Plan: Community & Environmental Impact Scan and Assessment; Technical Memo, Atlanta Regional Commission, August 16, 2007.
http://www.atlantaregional.com/File%20Library/Transportation/Roads%20and%20Highways/tp_community_assessment_report_8-16-07.pdf.
Section 2 of this technical memo, which begins on page 87, includes an Impacts of Freight and Mitigation Best Practices Table (page 89). The table is organized by freight impact and addresses all forms of freight (truck, rail, air and water) though focuses more on truck and rail. Impacts are identified as the community, the environment or both; prevention and mitigation methods are noted. The table also includes examples of best practice case studies that relate to the specific freight impact. (*Note:* Brief descriptions of the case studies appear in Section 3; see page 98.) Freight impacts assessed in the table include:

- Air pollution.
- Road issues (traffic flow, congestion, cut-through traffic, road/pavement conditions, and connectivity and access).
- Noise pollution and vibration.
- Light pollution.
- Community safety (injury, accidents, hazardous materials and security concerns).
- Environmental impacts (ecosystems; air; water; soil; wetlands; and historic, cultural and archaeological resources).
- Visual and aesthetic concerns.

Related Resource:

Atlanta Regional Freight Mobility Plan, Final Report, Atlanta Regional Commission, February 2008.
http://documents.atlantaregional.com/transportation/freight/Freight_Mobility_Plan_Final_Report_Feb%206_%202008.pdf
Chapter 6 of this plan presents a preliminary list of recommendations and discusses the screening process used to evaluate them. Chapter 7 presents the recommendations that resulted from the screening process, and Chapter 8 provides the implementation plan. Strategies included in the plan are organized in three categories: institutional and policy, operational improvement and infrastructure.

Illinois

Building Planning Capacity Between Public and Private Sector Partners in the Freight Industry: A Resource Manual for Public and Private Freight Planning Interests, Erika Young and Jenee Kresge, The National Association of Regional Councils, 2009.
http://narc.org/uploads/freightresourcesmanual_final.pdf
Page 73 of the manual provides a case study of the CREATE (Chicago Region Environmental and Transportation Efficiency) program, which was developed to "increase national level economic competitiveness and mitigate potential adverse environmental and quality of life impacts." Initiated in 2002 as a public-private partnership, CREATE includes the U.S. DOT, the state of Illinois, the city of Chicago, the Association of American Railroads, and the local transit and passenger rail operators Metra and Amtrak.

Related Resource:

> **"$26 Million CREATE Project to Reduce Rail Congestion and Improve Air Quality in Two Illinois Communities: CREATE Partners Break Ground to Get Highly Anticipated Project Underway,"** Press Release, CREATE Program, October 5, 2009.
> http://createprogram.org/press_releases/oct5-2009.pdf
> This press release announcing the kickoff of CREATE project B12—the addition of a third main line of rail track in Blue Island and Alsip, IL—also provides perspective on the freight impacts the CREATE program's rail and highway projects seek to mitigate:
>
> > Because of the manner in which train tracks currently intersect with each other and with roads, it can now take up to 30 hours for freight trains to pass through the Chicago region. Delays in rail-based freight, including grade crossings, threaten the economic vitality of the region, make it harder for our farmers to make a profit, lead to increased traffic congestion on our roads and highways, generate unnecessary levels of air pollution, raise safety concerns, and adversely affect the reliability and speed of rail passenger service.

Illinois/Georgia

Case Study: The Relocation of Intermodal Facilities, Envision Freight: A Roadmap to Freight Compatibility, undated.
http://www.envisionfreight.com/issues/pdf/Joliet_Austell.pdf
Case studies of two relocation efforts are used to illustrate the differences in these processes and the factors that contribute to or impede success. The two projects—the Joliet Arsenal redevelopment southwest of Chicago and the Norfolk Southern Whitaker Intermodal Terminal in Austell, GA—offer examples of new intermodal facilities that were relocated to suburban areas to lessen impacts on surrounding communities. See page 19 of the document for a discussion of stakeholders' contribution to project outcomes.

Kansas

Kansas Statewide Freight Study, Final Report, Kansas Department of Transportation, June 2009.
http://ksdot1.ksdot.org/burRail/pdf/Statewide%20Freight%20Study,%20Sections%201-6.pdf
Section 2.2, Stakeholder Outreach, which begins on page 2-3 of the report (page 5 of the PDF), summarizes the stakeholder engagement measures undertaken for the study. The outreach strategy included the following elements:

- Developing the Kansas Freight Advisory Group, which included key freight stakeholders from across the state and from a variety of industries.
- Developing a Study Coordination Team, which included other organizations also studying state and regional freight issues within Kansas.
- Conducting over 60 stakeholder interviews.
- Holding eight regional meetings across the state to gather additional feedback from regional stakeholders.
- Holding a statewide freight summit to announce the study's preliminary recommendations and discuss specific concerns about the implementation of the recommendations.
- Developing a project web site to share information throughout the life of the project.

Maryland

Baltimore-Washington Rail Intermodal Facility Health Impact Assessment, National Center for Healthy Housing, 2008.
http://www.nchh.org/Policy/HealthImpactAssessment/BaltimoreWashingtonRailIntermodalFacilityHIA.aspx

From the web site's project description:

> "Decisions about how goods are moved across the state and across the country are made every day," stated then-Director Rebecca Morley. "Only in a few instances are those decisions looked at through the lens of public health. This project will enable NCHH to use its research expertise to help residents of Maryland understand the anticipated impact of the intermodal transfer facility on their health and provide input into the decision-making process." The goal of this HIA was to use the findings and recommendations to improve both the consideration of health and the implementation of specific mitigation measures to protect health in the final project decisions.

Related Resource:

> **Baltimore-Washington Rail Intermodal Facility Health Impact Assessment Final Report,** Ruth Lindberg, Kristina Souders, Rebecca Morley, Rajiv Bhatia, Tom Rivard, Judith Akoto, Jonathan Heller and Jill Breysse, National Center for Healthy Housing, September 2013.
> http://nchh.org//Portals/0/Contents/Baltimore-Washington-Intermodal-Facility-HIA_Final-Report.pdf
> Priority recommendations begin on page 11 of the report (page 12 of the PDF) in these key areas:
>
> - Design/planning phase.
> - Construction phase.
> - Operations phase.
> - Communications.
> - Monitoring.
> - Policy recommendations.

A few highlights from these recommendations:

- CSX, the rail-based freight transportation provider that will use the intermodal facility, should pay the city of Baltimore a facility regulatory and site infrastructure fee to at least offset partially any potential negative impacts on access to neighborhood resources. The fee collection should increase by 5 percent each year and would automatically increase by 20 percent if the state or city takes any enforcement action related to the construction or operation of the facility. The fees could be used to:
    - Provide local jurisdictions with block grants for improvements to neighborhood resources (e.g., libraries, schools, parks, community centers) that could be impacted by the project.
    - Mitigate costs borne by the city to mitigate the impact of the trucks on the roads, the potential loss of tax revenue resulting from decreased property assessments, and to pay for pedestrian and bicycle safety programs.
    - Provide a sustainable stream of funding to mitigate unforeseen impacts of the facility in the future.
- Create a neighborhood revitalization plan that improves the community's infrastructure and services, and encourages businesses to remain in the intermodal corridor communities through financial incentives.
- CSX should restrict activities that are likely to produce noise and light pollution before 7 a.m. and after 7 p.m. and on weekends.
- CSX, the city of Baltimore and the Maryland Department of Transportation should develop clear and transparent procedures through which residents may raise and address issues regarding noise, lighting, air quality or other concerns once the project is operational.

New York

Truck Route Management and Community Impact Reduction Study, New York City Department of Transportation, The City of New York, 2015.
http://www.nyc.gov/html/dot/html/motorist/truckrtemgmt.shtml
New York City DOT initiated the Truck Route Management and Community Impact Reduction Study in 2003 to "coordinate engineering, education, information and enforcement efforts to mitigate the negative impacts relating to truck traffic, as well as improve the overall truck management framework that exists in the City of New York."

The March 2007 publication *Technical Memorandum 5: Public Involvement Program*, available at http://www.nyc.gov/html/dot/downloads/pdf/tm5pubenvprog.pdf, describes the outreach component of the study, including surveys of the community, the trucking industry and businesses.

Oregon

A Capping Case Study: Integrating Freight Rail into a Community Setting, Jeff Schnabel and Tristan Brasseur, Oregon Transportation Research and Education Consortium, November 2011.
http://ppms.otrec.us/media/project_files/OTREC-RR-11-26_Final.pdf

From the abstract:

> This investigation seeks to explore specific design solutions that could potentially enhance the capabilities of heavy rail facilities while increasing their safety and reducing their environmental and community impacts. Using Portland's Brooklyn Rail Yard as the study site, this case study explored the potential of structural platforms (caps) built above the existing rail yards to provide development space for expanding rail capacity and rail related activities. The potential for capping to reduce/eliminate conflicts between rail and non-rail uses will also be investigated. Finally, the various designs were presented for caps at the rail yard. Capping projects (the development of air rights above an existing use) have been successfully employed over other forms of transportation. Duluth Minnesota, Barcelona Spain, and Seattle Washington have each employed capping strategies to mitigate the impact of freeways on the urban fabric. This study will explore the potential of caps to address the specific conditions of a privately held freight rail facility. Key stakeholders will be identified including Union Pacific Railroad, TriMet, Portland Development Commission, Brooklyn Neighborhood Association, Creston-Kenilworth Neighborhood Association and Reed Neighborhood Association. The stakeholders will be interviewed to identify the needs and impacts of freight rail on this particular site. Consultants with expertise on the mitigation of the identified impacts will be interviewed and their input documented. Precedents for potential solutions will be identified and documented. Sites in the Brooklyn Rail Yard will be selected as areas for additional study based upon their potential to illustrate the impact of the proposed solutions. Once the sites are selected a master plan will be generated that reflects input from the stakeholders, consultants, and precedent investigations. The master plan will be presented to stakeholders and consultants for their response to the proposed solutions.

Tennessee

"Defining Livability for Freight-Centric Communities: Identifying Priorities of Residents of the Lamar Avenue Corridor in Memphis, TN," M. Doherty, V.A. Wise, M.V. Hart, S.S. Ivey and T.M. Adams, *Second Conference on Green Streets, Highways, and Development*, November 2013.
Citation at http://dx.doi.org/10.1061/9780784413197.031

From the abstract:

> Community livability is increasingly being examined and promoted as exemplary practice. This is due in part to the recognition of environmental, infrastructure, and land use variables contributing to sustainable, vibrant, and healthy places for people to live and work. The impact of freight on an urban community is significant, yet few efforts in the United States have been devoted to creating policies and practices that support livability while also recognizing the critical importance of freight transport to economic vitality. This paper summarizes an approach to understanding freight impacts on neighborhoods, defining what constitutes a freight-centric community, and identifying the livability priorities of residents. The methodology for the current study is presented, outlining stakeholder survey instruments and recruitment approaches. The livability priorities identified through the stakeholder surveys will be used to develop strategies or plans for improvement that include private sector-led operational changes, infrastructure improvements, public-sector policies, and placemaking. This research also tests the effectiveness of the term "livability" among stakeholder groups. While this work is based on Lamar Avenue, a high-volume, heavily congested freight corridor in Memphis, Tennessee, this research can also benefit other freight-centric communities across the country.

Related Resources:

***Project in Process*: Making Freight-Centric Communities More Livable: Measuring the Impact of Advanced Technologies**, National Center for Freight and Infrastructure Research and Education. (*Note:* The final report is expected to be available on the CFIRE web site by the summer 2015.)
Citation at http://www.wistrans.org/cfire/research/projects/ri-02/

From the abstract:

> Communities that attract or retain industrial viability are considered less livable, but reducing, limiting, or mitigating freight operations have direct, measurable economic impacts. This research will measure benefits of advanced technologies and practices to safely blend freight with passenger, transit, bicycle, and pedestrian traffic including Safe Routes to School. These technologies could mitigate a community's safety, noise, and environmental concerns and accelerate implementation of improved practices. This research involves scenario-based analyses to evaluate quantifiable livability benefits of adopting these technologies. Advanced technologies such as intelligent transportation system (ITS), intersection management, dynamic mobility, dynamic route guidance, and optimization will be reviewed for application suitability. As a case study, a selected subset of advanced ITS technologies will be applied in the Memphis area and evaluated for their sustainability, cost effectiveness, transferability to other regions, and safety impacts.

"Reconciling Freight and Community," Scott Gordon, University of Wisconsin–Madison College of Engineering news archive, December 16, 2014.
http://www.engr.wisc.edu/dec16.html

From the article:

> Maria Hart and Stephanie Ivey want their fellow transportation researchers to look beyond roads, distribution centers and ports, and to think more about the neighborhoods that co-exist with America's freight networks. Hart, an associate researcher with the UW-Madison Center for Freight and Infrastructure Research and Education (CFIRE), and Ivey, an associate professor of civil and environmental engineering at the University of Memphis, recently began what may be the first study by planners and civil engineers of how freight operations affect the livability of nearby communities. They focused on Memphis, which is one of the major logistics hubs for shipping in the United States, surveying residents in both "freight-centric" areas (those near major shipping facilities) and non-freight-centric areas about their definitions of livability and how they feel freight impacts their quality of life. … Even as more cities come around to the benefits of bike lanes, paths and more complete sidewalks, residents in areas like the Lamar corridor told the researchers the conversation needs to start with more immediate issues, including crime, poorly maintained property, and unemployment.

Making Freight-Centric Communities More Livable: Examining Residential Perceptions and Priorities for Livable Communities, Stephanie Ivey, The University of Memphis, and Maria Hart, University of Wisconsin–Madison, 2014 Mid-Continent Transportation Research Symposium, August 2014.
See **Appendix A**.
This presentation offers conclusions on the project to date, including the following assessments of the feedback from focus group and online survey participants in the freight-

centric study area (the Lamar Street corridor in Memphis) and non-freight centric communities in Memphis:

- Residential stakeholders define livability in a similar way but freight-centric residents perceive their communities to be less livable than non-freight centric residents.
- Analytical hierarchy process, which quantifies what cannot be measured, can be used for a holistic view of livability and for showing disparities within a city.
- The barriers identified in this project differ from livability literature.
- Further research may require a two-step process for hierarchy development and survey design.
- The project's survey instrument can be easily adapted to in-person surveys or telephone surveys.

Texas

H-GAC Regional Goods Movement Plan, Houston-Galveston Area Council, June 2013. http://www.h-gac.com/taq/Regional%20Goods%20Movement/Reports/Documents/FR1_HGAC_RgnlGoodsMvmnt_FINAL%2006.13.2013_rev12-05-13v2.pdf
Among the solutions and recommendations in this regional goods movement plan are strategies to "mitigate community impacts related to congestion, safety, the environment and quality of life." The report includes a discussion of the plan's short- and long-term recommendations, which begins on page 5-1 of the report (page 83 of the PDF).

Impacts of Freight Operations on Communities

Resources for Engaging the Community

Below are journal articles, research results and resource guides that describe impacts on communities affected by freight operations. Many of these publications address the ways in which affected communities can be engaged in the process to mitigate these impacts.

"Improving Public Participation to Achieve Environmental Justice: Applying Lessons from Freight's Frontline Communities," Natalie R. Sampson, Amy J. Schulz, Edith A. Parker and Barbara A. Israel, *Environmental Justice,* Vol. 7, Issue 2, pages 45-54, April 2014. Citation at http://online.liebertpub.com/doi/abs/10.1089/env.2014.0004

From the abstract:

> This article reports on residents' experiences in two distinct frontline communities, those living near the proposed New International Trade Crossing in Detroit, Michigan and the Port of Long Beach in Long Beach, California. Recent studies suggest that persons of color and low-income are disproportionately exposed to air and noise pollution from heavy-duty engines at freight gateways (e.g., ports, borders). Synthesizing findings from qualitative interviews with community members and leaders, content analysis of environmental assessments, and observations at public events, we describe recent freight land use deliberations, as well as public participation experiences, catalysts, and barriers during these deliberations in the two study communities. Drawing directly on perspectives of community members and leaders as public participants, we report how agency-led public

> participation opportunities, while extensive, may be experienced as confusing, perfunctory, discriminatory, and burdensome. Further, public participation generally entails intensive community organizing efforts and can become a source of chronic stress for active residents of frontline communities—many who have been historically and repeatedly marginalized during land use planning and by its outcomes. We conclude by reconsidering theoretical frameworks, and offering concrete strategies for decision makers in a variety of sectors, such as transportation, housing, planning, and public health, to improve procedural justice and promote environmental justice.

Gearing Up for Action: A Curriculum Guide for Freight Transport Justice, Community Strategies for Sustainability and Justice Program, Pacific Institute, May 2013.
http://pacinst.org/wp-content/uploads/sites/21/2010/10/gearing-up-for-action2.0.pdf

From page 5 of the guide:

> The goal of our Freight Transport Justice Project is to reduce the adverse health impacts of freight transportation on low-income neighborhoods of color closest to freight transport hubs, and to increase the share of the benefits that residents of these communities enjoy. Between 2007 and 2009, the Pacific Institute and its partner organizations developed and piloted the activities in this guide to engage community residents most affected by ports, rail lines, truck routes, and other freight transport infrastructure in local, regional, and state-level decision-making.

The guide uses a popular education approach (page 6), which is described in this way:

> Popular education is an approach to building community power that draws upon the everyday experiences of the people most affected by an issue as an important source of knowledge. In this approach, people "scale up" their individual experiences by creating a space of trust to share and discuss patterns in their experiences. This can be done through a variety of activities, such as the ones depicted in this guide, that help distill the common themes in the lives of participants and facilitate a discussion about how to use those experiences to create positive changes.

Global Trade Impacts: Addressing the Health, Social and Environmental Consequences of Moving International Freight through Our Communities, Martha Matsuoka, Andrea Hricko, Robert Gottlieb and Juan De Lara, Occidental College and University of Southern California, March 2011.
http://scholar.oxy.edu/cgi/viewcontent.cgi?article=1410&context=uep_faculty
This report examines port and distribution hub locations in California, Florida, Georgia, Illinois, Kansas, Maryland, Michigan, Missouri, New Jersey, New York, South Carolina, Texas, Virginia and Washington. The report assesses trends in freight transportation and examines the organizations that attempt to address the impacts of and possible solutions to issues associated with the movement of goods.

This three-part report includes the following discussions particularly relevant to this investigation:

- In Part II, which begins on page 23 of the report (page 25 of the PDF), the authors provide examples of "strategies that involve sharing information on health research findings, education, community organizing, legal advocacy, research, and coalition building that have informed and engaged community residents, workers, and environmental, health and labor advocates to focus on goods movement issues, public

policy and decision-making. Examples of policies are provided that represent levers to ensure that health, labor, community, and environmental conditions are addressed in freight transportation planning and decision-making."

- Part III (page 59 of the report, page 61 of the PDF) addresses "efforts to advance and build the capacity of the groups such as organizing and policy innovations that have effectively changed how the global trade and freight transportation movement issues are being framed and how decisions are being made." The authors' recommendations follow:
    - Ensure public notice and participation policies.
    - Connect local organizing to regional organizing.
    - Strengthen, expand and link national networks and international ties.
    - Strengthen and expand research on health and environmental impacts.
    - Forge and promote public policies that integrate community and worker health protective measures into freight transportation planning and project approval.
    - Increase local government capacity.
    - Broaden and strengthen the movement.

An extensive list of endnotes, which begins on page 82 of the report (page 84 of the PDF), provides another resource for additional information on this topic.

Promoting Community Involvement in Freight Decision-Making: A Resource Guide for the Port Region of New York and New Jersey, Sandra Rothbard, Port Authority of New York and New Jersey Planning and Regional Development Department, August 2010.
http://www.utrc2.org/sites/default/files/pubs/RothbardFreightFinalDraft.pdf
This product of a graduate fellowship presents examples of technical concerns that have been mitigated with prevention tactics (see page 8 of the guide). A resource list that begins on page 75 provides links to public participation reports that offer guidance for engaging community members in freight decision-making.

Healthy Communities and Healthy Economies: A Toolkit for Goods Movement, California State Department of Transportation, Los Angeles County Metropolitan Transportation Authority, Riverside County Transportation Commission and San Bernardino Associated Governments, March 2009.
http://www.rctc.org/uploads/media_items/healthy-communities-and-healthy-economies-a-toolkit-for-goods-movement.original.pdf
Intended as a guidebook for local jurisdictions, this toolkit identifies strategies to address a range of impacts associated with the movement of goods. Chapter 8, which begins on page 8-1 of the report (page 87 of the PDF), includes fact sheets on strategies that address air quality, noise, traffic and safety, and aesthetics. Each fact sheet includes a description of the strategy, benefits, challenges, costs, and potential local actions and partners.

Chapter 9, which begins on page 9-1 of the report (page 159 of the PDF), provides guidance for stakeholders wishing to get involved in goods movement issues. Recommendations include:

- Monitor agendas and news items and attend meetings.
- Contact local planning, transportation and other resource agencies.

- Contact your local elected official (council member or supervisor).

Organizations Advocating for Communities Impacted by Freight

This section presents a sampling of state, regional and local organizations that are encouraging community involvement and public and private sector cooperation in managing the impacts of freight facilities and the movement of goods. The organizations cited here are seeking funding to conduct research and publishing reports of study results. (*Note:* Reports published by advocacy groups are also included in other sections of this Preliminary Investigation.)

Center for Neighborhood Technology (CNT), 2003-2015.
http://www.cnt.org/

From the web site:

> Founded in 1978, the Center for Neighborhood Technology is a leader in promoting more livable and sustainable urban communities. We research, invent, and test urban strategies that use resources more efficiently and more equitably.

Related Resource:

> **Cargo-Oriented Development: Analysis and Implementation**, Center for Neighborhood Technology, September 2013.
> http://www.cnt.org/publications/cargo-oriented-development-analysis-and-implementation
>
> From page 2 of the report:
>
> > In a growing number of cases around the country, highlighted by the examples on the following pages, civic and economic development organizations and local governments are collaborating with private freight companies to realize the potential of [cargo-oriented development] for sustainable development. These collaborations will improve economies and the quality of life in regions and in established communities.

Ditching Dirty Diesel Collaborative, 2015.
http://www.ditchingdirtydiesel.org/publicatoins-press

From the web site:

> The Ditching Dirty Diesel Collaborative (DDDC) is a powerful coalition of over fifteen community-based, environmental justice, public health, and environmental organizations and agencies working to reduce diesel pollution in low-income communities of color.

(*Note:* The DDDC has collaborated with the Pacific Institute on several publications. One of these reports appears as a Related Resource below; a citation for a second collaboration appears on page 10 in **State, Regional and Local Plans and Practices**.)

Related Resource:

> **Paying with Our Health: The Real Cost of Freight Transport in California**, Pacific Institute and Ditching Dirty Diesel Collaborative, November 2006.
> http://pacinst.org/wp-content/uploads/sites/21/2013/02/paying-with-our-health-full-report.pdf

Recommendations appear in Chapter 6 of the report, which begins on page 33 of the report (page 38 of the PDF). Community-focused solutions to address, as the report describes it, "the severe costs of freight transport, in dollars, illnesses, and personal perspectives" include the following:

- Impacted communities should be at the center of decision making on the growth and expansion of freight transport.
- People should be separated from freight transport industry operations.
- Hubs in the freight transport system should be regulated like factories.
- Emissions reductions efforts should be focused on the most impacted communities.
- All new infrastructure projects should include mitigation funding.
- The cleanest and most efficient technologies should be used in all cases. Many existing technologies can already provide significant reductions in diesel pollution.

"The Negative Impacts of Air Pollution in Latino Communities," *Clean Air Facts*, Natural Resources Defense Council, March 2011.
http://www.nrdc.org/air/files/airpollutionlatinos.pdf
This one-page fact sheet encourages members of Congress to allow the U.S. Environmental Protection Agency to improve standards that address mercury, arsenic, carbon dioxide and other air pollutants.

Defend Your Air: A Guide for Reducing Freight Transportation Air Pollution Under the National Environmental Policy Act (NEPA), Melissa Lin Perrella and Morgan Wyenn, Natural Resources Defense Council, undated.
http://www.nrdc.org/air/diesel-exhaust/files/nepa-toolkit.pdf

From the guide:

> *Defend Your Air* explains NEPA's requirements and is designed to help community members and organizations participate in the NEPA process as a strategy to reduce air pollution from the freight transportation system.

Clean Cargo: A Guide to Reducing Diesel Air Pollution from the Freight Industry in Your Community, Diane Bailey, Melissa Lin Perrella and Cooper Hanning, Natural Resources Defense Council, undated.
http://www.nrdc.org/air/diesel-exhaust/files/clean-cargo-toolkit.pdf

From page 3 of the report:

> In this Clean Cargo series, we provide a brief summary of the health effects of air pollution created by the freight transportation system and outline available measures for cleanup. We detail specific cleanup measures for trucks, rail yards, ports, warehousing hubs and construction areas with a summary of best measures and practices in each sector. Each sector factsheet also includes real-world clean cargo examples showing how the cargo industry has already begun adopting limited reforms, and providing evidence that cleaner solutions can work in communities like yours.

Pacific Institute, 2015.
http://pacinst.org/

From the web site:

> The Pacific Institute is unique, both in structure and in operations, with three integrated Programs: Water, Corporate Sustainability, and Community Strategies, and our Initiative in International Water and Communities. Each Program works directly with the others to ensure that the work is truly interdisciplinary and synergistic in addressing environment, equity, and economy.

Related Resource:

> **Freight Transport Justice**, Pacific Institute, 2015.
> http://pacinst.org/issues/environmental-health-and-justice/freight-transport-justice/
>
> From the web site:
>
> > The goal of the Pacific Institute's Freight Transport Justice Project is to reduce the adverse impacts of freight transportation on community health and quality of life in low-income neighborhoods of color closest to freight transport hubs and corridors and to increase the share of the benefits that are enjoyed by residents of these communities. … We do so by working with project partners to carry out action research that makes the case for community solutions to freight transport impacts with decision-makers and by conducting leadership development trainings on freight transport issues with community residents.

Funding Sources to Address Impacts on Freight-Centric Communities

We consulted FHWA staff to supplement our research, but identified little about current federal funding programs specific to freight-related planning outside the traditional FHWA Surface Transportation Program funding (not cited here). Some federal programs that had offered freight planning-related funding are no longer being funded (see the first citation below as an example). To illustrate opportunities for funding outside of federal sources, we include below examples of grant funding provided by California ports, and a private source of funding for projects that integrate health into community planning and decision-making. Similar grant funding through other private sources has not been examined for this investigation.

Federal Agency Funding

TIGER Discretionary Grants, U.S. Department of Transportation, March 12, 2015.
http://www.dot.gov/tiger
Transportation Investment Generating Economic Recovery (TIGER) grants award funds to any public entity for projects that "invest in road, rail, transit and port projects that promise to achieve critical national objectives." From the web site:

> The competitive structure of the TIGER program and its broad eligibility allow project sponsors at the State and local level to avoid narrow, formula-based categories, and fund multi-modal, multi-jurisdictional projects not eligible for funding through traditional DOT

programs. TIGER can fund port and freight rail projects, for example, which play a critical role in our ability to move freight, but which are not eligible for any other sources of Federal funds. … This flexibility allows TIGER and our traditional partners at the state and local level to work directly with a host of entities that own, operate and maintain much of our transportation infrastructure, but otherwise cannot turn to the Federal government for support.

Related Resource:

Note: As the article below explains, the recently enacted appropriations bill for fiscal year 2015 does not include TIGER planning grants that may have been of interest to local agencies wishing to fund an examination of the mitigation of freight impacts.

What the 'Cromnibus' Would Mean for Federal Community Development Programs, Elliot Sperling, Smart Growth America, December 11, 2014.
http://www.smartgrowthamerica.org/2014/12/11/what-the-cromnibus-would-mean-for-federal-community-development-programs/

From the article:

At the Department of Transportation, the bill includes $500 million for another round of TIGER grants—a $100 million drop from last year. One casualty of that drop? The program's planning grants, which received $35 million last year.

Environmental Justice Small Grants Program, U.S. Environmental Protection Agency, last updated November 24, 2014.
http://www.epa.gov/environmentaljustice/grants/ej-smgrants.html

From the web site:

Since its inception in 1994, the Environmental Justice Small Grants Program has awarded more than $24 million in funding to over 1400 community-based organizations, and local and tribal organizations working with communities facing environmental justice issues. The Environmental Justice Small Grants Program supports and empowers communities working on solutions to local environmental and public health issues. The program assists recipients in building collaborative partnerships to help them understand and address environmental and public health concerns in their communities. Successful collaborative partnerships involve not only well-designed strategic plans to build, maintain, and sustain the partnerships, but also working towards addressing the local environmental and public health issues.

Environmental Justice Collaborative Problem-Solving Cooperative Agreement Program, U.S. Environmental Protection Agency, last updated September 23, 2014.
http://www.epa.gov/environmentaljustice/grants/ej-cps-grants.html

From the web site:

The Environmental Justice Collaborative Problem-Solving Cooperative Agreement Program provides financial assistance to eligible organizations working on or planning to work on

projects to address local environmental and/or public health issues in their communities, using EPA's "Environmental Justice Collaborative Problem-Solving Model." … The model aims to address local environmental and/or public health issues in a collaborative manner with various stakeholders such as communities, industry, academic institutions, and others.

California Port Funding

Summarized below are grant programs offered by three of the 11 public deep water ports in California to provide assistance with freight-related community mitigation efforts. Not all of the programs are currently allocating funds.

Port of Long Beach

Greenhouse Gas Emissions Reduction, Port of Long Beach, undated.
http://www.polb.com/environment/grants/apply/ghg.asp
In 2011-2012, the Port of Long Beach offered a $5 million Greenhouse Gas (GHG) Emissions Reduction Grant Program, with a ceiling of $1 million available for a single applicant. The funds were offered to help offset the impacts of operations and new development. The goal of the program was "to fund projects that reduce, avoid or capture greenhouse gas emissions." Eligible projects had to meet program goals by either reducing energy or fuel use; avoiding GH emissions by generating clean energy from renewable resources; or capturing and storing GHG emissions by planting and maintaining trees. Eligible applicants included tenants of the port; government agencies; or charities and nonprofit organizations with a current 501(c)(3) tax-exempt status.

Community Mitigation Grant Programs, Port of Long Beach, undated.
http://www.polb.com/environment/grants/default.asp
In 2013, the Community Mitigation Grant Program awarded $2.6 million to schools, parks and clinics near the Port of Long Beach. The 32 community grants awarded during the 2013 grant cycle were intended to reduce the health impacts of air pollution.

Begun in 2009, the grant program was designed "to improve community health by lessening the impacts of Port-related air pollution, and to reduce emissions of greenhouse gases." A primary focus of the program is to "address air pollution risks to vulnerable groups such as children and seniors." The Port has established eligibility criteria for projects, programs and applicants. For grants directed to schools and health-care organizations, the applicants considered most eligible for funding will be from three geographic impact zones that extend three miles from the Port and adjacent trade corridors.

Port of Los Angeles

Community Mitigation, Port of Los Angeles, 2015.
http://www.portoflosangeles.org/environment/mitigation.asp
The Port of Los Angeles implemented an environmental mitigation program in partnership with the Port Community Advisory Committee (PCAC). The program is part of a 2003 settlement that earmarked more than $50 million to "address significant impacts of Port-related activities." According to the Port's web site, the Port "is now working with the PCAC to review various air quality and aesthetic mitigation proposals to make the best use of the funding"; however, it appears that the program is no longer active.

The funding program, which concentrated on air quality and aesthetic mitigation projects, was divided into three categories:

- $23.5 million for community aesthetic mitigation projects in San Pedro and Wilmington (communities adjacent to the Port).
- $20 million for reduction of air quality impacts.
- $10 million for the Gateway Cities Council of Governments Program to replace, re-power or retrofit existing diesel-powered on-road trucks.

Less than half of the funding from this grant program was used for community aesthetic mitigation projects.

Port of Oakland

Port of Oakland Sponsorship Program, Port of Oakland, May 22, 2015.
http://www.portofoakland.com/community/sponsorship.aspx
The Port of Oakland offers several programs, including the Port of Oakland Sponsorship Program, focused on giving to adjacent communities. At this time, none of the programs are focused on mitigation efforts.

While the Port of Oakland Sponsorship Program has been referred to as a Port staple, the program is currently suspended as the Port revises its sponsorship policy. We were not able to find any archived files for this program that would provide a description of what was funded in the past or gather information on the future direction of the program.

Private Funding

"Program Grants Awarded to Integrate Health into Community Decision Making," News Release, The Pew Charitable Trusts, February 3, 2015.
http://www.pewtrusts.org/en/about/news-room/news/2015/02/03/program-grants-awarded-to-integrate-health-into-community-decision-making
This news release describes one of six projects recently funded under the Health Impact Project, a collaboration of the Robert Wood Johnson Foundation and The Pew Charitable Trusts. This health impact assessment (HIA), overseen by the Center for Quality Growth and Regional Development at the Georgia Institute of Technology, in collaboration with the regional metropolitan planning authority, will "establish a framework for the consideration of health effects in freight planning. The HIA process will focus on infrastructure, commodity, and freight needs, with an emphasis on disproportionate effects on low-income communities and people of color. The recommendations will be integrated into the Coastal Region Metropolitan Planning Organization Freight Transportation Plan." A second HIA is planned for the Cargo Atlanta Citywide Freight Study.

Contacts

CTC contacted the individuals below to gather information for this investigation.

Federal Agencies

Federal Highway Administration

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2014 Mid-Continent Transportation Research Symposium

Making Freight-Centric Communities More Livable

Examining Residential Perceptions and Priorities for Livable Communities

Stephanie Ivey
THE UNIVERSITY OF MEMPHIS

NATIONAL CENTER FOR FREIGHT & INFRASTRUCTURE RESEARCH & EDUCATION
CFIRE

Maria Hart
WISCONSIN
UNIVERSITY OF WISCONSIN–MADISON

What does livability mean to *you*?

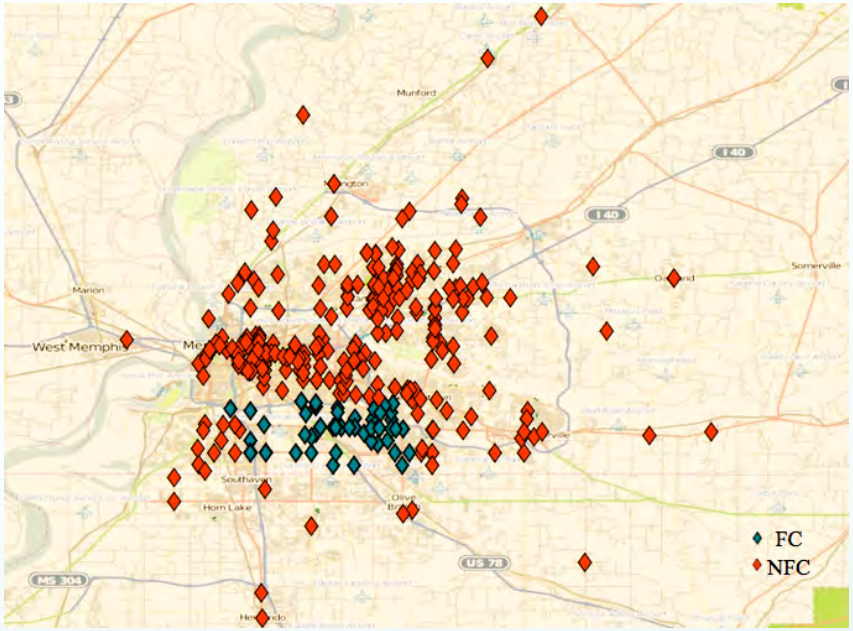
- Different Definitions
- Multiple Stakeholders
- Difficult to Quantify

Challenge: Reflect Community Values

- Residential Survey
  - Open ended
  - Reflection on terminology
- AHP Survey
  - Prioritize values
  - Quantify

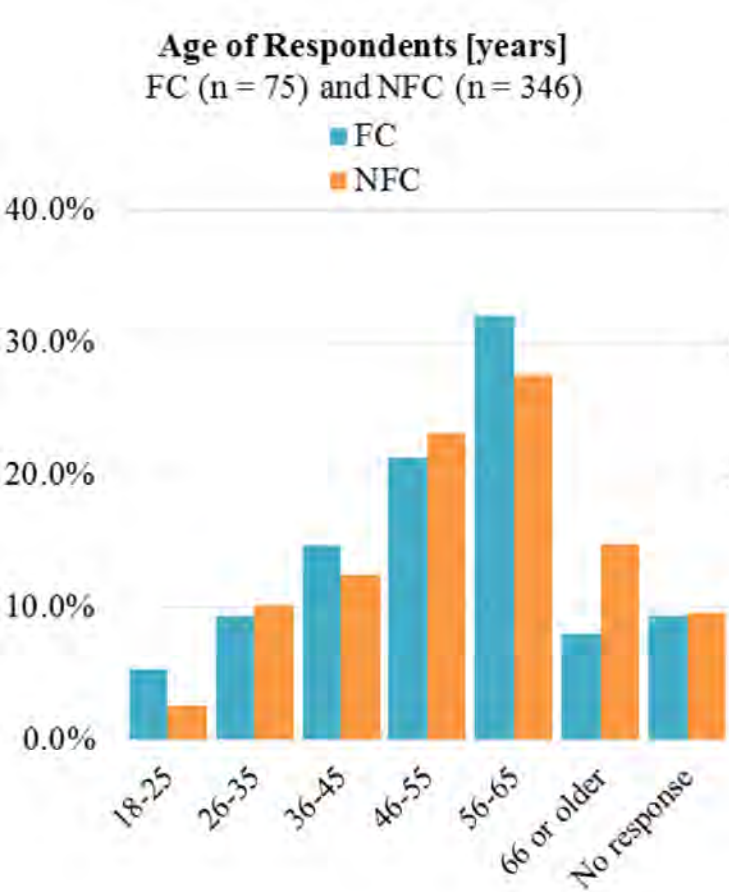
Residential Survey

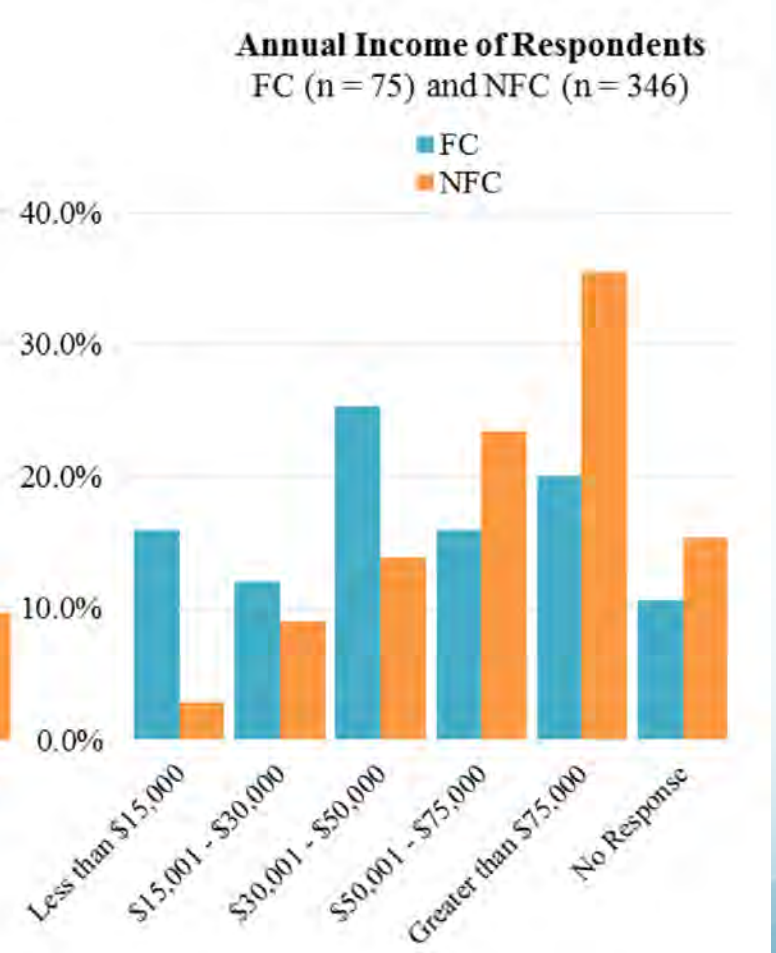
- Designed to inform the study regarding residential perceptions
- Administered in focus group and online formats
- Participants recruited from both the freight-centric study area and non freight-centric communities in Memphis.



FC (n=75) and NFC (n=346)

Residential Survey





Residential Survey

- 32 item survey
  - Definition of livability
  - Perceived barriers to livability
  - Personal commuting patterns
  - Lamar corridor experience
  - Demographic information
- Items analyzed for comparison between FC and NFC
  - Chi-Squared test for categorical
  - Wilcoxen's Rank Sum for ordinal

Residential Survey - Results

Contributors to Livability (FC)

- Feeling safe in my neighborhood (87%)
- Clean air and water (57%)
- Knowing my neighbors (41%)
- Roads in good condition (37%)
- Living in an economically thriving neighborhood (36%)

Contributors to Livability (NFC)

- Feeling safe in my neighborhood (88%)
- Minimal road congestion (49%)
- Roads in good condition (46%)
- Knowing my neighbors (44%)
- Living in an economically thriving neighborhood (43%)

21 factors provided, categorical frequencies; significantly different, $\alpha = 0.05$

Residential Survey - Results

Barriers to Livability (FC)

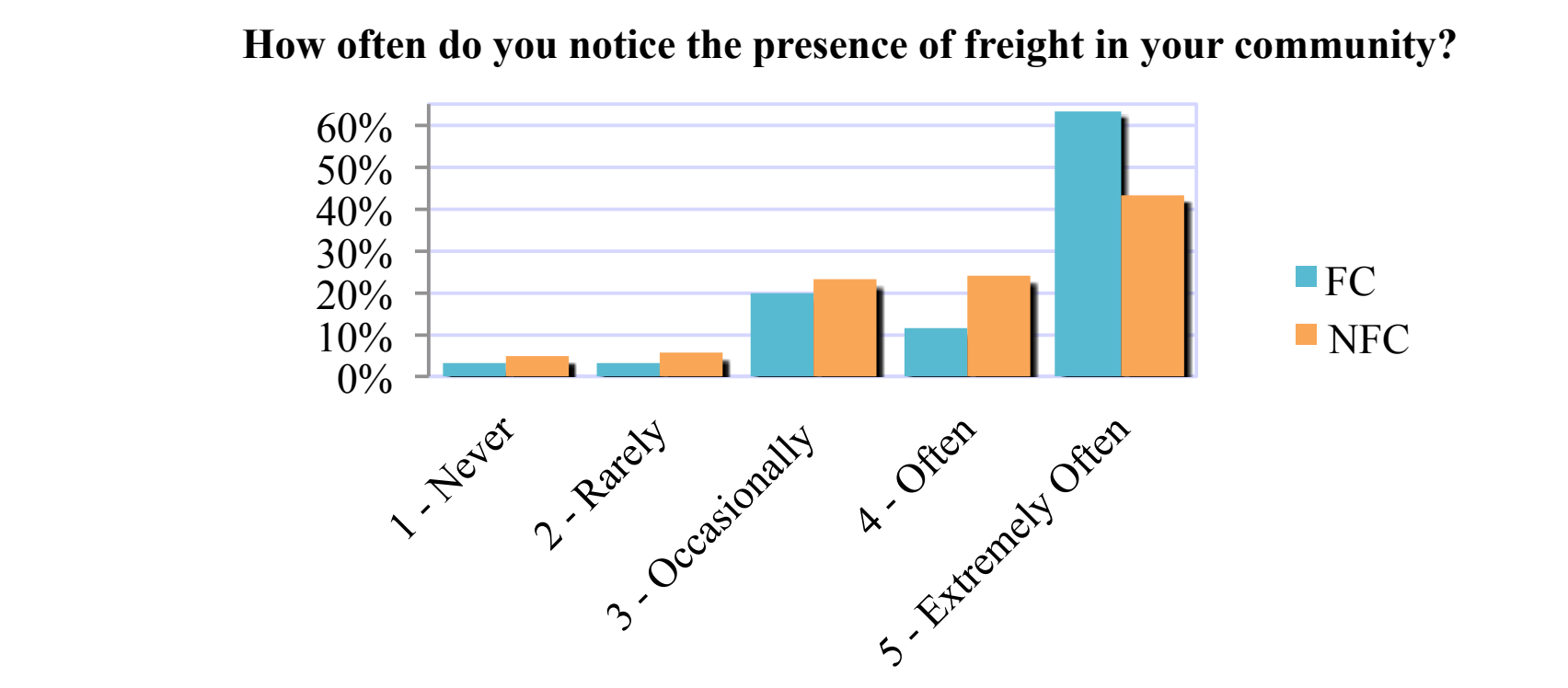
- Crime (44%)
- Poor upkeep of property/ blight (26%)
- Poverty/unemployment/ lack of jobs (19%)
- Apathetic attitudes within community (19%)
- Poor transportation infrastructure (13%)

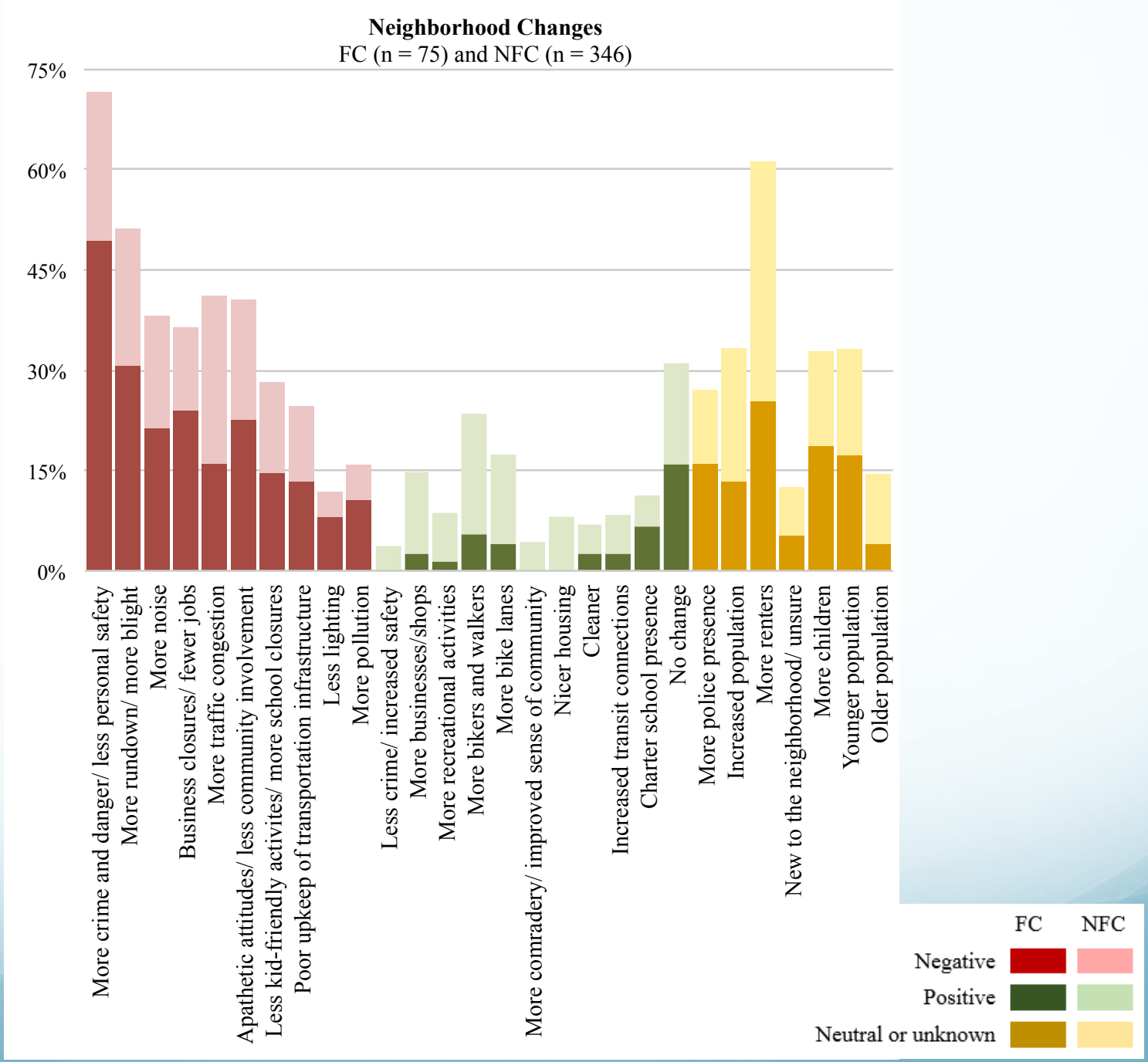
Barriers to Livability (NFC)

- Crime (40%)
- Poverty/unemployment/lack of jobs (22%)
- Lack of transportation options/accessibility (20%)
- Poor upkeep of property/ blight (18%)
- Poor transportation infrastructure (18%)

Open-ended responses; categorical frequencies; not significantly different at $\alpha = 0.05$

Residential Survey - Results




Neighborhood Changes
FC (n = 75) and NFC (n = 346)
75%
60%
45%
30%
15%
0%
More crime and danger/ less personal safety
More rundown/ more blight
More noise
Business closures/ fewer jobs
More traffic congestion
Apathetic attitudes/ less community involvement
Less kid-friendly activites/ more school closures
Poor upkeep of transportation infrastructure
Less lighting
More pollution
Less crime/ increased safety
More businesses/shops
More recreational activities
More bikers and walkers
More bike lanes
More comradery/ improved sense of community
Nicer housing
Cleaner
Increased transit connections
Charter school presence
No change
More police presence
Increased population
More renters
New to the neighborhood/ unsure
More children
Younger population
Older population
FC
NFC
Negative
Positive
Neutral or unknown

Residential Survey - Results

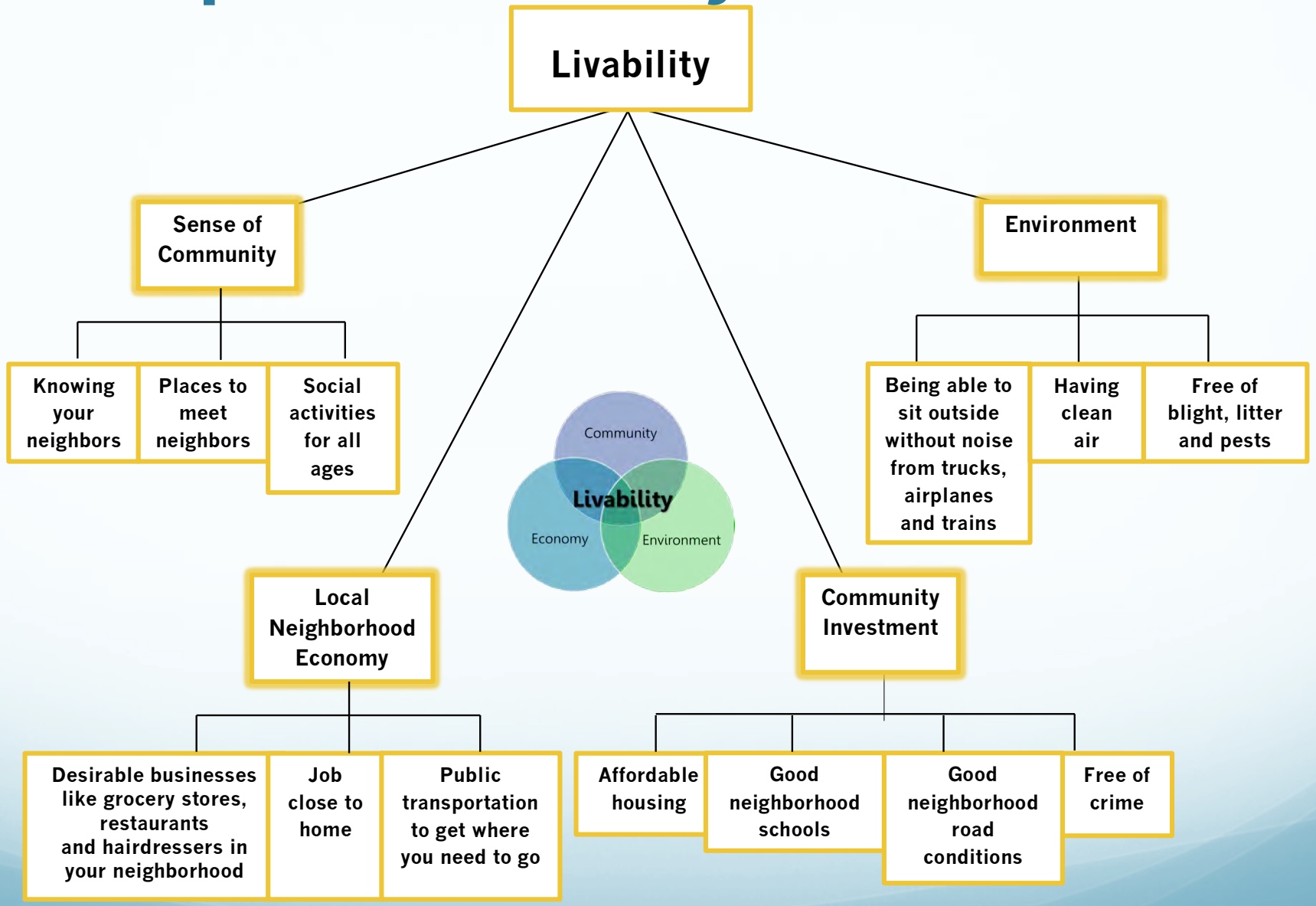
Analytical Hierarchy Process (AHP)

- Foundation in psychology and mathematics
- Described in many ways
  - Replicates how the mind organizes multiple criteria (hierarchy)
  - Decision-making technique
    - Pairwise comparison judgments
  - Quantifies what we cannot measure

Step 1: Understanding the Problems or Barriers

- Loss of community identity
- Lack of stakeholder involvement
- Lack of places
- Compromised health
- Isolation
- Memphis focus group: crime, rats, blight, money stores, strip joints
- Memphis survey: pavement, education

Step 2: Hierarchy of Criteria



Step 3: Design the Pairwise Comparison Survey

- What is more important to you?
  - Environmental qualities like air, noise, or blight
  - Sense of Community
- How much more important is it?
  - Equal importance
  - Moderate importance
  - Strong importance
  - Very strong importance
  - Extreme importance

AHP Scale of Relative Importance

Intensity	Definition	Explanation
1	Equal importance	Two factors contribute equally to the objective
2	Weak or slight	
3	Moderate importance	Experience and judgment slightly favor one activity over another.
4	Moderate plus	
5	Strong importance	Experience and judgment strongly favor one activity over another.
6	Strong plus	
7	Very strong or demonstrated importance	An activity is favored very strongly over another; its dominance demonstrated in practice.
8	Very, very strong	
9	Extreme importance	The evidence favoring on activity over another is of highest possible order of affirmation.
Reciprocals	If activity *i* have one of the above non-zero numbers assigned to it when compared with activity *j*, then *j* has the reciprocal value when compared with *i*.	A reasonable assumption

Step 4: Test the comparison survey

#9	Sense	Economy	Environment	Comm. Inv	4th Root	Priority Vector
Sense of Community	1.00	1	9	.14	1.06	.187
Local Neighborhood Economy	1	1.00	9	9	3	.525
Environment	.11	.11	1.00	.2	.22	.039
Community Investment	7	.11	5	1.00	1.40	.246
Sum	9.11	2.22	24	10.34	5.69	
Sum*PV	1.70	1.17	.939	2.55	6.36	

Consistency Index (CI)
0.789
Random Index (RI)
0.9
Consistency Ratio (CR)
0.88

Individual to Group --- Geometric Mean

Priority Weights for Livability Goals and Factors

Memphis MSA, Shelby County, TN, Study Area

Sense of Community	21 20 17	Local, Neighborhood Economy	19 20 21	Environment	30 30 25	Community Investment	29 30 37
Knowing your neighbors	53 50 62	Desirable businesses	54 56 30	Sit outside without noise from trains, trucks, airplanes	14 14 11	Affordable housing	14 14 37
Places to meet neighbors	19 20 19	Job close to home	29 27 57	Clean Air	40 37 34	Good neighborhood schools	20 20 13
Social activities for all ages	28 30 20	Public transportation	16 17 14	Free of blight, litter, pests	46 49 54	Good neighborhood road conditions	9 9 9
						Free of crime	58 57 41

Goals

Factors

KEY: Memphis MSA, Shelby County, Study Area

Applications

- Priority weights
  - Capture freight externalities on livability
  - Can serve as a guide to investment and strategies

Broad Category	Specific Category	Weights	Budget
Community - 21 %	Know neighbors	0.62	$ 105,400
$170,000	Places	0.19	$ 32,300
	Activities	0.2	$ 34,000
Local Economy - 21 %	Desirable businesses	0.3	$ 51,000
$170,000	Job close to home	0.57	$ 96,900
	Public transport	0.14	$ 23,800
Environment - 25%	Noise	0.11	$ 27,500
$250,000	Air	0.34	$ 85,000
	Blight/Litter/Pests	0.54	$ 135,000
Community Inv - 37%	Affordable housing	0.37	$ 136,900
$370,000	Schools	0.13	$ 48,100
	Roads	0.09	$ 33,300
	Crime	0.41	$ 151,700

  - Benchmark in the development of performance measures and cost/benefit analysis.

Conclusions

Residential stakeholders define livability in a similar way but FC residents perceive their communities to be less livable than NFC.

AHP can be used for a holistic view of livability and for showing disparities within a city.

Barriers identified differ from livability literature.

May require a two step process for hierarchy development and survey design.

AHP survey can be easily adapted to in person surveys or telephone surveys.

Questions?

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CFIRE

Challenges

S 3rd St
Lamar Ave
269
205
59
300
40
191
131
78
14
240
72
57
176
175
385
309
55
51
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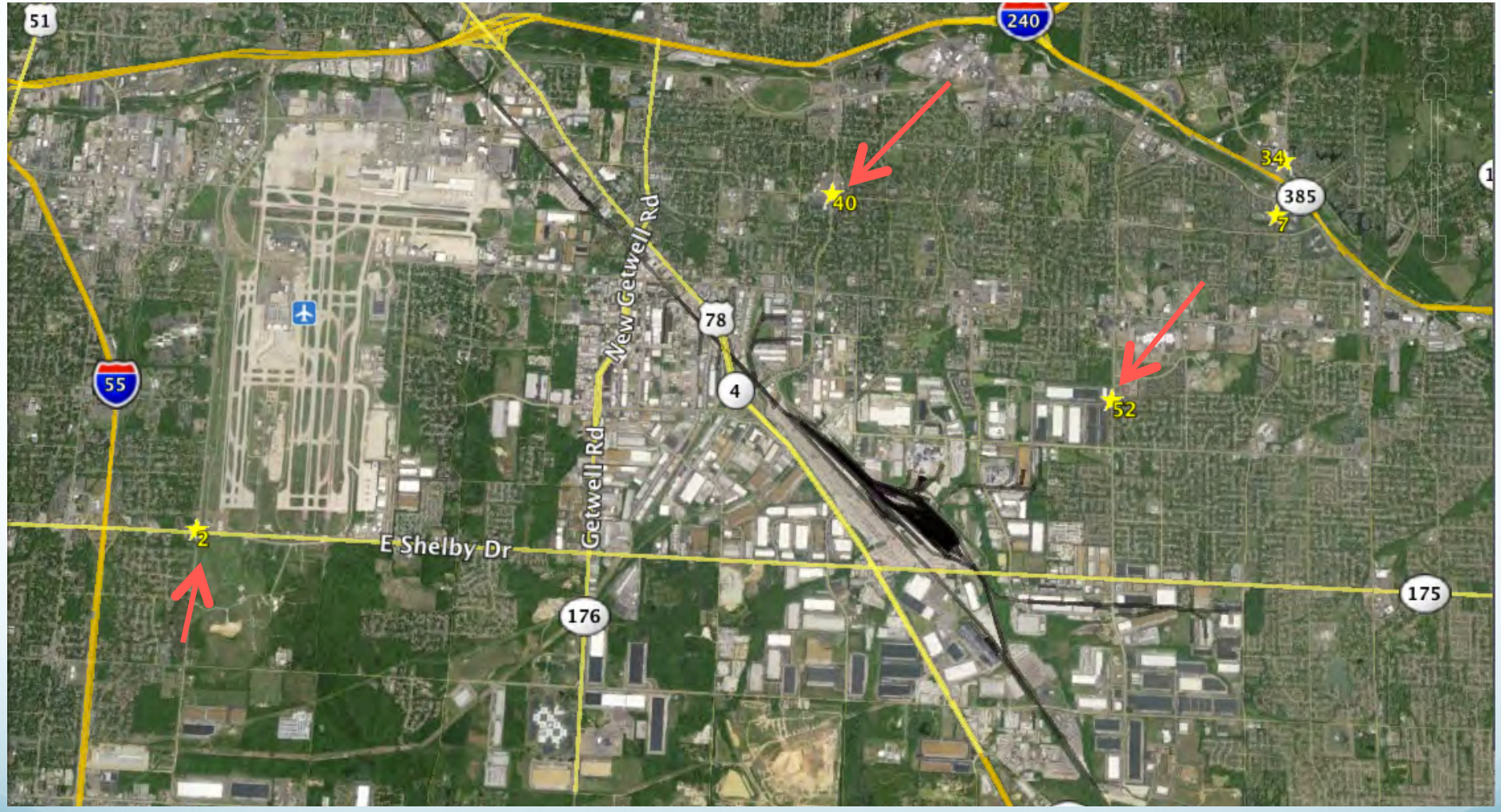
Challenges


51
240
55
78
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385
176
175
New Getwell Rd
Getwell Rd
E Shelby Dr
40
34
7
52
2