

1. REPORT NUMBER CA18-2866	2. GOVERNMENT ASSOCIATION NUMBER	3. RECIPIENT'S CATALOG NUMBER
4. TITLE AND SUBTITLE UTC - Bringing a Community Health Lens to Highway-to-Main Street Conversions through the Integration of Top-Down Expert Guidance and Bottom-Up Community Engagement, (UCCONNECT)		5. REPORT DATE May 2016
7. AUTHOR Brian Cole, Richard Jackson		6. PERFORMING ORGANIZATION CODE
9. PERFORMING ORGANIZATION NAME AND ADDRESS University of California, Los Angeles Los Angeles, CA 90095		8. PERFORMING ORGANIZATION REPORT NO.
12. SPONSORING AGENCY AND ADDRESS California Department of Transportation Division of Research, Innovation and System Information PO Box 942873, MS 83 Sacramento, CA 94273-0001		10. WORK UNIT NUMBER
		11. CONTRACT OR GRANT NUMBER 65A0529
		13. TYPE OF REPORT AND PERIOD COVERED Final Report 6/1/2015 - 5/31/2016
		14. SPONSORING AGENCY CODE
15. SUPPLEMENTARY NOTES		

16. ABSTRACT
 This report examines one type of conversion, converting unrestricted-access state highway segments to “community main streets.” Going beyond the multi-modal transportation aims of “Complete Streets” initiatives, such conversions consider multiple transportation and non-transportation functions. Since many, if not most, of these functions support community health and well-being, and since community health tends to be a high priority in most communities, we use a community health lens to winnow through tools and metrics for assessing the opportunities presented by particular street segments for such conversions. The report explains the evidence base linking five domains of street functions: transportation, the physical environment, economic conditions, land-use and social conditions to public health and well-being.

17. KEY WORDS Community, Health, Highway to Main Street Conversions, Top-Down Expert Guidance, Bottom-Up Community Engagement	18. DISTRIBUTION STATEMENT No restrictions
19. SECURITY CLASSIFICATION (of this report) Unclassified	20. NUMBER OF PAGES 24
	21. COST OF REPORT CHARGED

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BRINGING A COMMUNITY HEALTH LENS TO HIGHWAY-TO-MAIN STREET CONVERSIONS THROUGH THE INTEGRATION OF TOP-DOWN EXPERT GUIDANCE AND BOTTOM-UP COMMUNITY ENGAGEMENT

Draft Final Report

May 2016

**Bringing a Community Health Lens to Highway-to-Main Street Conversions
through the Integration of Top-Down Expert Guidance
and Bottom-Up Community Engagement**

Submitted to

California Department of Transportation

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August 2016

TABLE OF CONTENTS

Preface and Acknowledgments	iii
I. Introduction	1
A. Overview of Report Contents	
B. Problem	
C. Objectives	
D. Significance of the research findings for the Department of Transportation	
II. Methodology and Technical Discussion	3
A. Procedures	
B. Scope Description	
C. Problems	
III. Conclusions and Recommendations	1
IV. Deployment and Implementation (Section 6)	1
V. Appendices	
Appendix A: Tools included in the Master Review Document	1
Appendix B: Maps of State Highway Segments in Los Angeles County	1
Appendix C: Case-study Site Indicator Maps	1
VI. References, Literature Cited, or Bibliography	1
ILLUSTRATIONS AND TABLES	1

DISCLOSURES

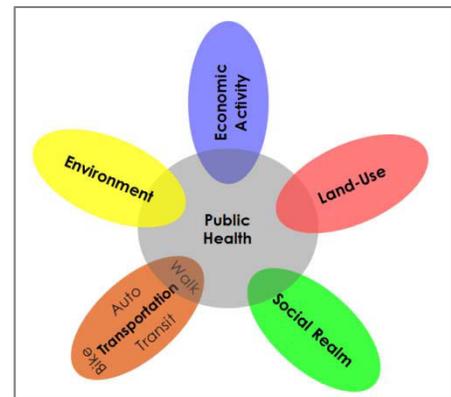
Sole funding for this work was provided by California Department of Transportation through the UCCONNECT Grant awarded to the University of California. All work was completed by the grantee. No portion of this work was sub-contracted out.

I. Introduction

A. Overview of Report Contents

In response to changing transportation patterns and community priorities, many communities in California and across the country are reconsidering how urban streets might better support a thriving, livable and sustainable urban environment.¹ A variety of initiatives, such as “Complete Streets,”² “Main Streets,”³ “Great Streets”⁴ and “Open Streets,”⁵ call for an expanded vision of the functions of an urban street, looking beyond the movement of motor vehicles to facilitating multi-modal mobility, supporting opportunities for economic growth, social interaction and recreation, and providing greenspace and other environmental functions.⁶ The new main street can serve as a focal point for community life, bringing the community together, providing a public space venue for community events, and encouraging physical activity and civic engagement, in addition to providing a key corridor for mobility through and to a community.⁷

This report examines one type of conversion, converting unrestricted-access state highway segments to “community main streets.” Going beyond the multi-modal transportation aims of “Complete Streets” initiatives, such conversions consider multiple transportation and non-transportation functions. Since many, if not most, of these functions support community health and well-being, and since community health tends to be a high priority in most communities, we use a community health lens to winnow through tools and metrics for assessing the opportunities presented by particular street segments for such conversions. The report explains the evidence base linking five domains of street functions: transportation, the physical environment, economic conditions, land-use and social conditions to public health and well-being.



We also draw from community health practice to identify ways of improving community engagement and bringing together knowledge from technical experts and local stakeholders. Community stakeholders may have diverse visions and priorities that for a street conversion. We assert that integrating expert-driven top-down and community-

¹ McCann B. 2013. *Completing Our Streets: The Transition to Safe and Inclusive Transportation Networks*. Washington, D.C.: Island Press.

² National Complete Streets Coalition. 2014. What are complete streets? (webpage) <http://www.smartgrowthamerica.org/complete-streets/complete-streets-fundamentals/complete-streets-faq>

³ National Main Street Center. 2014. Why main streets matter? (webpage) <http://www.preservationnation.org/main-street/about-main-street>

⁴ City of Los Angeles, Mayor’s Office. 2014. Great Streets LA: A message from the Mayor (webpage). <http://www.lamayor.org/greatstreets>

⁵ Street Plans Collaborative, Alliance for Biking & Walking. 2012. The Open Streets Guide. <http://www.bikewalkalliance.org/resources/reports/open-streets-guide>

⁶ LaPlante J. 2007. Retrofitting urban arterials into complete streets. Presented at the 3rd Urban Street Symposium, June 24-27, 2007, Seattle, WA.

⁷ California Department of Transportation. 2013. *Main Street, California: A Guide for Improving Main Street and Transportation Vitality*.

centered bottom-up perspectives process can provide a more holistic, multi-faceted assessment.

In addition to a review of the tools and metrics and procedures for integrating them into community engagement efforts (see attached “Metrics Index”), we demonstrate their application for a particular roadway segment, State Route 17 (Lakewood Boulevard) bordering the cities of Bellflower and Paramount, two small, multi-ethnic working-class communities in south Los Angeles County.

B. Problem

The research presented in this report springs from the need to address three inter-related problems, each representing a different sector or perspective:

1. **Public Health:** An increasing recognition in public health that improving the public’s health requires joint efforts of many sectors;
2. **Transportation Planning and Sustainability:** Recognition of the limitations and unintended consequences of the long-standing reliance on automobile-centric metrics for roadway planning, such as automobile level-of-service (Automobile-LOS) and vehicle-miles traveled (VMT), has resulted in mandates to find alternatives that support multi-modal mobility and sustainability (i.e. OPR Guidelines implementing SB 743, Steinberg, 2013);
3. **Community Members and Public Officials:** Frustration with siloed decision-making has brought calls to take a more holistic and efficient approach to community planning.

Among the many settings where these problems intersect, street conversions, ranging from installation of landscaping to Complete Streets projects to comprehensive redevelopment of a neighborhood, are particularly important to address. Street conversions represent major commitments of resources and often set the direction for other community changes. Streets present the face of a community. Because so many people use and are impacted by streets, street conversions also present a valuable opportunity to engage and mobilize community members in efforts to re-envision and plan communities. Because of this and the fact that we are reconsidering what is well functioning street, street conversions also present an opportunity to better integrate multiple perspectives from different stakeholders, representing multiple sectorial interests as well as both technical experts and lay community members.

C. Objectives

The proposed project aims to identify metrics and community engagement procedures for assessing potential problems and benefits of converting state highway segments into community main streets, addressing transportation, public health and other community development goals.

D. Significance of the research findings for the Department of Transportation

1. Provide alternative metrics, beyond Automobile-LOS and VMT to guide Department design and maintenance decisions affecting surface street highways under State jurisdiction in urban areas, in order to better meet performance expectations beyond vehicle mobility and traffic safety;
2. Help local jurisdictions to identify and respond to opportunities for state highway relinquishment so as to mutually benefit the State and local jurisdictions;
3. Support Department efforts to provide guidance to local jurisdictions on how to assess, improve and monitor the transportation and non-transportation functions of community streets, ranging from surface street highways and arterials to community main streets.

II. Methodology and Technical Discussion

A. Procedures

The study described in this report proceeded in three distinct phases.

Phase 1: Review of tools and metrics: We reviewed complete streets guidelines and research reports and research literature pertaining to each of the six (5 + public health) hypothesized domains potentially affected by roadway travel, construction and conversions to identify tools and metrics for assessing health-related effects. Key reports and articles for starting this search included:

- Abbey, S. (2005). Walkability Scoping Paper. <http://levelofservice.com/walkability-research.pdf>
- Brozen, M., Black, T., & Liggett, R. (2014). Comparing Measures and Variables in Multimodal Street Performance Calculations: What's a Passing Grade?. Transportation Research Record: Journal of the Transportation Research Board, (2420), 1-14.
- CA Office of Planning and Research. (2013). Preliminary Evaluation of Alternative Methods of Transportation Analysis.
- Ewing, R., & Clemente, O. (2013). Measuring Urban Design: Metrics for Livable Places. Washington, DC: Island Press.
- Ingles, A. (2013). Incorporating Health Considerations into Collaborative Transportation Decision Making (Doctoral dissertation, Georgia Inst. of Technology).
- VTPI. (2015). TDM Encyclopedia: Multi-Modal Level-of-Service Indicators Tools For Evaluating The Quality of Transport Services and Facilities (online resource). <http://vtpi.org/tdm/tdm129.htm>

After reviewing these tools and metrics we identified 27 tools (see attached “Metrics Index”), each composed of multiple metrics or indicators, that captured the breadth of the six domains potentially affected by street conversions and which differed substantially from other tools already in the review.

To promote the dissemination and use of these tools, we assembled a master document: “Community Main Streets for Promoting Community Health and Well-Being: Indicators for Assessing and Monitoring Opportunities for Action” summarizing the

Australian Pedestrian LOS (AUST)						
Source	Main Roads Western Australia	Domains				
		<table border="1"> <tr> <td>Primary</td> <td>Transportation</td> </tr> <tr> <td>Also</td> <td>Land Use Social Realm</td> </tr> </table>	Primary	Transportation	Also	Land Use Social Realm
Primary	Transportation					
Also	Land Use Social Realm					
Indicators	Physical <ul style="list-style-type: none"> • Path width • Surface quality • Obstructions • Crossing opportunities • Support facilities 	Location <ul style="list-style-type: none"> • connectivity • Path environment • Potential for vehicle conflict User <ul style="list-style-type: none"> • Pedestrian volume • Mix of path users • Personal security 				
Ease of Use:	Low to moderate level of technical knowledge					

Figure 1: Sample summary page of an assessment tool for the Indicators document

tools. Each tool's aim, use and indicators are summarized on a summary page with cross-indexing of domains and indicators. Instructions are provided for how different types of users (e.g. community planners, advocacy organizations, etc.) can navigate the document to find tools that they can use to support their work.

Phase 2: Data and Mapping of State Highway Segments in Los Angeles County:

With the aim of identifying candidate highway segments for a case-study application of the tools we assembled, geocoded and mapped data for describing state highway segments in Los Angeles County and the characteristics of adjacent communities.

From the review of tools and indicators in Phase 1 we identified indicators for which existing data was available that could be used for identifying, assessing or monitoring highway-to-main-street conversions.

Since we were most interested in conversions that involved the potential for comprehensive changes to the character and function of a highway segment, we sought to identify unrelinquished⁸ state highway segments that had potential for relinquishment and adjacent redevelopment. For the purpose of screening highway segments for suitability as a case-study site, we identified the following characteristics as more suitable for conversion and consequently preferable for selection as a case-study site:

1. Unrestricted access, surface-level state highway (i.e. not freeways);
2. Urbanized, non-industrial area (i.e. not segments in outlying, rural or purely industrial areas);
3. Unrelinquished status;
4. Fewer lanes (i.e. 4 or 5 lanes preferred to 10 lanes);
5. Slower speeds (i.e. 35 mph preferred to 55 mph);

Due to the lack of a centralized database of state highway segments with all of this data, we had to assemble it from multiple sources. After a review of maps summarizing this data (see Appendix B) we identified several segments as possible candidates. Based on site visits to these candidates sites and subsequent contacts with local officials about their plans for roadways we ruled out all but one of the sites - SR-19 (Bellflower). Below are the factors that made these other unrelinquished highway segments less than ideal candidates for a main street conversion:

- SR-1 (Pacific Coast Highway, Manhattan Beach-Torrance-Lomita-Long Beach): high speeds, high traffic volume, often many lanes;
- SR-19 (Rosemead Boulevard), Temple City: Mostly already relinquished except short segment at the southern edge of the city with minimal retail (semi-restricted access). City showed no interest in collaborating with us on the study.

⁸ While there is no 1-to-1 correspondence between highway characteristics and relinquishment status (i.e. whether a highway segment is under State or local jurisdiction), unrelinquished highways are generally maintained with the traditional aim of maximizing vehicle capacity while maintaining safety. Through relinquishment local jurisdictions can take over control of a roadway to modify it to better suit a wide range of community functions.

- SR-107 (Rosecrans Blvd), Torrance: too many lanes, high traffic volume, retail limited mostly to “big box” and other retailers with large parking lots.
- SR-213 (Western Boulevard) Torrance: High speeds, shopping center development with large parking lots separating roads and retail.

In contrast, SR-19 (Lakewood Boulevard), bordering the cities of Bellflower and Paramount) had the following characteristics that made it appear suitable for the case-study:

- a. Most of the segment has only 5 lanes except at the southern end where there are freeway off-/on- ramps;
- b. Relatively low traffic volume compared to other unrestricted access highways in the area;
- c. Open connections with side streets fully integrate the street with neighboring street grid;
- d. Street bordered by mix of retail, residential and light industrial uses;
- e. City officials and community organizations enthusiastic about participating in the study. On-going corridor studies provided an opportunity for this study to add real value. Nearby conversion of arterials (Bellflower Blvd in Bellflower and Firestone Blvd in Downey) also provided a vision of possible transformation for this segment.



Case-Study Site - Lakewood Blvd (SR-17) bordering the cities of Bellflower and Paramount in Southeast Los Angeles County

Phase 3: Application of tools and community engagement to case-study site: After selecting the case-study site we interviewed key informants at city agencies local

community-based organizations and began planning the community engagement process.

In the “top-down/bottom-up” conceptualization of stakeholder engagement, stakeholders in this project have the opportunity to take a more active role in determining priorities, collecting data and formulating plans. Working through community organizations the project is involving community stakeholders in a series of workshops to elicit their ideas and to provide and implement training in assessment methodologies to assess current conditions and opportunities for improvement using indicators of their choosing. Key steps in this engagement process are:

1. **Vision:** What is your vision for a healthy community? How could changing this street and neighborhood help realize this vision?
2. **Feedback:** Do these proposed measures (proposed by project staff based on vision statement) get at what you think is important?
3. **Participatory data collection:** Community members participate in collecting data that address their priorities?
4. **Communication & Advocacy:** Presenting data to city decision-makers. Using the data to organize and advocate for changes.

This stakeholder engagement process involves a two-way exchange of information. Project staff educate stakeholders about the roles that streets can play in advancing community health and well-being and provide training in participatory assessment methods. Stakeholders help project staff learn about community visions and priorities so as to better select indicators and they provide a framing for problems and opportunities that will more likely resonate with local officials than indicators chosen based on expert opinion alone.

B. Scope Description

The scope of the study was defined primarily by the study’s aim to examine transportation and non-transportation metrics for assessing the potential effects of state highway to “main street” conversions. We set out to assess both transportation and non-transportation indicators of prospects and impacts of roadway conversions, (2) the decision to focus on highway segments in Los Angeles County as outlined in the project proposal and (3) our screening decision to select an unrelinquished highway segment for the case study since it appeared that information from this study could have value to local decision-makers as they considered relinquishment. Thus, the scope of inquiry was defined by these four factors:

- Geography: Los Angeles County;
- Roadway type: Surface-level state highways (relinquished and unrelinquished but case-study candidates were selected only from unrelinquished segments);
- Land-use setting: Urbanized area with at least some retail (since “main street” conversion would not be viable in a purely rural, industrial or residential setting);
- Relinquishment status

C. Problems

Implementation of this study encountered a variety of problems. Most of these are relatively minor and offer valuable lessons for (a) broader application of alternatives to automobile-LOS and VMT metrics and (b) efforts to integrate top-down indicators with bottom-up stakeholder perspectives.

First, there are a plethora of related tools and indicators. While we wanted to tools and indicators that did a good job of capturing health-related aspects of each domain, we did not consider it within the scope of this project to compare the quality of different tools and indicators. By cross-indexing and rating the ease-of-use of different tools in our *“Indicators for Assessing and Monitoring Opportunities for Action”* document, we hope to have made the task of selecting an assessment tool easier for different users, but the number of available tools can still make this a daunting task.

Second, it was difficult to get current and historical data on relinquishment status of all the highway segments in Los Angeles County. We had to cross-reference legislative bill information across multiple years, Relinquishment Assessment Reports (RARs), and various listings from the Department of Transportation. Further complicating matters, segment definitions in most State documents use “postmile” markers for location, that are difficult to tie to standard geographical information system codes. This problem may be particular for our individual project. Most community groups or local agencies, would not be interested in cataloging the relinquishment status of multiple state highways. Nonetheless, it was surprising, given the ubiquity of geocoded data and digital maps.

Another problem, again probably more of an issue for a research study than an implementation project, was the lack of interest of local agencies at one of the candidate sites for the case-study. Without participation of local agencies and community organizations the study could not proceed. Luckily, agencies and community groups at the site that we selected in the end were extremely eager to participate. We were fortunate in contacting them about the study just as they were commencing their own corridor study, so they saw the benefits of participating with us on the research project. If we had not had such fortunate timing, we would not have had the local engagement needed for the “bottom-up” stakeholder engagement part of this project.

Fourth, there are a constellation of problems getting good stakeholder participation. Based on principles of community organizing, we decided to work through local networks of CBOs, rather than simply convening open forums. Fortunately the relatively small, close-knit communities at the case-study site have a strong, vibrant civic network with relatively good relationships with government agencies that we were able to tap into. Without such a network or in a larger city this approach might have been more challenging. We also anticipate difficulties sustaining participation as we move into participatory data collection with stakeholder groups since this requires substantially more commitment than just attending a single focus group. In the final draft of this report we will discuss strategies for maintaining the engagement of individuals and organizations.

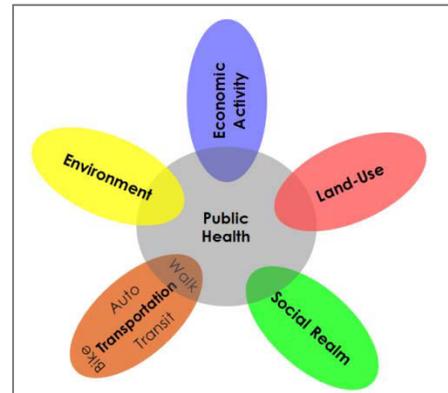
Finally, we have not yet demonstrated the integration of top-down indicators and bottom-up stakeholder engagement. Due to a truncated project timeline, we are still analyzing

data collected from stakeholder. We expect to complete this analysis by the end of September 2016.

III. Conclusions and Recommendations

Metrics to assess current conditions and prospects for change

The literature review we conducted while compiling assessment metrics as well as our discussions with community stakeholders revealed a deep interest in integrating consideration of both transportation and non-transportation functions of roadway conversions. Our typology for organizing different metrics and considerations into six domains (see right) captured the range of issues for roadway conversions that concerned stakeholders and was reasonably succinct. As discussed below, there is one additional, over-arching element that should be added—community participation and agency.



While all stakeholders expressed concern about public health considerations, not all groups of stakeholders recognized the degree to which all of these factors contribute to the public's health. Interestingly, business stakeholders were the one group that believed public health was a key, cross-cutting element for creating a strong, vibrant community.

Our review of metrics showed that there is definitely no shortage of metrics that can be used to assess the transportation and non-transportation functions of roadway conversions. Most, however, are exceedingly long and complex and yield results that are difficult to compare across different domains. Only a few of the assessment tools are simple enough and have sufficient documentation for community members to use. That said, across all the domains we found assessment tools that community groups could use. Offering workshops and technical assistance to community groups as part of the roadway conversion planning process so that they can collect their own data could be a viable strategy for increasing community participation and collecting data on issues that are priorities for community groups.

Stakeholder- vs. expert-centered assessment and the importance of community participation

Our preliminary analysis of stakeholder interviews and focus groups shows that there is a disjoint between top-down, expert-driven assessment and the perspectives of stakeholders on roadway conversions. Our examination of this disjunction appears to suggest three important take-home messages:

1. It is essential to get proposed plans as well as existing data describing current conditions to stakeholders in a form that they can understand. There is no “one-size-fits-all” formula for doing this. Visual representations, diagrams and

graphics certainly help, but multiple modalities (e.g. graphics + text + tables + oral presentations).

2. Community participation and improving community agency (i.e. capacity and power) is as much a priority as traffic safety, economic opportunities and other outcomes. Community stakeholders tend to emphasize participatory process as much as outcomes. Community participation is a priority. This is especially true for highway-to-mainstreet conversions since they are at their core about building community. Improving community infrastructure is certainly valuable, as are “soft-scape” improvements to social and economic conditions, but there is also another dimension that is about *processes* that strengthens and enriches the fabric of community life. Public agencies responsible for delivering end products need to realize that community members judge their performance in this respect as much as on outcomes. Along with asking how a roadway conversion will impact safety, land-use and community economic conditions, planners need to assess whether the process of planning and implementing the project will promote community participation and agency.

These findings and recommendations are tentative, especially findings from the stakeholder interviews and focus groups. Findings from the stakeholder engagement activities will be presented in more detail in the revised version of this report to be delivered in September 2016.

IV. Deployment and Implementation (Section 6)

FORTHCOMING IN REVISED FINAL REPORT, SEPTEMBER 2016

V. Appendices

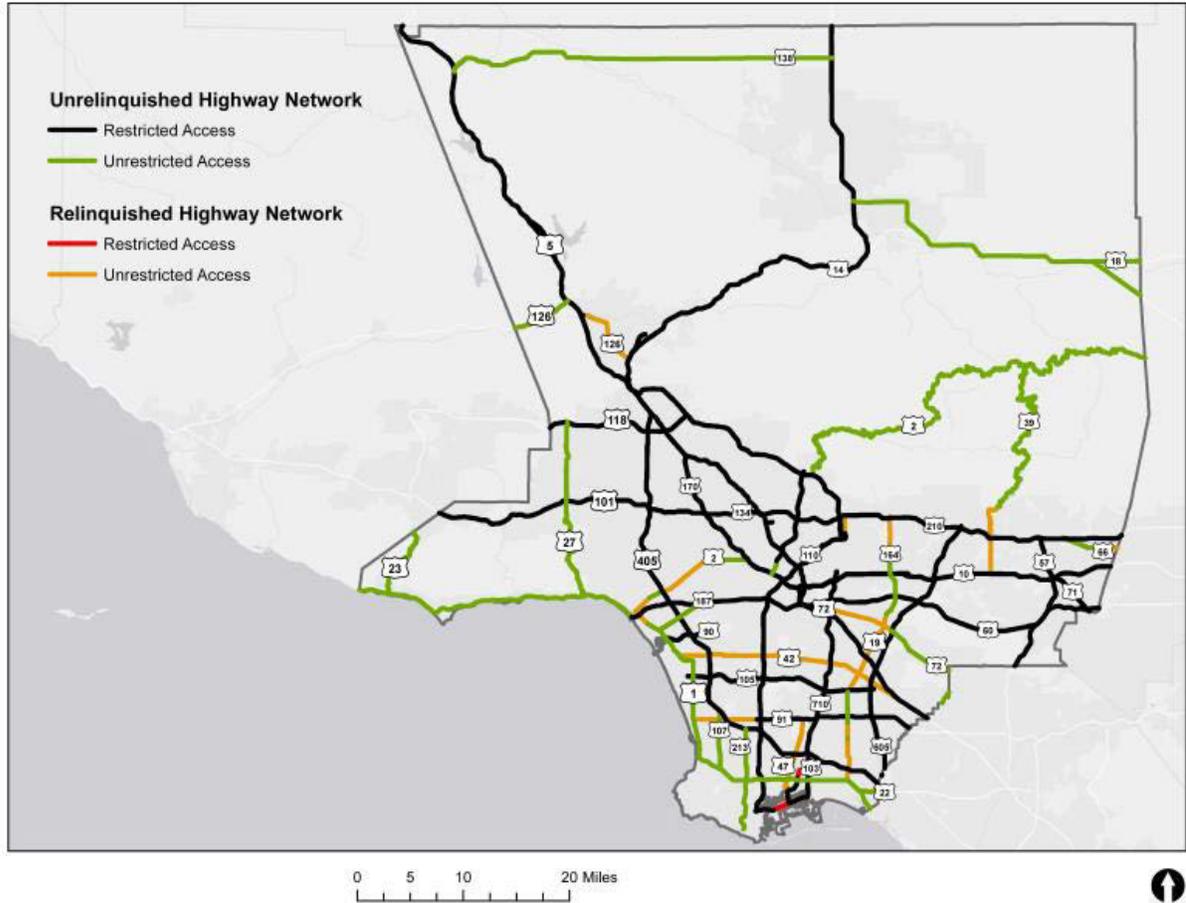
Appendix A: Tools included in the Master Review Document (see attached “Metrics Index”)

1. (AUST) Australian Pedestrian Level-of-Service
2. (Bogota) Bogota Bike Account
3. (Charlotte) Charlotte Bike/Ped LOS
4. (Copenhag) Copenhagen Bike Account
5. (Comm_Select) WSDOT Community Design
6. (Exp_In) Maine DOT Exposure Index
7. (EW-U) Emission-Weighted Traffic Volume
8. (FDOTLOS) Florida Bicycle LOS for Arterials Model
9. (ITHIM) Integrated Transport and Health Impact Modelling Tool
10. (MAPS Mini) Microscale Audit of Pedestrian Streetscapes
11. (MMLoS) NCHRP Multimodal Level of Service
12. (Mode_Count) Street-specific Traffic Volume
13. (MOBILE) EPA Emission Rate Model
14. (Mode_Assess) Measuring Mode Shifts
15. (NYCDOT) NYCDOT Bike Lane Retrofit
16. (MOEs) Maine DOT Measures of Effectiveness
17. (PEDS) Pedestrian Environmental Data Scan
18. (PERS) Pedestrian Environment Review Software
19. (Retail_Econ) Retail Sales & Economic Vitality
20. (SF_BEQI) SFDPH Bicycle Environmental Quality Index
21. (SF_IP) SFDPH Indicator Project
22. (SF_NCI) SFDPH Neighborhood Completeness Indicator
23. (SF_PEQI) SFDPH Pedestrian Environmental Quality Index
24. (UF_Part) Ultrafine Particle Analysis
25. (UrbnDez) Active Living Research Urban Design Quality Assessment
26. (Walk_In) Walkability Index
27. (Walk2Tran) Path Walkability to Transit Variable Mode

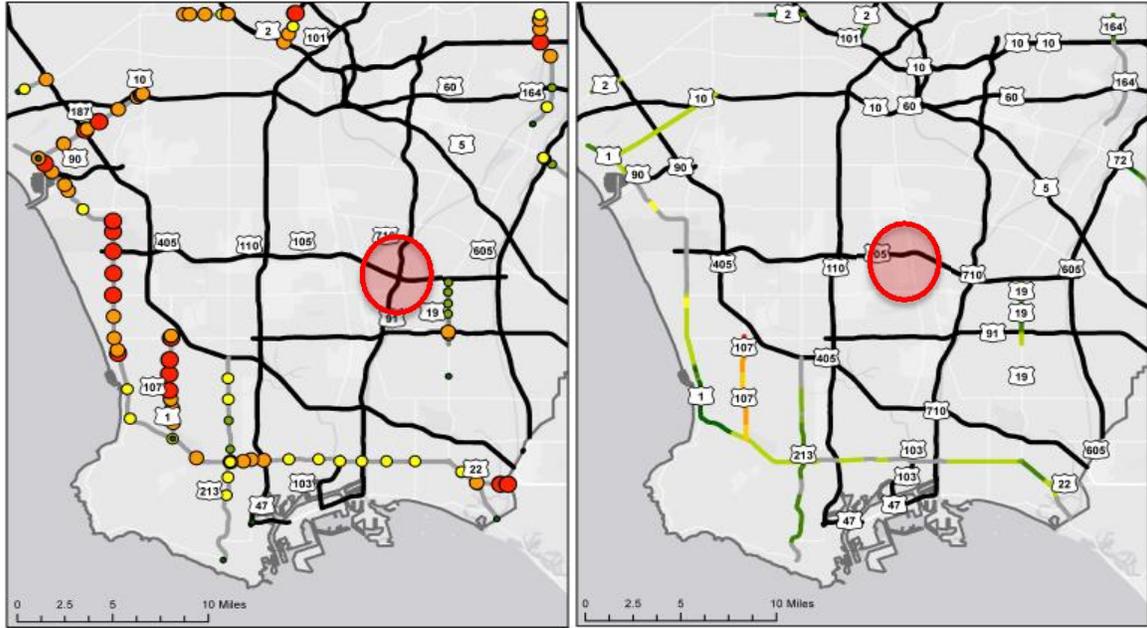
The complete, indexed summary of these measures and their component indicators will be available on-line at <http://www.ph.ucla.edu/hs/health-impact/methodology.htm> (September 2016)

Appendix B: Maps of State Highway Segments in Los Angeles County

State Highway Segments in Los Angeles County by Relinquishment Status and Restricted vs. Unrestricted Access



State Highway Segments in South Los Angeles County by Traffic Volume and Number of Lanes



Back AADT

- 0 - 5,400
- 5,401 - 28,000
- 28,001 - 43,000
- 43,001 - 60,000
- 60,001 - 230,000

Access Type, Land Use

- Restricted, Freeway
- Unrestricted, All Land Uses

Lanes

- 4
- 5
- 6
- 7
- 8
- 9
- 10
- 11
- 12

Access Type, Land Use

- Restricted, Freeway
- Unrestricted, Industrial/Vacant



Appendix C: Case-study Site Indicator Maps (Transportation Facilities) – Lakewood Blvd (Bellflower/Paramount)

Bus Stops

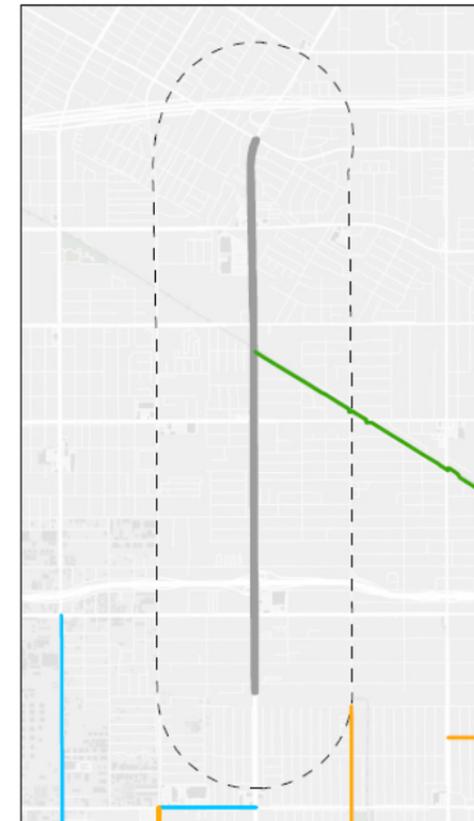
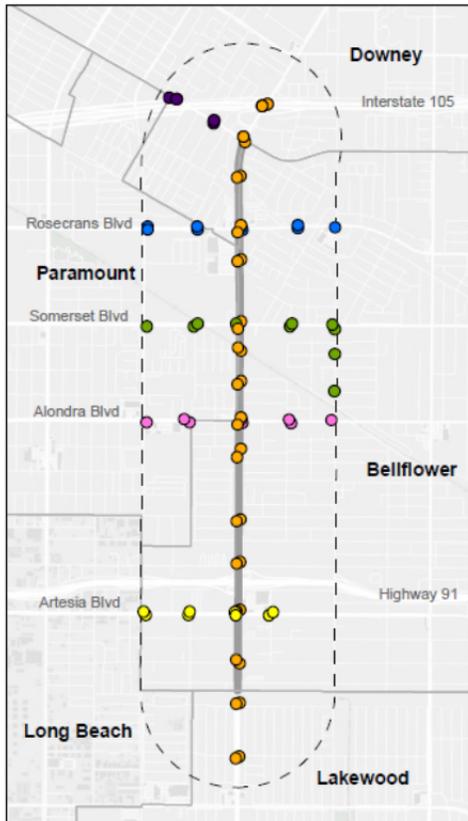
Line Number	Color	Line Number	Color
117	Red	128	Pink
125	Blue	130	Yellow
127	Green	265	Purple
		266	Orange

Rail Lines

- Green Line Station
- Lakewood Blvd Station

Bikeways

- Class 1 Bike Lane
- Class 2 Bike lane
- Class 3 Bike Lane



Appendix C (cont'd): Case-study Site Indicator Maps (Traffic Safety) Lakewood Blvd (Bellflower/Paramount)

Pedestrian Collisions (2009-2013) - 95

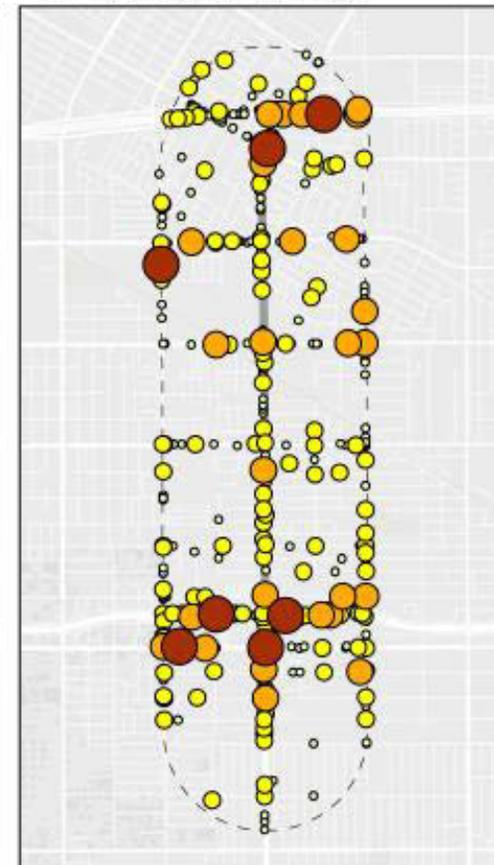
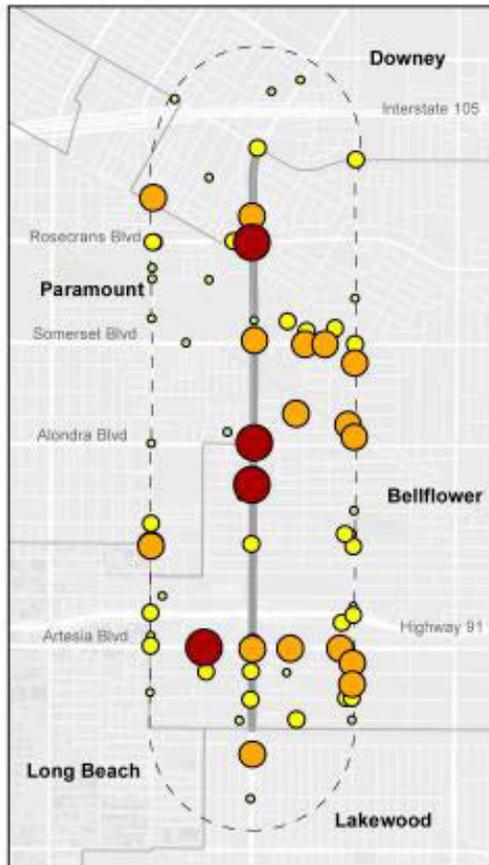
- 1 (Fatal) - 4
- 2 (Severe Injury) - 18
- 3 (Visible Injury) - 29
- 4 (Complaint of Pain) - 44

Bicycle Collisions (2009-2013) - 89

- 2 (Severe Injury) - 4
- 3 (Visible Injury) - 39
- 4 (Complaint of Pain) - 46

All other collisions (2009-2013) - 880

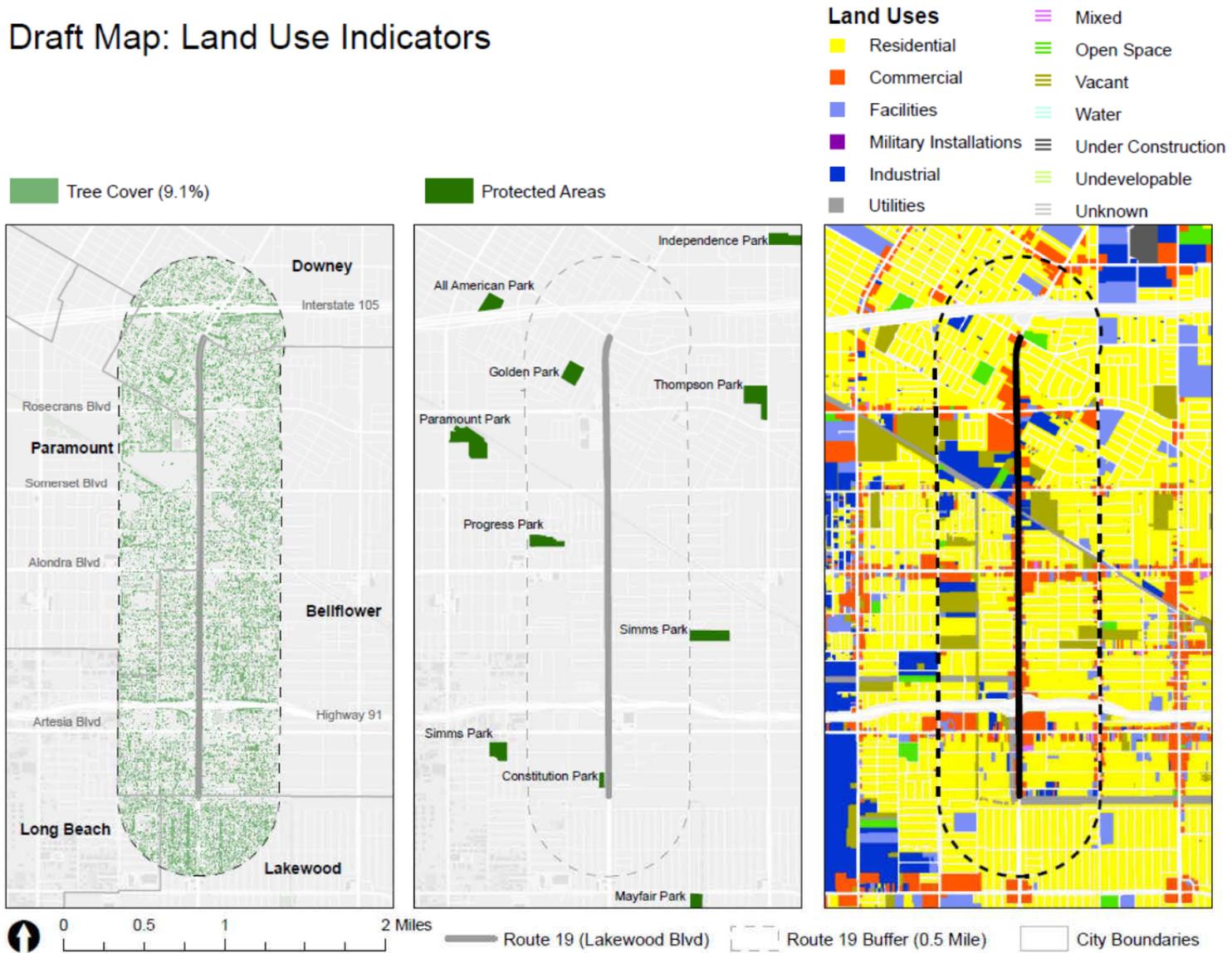
- 1 (Fatal) - 7
- 2 (Severe Injury) - 31
- 3 (Visible Injury) - 186
- 4 (Complaint of Pain) - 656



— Route 19 (Lakewood Blvd) - - - Route 19 Buffer (0.5 Mile) □ City Boundaries

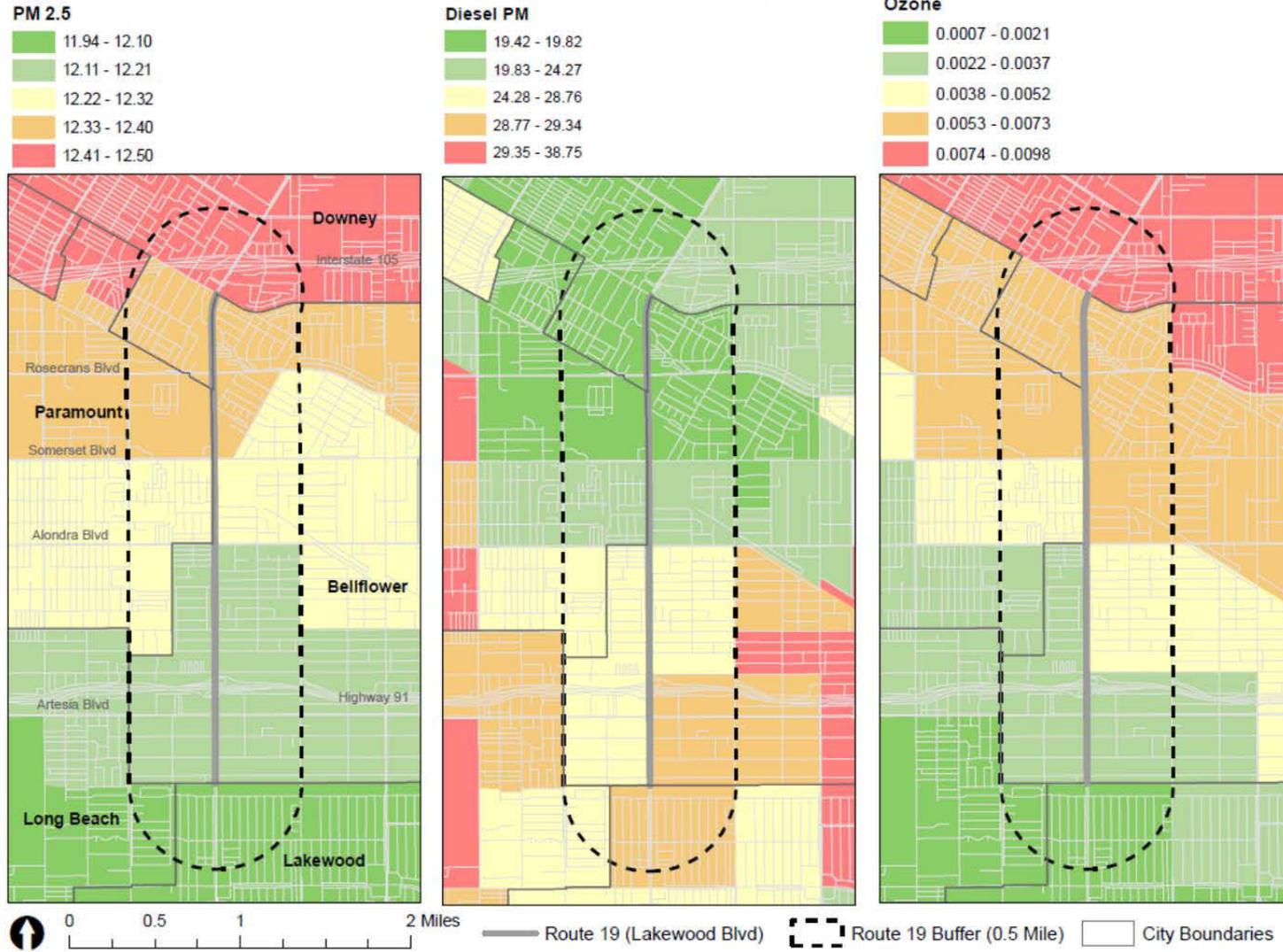
Appendix C (cont'd): Case-study Site Indicator Maps (Land Use) – Lakewood Blvd (Bellflower/Paramount)

Draft Map: Land Use Indicators



Appendix C (cont'd): Case-study Site Indicator Maps (Air Quality) – Lakewood Blvd (Bellflower/Paramount)

Draft Map: Environmental Indicators (Air Quality)



VI. References, Literature Cited, or Bibliography

Main Street Highways

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