

Comments on Durham-Orange Light Rail Transit DEIS

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To Whom It May Concern:

Please find attached comments on the Draft Environmental Impact Statement for the Durham-Orange Light Rail Transit Project, submitted by the Southern Environmental Law Center on behalf of Clean Air Carolina, Medical Advocates for Healthy Air, and the Orange-Chatham Group of the North Carolina Chapter of the Sierra Club.

Sincerely,

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Attachments:  [2015-10-13 D-O LRT Project Comments re DEIS from SELC.pdf](#)

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October 13, 2015

VIA E-MAIL

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Re: Comments on Durham-Orange Light Rail Transit Project Draft Environmental Impact Statement

These comments on the Draft Environmental Impact Statement (“DEIS”) for the Durham-Orange Light Rail Transit (“D-O LRT”) project are submitted by the Southern Environmental Law Center on behalf of Clean Air Carolina, Medical Advocates for Healthy Air, and the Orange-Chatham Group of the North Carolina Chapter of the Sierra Club. SELC is a 501(c)(3) non-profit organization dedicated to protecting the natural resources of the Southeast. In particular, SELC works with groups throughout North Carolina to promote transportation and land use decisions that strengthen our communities, protect our natural resources, and improve our quality of life. Clean Air Carolina is a non-profit committed to improving North Carolina’s air quality through education and advocacy efforts to reduce pollution in our state. Medical Advocates for Healthy Air is an initiative of Clear Air Carolina comprised of health professionals dedicated to educating others about the health impacts of poor air quality and advocating for stronger policies that will promote clean and healthy air for North Carolinians. The Orange-Chatham Sierra Club Group is a local division of the national nonprofit Sierra Club, which promotes protection of wild places and responsible use of natural resources through education and advocacy. Orange-Chatham Sierra Club Group’s members live in Orange, Chatham, Alamance, and Caswell Counties.

We are pleased to indicate our enthusiastic support for the D-O LRT project and the National Environmental Protection Act (“NEPA”) Preferred Alternative identified in the DEIS. We see this project generating many benefits to the region, and we appreciate that GoTriangle has identified light rail as the best-fit solution for the growth demands of the Durham-Orange Corridor (“D-O Corridor” or “the Corridor”). In addition to our strong support for the project, we submit the following specific comments regarding the DEIS.

I. Light Rail Creates Significant Benefits Beyond Public Transportation Improvement

We are thrilled by the prospect of a light rail system within the Triangle Region. Light rail lines have been successfully implemented in cities across the country to enhance public

transportation options while generating a variety of corresponding benefits. We are encouraged that a light rail system will finally be constructed within the Triangle, and we hope that the system will continue to expand as its promised benefits become a reality. In particular, we wish to highlight the environmental, human health, economic, and community benefits a light rail system will bring to the D-O Corridor and the greater Triangle area.

A. Light Rail Yields Significant Environmental Benefits

The environmental benefits of light rail are myriad. Most obvious, light rail reduces the number of vehicle trips that are made each day and correspondingly reduces tail pipe pollution. Pollutants from cars contain a variety of toxic and carcinogenic compounds.¹ Such pollution includes harmful carbon monoxide (“CO”), nitrogen oxides (“NO_x”), and volatile organic compounds (“VOCs”).² NO_x and VOCs emissions are precursors to ozone, which is associated with a variety of detrimental human health and ecological effects.³ Car emissions also contain greenhouse gases (“GHGs”) like carbon dioxide (“CO₂”), which contribute to global climate change.

In addition, urban light rail systems such as this one encourage concentrated growth in already disturbed environments, rather than the sprawling development into undeveloped, natural areas that is often enabled by new-location highway projects.⁴ Light rail facilitates these concentrated growth patterns primarily because it is a “fixed-guideway” system. Once the light rail line is constructed and its various stations are fixed in place, the D-OLRT project will allow investors and developers to confidently invest in an area that will thrive due to the transportation options in place. Light rail will effectively anchor development within a predictable corridor along the light rail route.

Such guided, planned land use with built-in public transportation options is environmentally beneficial on many levels. By containing development within a specific, planned, high-density area, the light rail system will help stall sprawling, unplanned growth patterns into suburban and exurban areas. This type of unplanned growth can lead to long commute times and an associated increase in vehicle miles travelled (“VMT”). With more cars on the road driving for longer periods there is an associated increase in local air pollution and greenhouse gas emissions, as discussed above. Likewise, as growth sprawls out of urban areas

¹ *E.g.* HEALTH EFFECTS INST., SPECIAL REPORT 17: A CRITICAL REVIEW OF THE LITERATURE ON EMISSIONS, EXPOSURE, AND HEALTH EFFECTS OF TRAFFIC-RELATED AIR POLLUTION 2-17–2-18 (2010), available at <http://pubs.healtheffects.org/getfile.php?u=553>

² *E.g. id.*; EPA, AUTOMOBILE EMISSIONS: AN OVERVIEW 2 (1994), available at <http://www3.epa.gov/otaq/consumer/05-autos.pdf>; *Greenhouse Gas Emissions: Transportation Sector Emissions*, EPA, <http://www3.epa.gov/climatechange/ghgemissions/sources/transportation.html> (last updated September 11, 2015).

³ *Ground-Level Ozone*, EPA, <http://www3.epa.gov/ozonepollution/> (last updated October 1, 2015).

⁴ DEIS at 4-291 (noting that “[t]he proposed D-O LRT Project and associated land use policies are expected to encourage more compact development, which has a smaller footprint than the auto-oriented development likely to occur without the transit investment”).

into less disturbed, rural areas, there can be significant impacts on other aspects of the natural environment. Forests may be cleared, farmland developed, and wetlands and streams paved over. The increase in impervious surfaces from this development can have an extremely detrimental effect on water quality as run-off increases.

In contrast, compact, planned land use enables developers to use space more efficiently, requiring less new development into rural areas. Moreover, compact, mixed-use communities mean residents can walk, bike, or use public transportation to reach destinations. In turn, fewer people rely on cars in their daily lives, which equates to fewer harmful pollutants being emitted into our air and water on a daily basis.

Moreover, the D-O LRT will serve as a keystone piece of a long-term vision for an improved Triangle-wide public transit system. As explained in the DEIS, the D-O LRT has not been proposed or developed in isolation; instead, it is part of a broader regional plan to invest in fixed-guideway transportation solutions.⁵ As such, the D-O LRT is an important regional investment in an environmentally-sound public transit solution which will facilitate compact, less environmentally damaging transit-oriented development. Indeed, the affected municipalities have premised their public transportation plans on this light rail project being implemented.⁶ Local governments' land-use visions "call for more compact, walkable, higher-density, mixed-use development within the D-O Corridor," and a light rail system will accordingly "channel future growth by providing a transportation option that supports compact, high-density developments."⁷

B. Light Rail Improves Physical and Mental Health

By driving mixed-use, compact development near public transportation options, light rail encourages more active lifestyles. Walking and bicycling to destinations, or to the closest light rail station, will be feasible and easier than driving and finding parking. Transit-oriented development, and the corresponding greater use of public transportation, increases physical activity and improves physical health.⁸ For example, mixed-use neighborhoods with public transportation access correspond to lower rates of obesity, while sprawling neighborhoods correspond to higher rates of hypertension, diabetes, asthma, and cancer.⁹

One study of individuals living near the Charlotte Lynx light rail system showed significant increases in physical health, including that light rail users lost weight and substantially reduced their likelihood of becoming obese.¹⁰ Public transportation access and

⁵ *Id.* at 2-2-2-8.

⁶ *E.g. id.* at 8-7.

⁷ *Id.* at 1-22; *see id.* at 4-291, 4-298.

⁸ *See* TODD LITMAN, VICTORIA TRANSPORT POLICY INSTITUTE, EVALUATING PUBLIC TRANSPORTATION HEALTH BENEFITS 13-15 (2015), *available at* http://www.vtpi.org/tran_health.pdf.

⁹ *Id.* at 15.

¹⁰ John M. MacDonald, et al., *The Effect of Light Rail Transit on Body Mass Index and Physical Activity*, 39 AM. J. PREVENTIVE MED. 105, 108 (2010). The study concluded that "[t]he findings from the current study suggest that

walkable communities are also associated with numerous mental health benefits, such as reducing emotional stress and symptoms of depression.¹¹ Moreover, in terms of general public health, public transit use is safer than private automobile use, with a much lower fatality rate than automobile travels.¹² As one researcher has observed, “[p]eople who live or work in transit oriented communities tend to drive fewer annual miles, drive at lower speeds, and have better travel options that allow them to avoid high risk driving, such as after drinking alcohol or when ill.”¹³ Light rail, as a fixed public transportation system, will lay the foundation for such healthier and safer transit-oriented communities in the D-O Corridor.

Additionally, light rail’s resulting reduction in tailpipe emissions corresponds to significant human health effects. As noted above, driving individual automobiles creates toxic particulate matter pollution and ozone-producing chemicals that can have a wide range of adverse health effects. A recent study published in the journal *Nature* suggests that air pollution was responsible for 3.3 million premature deaths worldwide in 2010.¹⁴ Air pollution exacerbates asthma, which was the leading medical cause for school absences in North Carolina during the 2009-2010 school year.¹⁵ It is also linked to low birth weight, premature birth, miscarriage, autism, ADHD, obesity, diabetes, compromised immune response, increased susceptibility to allergies, stroke, liver disease, dementia, anxiety, and depression.¹⁶ Particulate matter pollution is created not only by burning fossil fuels, but also by road wear, brake wear, and tire wear. The cleanest electric car will still cause particulate matter pollution because it cannot avoid friction with the petroleum-based asphalt comprising our roads. However, light rail avoids these friction-based sources of pollution by not using the petroleum-based asphalt. Moreover, light rail can avoid or mitigate these many adverse health impacts by providing a high-capacity public transit alternative to driving private vehicles. Fewer cars on the road equates to cleaner air for North Carolinians.

increasing the access to LRT transit for individuals to commute to work may help overcome some of the barriers to engaging in daily utilitarian exercise.” *Id.* at 110.

¹¹ LITMAN, *supra* note 9, at 17.

¹² *Id.* at 8–9.

¹³ *Id.* at 8.

¹⁴ J. Lelieveld et al. *The Contribution of Outdoor Air Pollution Sources to Premature Mortality on a Global Scale*, 525 *NATURE*, 367–371 (2015).

¹⁵ N.C. DEPT. OF HEALTH & HUMAN SERVS., *ASTHMA IN NORTH CAROLINA FACT SHEET 1* (2011), available at <http://www.asthma.ncdhhs.gov/docs/factsheets/2011/AsthmaInNorthCarolina.pdf>; N.C. DEPT. OF HEALTH & HUMAN SERVS., *THE NORTH CAROLINA ASTHMA PLAN 2013-2018 2* (2013), available at <http://www.asthma.ncdhhs.gov/docs/NorthCarolinaAsthmaPlan-2013-2018.pdf> (identifying Reducing school absences due to asthma as one of four priorities of the North Carolina Asthma Plan).

¹⁶ *E.g. Ambient (Outdoor) Air Quality and Health*, WORLD HEALTH ORG., <http://www.who.int/mediacentre/factsheets/fs313/en/> (last updated Mar. 2014); *ARB Fact Sheet: Air Pollution and Health*, AIR RES. BD., <http://www.arb.ca.gov/research/health/fs/fs1/fs1.htm> (last updated Dec. 2, 2009); Bradley S. Peterson, et al., *Effects of Prenatal Exposure to Air Pollutants (Polycyclic Aromatic Hydrocarbons) on the Development of Brain White Matter, Cognition, and Behavior in Later Childhood*, 72 *JAMA PSYCHIATRY* 531 (2015); W. James Gauderman, et al. *Association of Improved Air Quality with Lung Development in Children*, 372 *N. ENG. J. MED.* 905 (2015).

C. Light Rail Brings Business and Boosts Economic Development

As alluded to above, the proposed light rail system will draw concentrated economic development.¹⁷ Large companies are deliberately investing in and developing areas connected to permanent public transit systems like light rail. Mercedes-Benz relocated to downtown Atlanta,¹⁸ and Kaiser-Permanente decided on Georgia over Colorado because of the public transit options available, specifically the rail system in the Midtown area.¹⁹ Indeed, The Charlotte Lynx System has proven to be an enormous economic success for the area: “From 2005 to-date, the Blue Line has generated approximately \$900M in development projects completed within a ½ mile of the Blue Line Stations.”²⁰ This has “transformed portions of the community from vacant or underutilized parcels to vibrant, pedestrian friendly communities including housing, restaurants, retail and small businesses.”²¹ Charlotte Area Transit System staff project an additional \$500 million-worth of development in the coming years.²² The Blue Line Extension, which is set to begin operations in 2017, has already attracted more than \$200 million in new, private development projects along the future route.²³ Clean Air Carolina, which is based in Charlotte, has witnessed first-hand these positive community—not to mention environmental and health—benefits of the Lynx system. While this success story from within our State is particularly impressive, it is not an isolated instance. Light rail systems across the country, in metropolitan regions similar to the D-O corridor, have likewise experienced substantial economic benefits. These include systems in Portland, Oregon; Dallas, Texas; Denver, Colorado; Santa Clara County, California; and St. Paul-Minneapolis, Minnesota.²⁴

Notably, bus service, including bus rapid transit (“BRT”), has not and cannot spur such economic benefits precisely because of its unpredictable, ever-changing routes.²⁵ A BRT system includes fixed guideways for buses, thus removing segments of bus service from mixed-use traffic to enable quicker travel times. However, BRT is still characterized by flexibility in route

¹⁷ See DEIS at 1-22; *id.* at Table 8.1-1: *Project Need Performance Summary for No Build, NEPA Preferred, and Project Element Alternatives*.

¹⁸ Matt Kempner and J. Scott Trubey, *MARTA A Sudden Factor in Company Moves*, THE ATLANTA JOURNAL-CONSTITUTION, Jan. 16, 2015, <http://www.myajc.com/news/business/marta-a-sudden-factor-in-company-moves/njpnF/>.

¹⁹ Maria Saporta, *Transit and Walkability Key Factors in Kaiser Permanente’s Decision to Put 900 New Jobs in Midtown*, SAPORTAREPORT, Apr. 17, 2015, <http://saportareport.com/transit-and-walkability-key-factors-in-kaiser-permanentes-decision-to-put-900-new-jobs-in-midtown/>.

²⁰ E-mail from Tina Votaw, Transit Oriented Dev. Specialist, Charlotte Area Transit Sys., to Kym Hunter, Staff Attorney, S. Envtl Law Ctr. (April 22, 2015); *see also* Alternatives Analysis at 5-86 (“North Carolina’s first LRT line, the Blue Line, has been a catalyst for almost \$1.5 billion of new or planned development along Charlotte’s South Corridor, a formerly underutilized railroad corridor.”).

²¹ E-mail from Tina Votaw, *supra* note 20.

²² *Id.*

²³ *Id.*

²⁴ Alternatives Analysis, at 5-86–5-87 (listing the significant economic benefits which have accrued to the areas surrounding the respective light rail systems).

²⁵ Alternatives Analysis, at 5-88 (citing limited available studies on BRT and noting that potential economic benefits of BRT are unproven and speculative, unlike light rail’s demonstrated positive effects).

and still relies on mixed-use traffic for portions of its trip. Businesses cannot plan on bus service, but businesses can and will plan on a fixed light rail system.

D. Light Rail Creates Desirable Mixed-Use Communities

Private citizens are also increasingly choosing to live near established public transportation options. Indeed, a recent Chapel Hill poll indicated that the D-O LRT project is “overwhelmingly popular” with 69% of voters supporting the project.²⁶ This is in line with national trends showing that people, particularly the Millennial generation, are consciously driving less and prefer to use alternate modes of transportation.²⁷ The vast majority of Millennials express a preference for living in more urbanized, mixed-use, walkable communities with public transportation access.²⁸ Existing compact, mixed-use development along public transportation routes have shown that such less automobile-dependent communities are a reality with corresponding real benefits: “[r]esidents of communities with high-quality, well integrated public transit . . . own half as many vehicles, drive half as many annual miles, walk and bicycle four times more, and use public transit ten times more than residents of more automobile-dependent communities.”²⁹

Light rail will also assist less mobile populations, such as the elderly, 0- or low-car households, and lower-income families. These populations will be able to depend on light rail for their transportation needs, while also making long-term housing and employment decisions knowing that light rail will remain, fixed in route, for the future. Indeed, the D-O LRT system will connect large employment and education centers with its end points near the institutions of the University of North Carolina and Duke University, respectively.³⁰ Public transportation to such employment hubs will provide a low-cost, reliable means of transportation to jobs for low-income and 0-car households. These same individuals will also have greater access to the educational opportunities at both universities on the D-O LRT project route. Light rail and its corresponding transit-oriented development “provide basic mobility and accessibility, particularly for physically and economically disadvantaged people, such as people with disabilities and lower-income seniors.”³¹ Public transportation and more compact, mixed-use communities can provide a means of greater access to necessary medical services for the elderly and disabled.³² The D-O LRT project exemplifies this attribute by connecting to both the UNC

²⁶ Memorandum from Tom Jensen, Dir. of Pub. Policy Polling, State of the Chapel Hill Election 2 (Sept. 23, 2015), available at <http://chapelboro.com/wp-content/uploads/2015/09/ChapelHillPoll2015.pdf>.

²⁷ TONY DUTZIK & PHINEAS BAXANDALL, U.S. PIRG FUND & FRONTIER GRP., A NEW DIRECTION: OUR CHANGING RELATIONSHIP WITH DRIVING AND THE IMPLICATIONS FOR AMERICA’S FUTURE 21-25 (2013), available at <http://www.uspirg.org/sites/pirg/files/reports/A%20New%20Direction%20vUS.pdf>.

²⁸ *Id.* at 23; *Millennials Prefer Cities to Suburbs, Subways to Driveways*, NIELSEN (Mar. 4, 2014), <http://www.nielsen.com/us/en/insights/news/2014/millennials-prefer-cities-to-suburbs-subways-to-driveways.html>.

²⁹ LITMAN, *supra* note 9, at 3.

³⁰ *E.g.* DEIS, at 1-3–1-4.

³¹ LITMAN, *supra* note 9, at 16.

³² *E.g.* WENDY FOX-GRACE & JANA LYNOTT, AARP PUB. POLICY INST., EXPANDING SPECIALIZED TRANSPORTATION: NEW OPPORTUNITIES UNDER THE AFFORDABLE CARE ACT 1 (Jan. 2015), available at

Hospitals and the Duke/VA Medical Centers. Furthermore, fixed-route transportation helps older adults maintain a more independent lifestyle while remaining in their homes and communities, particularly when paired with well-coordinated, community-focused transportation and growth policies.³³

Public transportation and compact, walkable communities will also assist families living in poverty by enhancing transportation options and access. As recognized in a Federal Highway Administration paper, “[i]mproving mobility and job accessibility are very important factors to escape poverty.”³⁴ Light rail will serve as a reliable, fixed, accessible transportation option and drive development of less automobile-dependent communities. Such characteristics appeal to and benefit populations in need of greater transportation accessibility, as well as those who are deliberately choosing to rely less on private automobiles for their travel needs.

II. The NEPA Preferred Alternative is the Best Option for the D-OLRT Project

The above-stated benefits of light rail inform our support for the specific D-O LRT project. The stated Purpose and Need of the D-O LRT project includes implementing a high-transit transportation solution that facilitates future land use plans which focus on compact, transit-oriented development.³⁵ As the DEIS states, “[i]n order to address the transportation challenge faced by the region and more specifically within the D-O Corridor, and to cultivate a more sustainable cycle of growth for a future, a high-capacity transportation infrastructure solution is required.”³⁶ Thus, this project is intended to address not only transportation demands, but land-use demands. Indeed, the Alternatives Analysis completed at an earlier stage of this project identified four needs to be addressed, one of which was “to foster compact development.”³⁷ A light rail system is by far the best high-transit option in terms of promoting compact, less-environmentally damaging development. As documented throughout the DEIS, the D-O LRT project will best satisfy the defined Purpose and Need of the project as compared to other transportation options and the studied alternative light rail routes.

A. Light Rail is the Best Transportation Alternative for Meeting the Stated Purpose and Need of the Project

Light rail represents the best option for alleviating the already-present problems of increasing congestion in the project area. As identified in the DEIS, population growth in

<http://www.aarp.org/content/dam/aarp/ppi/2015/AARP-New-ACA-Transportation-Opportunities.pdf> (identifying access to transportation as a critical need for elderly individuals).

³³ E.g. TRANSP. FOR AM., AGING IN PLACE, STUCK WITHOUT OPTIONS 3, 35 (2011), available at <http://www.t4america.org/docs/SeniorsMobilityCrisis.pdf>.

³⁴ FED. HIGHWAY ADMIN., NATIONAL HOUSEHOLD TRAVEL SURVEY BRIEF: MOBILITY CHALLENGES FOR HOUSEHOLDS IN POVERTY 3 (2014), available at <http://nhts.ornl.gov/briefs/PovertyBrief.pdf>.

³⁵ DEIS at 1-22–1-23; see also Alternatives Analysis at 3-1.

³⁶ DEIS at 1-16.

³⁷ Alternative Analysis at 3-1. The other three needs were: “to enhance mobility,” “to expand transit options between Durham and Chapel Hill,” and “to serve populations with high propensity for transit use.” *Id.*

Durham and Orange Counties is exploding; indeed, “[b]etween 2010 and 2040, the population of each county is expected to grow by 64 percent and 52 percent, respectively.”³⁸ We agree with and applaud the DEIS’s acknowledgment that “[t]he existing built and natural environments limit the ability to widen the roadways to accommodate additional travel lanes,” and that “[i]f left unmanaged, this rapid growth will not only continue to constrain corridor mobility, but will also result in sprawling development patterns, which would lead to the reduction of open space and farmlands.”³⁹ Building more roads is not the answer to population growth and increased transportation demands, and expanding such roads would result in environmentally harmful development patterns and further exacerbate dependence on automobile travel. We further agree with the DEIS’s conclusion that “[e]ven with implementation of all roadway projects programmed in the 2040 MTP, the capacity of the roadway system will not keep pace with the increase in traffic volumes.”⁴⁰ Importantly, building new roads can sometimes paradoxically cause an increase in congestion. Travelers who previously avoided congested roads by foregoing discretionary trips or by traveling at non-peak hours might now opt to take more trips at different times. Moreover, development might expand along the new road, creating new communities and new travel demands. As such, building roads entices new vehicle trips, creating what is known as “induced demand” and in turn causing more, not less, congestion.

Light rail is uniquely suited to meet the transportation needs in the D-O Corridor. GoTriangle analyzed a variety of different transit system options in the Alternatives Analysis phase, and correctly concluded that they would not meet the identified Purpose and Need of the project.⁴¹ As identified in the earlier Alternatives Analysis, “the flexibility in the delivery of conventional bus services fails to provide the permanency in routing and stop placement necessary to shift current development patterns.”⁴² Furthermore, adding additional buses on already congested roadways will not address increased travel demands.⁴³ As observed by the DEIS, “[t]he number of buses serving each of these areas [near UNC hospitals and /Durham VA Medical Center/Duke University Medical Center] has surpassed or is approaching the feasible limit of the number of buses that can be accommodated on the roadways.”⁴⁴ We have been pleased by the increased bus ridership in the region, as identified by the DEIS, and believe this is indicative of the shift in the public’s desire and willingness to utilize public transportation options. However, the DEIS correctly identifies that the current bus system at our present-day population levels is increasingly inconsistent and unreliable in adhering to bus schedules.⁴⁵

³⁸ DEIS at 1-5.

³⁹ *Id.* at 1-6.

⁴⁰ *Id.* at 1-17.

⁴¹ Alternatives Analysis, ES-4–ES-8, 5-113–5-118, (2012); *see* 42 U.S.C. § 4332 (C), (E) (requiring evaluation of “appropriate alternatives” when preparing EIS); 40 C.F.R. § 1502.14 (limiting EIS review of alternatives to those that are “reasonable”).

⁴² Alternatives Analysis at 3-8.

⁴³ DEIS at 1-18–1-19.

⁴⁴ *Id.* at 3-9; *see id.* at 1-22.

⁴⁵ *Id.* at 1-10.

Clogged roadways already prevent efficient travel times of both private cars and buses, and this will only worsen with an increased population in the area.⁴⁶

Like increased bus service, BRT falls far short of meeting the Purpose and Need of the project. Triangle Transit ruled out BRT largely because of its inability to meet the economic development and compact growth elements of the project's Purpose and Need.⁴⁷ While proponents of BRT tout its flexibility and ability to respond to growth and development, this characteristic is precisely why BRT is less effective in driving compact land use patterns. Light rail outcompetes BRT in passenger capacity, partially because cars can be added to trains, and additional trains can be added to the entire light rail system with minimal impact so as to easily increase passenger capacity. Finally, commuter rail or heavy rail was appropriately rejected as a feasible option for the D-O corridor. Such vehicles are incapable of stopping quickly enough between closely-spaced stations, such as are needed on Duke and UNC campuses and in downtown Durham.

In contrast to other options, the D-O LRT project is a fixed transportation system which will drive smart, compact development while decreasing the numbers of cars on the road and enhancing public transportation accessibility. As the Alternatives Analysis succinctly summarized, after extensive evaluation of other modes of transportation, "the [light rail alternative] alone can fully address the stated Purpose and Need for a fixed-guideway investment in the Durham-Orange Corridor."⁴⁸ Ridership forecasts of the NEPA Preferred Alternative demonstrate that light rail will provide a substantial reduction in automobile trips; by 2040, the preferred alternative will account for more than 23,000 trips per average weekday.⁴⁹ These forecasts are supported by the ridership rates of the Charlotte Lynx system where daily ridership exceeded 2020 forecast levels within three years of its initial operations "and now averages about 15,000 trips per day."⁵⁰ The DEIS also projects that the light rail system will yield 23 million fewer vehicle miles traveled annually by year 2040.⁵¹ We agree with and support GoTriangle's determination that light rail is the best mode of public transportation for meeting the transportation and development needs of the D-O Corridor.

B. The NEPA Preferred Alternative is the Superior Alignment for the D-OLRT Project

We urge GoTriangle to proceed with the currently identified NEPA Preferred Alternative. We agree with and applaud the DEIS's observation that "[t]he NEPA Preferred Alternative would cause the least damage to the biological and physical environment and best protect,

⁴⁶ *Id.* at 1-18.

⁴⁷ *E.g.* Alternatives Analysis at 5-88, 5-113 ; DEIS at 1-16.

⁴⁸ Alternatives Analysis at 5-113.

⁴⁹ DEIS at 3-14.

⁵⁰ Alternatives Analysis at 5-86.

⁵¹ DEIS at 4-252; *id.* at Table 4.13-1: *Comparison of Estimated Annual VMT for the Triangle Region (2040)* (in millions of miles).

preserve, and enhance historic, cultural, and natural resources.”⁵² The NEPA Preferred Alternative represents the Least Environmentally Damaging Practicable Alternative (“LEDPA”), as determined by the U.S. Environmental Protection Agency (“EPA”).⁵³ The United States Army Corps of Engineers (“USACE”) likewise supports the NEPA Preferred Alternative.⁵⁴

In completing its thorough review of alternatives, GoTriangle carefully considered whether certain sections of the proposed D-OLRT route could be aligned differently. These Project Element Alternatives constitute different possible routes in the New Hope Creek and Little Creek areas of the project’s route. As determined by the DEIS after careful evaluation, the other Project Element Alternatives have greater environmental impacts, particularly to undisturbed natural habitats, than the NEPA Preferred Alternative.

For example, the C2 Alternative impacts 23 more acres of biotic resources than the NEPA Preferred Alternative.⁵⁵ The C1 and C1A Alternatives would impact undisturbed natural areas, such as the Little Creek Bottomlands and Slopes Significant Natural Heritage Area.⁵⁶ Importantly, the USACE informed GoTriangle that given the existence of a less-environmentally damaging alternative, the USACE would not authorize the C1 alternative with its corresponding significant adverse impacts to natural resources and public use of the Jordan Lake Game Lands.⁵⁷ Although the DEIS nonetheless carefully studied this alternative, the USACE’s unwillingness to grant GoTriangle use of the Jordan Lake Game Lands for the C1 Alternative effectively eliminates it as an option.⁵⁸

The NEPA Preferred Alternative also outperforms the New Hope Creek Alternatives in terms of impacts to the natural environment. The New Hope Creek LPA (“NHC LPA”) Alternative would result in fragmentation of undisturbed forested areas and wetlands, and would create a new transportation corridor in the New Hope Creek Bottomlands.⁵⁹ The New Hope Creek 1 (“NHC 1”) Alternative fares slightly better than the NHC LPA Alternative, but would impact 7 more acres of hardwood forests than the NEPA Preferred Alternative. We are pleased that the selected NEPA Preferred Alternative impacts the fewest acres of biotic resources as compared to the other element alternatives, and we support GoTriangle in advancing this route for further evaluation and implementation.⁶⁰

⁵² *Id.* at 8-26.

⁵³ *See id.* at 8-14.

⁵⁴ *See id.* at 8-14.

⁵⁵ *Id.* at 8-18.

⁵⁶ *Id.* at 8-17.

⁵⁷ *Id.* at 8-17, G-99.

⁵⁸ *See* 16 U.S.C. § 460d (authorizing USACE to “grant leases of lands . . . at water resource development projects . . . for such purposes as [the Secretary] may deem reasonable in the public interest”).

⁵⁹ *Id.* at 8-18–8-19.

⁶⁰ *See* DEIS at Table 8.2-1: *D-O LRT Alternatives Benefits and Consequences Matrix*.

C. Fewer Harmful Effects Correspond to the Farrington Road Rail Operations and Maintenance Facility

In addition to studying different alignment routes, the DEIS reviewed different possible locations for a rail operations and maintenance facility (“ROMF”), where trains will be serviced and stored, and where the technical operations for the system will be based. The Farrington Road ROMF included in the NEPA Preferred Alternative surpasses each of the alternative ROMF locations. Leigh Village would permanently impair use of the historic Walter Curtis Hudson Farm, and the Patterson Place ROMF is incompatible with the Preferred Alternative New Hope Creek Element (“NHC 2”), as well as the perhaps “second best” New Hope Creek route possibility of NHC 1.⁶¹ Because the Patterson Place ROMF would rule out these two environmentally-preferable routes, we oppose the Patterson Place ROMF and strongly concur with the NEPA Preferred Alternative’s selection of the Farrington ROMF. While the Cornwallis and Alston Avenue ROMF locations may result in fewer impacts to water resources, and natural resources in the case of the Alston Avenue ROMF, the resulting operational difficulties, higher costs, and community impacts render these locations less desirable to the NEPA Preferred Alternative location.⁶² Specifically, the Cornwallis Road location would have significant impacts on the Judea Reform Congregation, Levin Jewish Community Center, and the Lerner Jewish Community Day School.⁶³ The Alston Avenue Location would be located in an area with high low-income and minority populations, result in a net loss of jobs, and displace multiple businesses.⁶⁴ Such significant community impacts would undermine the community support and longevity of the D-O LRT project.

In sum, the NEPA Preferred Alternative utilizes existing transportation right-of-ways and follows a route that minimizes new impacts to sensitive environmental resources. By sticking close to established transportation corridors, most of the NEPA Preferred Alternative’s environmental impacts are to already disturbed environments. As such, we are pleased with the identified NEPA Preferred Alternative and strongly support GoTriangle’s continued selection of this route and ROMF location as the NEPA Preferred Alternative.

III. GoTriangle Should Continue to Analyze Certain Environmental Impacts and Develop Further Mitigation Measures

On the whole, the DEIS carefully and thoroughly documents the possible impacts to natural resources, streams and wetlands, water quality, and air quality within the project area. We are pleased with the consistent recommendation of best management practices to avoid and reduce certain environmental impacts. The below comments applaud some of the specific aspects of the DEIS’s discussion of the affected environment and environmental consequences,

⁶¹ *Id.* at 8-20.

⁶² *Id.* at 8-21–8-22.

⁶³ *Id.* at 8-21.

⁶⁴ *Id.* at 8-22–8-23.

while also noting areas in which the Final Environmental Impact Statement (“FEIS”) should be improved.

A. Natural Resources

Overall, we are content with how the DEIS addresses potential impacts to natural resources, including wildlife and broader ecosystem impacts. The DEIS recognizes that the indirect impacts—largely compact development in the affected area—“would be more beneficial to natural resources than the type of dispersed growth that typically occurs with auto-oriented development.”⁶⁵ We believe such acknowledgments and comparisons are important when considering a project such as this, where some minimal environmental harm may result in the construction and implementation phases, but where the long-term environmental effects are substantial. Even then, the natural resource impacts will largely be limited to already disturbed habitats.⁶⁶

However, the DEIS provides an incomplete picture regarding endangered and threatened species. We are pleased that GoTriangle carefully analyzed the occurrence of federally listed species in the project area, and that the DEIS includes preliminary measures to be taken in the event the species are observed in the area. Nonetheless, the DEIS lists many North Carolina state-listed endangered and threatened species, but does not include any information about their abundance in the project area or how to mitigate possible harm to the species. We understand that studies and coordination with North Carolina agencies are ongoing, and we encourage careful evaluation of possible harm to these species and implementation of necessary mitigation measures. The FEIS should include a more thorough discussion regarding these state-listed species.

B. Water Resources

While the NEPA Preferred route will have impacts to water resources in the project area—particularly wetlands, streams, and floodplains—the impacts are relatively minor when considered in comparison with the sprawling, car-oriented development that would occur under a No Build scenario.⁶⁷ Nonetheless, we note that the NEPA Preferred Alternative will impact approximately .558 acres of wetlands,⁶⁸ and that the Little Creek project elements alternatives would actually impact .05 acres fewer than the NEPA Preferred Little Creek route (C2A).⁶⁹ We have limited concerns about this as the acreage impact is so slight. Moreover, we understand that while the Little Creek alternatives may impact a smaller acreage of wetlands, these alternatives “would impact one or two more [discrete] wetlands.”⁷⁰ Nonetheless, GoTriangle

⁶⁵ *Id.* at 4-92.

⁶⁶ *Id.* at 4-138, 4-142.

⁶⁷ *E.g. id.* at 4-290, 4-292.

⁶⁸ *Id.* at 4-156.

⁶⁹ *Id.* at 4-159.

⁷⁰ *Id.* at 4-159.

should continue to evaluate the possible wetlands impacts associated with the NEPA Preferred Alternative and identify specific mitigation measures to ensure the least impact possible to these special water resources.

C. Air Quality

The DEIS's cursory examination of air quality impacts does a disservice to the project by failing to document the significant positive effects the D-O LRT will have on air quality. While "[m]odeling analyses are only required for areas that are in nonattainment or maintenance for a particular pollutant" in terms of National Ambient Air Quality Standards ("NAAQS") under the Clean Air Act, the FEIS should discuss more of the air quality impacts than are discussed in the DEIS.⁷¹ The DEIS identifies that Durham County is a maintenance area for carbon monoxide and then limits air quality discussion to this sole pollutant and area. Even if modeling analyses are not required, the FEIS should document and consider the possible air quality impacts that will result from this project. For example, the FEIS should note that by reducing the numbers of cars on the road, there will be a corresponding reduction in multiple harmful pollutants. Moreover, even if additional modeling analyses are not *required*, they certainly are not prohibited, and we would support GoTriangle conducting further modeling analyses to document the positive effects this system will have on air quality.

D. Greenhouse Gas Emissions

One of the prime environmental benefits of the D-O LRT is the potential for reductions in tailpipe emissions of GHGs. In December 2014, the Council of Environmental Quality ("CEQ") issued a draft guidance on "Consideration of Greenhouse Gas Emissions and the Effects of Climate Change," under NEPA.⁷² The draft guidance instructs agencies to consider impacts on GHGs when conducting a NEPA analysis. The DEIS failed to conduct such an analysis, citing a lack of a "national strategy to address greenhouse gas emissions from transportation," and asserting that "[i]t is technically unfeasible to accurately model how negligible increases or decreases of CO₂ emissions at a project scale would add or subtract to the carbon emissions from around the world."⁷³ We disagree with this sentiment. As recognized by the CEQ's draft guidance, while "climate impacts are not attributable to any single action," they are "exacerbated by a series of smaller decisions, including decisions made by the government" and should be analyzed as such.⁷⁴ Here, the D-O LRT's impact would almost certainly have the positive environmental effect of reducing GHGs. Documenting such a positive effect is important for future transportation planning and to establish the precedent of conducting such evaluations.

⁷¹ The FEIS should also clarify that 40 C.F.R. 93, subpart A, requires modeling analyses for only nonattainment or maintenance areas for a given pollutant. While reference is made in Appendix K23, the source of this requirement should be clarified within the text of the FEIS.

⁷² Revised Draft Guidance on Consideration of Greenhouse Gas Emissions and the Effects of Climate Change, 79 Fed. Reg. 77801 (Dec. 24, 2014).

⁷³ DEIS at 4-201.

⁷⁴ Revised Draft Guidance, 79 Fed. Reg. at 77825.

IV. GoTriangle Should Continue to Collaborate with Low-Income and Minority Communities Who May be Impacted

Although there is wide community support for enhanced public transit options in the D-O Corridor and for light rail in particular,⁷⁵ the D-O LRT project has the potential to disproportionately burden certain low-income and minority communities in Durham. While the Durham-Chapel Hill Metropolitan Statistical area is economically robust, the DEIS notes that the census tracts within the D-O Corridor have a 19 percent lower median household income than the combined median household income in Durham and Orange counties on the whole.⁷⁶ More than thirteen percent of households within the Corridor do not have an available vehicle, and 42.6 percent of households in the Corridor have only one vehicle.⁷⁷ Moreover, Durham has a history of proposed transportation projects having a disproportionate impact on people of color and low-income communities.⁷⁸ GoTriangle must be mindful of these disparities and the historical backdrop in continuing to proactively engage communities that will be affected by the D-O LRT project.

We are pleased by GoTriangle's thoughtful efforts to date in informing and collaborating with affected communities. The DEIS identifies access to proposed stations is a primary concern voiced by low-income and racial minority communities in the area.⁷⁹ The DEIS also highlights concerns about affordable housing, business displacements, and inequitable distribution of sales tax revenues from the area.⁸⁰ While the DEIS identifies responses to each of these concerns, we hope GoTriangle continues to collaborate and develop additional means of mitigating these concerns, as required by Executive Order 12898.⁸¹ We are pleased that Durham County and the City of Durham have set goals of having "15 percent housing within a ½ mile of each station be affordable to people at or below 60 percent of the median area income."⁸² However, we encourage GoTriangle to work with local leaders to develop more hard-and-fast policies and mechanisms to keep housing affordable. Such measures should include methods to help current residents in the affected areas remain in their homes and not be priced-out of their residences. Additionally, the DEIS should be clearer and more consistent about the potential problem of

⁷⁵ *E.g.* Jensen, *supra* note 26, at 2.

⁷⁶ DEIS at 1-8.

⁷⁷ *Id.* at 1-5.

⁷⁸ See *id.* at 5-30; *Removal of Los Primos Supermarket – Analyzing and Identifying Alternatives*, FED. HIGHWAY ADMIN. (last updated Feb. 4, 2013),

https://www.fhwa.dot.gov/environment/environmental_justice/ej_and_nepa/case_studies/case04.cfm; *Case Studies: East-West Expressway Environmental Impact Study*, FED. HIGHWAY ADMIN. (last updated Aug. 29, 2011).

http://www.fhwa.dot.gov/environment/environmental_justice/case_studies/case3.cfm.

⁷⁹ DEIS at 5-18.

⁸⁰ *Id.* at Table 5.3-1: *EJ Community Concerns Expressed and Triangle Transit Actions/Response*.

⁸¹ Exec. Order No. 12,898, 59 Fed. Reg. 7629 (Feb. 11, 1994).

⁸² DEIS at Table 5.3-1: *EJ Community Concerns Expressed and Triangle Transit Actions/Response*; *id.* at 5-31; see N.C. GEN. STAT. § 136-252(b)(3)(d) (requiring recipients of state public transportation grant money to develop strategies "to provide replacement housing for low-income residents displaced by transit development . . . for the purpose of increasing the stock of affordable housing to at least fifteen percent (15%) [near the transit development] to be affordable to families with income less than sixty percent (60%) of area median income.") .

affordable housing; a few pages after identifying this problem, the DEIS includes “[a]ffordable housing near transit” as one of the offsetting beneficial impacts the project will have on low-income and minority populations.⁸³ Affordable housing should be eliminated from this list of benefits in the FEIS, unless concrete and enforceable policies are instituted that guarantee access to affordable housing proximate to light rail stops.

The DEIS observes that acquisitions and displacements required by the D-O LRT project might “be perceived as a disproportionately high and adverse effect on the east Durham community in particular.”⁸⁴ The DEIS lacks documentation or analysis of the businesses and community resources that may be displaced due to the project. This missing information creates an incomplete picture of the nature and extent of the adverse effects such displacements and acquisitions will have on affected people of color and low-income communities. As such, we urge GoTriangle to devote detailed discussion in the FEIS to the precise businesses and resources to be displaced in the affected areas. Further, as much as possible, GoTriangle should select routes that will require as few business, community resource, and residential displacements as possible. Retaining community pillars is key for community cohesion.

We are mindful that community members have expressed concerns that the current D-O LRT project does not reach East Durham, where low-income and minority populations are in dire need of better access to public transportation. Instead, light rail will reach these communities only during a possible later phase of light rail expansion. In the transportation mitigation section, the FEIS should address coordinating connecting bus service from East Durham communities to the nearest D-O LRT stop as well as provide realistic numbers on the ridership projections for D-O LRT from East Durham. Because community members have expressed that the D-O LRT will not serve the East Durham community due to the local nature of community travel, these additional actions would work toward establishing how East Durham residents would get to the D-O LRT, assessing the level of current East Durham community transportation need, and firmly determining how this project can actually provide transit to those lower-income, less mobile households. Indeed, since a prime part of the Purpose and Need for the project is providing public transit access to lower-income, less mobile households, connecting East Durham communities to this light rail project should be prioritized.

Finally, we urge GoTriangle to study and include in the FEIS information about the estimated fares for light rail passengers. We note that the DEIS stated Go Triangle will work with public transportation staff to “engage the public and complete a Transit Service and Fare Equity Analysis” prior to initiating revenue service.⁸⁵ If the light rail service is cost-prohibitive for low-income populations, the project will not satisfy its stated Purpose and Need, and may not yield as many positive benefits for target populations as forecast by the DEIS.

⁸³ DEIS at 5-35.

⁸⁴ *Id.* at 5-30.

⁸⁵ *Id.* at 3-14.

As noted throughout the DEIS's section on impacts to low-income and minority populations, despite the possible negative impacts, many positive impacts will accrue to the affected communities. These include new employment prospects and greater mobility and connectivity with other communities through the greater access to reliable public transportation.⁸⁶ We agree that in many ways, low income and people of color communities stand to benefit from the D-O LRT project, but we nonetheless encourage GoTriangle to continue to carefully analyze and avoid potential impacts to these communities.

V. Conclusion

We are thrilled to offer our support for the D-O LRT project and to submit these overwhelmingly positive comments regarding the project. As discussed above, the D-O LRT system represents an opportunity to improve the public transportation network in the region, while driving compact, prosperous growth and development in the face of future population growth in the D-O Corridor. In turn, the D-O LRT project corresponds to environmental, health, and community benefits. We urge GoTriangle to enhance its analysis and address our limited concerns regarding the project. We look forward to continuing to work with GoTriangle in advancing this exciting public transit investment.

Sincerely,



Kym Hunter
Staff Attorney



Ramona McGee
Associate Attorney

⁸⁶ *Id.* at 5-3-5-35.

KH/lv

cc (via email):

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Max Felsher, Orange-Chatham Group of the North Carolina Chapter of the Sierra Club

Olga Grlic, Orange-Chatham Group of the Sierra Club

May Becker, Orange-Chatham Group of the Sierra Club

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14 MR. JOYNER: Thank you.

15 MS. RAMONA McGEE: There we go.
16 My name is Ramona McGee, and I'm an
17 attorney with the Southern Environmental
18 Law Center. Our address is

21 The Southern Environmental Law
22 Center or SELC is a 501(c)(3) non-profit
23 organization working to protect the
24 natural resources of the Southeast. In

1 particular, we work with a wide range of
2 environmental groups across the state
3 advocating on transportation issues. SELC
4 is pleased to indicate our enthusiastic
5 support for the Durham-Orange Light Rail
6 Transit Project and the selected routes
7 identified in the Draft Environmental
8 Impact Statement. We see this project
9 generating many benefits, including to the
10 environment and to community health. The
11 environmental benefits of light rail are
12 well established. By reducing the number
13 of cars on the road, the system will help
14 improve air quality and reduce emissions
15 of climate-changing greenhouse gases.

16 Further, we expect that a fixed
17 transportation system such as the light
18 rail line will help shape land use along
19 the corridor as Orange and Durham Counties
20 continue to grow. As to the positive
21 effects on community health and quality of
22 life, the light rail system will combat
23 congestion, long commute times, and time
24 wasted behind the wheel. Such an active

1 transportation solution will also benefit
2 overall community physical and mental
3 health.

4 While we are supportive of the
5 project and the routes, we appreciate that
6 some concerns remain regarding possible
7 equity and accessibility impacts as a
8 result of the project's location in
9 Durham.

10 Nonetheless, we are pleased that
11 GoTriangle has adopted a thoughtful
12 approach to collaborating with the
13 affected communities in resolving these
14 issues, and we are hopeful that this
15 collaboration will continue.

16 Again, SELC is happy to share our
17 overall support for this project and the
18 identified routes. We are carefully
19 reviewing the DEIS and will be submitting
20 more thorough written comments soon.

21 Thank you.

22 MR. JOYNER: Thank you. Next
23 speaker, please.

24