

"Buford Highway through DeKalb County is the most dangerous stretch of road for pedestrians in Georgia, with 154 struck since 2003 and nine fatalities in the past 10 years. Long stretches have six lanes of speeding traffic, crosswalks a mile apart, stoplights sporadically placed, no sidewalks and bus stops that are nothing more than a sign immediately adjacent to cars, trucks and SUVs zooming by in lanes of traffic just a few feet away." [Page 28]

2016

## USDOT SMART CITIES CHALLENGE



**Lindy** : History, made here.

Metro Atlanta Buford Highway Corridor Municipalities:

Atlanta, Brookhaven, Chamblee, Doraville, Norcross, Duluth

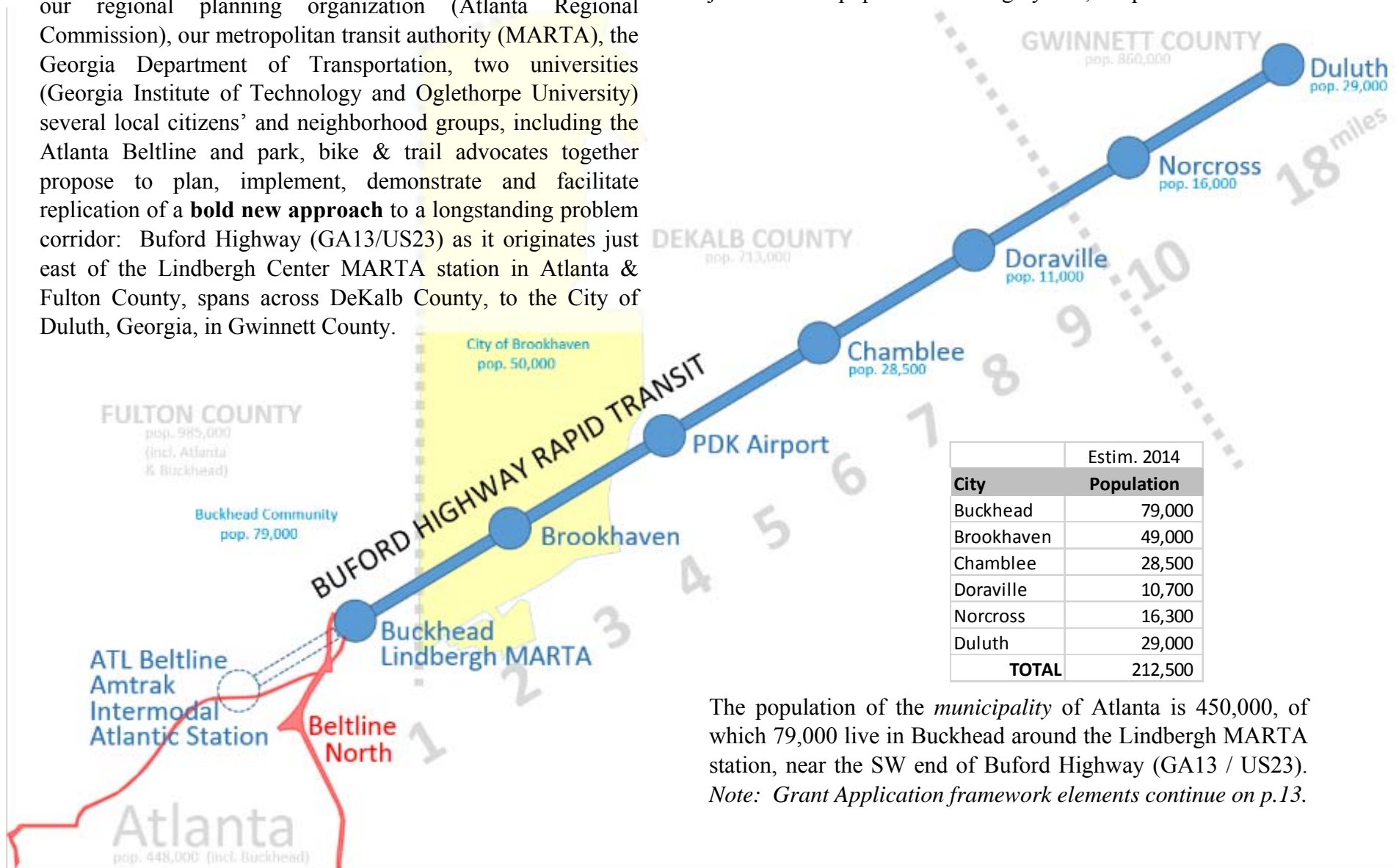
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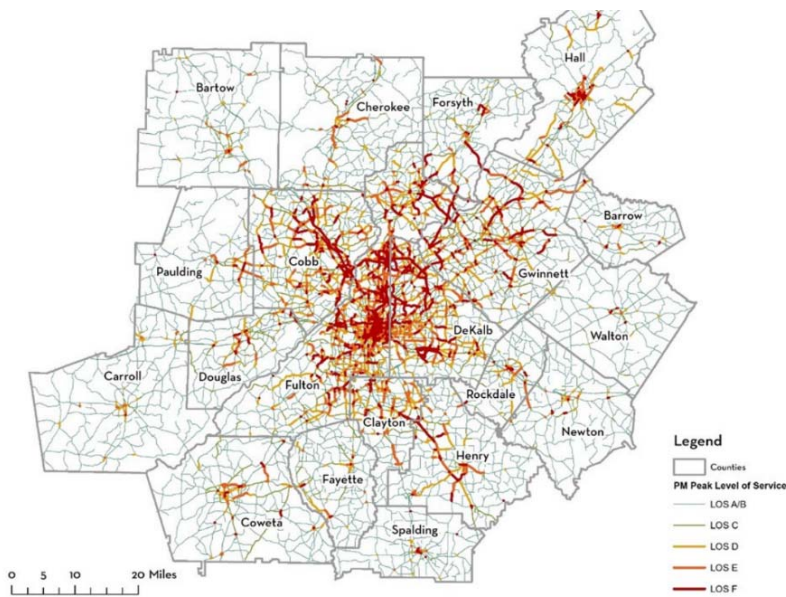
## 1. HIGH-LEVEL VISION / FRAMEWORK / CONCEPTS

A consortium of six Atlanta metropolitan area municipalities, our regional planning organization (Atlanta Regional Commission), our metropolitan transit authority (MARTA), the Georgia Department of Transportation, two universities (Georgia Institute of Technology and Oglethorpe University) several local citizens' and neighborhood groups, including the Atlanta Beltline and park, bike & trail advocates together propose to plan, implement, demonstrate and facilitate replication of a **bold new approach** to a longstanding problem corridor: Buford Highway (GA13/US23) as it originates just east of the Lindbergh Center MARTA station in Atlanta & Fulton County, spans across DeKalb County, to the City of Duluth, Georgia, in Gwinnett County.

The corridor is roughly 18 miles long and connects six cities roughly paralleling the I-85 Interstate, serving an adjacent multi-jurisdictional population of roughly 212,000 persons.



The population of the *municipality* of Atlanta is 450,000, of which 79,000 live in Buckhead around the Lindbergh MARTA station, near the SW end of Buford Highway (GA13 / US23).  
*Note: Grant Application framework elements continue on p.13.*



Above: Atlanta Regional Commission commute congestion/delays

### ABSTRACT: “Traffic will kill Atlanta.”

Having grown unbound by geographic limits – with no adjacent ocean, bay, lake, mountain range, broad river, or state line, **Atlanta exemplifies the worst-case scenario of urban to suburban transportation-development sprawl** in the United States. Buford Highway, our 6 to 7 lane, three county multi-jurisdictional state-route from Midtown to Gwinnett County, is also our **notorious example of dystopic land-use**, a remnant of outdated and ineffective planning that failed to yield to the freight train of late 20<sup>th</sup> century double-digit MSA growth. That train left the station with no brakes when the population of our northeast suburban communities along the I-85 corridor, Gwinnett County, **increased tenfold** since 1970, from 78,000 to over 860,000 today. Similarly, Georgia, the fifteenth most populous state in 1970, now ranks ninth most populous.

**NAMING OUR CHALLENGES.** Decreasing our roadway congestion and providing effective alternative commute options

for Atlanta’s north and northeast MSA growth is critical to our future economic vitality. The north suburbs are counter-weighted by the world’s busiest airport at the south-center of the I-285 perimeter, which decreased the desirability of surrounding land for residential use. Swaths of existing neighborhoods were annexed and cleared for Hartsfield-Jackson runway expansions, the last of which opened in 2006. The modern era of urban development in Atlanta surged northward from the downtown Capitol area following Peachtree Street, annexing Buckhead in 1952, sprouting a Midtown high-rise core and another one further north at Lenox, midway between the historic center and the north perimeter. The last major new Atlanta arterial carved from residential fabric was GA400, constructed from 1971-1993 to relieve daily commute congestion and connect the outside-perimeter north municipal suburbs of Dunwoody, Roswell, and Alpharetta. I-75, I-85, I-20 & I-285 are full right-of-way width.

**HUB AND CONNECTION.** Lindbergh Center MARTA station near the southwest terminus of Buford Highway is more than a transportation hub and an area of dense development, it’s the geographic midpoint of living centers spread over the entire metro area, often traversed when navigating from one signature “neighborhood in a forest” to another. Atlanta’s tree-canopied neighborhoods include Buckhead, Decatur, Vinings, Smyrna, Mableton, West Paces Ferry, North Druid Hills, Tucker, Clarkston, Scottdale, Avondale Estates, Panthersville, Gresham Park, Forest Park, College Park, East Point, Virginia Highland, Summerhill, West End, Bankhead, Ansley, as well as the **six Fulton-DeKalb-Gwinnett County municipalities with their local governments** that support this proposal: Atlanta, Brookhaven, Chamblee, Doraville, Norcross and Duluth.



**HOPES FOR TECHNOLOGY.** Few innovations can match the power of electronic communication (now digital, wireless & ubiquitous) to disrupt or transform society's planned arrangements *as do shifts in transportation technology*. For better or worse, transportation innovations typically affect large geographic areas and great numbers of people, often over generations and in unforeseen ways. Though there remain many ways Atlanta's interstates and arterials can be improved and optimized, there is little to suggest road-building will address the magnitude of current challenges or the additional trending growth. Rather, we're in a race to outsmart and overcome the consequences of past successes --- we're seeing familiar approaches we've tapped before that will soon default to gridlock for several hours every workday. But new innovations can sometimes *leap over obsolete systems*. Think of the game-changing adoption of cell-phones in developing countries that previously lacked telephone poles, overhead wires and analog switch exchanges --- practically overnight, underserved, neglected places found themselves "cutting edge," even ahead of their neighbors and finding new opportunities afforded by the installation of relatively few cell-phone towers and wireless relays. That's the nature of the solution we intend here.

Our proposal asserts that the transportation corridor connecting our municipalities along Buford Highway from Midtown Atlanta to Gwinnett is now "ripe" to leap ahead. It has proven formidably difficult to re-imagination *for decades*. *Its failed & 'retro' configuration is so out of date that it now qualifies as an underutilized asset, a potential model to convert and repurpose*. This also suggests that a resolute, pragmatic approach to the challenges encountered along these 10-18 miles of previous car-

centric planning **will certainly offer a replicable roadmap to other mid-sized municipalities** facing the same intractable legacy.

**WHAT WENT WRONG?** There was a hidden, unintended *lack of conviviality* in the urban/suburban planning & road-building spree that caught on here in the mid-20<sup>th</sup> century. Like many other cities in the US, we cheerfully ignored the economic externalities of too many parking lots, widened right-of-ways, dangerous pedestrian crossings, and other long-term *macro*-consequences of unbridled automobile-centered growth. Next, we failed to imagine that our suburbs would one day be called on to house Americans who can't afford *one* car, let alone two per family, but who nevertheless must travel to their jobs, schools, grocery stores and everywhere else we need to go flexibly if we're to going compete with our "human capital" hitting on all cylinders.



Proposed MARTA Transit-oriented Development adjacent to Chamblee Sta.

**WHAT CAN WE DO DIFFERENTLY?** Using ITS (Integrated Transportation System) technology, our six collaborating municipalities can coordinate their efforts like never before.

We'll implement a flexible, balanced approach using the latest environmentally clean, connected, rider-centric rapid transit & shared transportation technologies available. The Bus Rapid Transit (BRT) model is well-proven now, worldwide. But this simple improvement over traditional bus transit can be especially leveraged. Combine it with ride and bike sharing, also now-matured system components. We can enable these with insightful, transitional land-use overlays and a sustainable, forward-looking means to finance new infrastructure where it's needed. Our plan will reverse environmental degradation, unclog precious mobility, and remove hazards from the public way. Further, we'll set up optimal performance criteria to test, measure, manage, report, share and improve future planning. Rather than borrow from the future, we plan to invest in it.

We see these goals as attainable while also **activating streets with people-friendly amenities that improve quality-of-life and grant access to social amenities for everyone**, including the youngest and oldest, disabled, and lower-income individuals and families for whom owning or operating a private automobile is not possible, or represents a wasteful investment of limited personal finances. Our planning will recognize the emerging reality, that it's not a failure of prosperity if there are fewer cars than people in a dense urban/suburban context, especially if everyone is afforded reliable, comprehensive public transportation alternatives. In short, we're acknowledging a previously unthinkable question on the scale of a mid-size city: Why spend money to own a car that sits idle 95% of the time, and will only get you stuck in traffic when you use it? Wouldn't that money be better spent on housing, food, education, recreation and leisure, or saved for the future?

Effective public transportation can save a typical household over \$9,000 per year compared to private car ownership. That savings alone justifies financing transportation-oriented development (TOD) as a social good and a stimulus to local economic vitality wherever it can be arranged. MARTA is already piloting TOD projects here on this principle:

- [Avondale Fact Sheet](#)
- [Edgewood / Candler Park Fact Sheet](#)
- [King Memorial Fact Sheet](#)
- [Oakland City Station Engagement Report](#)



TOD currently under construction at Avondale MARTA Station, Decatur

Buford Highway's challenges are different than those facing MARTA along its rail lines, with their ready assets of large parking lots that can go underground (or under a podium), but the similarities are very real. Some of the expertise among MARTA and its competitively-selected developers will clearly transfer to road corridor redevelopment enabled by municipal economic development best-practices.

Atlanta will always need flexible, efficient, safe & comfortable vehicles (private and shared) to accommodate all the various kinds of travel, transport and commerce, but continuing to build dense, sprawling or highly-utilized destinations and expect these to function smoothly if *everyone* has their own vehicle to operate and park on a two-dimensional conventional roadway is to deny the obvious: It won't work. As the IT and application developers say, "It doesn't scale." And we end up horribly wasting time, resources and space. Worst of all, its real cause is a failure of imagination, which is not an epitaph Atlanta is going to endorse. **We make history here in Atlanta.** We're ready to do it again.

### ATLANTA'S EXTRAORDINARY COLLABORATION CLIMATE: "We love Buford Highway!"

Fortunately for Atlanta in 2016, renewed prosperity after the recession of 2008 has re-awakened civic pride and awareness of the possibility of transformation through innovation collaboration and more activated streets and neighborhoods. The climate here in 2016 is certainly reminiscent of the extraordinary changes of the economic "boomlet" associated with hosting the Olympic Games twenty years ago. Intergovernmental cooperation at the time facilitated athletic venues and travel by spectators across multiple jurisdictions, successfully re-activated Atlanta's lethargic downtown business core, leaving us Centennial Park and an Olympic Stadium which then became the Braves' Turner Field. The Olympics also ushered a wave of international immigration and stimulated stagnated in-town residential redevelopment. Today the region's citizens, municipalities, planners, and an entire ecosystem of citizen activists, business, government as well as



the "creative class" of designers, architects, engineers and visionary entrepreneurs are clamoring for more innovative collaborations to improve quality of life in the city. Recently, Atlanta is suggesting it's ready to become the "Silicon Valley of the South," too.



Unexpectedly, Buford Highway emerged heroic in the civic conscience – its diversity, its dynamic and eclectic businesses, busy restaurants, Asian and eastern European

importers and international food emporia are regarded as civic treasures, despite the repetitive and relative ugliness of its countless non-descript strip malls, repurposed fast-food outlets, and chain-link fronted used car dealerships. There's a "Wild West" aspect to this corridor that inspires us and is suited to Atlanta's epic and uneven municipal history. Despite its ills, there's affordable housing here along Buford Highway and a concentration of contributing ethnicities that maintain aspects of their respective cultures while assimilating through commerce, education and local politics that's an ideal of American life.

The urgent and necessary international gravity of the Centers for Disease Control headquarters is here. But the practical idea that "small government can work" is also alive and well in each of the six cities along the corridor. There's still unincorporated DeKalb County land just south of Chamblee and Doraville, not to mention a major airport full of private and charter small



aircraft that abuts the highway. Plaza Fiesta shopping center offers 140 independent vendors under one 350,000 roof, modeled on a Mexican outdoor stall market.



Everyone here knows *something* about Buford Highway (for better or worse) and there's a sense we collectively want to see it succeed, to mature, to shed its negatives and become a better place to live, work and play, but also that it **deserves to retain aspects of its present character**. It would be a shame if it lost its diversity, its affordability, or the "place-making" that's been the unexpected blessing of its notoriety as one of the sprawlingest business districts in the United States. Atlanta is of course also the famous birthplace of Rev. Martin Luther King, whose dream for America included "the black, white, yellow, red and brown" of the world coming together in harmony. If there is a place in Atlanta where that dream is most evidently true, it's certainly Buford Highway.

*"Help us to walk together, pray together, sing together, and live together until that day when all God's children -- Black, White, Red, Brown and Yellow -- will rejoice in one common band of humanity in the reign of our Lord and of our God, we pray. Amen." --- Martin Luther King, Jr.*

## PLANNING, TRANSPORTATION, SOCIAL & TECHNICAL SUCCESSES & FAILURES IN GEORGIA

*(Atlanta's remarkable journey shapes its readiness to lead.)*

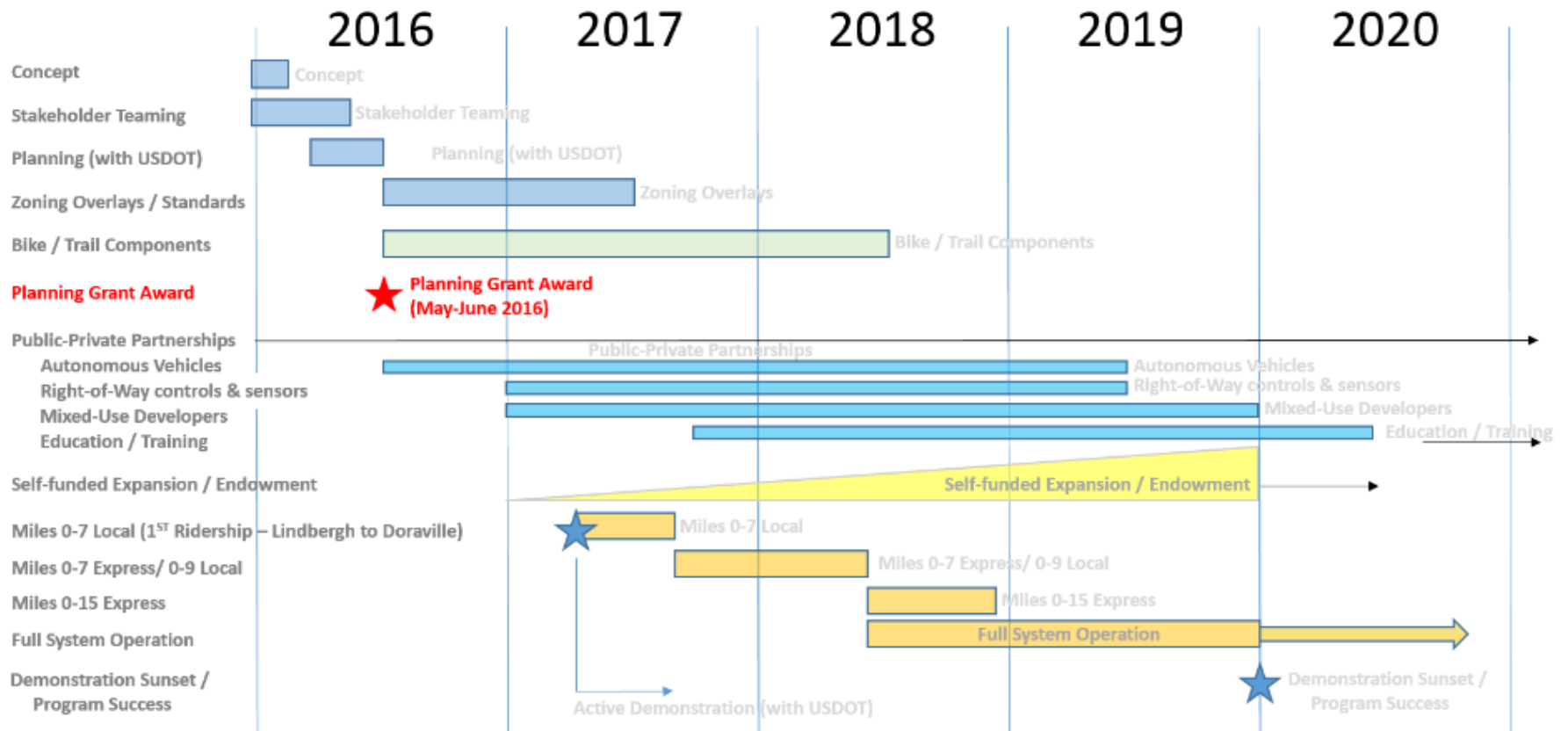
Atlanta and Georgia are standouts in the unfolding history of business, technology, planning and innovation, with numerous examples of early adoption, unintended consequences, and high stakes reversals of fortune. A quick overview hints at Georgia's long-standing knack for pioneering, resisting or otherwise embracing transformative ideas and trends, for better or worse. In 2016, it's a city willing to learn, change, lead and share.

The land now encompassed by Georgia was of course originally settled and occupied by Native Americans. These Americans first encountered European culture when explorers from Spain arrived around 1520. The first recorded Catholic Mass in North America was performed at a Spanish settlement in 1526 on the coast of what is now Georgia. With their trans-Atlantic crossings though, Europeans inadvertently introduced new diseases all over the western hemisphere, unfortunately Smallpox (the Variola virus), which decimated native populations. Outright conflicts between new and original inhabitants and between competing colonial powers, who drew in natives as proxies and allies also exacted a heavy price. The English violently drove the Spanish and their native allies from the contested coastal region here 299 years ago, in 1717.

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**Next page** shows a high-level schedule of the vision for a reinvented Buford Highway corridor, leveraging USDOT's Smart City Challenge and technical assistance into a successful project called "Lindy." The diagram effectively exhibits LINDY's "Program Management approach" at this early conceptual stage.

2016 USDOT Smart Cities Challenge Proposal  
 BUFORD HIGHWAY RAPID TRANSIT



**300 to 200 years ago.** The English colony of *Georgia* (named after then King of England, George II) was founded at the site of the present day port of Savannah in 1733, its charter secured by Parliament and member James Oglethorpe. Oglethorpe arrived on the first ship carrying colonists to serve as its Governor. The structure of the Charter and its subsequent land

grants to colonists were innovatively *designed to balance town & agrarian land use*. English planners associated unregulated urban land use with the disintegration of society. Their opinion arose from observations of fast-growing municipalities back in Europe, at the time experiencing disruption from country-to-city migration linked to early agricultural consolidation and the

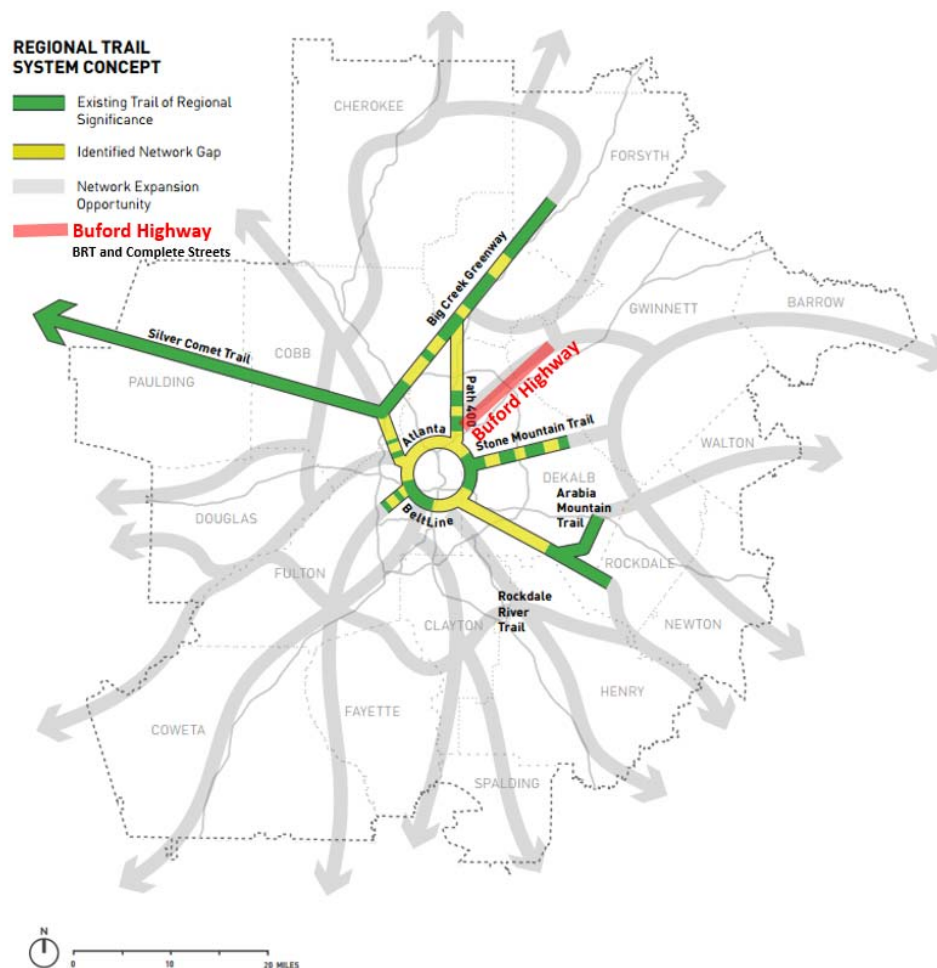


opportunities of new industries and finance. England was also suffering the effects of a prodigious public health crisis from alcohol (“Gin”) drinking, especially from 1730 to 1757 when economics favored the production of extremely cheap distilled spirits. The Georgia Colony charter balanced land use by associating 50-acre rural farms each with an in-town lot for a house and garden. Every colonist family was expected to support itself by farming. A final Spanish military invasion from Florida was repulsed by English settlers in 1742.

Early Georgia was open to immigration. Colonists included Scottish pioneers and English artisans/tradesmen, religious refugees from Germany, Switzerland, France and Austria, as well as Jews leaving Europe. Governor Oglethorpe was a humanitarian visionary who outlawed slavery in the colony, but after his departure back to England in 1743, the remaining colonists overturned his ban. Colonists began importing slaves from Africa in large numbers, a practice which continued legally under English law and was unchanged by the assertion of U.S. independence during the American Revolution (1775-1783) until the importation of slaves was made illegal in 1808.

**200 to 100 years ago.** Slave *smuggling* into Georgia continued illegally to support the hugely profitable cotton plantation economy until the abolition of slavery by the 13<sup>th</sup> Constitutional Amendment in 1865 at the close of the American Civil War (1861-1865.) In the meantime, the *industrial revolution* had begun: steel, steam engines, and labor-saving machines of all kinds began appearing and changing old ways of life. The invention of the cotton gin served to *triple* cotton production for the textile industry between 1830 and 1850. Slavery increased accordingly, and the South became an agricultural power-house, producing 2/3rds of the world’s cotton and earning impressive fortunes for investors to spend developing their towns, factories, plantations, ports and railroads, and to import goods.

Atlanta was initially founded as “Terminus” around 1840, purposefully placed to serve as a rail transportation hub. Settlement grew quickly around railroad yards, warehouses and merchant storefronts. Over its first two decades Atlanta became a major center of industrial operations. As such it was a top strategic asset to the Confederacy when Georgia seceded from



the Union and hostilities began between the North and South in 1861. Atlanta's importance to the South only increased after the fall and occupation of New Orleans by Union forces in spring 1862. Atlanta factories ramped up to manufacture railroad cars, revolvers, cannon, knives, saddles and spurs, buttons and belt buckles, tents and canteens. A naval munitions factory was salvaged from New Orleans and moved to Atlanta, which turned out 7", 100lb artillery shells. Atlanta's steel rolling mill made the 3" thick plating used to armor-clad the steam-powered warship CSS Virginia (also known as the Merrimack) which easily sank and defeated the first two wooden warships it encountered (firing 7" shells at close range.) In a one-day naval battle in March 1862, with only two Confederate casualties compared to 400 Union sailors lost, this military tech innovation rendered all but two other warships in the world obsolete and vulnerable. A world-wide naval armored gunship race ensued over the next 80 years, which the U.S. ultimately won.

**DESTRUCTION AND REBIRTH.** By 1863, the Union understood it needed to knock Atlanta out of the war. After the city fell to siege and attack by forces under command of General William T. Sherman in the summer of 1864, the Northern army occupied Atlanta for two months. Realizing the spirit of the Confederacy was still not broken, Sherman conceived a plan to drive home the point that the South could no longer hope to win the war. He proposed a destructive "March to the Sea" across Georgia that would cripple the resilient deep-south and render it incapable of feeding, clothing, or supplying its army still in the field. President Lincoln and his top general Ulysses Grant agreed to Sherman's plan. That November, Sherman burned Atlanta's remaining assets to the ground, spared only several

hospitals and churches, and departed for Savannah with some 60,000 troops. He kept no rear supply line, saw no significant opposition in front of him, and issued orders that amounted to "Total War" against the rural civilian population, to confiscate or destroy property, valuables or crops in a wide sweep across the state.

General Sherman's memoir recalled the scene:

*"We rode out of Atlanta by the Decatur road, filled by the marching troops and wagons of the Fourteenth Corps; and reaching the hill, just outside of the old rebel works, we naturally paused to look back upon the scenes of our past battles. We stood upon the very ground whereon was fought the bloody battle of July 22d, and could see the copse of wood where McPherson fell. Behind us lay Atlanta, smoldering and in ruins, the black smoke rising high in air, and hanging like a pall over the ruined city."* — William T. Sherman

The image of a defeated city, rebuilding itself without bitterness or self-pity after the war, is one of Atlanta's enduring values, a commitment to reinvention and overcoming adversity that ushered it to the modern era of the past 100 years. The motto on the city seal adopted in 1867 is *Resurgens*, Latin for "Rising" (Resurrection.) The seal shows the mythic Phoenix bird, ascending from fire and the ashes of its predecessor. Reconstruction was fast and effective. In 1868 Atlanta was made the Capital of Georgia. By 1880 Atlanta was the largest city in the state, population 37,000.



Seal of the City of Atlanta



Atlanta's streetcars (horse drawn at first) began operating on Peachtree Street in 1871. Electrified trolleys appeared in 1889.

Beginning shortly after the Civil War, Georgia saw the founding of its historic black colleges, Morehouse, Spellman, Clark, and Atlanta University which advanced black leadership, offered master degree programs, training ministers, engineers, doctors & lawyers who formed a stable black middle class, despite re-segregation and the advent of discriminatory “Jim Crow” laws. Jim Crow appeared after the Reconstruction period ended and Federal troops left the south in 1877. Their departure ended enforcement of 14<sup>th</sup> Amendment suffrage for former slaves and abandonment of equal protection for all regardless of race.

Besides the betrayal of Reconstruction, there were other setbacks to civil society along the way, including an infamous riot in 1906 amid racial tensions incited by newspapers in the lead-up to that year’s gubernatorial election. A mob of whites killed at least 25 black citizens. Historians credit the aftermath of the internationally-reported event as inducing a more aggressive approach to the struggle for Civil Rights in the black community over the long run, rather than the more accommodating strategies favored by previous African-American leaders, such as Booker T. Washington. Relations remained tense for another six decades.

The Georgia Institute of Technology was founded in 1885 by the General Assembly and endowed with 5 acres at 10<sup>th</sup> St., which was at the time the City’s northern limit. Tech’s night school was spun off as Georgia State University in 1931.

**100 to 50 Years Ago.** Originally chartered in 1834 and named after the English founder of the Georgia colony, Oglethorpe College was shut down by the Civil War and was eventually re-chartered as a non-denominational institution in 1913. Construction of its new campus in Brookhaven was begun in 1915. The school changed its name to Oglethorpe University in the late 1960’s. A DeKalb County public charter high school also operates embedded in the college campus today.

**1923-1927. “Lucky Lindy’s” transportation connection to Georgia.** Americus, Georgia was home to a training base for US pilots during WWI. In late April 1923, twenty-one year-old Charles Lindbergh arrived to purchase his first airplane from an army surplus trader out of Macon. Having saved his money working as a “barnstorming” daredevil (an airshow wing-walker



and parachutist) he selected a Curtiss JN-4 "Jenny" biplane for \$500, new in a crate, which was assembled for him. Lindbergh was adept enough to taxi the new plane himself and attempt take-off, but a wind gust dipped his wing to the ground and he aborted his first flight attempt. A pilot watching from a hanger offered to take him up instead. For several hours, the two practiced take-offs and landings together. Later that day, Charles flew on his own, his first solo flight in life was over Georgia. A week later, with 20 hours' flight experience, he took-off for Montgomery to start his career as a barnstormer and airmail pilot. Four years later, on May 21, 1927, 33-1/2 hours out of New York, he circled the Eiffel Tower in Paris and landed at Le Bourget Field, completing a 3,610-mile non-stop flight across the Atlantic, claiming the Orteig Prize worth \$25,000.00.



Charles Lindbergh's parade on Peachtree St., Atlanta Oct 11, 1927. Lindbergh spoke to 20,000 assembled at Georgia Tech.

Lindbergh's transatlantic flight vastly changed the perception of air transportation, inspired people and awakened imaginative

possibilities. William Hartsfield (an Atlanta City Councilman, amateur aviator, and future Mayor for whom Atlanta's airport was later named) was among the businesspeople and politicians who arranged for Lindbergh to visit, exhibit his aircraft, and give a speech. Arguably the most famous person in the world at the time, Lindbergh was awarded honors everywhere he went. His great fortune inspired a nickname "Lucky Lindy." A dance step was named after him in Harlem, "The Lindy Hop" which swept around the world during the 1930's with American Swing Jazz. A world-wide wave of enthusiasm for American culture erupted, exemplified by Lindbergh's daring, technological know-how and initiative. In 1930, Lindbergh leveraged his fame to convince New York financier Daniel Guggenheim to fund Robert Goddard's rocket research. Goddard's experiments become the basis of jet-assisted take-off, US military missiles and eventually the NASA space program. Atlanta renamed Mayson Avenue as Lindbergh Drive in 1927, coincidentally the site of a future MARTA stop.

Jimmy Carter was born in Plains, Georgia in 1924.

Sam Massell, Atlanta's first Jewish Mayor, was born here in Atlanta in 1927. His administration from 1970-1974 is credited with establishing MARTA. Massell's second (perhaps fourth) career included directing the Buckhead Coalition, a business association dedicated to the northern development area, real estate, tourism and transportation, among his other interests. Massell is 88 in 2016, still making Atlanta-boosting speeches!

Maynard Jackson, Atlanta's first black mayor (and the first black mayor of any large southern city) was born in 1938. Jackson graduated from Morehouse in 1956, entered politics,

unsuccessfully ran for US Senate at age 30, but won a position as Vice Mayor 1970-1974 before unseating Sam Massell. Jackson was elected to serve three separate 4-year mayoral terms beginning in 1974-1982, punctuated by the two terms of Mayor Andrew Young, then Jackson again from 1990-1994. Jackson is credited with modernizing and expanding Atlanta's airport to astounding economic success. After his death in 2003 the airport was partly renamed after him as "Hartsfield-Jackson" in his honor. While in office Jackson *opposed* DOT plans to place several more interstate connectors through in-town neighborhoods, during a period of citizen "freeway revolts" beginning in 1966 and continuing up until the time of the Olympic Games' downtown revitalization success and changes.

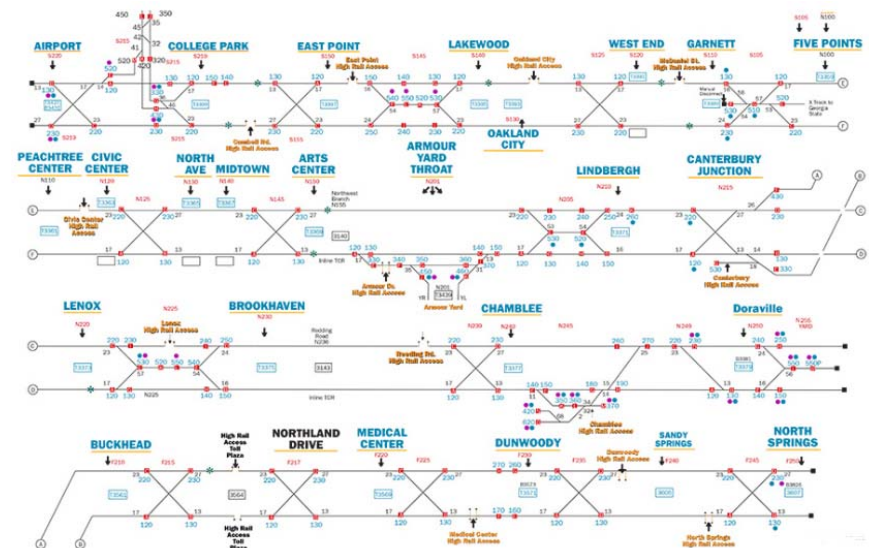
The Centers for Disease Control (CDC) was founded in 1946. It functions as the leading national public health institute of the United States, with headquarters in DeKalb County, including a major facility on Buford Highway, designated as its Chamblee Campus, just northeast of Peachtree DeKalb Airport.

In 1952, the City of Atlanta annexed its uptown Buckhead suburb, which over time became the City's third most densely urbanized district after downtown and midtown. Lenox Square mall was built in 1959, continuing Atlanta's northward growth surge.

In the 1960s, Atlanta was a critical organizing center of the US Civil Rights Movement. Martin Luther King, Jr. and students from Atlanta's historically black colleges and universities played various leadership roles. Early sit-ins at the segregated lunch counters of several Atlanta department stores, including the

Walgreen's in Lenox Mall, led to the arrest of Dr. King and several students. This drew attention from the national media.

In 1965, the Georgia General Assembly created the Metropolitan Atlanta Rapid Transit Authority (MARTA.) MARTA was to provide rapid transit for the five largest metro counties: DeKalb, Fulton, Clayton, Gwinnett, and Cobb, but Cobb failed to join by referendum. In 1971, Fulton and DeKalb Counties passed a 1% sales tax increase to pay for operations. In 1972, the agency bought the existing, bus-only Atlanta Transit Company. Construction began on the rapid rail system in 1975, and service commenced June 30, 1979, running east-west from Georgia State University downtown to Avondale. The Five Points downtown hub opened later that year. By 1984 the North-South line had been extended to reach from Brookhaven to Lakewood/Fort McPherson. In 1988 the line was extended into inside the terminal at Hartsfield-Jackson Airport.



The MARTA Rail System (Control Panel view, 2005.)

**50 Years Ago.** Georgia State Senator Jimmy Carter (1963-1967) became Governor of Georgia in 1971-1975 and 39<sup>th</sup> President of the US from 1977-1981. Carter worked in the Navy's nuclear program before resigning his commission to start an agriculture business and enter politics. Carter was forward-looking about the confluence of transportation, environmental, economic vitality and housing issues. In 1979 he issued a statement along with an executive order to his cabinet agencies. Not surprisingly, all of his directives remain applicable, some 37 years later:

"... transportation systems can greatly affect, for better or worse, our nation's environment, our utilization of energy, and our urban areas. It is my Administration's policy to enhance environmental protection, energy conservation, and urban revitalization ... that the nation's transportation system must provide greater support for these national goals.

I fully support the reorientation of urban transportation programs and projects to meet energy and urban goals and to improve overall environmental quality. I am directing you to act immediately to assure that:

- transportation funds are used to promote energy conservation through such energy saving features as special lanes for carpools, vanpools, and transit vehicles, and that encouragement be given to applying funds to public transportation projects;
- careful review is given to any transportation proposals which would encourage urban sprawl—one of the major causes of our high energy consumption—or which would tend to attract jobs out of our urban centers;
- consideration is given to the improvement and rehabilitation of existing facilities and the use of non-construction methods as alternatives to constructing new facilities;

- major transportation projects are utilized as a positive factor for improving the urban economy and attracting jobs to the nation's urban cores;
- ...and that environmental commitments we make in approving transportation projects are carried out when the projects are built."

Notice how President Carter's vision aligns with the framework of USDOT's 2016 Smart City Challenge! We reiterate here the concept of the proposed Buford Highway Bus Rapid Transit, to implement systems and innovations that will address challenges associated with the project area, measurably demonstrating success at USDOT's suggested goals, with replicable result:

- Reduce traffic congestion
- Improve traveler safety, especially for pedestrians
- Protect the environment and conserve energy
- Connect underserved communities
- Support economic vitality
- Mitigate climate change
- Improve the efficiency of city services delivery
- Leverage existing transportation infrastructure
- Optimize citizen participation
- Open data to spur related innovation
- Implement self-funding mechanism(s) to enable second-round cost sharing during operational implementation.

Details of the above goals are discussed at the conceptual level in this application, under the appropriate headings and response sections that follow. Meanwhile, stakeholder readiness along the Buford Highway corridor to implement transportation improvements and transportation-oriented redevelopment is strongly evident in documents such as the 2014 Economic



Development Study commissioned by the City of Brookhaven. After a 1-year comprehensive technical study, the consultants summarized some long-term recommendations in a section titled **Redevelopment and Economic Opportunities** as follows:

“Over the next five to ten years, the City of Brookhaven should work collaboratively with key Buford Highway Corridor property owners and with developers attracted by the potential for revitalization to facilitate redevelopment of the multiple parcels identified in this report. These redevelopment ventures will capture the residential, hotel, and retail/commercial opportunities identified in the market analysis.

These redevelopment opportunities will establish a positive entryway to Brookhaven from I-85 at the North Druid Hills/Buford Highway intersection. They will benefit from and closely relate to the proposed North Fork Greenway Trail. They will encourage rejuvenation of major commercial developments such as Corporate Square and Northeast Plaza in part through establishing mixed-uses at those properties. These redevelopment efforts will facilitate the redevelopment of older, significantly-deteriorated apartment complexes and collectively add as many as 2,500 new market-rate housing units into the Corridor. This growth in market-rate housing will be implemented in close collaboration with a detailed housing diversity approach that seeks to provide quality replacement housing to maintain housing affordability for Brookhaven’s current workforce.”

## 2. CENSUS URBANIZED AREA DESIGNATION

### 2010 Census Data

[http://www.atlantaregional.com/File%20Library/About%20Us/the%20region/city\\_census2010.xls](http://www.atlantaregional.com/File%20Library/About%20Us/the%20region/city_census2010.xls)

	Total Population		Change	
	2000	2010	#	%
Atlanta	416,474	420,003	3,529	0.8%
Chamblee	9,552	9,892	340	3.6%
Doraville	9,862	8,330	(1,532)	-15.5%
Duluth	22,122	26,600	4,478	20.2%
Norcross	8,410	9,116	706	8.4%

*Note: Brookhaven became a municipality in 2012. Population is 49,000*

Total 2010 Population of six municipalities above is **522,941**

The Buford Highway Corridor Area for this Smart City Challenge will connect three Georgia counties in the Atlanta MSA:

	Total Population		Change	
	2000	2010	#	%
Fulton County	816,006	920,581	104,575	12.8%
DeKalb County	665,865	691,893	26,028	3.9%
Gwinnett County	588,448	805,321	216,873	36.9%

Total 2010 Population of three counties above is **2,417,795**

As required per USDOT’s NOFO, the six municipalities along the Buford Highway corridor constitute a “significant portion” (more than 15%) of the overall population of their urbanized area per the 2010 census data. Dividing the demonstration area population of municipalities at 522,941 by the three (urbanized) counties they span (pop. 2,417,795) yields: **21.6%**



municipal airport directly adjacent to Buford Highway between Brookhaven and Chamblee, a few miles inside the I-285 perimeter, home to approximately 600 private and charter planes used for regional travel and not by large commercial jets.

- v. Multiple bus terminals: Greyhound, Gwinnett County Transit, Cobb County Transit, MARTA, Georgia Regional Transit Authority and private carriers such as Megabus. There are also “jitney” buses that run on Buford Highway making more frequent stops, wider pick-up areas offering cheaper service or more flexible transfers than the municipal buses. Buckhead community runs a connector shuttle that is popular with office workers at lunchtime to get to restaurants and shopping, particularly in the congested Lenox and Peachtree Road high-rise districts.
- vi. Freight trains with significant tonnage, including the bulk of container transfer to southeast regional trucking from the port of Savannah, roughly 250 miles to the south by rail.
- vii. A growing network of bike and walking trails, including the fast developing Beltline neighborhoods which expect to encircle downtown Atlanta with landscaped pedestrian paths at a distance roughly 2-3 miles from the Midtown core over the next several years. The Atlanta Beltline originated from a GA Tech Master’s Thesis.

#### **b. Conducive Environment for proposed strategies**

The municipalities and multi-jurisdictional organizations referenced in this proposal offer the attached letters of support (some arriving right at submission time!) as evidence of their eagerness to begin a collaboration targeted on the Buford Highway corridor with guidance and technical assistance of USDOT. A representative sample of studies and initiatives

already underway in Atlanta demonstrate the readiness of leadership to work together. (See Appendix I).

Recent changes in leadership at MARTA have met with very positive reviews from citizens, elected and business leadership. Atlanta Mayor Kasim Reed’s administration has especially prioritized transportation innovations, including the downtown Auburn Avenue trolley and Atlanta Beltline with their goals of connecting all in-town neighborhoods, especially currently underserved ones, activating previously underutilized railroad right-of-ways as a series of healthful bike-walk trails.

Georgia DOT has provided data about Buford Highway to the corridor municipalities as they’ve pressed forward with various plans for economic development with studies targeted at their respective sections of the arterial through their respective towns. This application partly originated as a follow-on to the economic development study completed by Brookhaven. With wide-ranging recommendations from their planning consultants’ final report, city leadership asked “How can we activate these recommendations?” A survey of grant and related funding opportunities turned up USDOT’s Smart City Challenge which led to fresh overtures between the corridor municipalities to energize their respective efforts into a “shovel-ready” plan and activate it for the consortium. USDOT hopes to catalyze a useful demonstration of leveraged land use for elsewhere for other similar sized municipalities, nationwide. And so do we.

#### **c. Continuity of Committed Leadership**

MARTA board members extended transit chief Keith Parker’s contract by two years in 2015, keeping him at the agency through 2019. MARTA Board Chair Robbie Ashe is quoted in



Atlanta Magazine, praising Parker's service since 2012: "I think Keith gets that MARTA is at the cusp of a truly transformational period."

<http://www.atlantamagazine.com/great-reads/keith-parker-puts-us-back-on-track/#sthash.75VYyrb5.dpuf>

#### **d. Integration with shared economy**

In 2015 MARTA began a partnership with the Uber ride-sharing company that facilitates passengers arranging ahead while riding public transit to have a ride share pick-up waiting at the station or bus stop nearest their final destination. MARTA allowed public use of the Wi-Fi connectivity that had been installed on all buses to support security cameras. More information is here: <http://commuting.blog.ajc.com/2015/07/23/marta-pilots-free-wi-fi-on-buses-and-uber-partnership/>

#### **e. Open Data to fuel entrepreneurship**

The City of Atlanta already operates an open data website with performance metrics published monthly from virtually every public safety or operational department. The data is viewable in charts and tables or is downloadable for inspection and analysis from <http://foratlanta.github.io/>. The website is operated by the Mayor's Office of Innovation and Performance, with whom the Lindy team collaborating for City of Atlanta's input to this application. In addition, Atlanta's Office of Sustainability tracks the city's success at delivering services in the context of energy efficiency and environmental goals. <http://www.atlantaga.gov/index.aspx?page=154> These two web portals are presented as examples of our current readiness.

#### **4. SITE MAP** (See next page.)

#### **5. ALIGNMENT WITH VISION POINT ELEMENTS**

##### **TECHNOLOGY ELEMENTS**

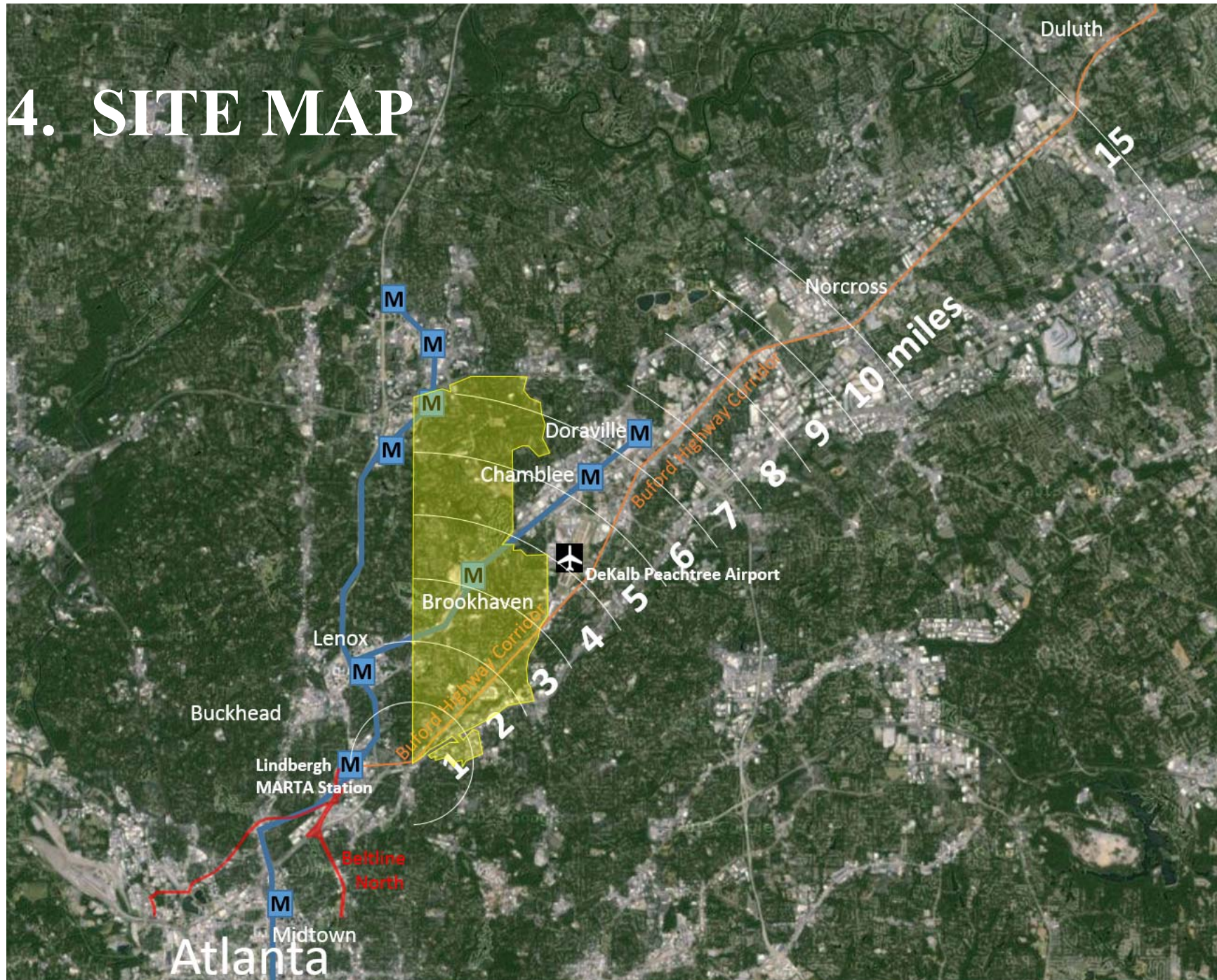
**1. Urban Automation** – The "Lindy" BRT / TOD land-use overlays and connected ride/bike share will utilize urban automation by integrating real-time rapid transit vehicle and rider GPS location to arrange connections. Riders will be advised when to arrive at a pick-up in order to reliably attain their ultimate destination, assembling the best combination of connections based on user inputs and the status of the comprehensive transportation system components.

**2. Connected Vehicles** – The BRT vehicles will be run in a combination of roadway and dedicated (or virtual) right-of-way as it assembled from available sections of the highway corridor. Where possible, the BRT vehicles will run in dedicated lanes optimized by signal coordination and shared use of minimal space afforded by ITS technology, minimizing congestion impact on the remaining components of the "complete streets."

**3. Intelligent, Sensor Based Infrastructure** – Sensors will detect when riders are at stops or need to cross streets, when cars are stacking at bottlenecks, when service delivery can be improved by platooning vehicles, when to increase service speeds to maintain schedule reliability. One of several system design goals for ITS-oriented development, after safety and throughput, is to optimizing system reliability and increase on-time performance.



## 4. SITE MAP





## INNOVATIVE APPROACHES TO URBAN TRANSP.

**4. Urban Analytics** - A Brookings Institution study found that only 3.4 percent of metro Atlanta-area jobs are reachable by transit within 45 minutes (from a respective employee's dwelling.) Only 22 percent are reachable by transit within a 90-minute one-way commute trip. <http://reason.org/news/show/to-improve-atlantas-transit-system#sthash.bgUkyZMD.dpuf> This is precisely the type of measurable statistic that improved performance along a BRT corridor of 200,000 citizens can impact. As Atlanta continues to grow, a greater number of both jobs and housing must be made accessible from the comprehensive public transit options for travel.

### 5. User-focused Mobility Services and Choices

The Atlanta Regional Commission advocates “Complete Streets” development for the Metro Area. The cities of Decatur and Roswell have adopted versions of these policies which are implemented to enable safe street access for *all users*. The flexible collection of policies and design standards that make up a typical Complete Streets program have now been adopted in over 850 jurisdictions in the United States, including 31 states, the Commonwealth of Puerto Rico, and the District of Columbia. The author of the term “Complete Streets”, David Goldberg, communications director for Smart Growth America, who suggested it for use in 2003, *is a Decatur, GA resident*. These same principles are envisioned to be included in the Buford Highway corridor BRT so that pedestrians, bicyclists, motorists and transit riders of all ages and abilities will safely move along and across complete streets. For Atlanta residents with disabilities, much of the Metro Area is presently served by

MARTA's Paratransit Service, on a day-ahead reserved basis. Service is provided with special lift-equipped vans on a curb-to-curb, shared ride basis. This service would also be integrated into the operation of the Lindy BRT.

### 6. Urban Delivery & Logistics

There were actually two revolutionary innovations that combined to make “e-commerce” possible (presently 5.4% of US GDP, or about \$900B of the total \$18 Trillion US economy is now on-line.) Besides websites with shopping carts and “Buy Now” buttons, the other innovation of the 1980s-1990s was super-efficient, reliable, privatized, demand-priced shipping by Fedex, UPS and others. Fedex started flying internationally in 1984. They now earn \$49B per year shipping packages globally. EBay's 2015 volume hit \$300B in world-wide online auction transactions, and all that stuff had to be delivered from seller to buyer. An ever-growing factor is home delivery of packages from internet-based “fulfillment” businesses such as Amazon.com. Amazon started by competing with brick and mortar bookstores, but since branched out into household products and groceries, working from a massive base of distributed warehouses. Amazon spent \$8B loading and shipping boxes in 2015, up 33% over the previous year. A new service at Amazon allows customers to pick items to pack a box up to 45lbs and have it delivered next day for about \$6 shipping.

A truly Smart City will anticipate the hyper-growing needs of home and business deliveries as the pressures of time and road congestion change “normal” consumer shopping behaviors. *Complete Street designs will include package drop-off and delivery turnouts, driveways, shipping entrances and loading*



*docks for delivery trucks, vans, cars, (and possibly, in the future), delivery drones and robots. Robots are already picking and packing the 45lb. boxes in Amazon warehouses, by the way.*

## **7. Strategic Business Models & Partnering Opportunities**

Metro Atlanta is a serial innovator in the realm of PPPs (Public-Private Partnerships). Having successfully used PPPs to complete many components of downtown revitalization in the 1990's, the City has returned to this strategic model to with the BeltLine, the most comprehensive revitalization undertaken in the (modern) City of Atlanta and among the largest, most wide-ranging urban redevelopment and mobility projects currently underway in the United States. The BeltLine is repurposing 22 miles of disused rail corridors into a network of public parks, multi-use trails and transit, circling downtown and connecting 45 neighborhoods directly to each other. Atlanta BeltLine Inc., an affiliate of Invest Atlanta (formerly the Atlanta Development Authority), is the PPP entity tasked with planning and executing in partnership with City of Atlanta Departments and private partners. Its functions include specifying the BeltLine plan; leading efforts to secure funding; to engage the community; manage and execute the BeltLine plan, including the coordination of all vendors and suppliers. Atlanta BeltLine Inc. is also responsible for tracking and reporting progress to the Atlanta City Council, Atlanta Public Schools and Fulton County, the three taxing authorities that authorized the BeltLine TAD legislation in 2005.

## **8. Smart Grid, Roadway Electrification, EVs**

Atlanta is home to General Electric's (GE) Power Systems Division as well as Siemens, both major international Smart Grid vendors. The modernization of electric power in the US is partly based on the "de-carbonization" of generating sources. Keeping track of who is preferentially buying cleaner, but typically more expensive energy, as well as planning how to manage peak use are encompassed in Smart Grid policies and equipment. For the proposed electrified Buford Highway BRT, planning will take into account opportunities to charge vehicles using cheaper off-peak energy, and to utilize clean sources of generated power to meet climate change mitigation targets. Studies show that EVs charged with electricity originating from natural gas generation plants are much more efficient and contribute less to global warming than burning natural gas in vehicle's combustion engines.

EV-type buses are extraordinarily efficient, with fewer drivetrain parts, no loss of gas combustion energy as heat, and the ability to recapture energy from braking into stored battery capacity. EV buses are presently commercially viable with 200+ mile ranges, fast-charging systems, environmentally non-toxic batteries with 12-year warranted capacity, and lighter, carbon-fiber chassis and body construction. The consortium has had initial conversations with both ProTerra and BYD, the major EV bus manufacturers in the U.S. ProTerra's east coast manufacturing facility is in nearby Greenville, SC, 120 miles NE of Duluth, GA, where there would likely be several "fast charge" stations at the end/turn-around of the BRT route. ProTerra's buses can be fully charged in under 10 minutes before running the 18 miles back to Lindbergh Center, fully air-conditioned for

passengers on a hot day. Except for signage and safety lighting at bus-stops, the latest EV bus batteries would not require on-route recharge, so roadway electrification is limited.

## **9. Connected, Involved Citizens**

Atlanta is home to numerous innovative citizen's groups focused on transportation and associated quality of life issues. A typical example is PEDS (<http://peds.org/about-us/>) which is a Complete Street and pedestrian advocacy group. Their members volunteer to survey streets and sidewalks, gathering data to assist in the selection of appropriate design and construction improvements to meet the needs of neighborhoods.

More formalized community involvement in Georgia is enabled by community improvement districts (CIDs). Article IX, Section VII of the Georgia Constitution authorizes CIDs as entities to fund and manager certain governmental services including street and road construction and maintenance, parks and recreation, storm water and sewage systems, water systems, public transportation systems, and other services and facilities. The administrative body of a CID can levy taxes, fees and assessments within the CID, not to exceed 2.5 percent of the assessed value of the real non-residential property. The Buckhead CID is a strong example of this community-based model of local citizen-driven planning and execution of special projects. The Buckhead CID formed in 1999, encompasses 2.5 square miles in the northern commercial core where Peachtree Road and Lenox Road cross GA400, an area of dense development and commercial high-rises. The CID has spent over \$60M of authorized taxation on its mission to “maintain a more accessible and livable urban environment; to make

meaningful improvements in the transportation network and public realm that connect people and places.”

## **SMART CITIES ELEMENTS**

### **10. Architecture & Standards**

The intent while implementing the proposed Buford Highway BRT is to utilize all applicable best practices from the Smart City movement and make use of emerging innovations as they come into focus from around the world. The consortium along Buford Highway would therefore attempt to adhere to principles pioneered for ICT in cities like Groningen, Netherlands which suggests: a) Data should be utilized in response to Customer-driven processes; b) Data should be collected and stored once and re-used, rather than collected multiple times; c) Data should be compliant with the needs of re-use and d) patterned for simple use, rather than overly complex; as well as e) be designed for integration from outside, such as from other applications which could benefit from an open, accessible data schema.

### **11. Low-cost, efficient, secure & resilient ICT**

The Smart City Challenge's IT-design imperatives to make data open, usable by outside entities and to align ICT developments with business requirements are implicit goals of envisioned project implementation along Buford Highway. It also follows that the data architecture for the proposed Buford Highway BRT would similarly incentivize low-cost, secure & resilient solutions for its data connectivity and to support assorted applications running off its systems and data services. Standards for connected and autonomous vehicles appear to be among the elements most especially suited to USDOT's level of

technical expertise and assistance. This would also be an area of significant interest to Georgia Tech's Institute for Robotics and Intelligent Machines, which we count as an informal consortium partner and research resource. (See attached letter.) GA Tech researchers in robotics and vehicle automation would likely be interested in the independent assessment role, observing and reporting on efforts to implement various levels of autonomous operation, connecting BRT vehicles to the smart street elements, sensors, signals, and intelligent signage.

## 12. Smart Land Use

The municipalities along the Buford Highway corridor are deeply engaged in the process of considering existing land-uses while planning ways to integrate latest best rezoning practices to address safety, mobility and quality-of-life issues for constituents (to reduce congestion) as well as preserve workforce (affordable) housing and activate transportation-oriented redevelopment. Various improvement plans and Economic Development Strategy studies include parcel-by-parcel assessments and recommend repositioning strategies. Typical of these studies is the one from the 2014 Buford Highway Economic study commissioned by Brookhaven:

*"The redevelopment schemes presented include an effort to add open space to the study area, establish a multi-use trail network along the North Fork with connection opportunities within the study area, support and develop a viable mix of market rate and affordable housing, and introduce new commercial zones that support the vision of Buford Highway as a thriving international community."*

## 6. IDENTIFY & RATE RISKS

**A POLICY RISKS.** In the past GDOT's acceptance of the necessary "Lane Diet" for Buford Highway was a non-starter. Today, some of those long-held positions are softening. In Brookhaven GDOT add central medians and alternating left turn central turnouts in lieu of BuHi's standard central two-way striped left turn median, the latter often being referred to as the "suicide lane" in local parlance.

## B INSTITUTIONAL RISKS

One risk is surely the difficulty forming of a regional coalition across six municipalities and three counties (and three congressional districts) in an area of substantial automobile congestion, with associated commuter distress and public outcry over previous insufficient planning and/or investment. Public meetings are quite often vociferous when agendas include traffic, parking or approval of a multi-family zoning variance come up. Nevertheless, the fact that a BRT shows up as a possible next best step for Buford Highway among *multiple* stakeholder's planning documents indicates it's an idea whose time has come.

The coalition plans to explore the best options for setting up legal structures to operate a separately branded BRT (whether contracted to MARTA or not) and to solicit potential public-private partnerships during the planning period afforded by being a finalist in the Smart Cities Challenge, should USDOT select "Lucky Lindy" as a proposal worthy of further study.

## 7. OUTLINE TEAM PARTNERS & STAKEHOLDERS

**A. PARTNERS.** The Governance process to enable the *municipal* stakeholders identified in this proposal to function as



a virtual single authority under non-binding memoranda of understanding is an important part of the concept and initial planning process. Regardless, there is capacity to implement technically in several **of the identified stakeholders, given cooperation from the others.**

**B. OTHER STAKEHOLDERS** The full list of stakeholders at this conceptual stage of the “Lindy” BRT include the following:

- Atlanta (Buckhead Community)
- Atlanta Regional Commission
- Assemble Development (Integral Gude)
- Atlanta BeltLine, Inc.
- Brookhaven
- Chamblee
- City of Atlanta Mayor’s Office
- DeKalb Peachtree Airport
- Doraville
- Duluth
- GA Dept. of Transportation
- Georgia Tech
- MARTA
- Metro Atlanta Chamber of Commerce
- Norcross
- Oglethorpe University

*A southern “spur” could involve Emory U. & the VA Hospital*

## **C UNIVERSITY RESEARCH PARTNERSHIPS**

Two potential university/research partners are identified at this project conceptual stage: Georgia Tech, particularly through its

Institute of Robotic and Intelligent Machines, led by professor Henrik Christensen, and Oglethorpe University, led by President Lawrence Schall. Both of these leaders have attached letters expressing their interest in the proposed project.



MARTA's Rail Operations Control Room

## **8. EXISTING INFRASTRUCTURE & SYSTEM FEATURES**

**a. Arterial Miles** – City of Atlanta operates 75 streets it designates as arterial, totaling 158.24 miles. The Buford Highway corridor, from City of Atlanta to Duluth is approximately 18 miles along GA13/US23.

**b. Freeway** is called “Interstate” in Atlanta. Freeways are in California, but with the advent of demand-priced HOV lanes on I-85, there is often now a difference between the *free lanes* (which are predictably stopped at 5pm heading into Gwinnett County) compared to the variable-price per mile lane that’s still moving on the far-left asphalt.

**c. Transit** in Atlanta includes inter-city rail (Amtrak), Commuter Rail (MARTA, but only the two major axis with some spur lines), MARTA buses, Taxis, Ride-Shares, school buses, “jitney” buses in some areas, private autos and bicycles.

**d. Shared use mobility services** – are discussed on page 19.

**e. ICT – Information & Communication Technology** - Understanding that Atlanta metro constitutes roughly 50% of the population and economy of Georgia, here are some ICT stats for the entire state. [Source: <http://tagstateoftheindustry.com/2015/>]

#### *Information Security*

- GA is among the top three states in the US for IT security
- GA is home to more than 115 IT security companies
- GA companies employ over 10,000 network engineers
- Over 25% of the worldwide security revenue market share is generated by companies in GA (---Gartner, Inc.)

#### *Financial Tech*

- GA is third in the nation for Financial Tech
- GA is home to more than 93 financial technology companies
- Eight out of the Top 10 Financial Tech 100 Companies have operations in GA (---American Banker)

#### *Communication Services*

- GA is among the top 5 states for employment in IT communications, employing 61,000 people
- There are more than 250 long distance telecommunications providers in the state
- Atlanta is a transmission hub for the country's two largest fiber optic trunk routes
- Metro Atlanta ranks in the top five U.S. markets for total bandwidth and fiber access (---GA Power)

#### *Health IT*

- GA is the nation's health IT capitol
- GA health IT companies produce >\$4 billion annual revenue

- Over 186 health IT companies operate in GA, employing 15,000 people

#### *Logistics IT*

- GA is home to nearly 11,000 providers of logistics services
- 90 percent of the top 25 global, third-party logistics providers have operations in GA
- GA has more than 1,000,000 logistics-connected employees
- GA is 5th in the nation for logistics employment

**f. ITS – Integrated Transportation Systems - Transportation Management Centers & Field Equipment.** MARTA currently operates the most extensive of these components in Atlanta. Their systems are sophisticated enough to track ridership of approximately 50 million unlinked trips per year, which was up nearly 3% in 2015. MARTA is planning a major capital program with track and rail service extensions budgeted at nearly \$8B, presumably with equipment modernization to match. A Buford Highway BRT is not currently in that budget.

**g. Smart Grid (Electric) Infrastructure - Vehicle Charging Stations.** The proposed BRT EV charging is discussed on pages 20-21. As more passenger EVs enter the market and daily use, the “Complete Streets” vernacular will begin to include car chargers in underground parking areas, fast charge stations (similar to gas stations now) and also possibly “remote fueling” services, where charging (or LPG/Gas) are delivered to cars, rather than making cars drive to a distributed network of charging, gas, refill stations.

## **9A. DATA CURRENTLY COLLECTED BY CITY(s)**

All of the municipalities in the coalition for a Buford Highway BRT are collecting data. At a minimum they have a GIS for property, zoning, taxes, parcel ownership, improvements, building permits and fines. The most sophisticated are sharing community policing data and work-order level metrics for delivery of city services including examples of **Human Services** (highlighting missing persons reports, reporting crimes and most wanted lists for law enforcement), **Transit** (advising of planned detours, lane blockages, allowing citizen to report potholes, traffic complaints or missing signage), and **Public Works** (reporting services outages, tracking water-saving toilet rebate programs, gathering mosquito control requests, and allowing reservations of public picnic shelters and ball-courts.)

## **9B NEW DATA TO BE COLLECTED**

Determining the appropriate sources and level of detail, currency of ITS, rider and other data is an important part of the concept and initial planning process envisioned for the post-planning award phase of this Challenge application. The demonstration would be awash in potential data sources and would be designing for sensor-based data utilization, rider inputs, application functionality, etc.

**C EXISTING DATA POLICIES - Sources of policies:** Right now the most applicable policies operating anything similar to the proposed BRT are aboard MARTA. MARTA operates the current traditional #39 bus route on Buford Highway, as well as the existing Lindbergh Central station. Adapting those policies to new equipment and a new landscape would be an important aspect of the demonstration. **Cross-cutting partnerships to advance smart city tech:** *Are these in*

*any advanced state yet in Atlanta?* This would be where a new open-architecture ICT system for the BRT, for the street's other traffic-flow functions & controls, and for the off-site monitoring to enable reliable advance planning would come into play for use by single rider/commuters or persons seeking some service along the Corridor. This will require partnerships between hardware, software, application developers, R&D, high-reliability testing and system planning/management. Right now a smart phone can be used to find the best rated dumplings in Doraville, or check whether your favorite restaurant is still open. The phenomenon of critical mass of useful data applies. As far as defining **policies and operating procedures to establish and maintain systems, interfaces, maintain data integrity and share data**, it's not possible in the scope of this proposal to outline what that will involve and how much data needs to be served by municipalities compared to what "evolves" for people to use once there is a need and an entrepreneur figuring out how to serve it as a way to aggregate users (for advertisements or possible crowd-funded opportunities.)

## **10. APPROACH TO & USE OF EXISTING ITS STANDARDS, ARCHITECTURE, CERTIFICATION PROCESSES OF ITS AND CONNECTED VEHICLES.**

This is somewhat discussed on page 21 (Section C.10), but this is clearly the area where USDOT technical support and input from commercial researchers is needed, and would be invited to work with the Buford Highway BRT to demonstrate the implementation of these technologies. It goes without saying that these must be extremely reliable and documentable as liability-reducing, rather than adding liability to the transportation system. An important financial concern is just



how much liability insurance could be reduced by the operation of autonomous, connected vehicles, and is a statistical reduction of accidents sufficient to reduce the cost of coverage

#### **11. MEASURABLE GOALS & OBJECTIVES to monitor impact of BRT implementation on:**

1. **Mobility** - Reduce the “reserve-ahead” time for door-to-transit by paratransit option from 24 hours to 4 hours. Reduce the bus travel time from Doraville to Lindbergh from 47 minutes including wait to 40 minutes via signal coordination and BRT.

2. **Safety** - Reduce pedestrian strikings on Buford Highway by 50% (down from approximately 10 per year).

3. **Efficiency** – Reduce insurance costs for public transit buses by increasing enhanced controls, sensor-based warnings, lane monitoring, parking assistance, driver alertness sensing and heads-up displays.

4. **Sustainability** – Decrease known ecological impacts by taking diesel and/or combustion engines out of Buford Highway bus circulation. Reduce oil, soot, and toxic battery use with EVs that have none of these impacts. Work with EV bus manufacturers to enhance bus designs to encourage adoption by other municipalities, achieve lower cost of manufacture (i.e., determine rate of positive feedback from successful demonstrations.) Do the same for ridership increase: As ridership increases, service can be more frequent, improving service, increasing predictability and improving conditions for businesses from customers who can step off and on a BRT as it moves through a corridor with multiple amenities.

5. **Climate Change** – Determine true decrease in Greenhouse gases (GHGs) by all factors per rider/mile compared to in-place traditional bus-lines. Determine if a metric is associated with creating a business district close to a viable market-rate rental housing attractive for its quick connection to the downtown core or other nodes along the transit route such as CDC, Peachtree DeKalb Airport, or Assembly Development.

The consortium of municipalities understands the need for **independent evaluation by third parties**, and will offer open access to planning and implementation processes via observation, interviews, surveys or experiments designed to achieve objective evaluation of targeted measures.

#### **12. CAPACITY / READINESS**

**A. Magnitude of Executive Commitment** – at this conceptual stage of the proposed demonstration/Challenge, *all that is required of the coalition cities and their leadership is to be prepared to enter into the multi-stakeholder planning process at the next stage.* Who those stakeholders will be *precisely* at different times and in different living centers along the 18-mile corridor will involve breaking down the demonstration area into similar geographic components, as well as into different tasks with deliverables that will ultimately be combined. For instance, zoning overlay studies to maximize the value of existing or available land for mixed-use TOD nodes will face different problems than technical ones related to determining how often to place “Express” stops based on anticipated ridership, transfer efficiency or tolerable wait times. Measuring capacity prior to the first encounter of planners with the opportunity to address

the real problems that will confront implantation seems premature.

**B. Workforce Capacity** – No serious BRT planning will begin until after MARTA and Gwinnett County Transit find they can each “let go” of their respective parts of bus service along Buford Highway (currently transferred at the Doraville MARTA station.) Once that possibility is enabled by a truly feasible regional proposal, there is ample staff at either agency to collaborate and design the BRT system that would serve them both better than the existing “relay” at the county line. At the SW end, there is similarly untapped energy on the part of the urban core bike-walk-trail advocates to extend their “complete streets” to development further along any arterial. The extraordinary enthusiasm for Atlanta BeltLine growth is showing that if we connect parks with neighborhoods via bike and walking trails, people flock to them and make an amenity of having somewhere to go, and enjoying the way to get there.

**C. Degree of Infrastructure Readiness** – as pointed out in discussion on page 3, it’s not so much the “readiness” of Buford Highway that is as beneficial as its *outdatedness* and ripeness to change. That being said, GDOT has done a good job keeping the seven lanes of asphalt smoothly paved, the storm-sewers properly sized so the roadway doesn’t flood, and the keeping the stripes on the “suicide lanes” colorfast.

**D. Data and Performance Mgmt. Capabilities** – See page 24, item “e” for an outline of Georgia’s prominence in five different tech-related sectors. This is where Atlanta makes its claim to being the Silicon Valley of the South. (Without Google, though.)

### 13. OPPORTUNITIES TO LEVERAGE FUNDING

**A. Cost Share** – Our planning target will be to reach a 50%-50% share with USDOT because a BRT and multiple TOD nodes along the entire corridor constitute a larger undertaking than the Smart City Challenge Implementation Grant. Fortunately, the demonstration also intends to become self-funding in the long run, or at least fully justified by the elimination of costly externalities that are direct benefits of the implementation.

**B. In-kind donations** – Brookhaven is seeking to acquire land for a southern district park near Buford Highway. The BRT program could offer the pattern whereby the City can acquire the Park as an in-kind donation under a structured PPP with a developer that acquires a larger parcel, successfully develops a TOD node to a higher density allowed by an overlay which leaves sufficient upside to donate the park land in trust as a shared public amenity.

**C. Partnering** – Each Municipality would likely enter into its own PPPs in its jurisdiction, though shared templates and expertise among them would be useful for issuing RFQs and evaluating developer proposals for TODs. The coalition itself could be a partnership for certain business functions. Most partnerships would be structured to be revenue neutral for the municipalities, except for contributions to “endowment” funds to support the BRT without additional taxation now or later.

**Twenty Questions** *specifically drawn from the USDOT Smart Cities Challenge NOFO, restated as simple questions.)*

**1. What are one or two MAJOR transportation problems facing your constituents?**

a) Congestion on the major surface roadways between sections of the city makes auto travel difficult when citizens must make trips for jobs, interviews, amenities, parks, recreation & entertainment, retail, clinics, schools, government offices, festivals, visiting friends & family, connecting to regional transit, etc.

b) Slow or non-existent public transit options for youth, elderly, disabled or non-car owning citizens.

c) Buford Highway through DeKalb County is the most dangerous stretch of road for pedestrians in Georgia, with 154 pedestrians struck since 2003 and nine fatalities in the past 10 years. Long stretches have six lanes of speeding traffic, crosswalks a mile apart, stoplights sporadically placed, no sidewalks and bus stops that are nothing more than a sign immediately adjacent to cars, trucks and SUVs zooming by in lanes of traffic just a few feet away.

**2. Do you have an idea for a demonstration of a solution to transportation problems facing your constituents?**

a. A Bus Rapid Transit line from Midtown Atlanta to Gwinnett through six municipalities to share amenities along a planned “Live-Work-Play” zoned overlay to reduce congestion, increase connection speed and enable people to live an urban lifestyle without reliance on private automobiles.

b. Self-financing of needed infrastructure changes by estimating and tracking property value increases generated for developers by increased housing density, changed height limits and relaxation of traditional parking requirements.

**3. How would technology play a role in the suggested solution (including applications that would serve users/citizens/commuters)?**

a. Technology would enable the “Rapid” element of the proposed BRT. (Connected vehicles would coordinate on the road with virtual right-of-way enhancements, timed signals for express buses, algorithms to time arrivals at regional transportation connection nodes, providing arrival times at every stop to allow riders smooth planning.)

b. Feedback from riders and integrated data collection systems would facilitate rapid adjustment of the system to meet evolving needs. (Where and when to add new stops, how to maximize efficient use of energy, when to surge and taper service, offer suggestions for nearest businesses accessible from BRT at current stop, etc.)

**4. How would the proposed solution integrate with management and operations of the City?**

a. The “City” in this case would consist of a consortium of six municipalities who share the corridor with GA DOT and the Metropolitan Atlanta Rapid Transit Authority (MARTA.) The city’s roles would be to structure zoning and incubate/serve businesses along the corridor that meet as many of citizens’ local needs as possible, to promote Live-Work-Play district aspects that attract residents who want to give up private cars in exchange for less commute time, less car maintenance expense (& a higher standard of housing enabled by savings.)

b. Operations of the City would include paying close attention to the needs of the special transportation-oriented corridor. Police would be responsive to problems that prevented the BRT from operating smoothly, simply because it serves a great number of people and would also be the “gateway” for many visitors to the city. Safety and quality of life issue patrolling, community policing, shared use of virtual right-of-way signaling for emergency vehicles (Fire & Ambulance)



would also integrate with the regional 911 and emergency/disaster responders. If there were a need for an evacuation of large numbers of people from the TOD corridor, the BRT would necessarily be part of that planning.

**5. How would the proposed BRT/TOD Corridor impact safety, efficiency, and sustainable movement of people and goods?**

a. The BRT and the TOD infrastructure (bus stops, walkable sidewalks, and the gradual but eventual transformation of setbacks & parking areas to mixed-use facilities) would be vastly safer than the current Buford Highway pattern of use that is setup almost exclusively for private cars. Pedestrians would be favored in the “complete streets” redesign. Efficiency is improved by fostering local businesses close to residential uses to service the needs of most, if not all trips. If a business is not near enough to walk to, it can be reached by a quick BRT trip, which incidentally allows residents to move small carts for groceries and heavier items across fully ADA-compliant ramps at every transition. A senior who can’t drive can nonetheless move supplies or receive deliveries that can arrive by BRT, too.

b. A Buford Highway BRT/TOD would be implemented in accordance with a “Complete Streets” approach recommended by the Atlanta Regional Commission, with proven Safety, Health, Economic, Environmental benefits while serving the needs of pedestrians, bicyclists, automobiles, public transit riders, and the delivery of goods.

**Economic Benefits for Individuals**

“Economic Benefits include lower transportation costs for families. Americans spent an average of 18 cents of every dollar

on transportation, with the poorest fifth of families spending more than double that figure. In fact, most families spend far more on transportation than on food. When residents have the opportunity to walk, bike, or take transit, they have more control over their expenses by replacing car trips with these inexpensive options. Taking public transportation, for example, saves individuals \$9,581 each year.” --- National Complete Streets Coalition

**6. How will the coalition close technical and policy gaps?**

a. The Buford Highway proposal envisions the creation of a standing committee that interacts between stakeholders by appointment of the elected officials of the municipalities served. In Atlanta there are already regional (ARC, MARTA), county and municipal officials dedicated to the implementation of public policy and to address needs and issues that a Buford Highway BRT/TOD project would also address. The need for a specific body to steer, advocate and report on Buford Highway’s progress is driven by the unique needs of the integration, the demonstration component(s), and to serve as the decision and information dissemination agent, were the same project to be implemented in another city with less regional policy and technical oversight expertise.

**7. What is the existing transportation system in the area to be serviced by the demonstration?**

a. The roughly 18-mile corridor from Midtown to Duluth in Gwinnett County is served by a patchwork system, some regional (MARTA serves Fulton & DeKalb but not Gwinnett), some public, and some private (At least two private shuttle services operate alongside MARTA and Gwinnet County Transit buses.) Georgia Regional Transit operates buses on the

I-85 interstate. Buckhead operates a connector service in the Lenox area.

b. Unfortunately, Buford Highway suffers from its present and historic “incomplete street” (car-centric) design. As such it is demonstrably dangerous, unhealthful, not conducive to walking or bicycle riding, it reduces options for housing to include only people who can afford or operate cars, it adds to congestion because its current bus service is not rapid and does not take advantage of all technology integration. In short, the corridor is ready for a change that will very likely transform the use of the land around it, in ways that will make it desirable for residents, businesses, customers and visitors. Ideally, it will become known in the city as an easy to reach Live-Work-Play neighborhood that transcends municipal boundaries and reduces rather than contributes to the difficulties of Atlanta’s world famous sprawl.

**8. How would the proposed demonstration fuel entrepreneurship and innovation to improve citizens’ lives, create jobs, and spur economic development?**

The average home-to-work commute for an Atlanta resident in a car takes *hours of time spent controlling a vehicle in traffic*, which really benefits no one but that individual. The same time spent in a vehicle piloted by someone else (or autonomously) allows essentially “free” time, which can be used to study, read, work on personal business opportunities, or just rest so that the commuter can be more sociable, active, and alert when spending time at home with friends or family. Unscientifically, driving in traffic makes people crabby.

**9. How would open city data be shared with the public or other systems in such a way to preserve privacy, security and other safeguards?**

This demonstration would undertake as a starting point the principles suggested by leading cities in the movement toward more open data, such as Groningen, Netherlands.

**10. How do the demonstration cities currently exhibit their commitment to managing operations, transportation or other administrative data as a strategic asset?**

The municipalities in our coalition clearly strive to make their respective websites into useful portals and transparent reporters of their day-to-day operations, punctuated by boosterism, consensus-building and serious public service announcements.

**11. Which of the demonstration cities or systems currently utilizes Intelligent Transportation Systems or operate a Traffic Management Center?**

It’s Marta! (That’s also one of MARTA’s slogans.)

**12. What area will serve as the ‘central business district’ in the demonstration as suggested in the USDOT NOFO?**

The corridor itself will aim to be the central business district for itself, but also serve as a conduit for commuters from one end of the BRT to the other. 18 miles is a lot of room for commercial businesses, service centers, more restaurants & places of entertainment, all of which mean jobs and places where one might walk to from either an affordable apartment or a market-rate one. Officially, of course, downtown Atlanta (and Midtown and Lenox or Perimeter Center) are the central business districts. Atlanta’s business districts tend to be linear and named “Peachtree Street.”

**13. What is the geographic area for the demonstration for the purposes of the USDOT NOFO / Grant?**

The TOD overlays would likely encompass the parcels on both sides of Buford Highway, thickening at major cross-street nodes such as Clairmont, N. Druid Hills, E. Roxboro, Briarwood,

Chamblee-Tucker. Perhaps 300' of width including the right-of-way. 18 miles x 300' is approximately 650 acres or exactly four times the size of the Assemble Development in Doraville the site of the old GM plant.

**14. What can the demonstration stakeholders offer as evidence of committed leadership, authority, and capacity to carry out the demonstration throughout the period of performance and continue operation after the period of performance is over?**

Besides having our city defeated in war, burned to the ground, rebuilding it in 3 years into a capitol, being forced to stand down and then stand up against racism (collectively work through it, exporting principled civil disobedience without late 20<sup>th</sup> century riots), build the world's busiest airport and airline, host the Olympics, grow to the ninth largest MSA, stand as the germ-fighters against world-wide epidemics, and diversify our metro area economy to include housing, construction, finance, technology, insurance, health care, equipment manufacturing, shipping, food distribution, auto suppliers, e-commerce and higher education, *Atlanta has a reputation for being lazy and lacking follow-through.* (Tongue firmly in cheek.)

**15. How with the demonstration assess its reproducibility for other mid-sized municipalities?**

a. Assessing the technical progress, difficulties, successes & failures, with emphasis on preferentially reproducing the success (including documentation of the full process, best practices, & translation of the model into step by step instructions for other municipalities) is the focus of the academic stakeholders as third-party independent researchers. Similar to Atlanta's Beltline initiative (which began as a Master's Thesis by Ryan Gravel) the academic component of the proposed demonstration

will be included from the start. The demonstration will be documented academically as an effort to change a previously ineffective multi-jurisdictional approach into one that will be measured with the intention of ensuring reproducible results elsewhere in the metropolitan area or in other mid-sized municipalities.

**16. Are changes in governance required to implement this demonstration?**

a. No changes in current governance structures are required. The existing governance structure is sufficient to undertaking planning, collaboration, activation of different parts of the demonstration at different times by different municipalities, and preservation of existing autonomy and local control of resources.

**17. What are estimated savings anticipated in hours not spent by citizens stuck in traffic and productivity potentially gained by this demonstration?**

a. Unfortunately, this demonstration will not magically free up congestion everywhere on Metro Atlanta's roads, but it should have measurable effects, particularly in the NE corridor and *especially* across a three-county divide (Fulton-DeKalb-Gwinnett) which otherwise hinders regional transportation solutions other than least-common denominator efforts (i.e. road-widening.) We need to create more places to live in the city with "complete streets" and where automobiles are optional, and make it easy to get from there to other interesting, useful parts of the city, too.

**18. Does this demonstration qualify as a step toward next-generation management of the municipalities involved?**

Yes, because part of the demonstration will be to generate an effective endowment ("rainy day fund" or equity pool) to ensure



the long-term maintenance and capital improvements necessitated by the higher activity, but also higher utility. See chart on page 7 for an indication of the timing of self-funded expansion.

**19. Is this demonstration part of an effort by the municipalities to become more attractive and competitive to residents and businesses considering relocation to the area?**

Yes, this is a critical component of a strategy to reposition as well as activate the corridor to higher uses while also preserving sufficient workforce housing in new mixed-use properties. The more the corridor is activated, the greater the potential to leverage increasing land values with zoning overlay(s) and/or TOD variances to generate funding for complete street amenities.

**20. How are the demonstration cities currently integrating shared use transportation options (bike share and car share options), and will the demonstration expand on these?**

MARTA is integrating ride-sharing with transfers to and from transit stations to address the “last mile” problem for some riders. Our plan is to similarly implement bike sharing at appropriate nodes along the BRT (likely at the express stops) similar to what was just implemented in [Lanzou, China](#).

## **EPILOGUE: Charles Lindbergh’s Triumph & Thoughts**

After Lindbergh’s, solo fight across the Atlantic, the aviator returned to Georgia Oct 11, 1927 for the largest parade that had yet travelled Peachtree St. in Atlanta, ending at Georgia Tech, where he gave a speech to 20,000 assembled.

Over the following decades he settled down and applied his mechanical talent and adventurous spirit to inventions, including rockets and an early version of an artificial heart. He lived till 1974, 72 years of age. Late in life he embraced nature conservancy and cautioned society against blindly embracing technologies:

“All the achievements of mankind have value only to the extent that they preserve and improve the quality of life.”  
In this same 1967 interview, he elaborated: *“The human future depends on our ability to combine the knowledge of science with the wisdom of wildness.”*

## **APPENDICES (web links only)**

- I. Buford Highway Economic Development Study by City of Brookhaven:**  
<http://www.brookhavenga.gov/home/showdocument?id=1327>
- II. Assembly Development (Old GM Plant redevelopment in Doraville)**  
<http://www.myajc.com/news/news/local-govt-politics/plans-call-for-turning-old-gm-plant-into-green-hub/njiTC/>