INTEGRATED INFRASTRUCTURE & TRANSPORTATION

Our vision for Lenexa is seamless transportation and connected infrastructure systems managed to enhance quality and performance while reducing resource consumption, waste and overall costs.

THE VISION: INTEGRATED INFRASTRUCTURE & TRANSPORTATION

Plan and deliver the next generation of multimodal transportation and smart infrastructure that optimizes accessibility, livability and community vitality. Use digital technology, shared knowledge and coordinated processes to anticipate Lenexa's needs and effectively serve people today and into the future.

STRATEGIES

We will create integrated infrastructure and transportation systems through:

1. Connecting to the regional transportation system.
2. Creating a seamless transportation system.
3. Managing assets to proactively address community needs.
4. Enhancing the transportation system performance.
5. Investing in infrastructure maintenance and capital improvements.

OVERALL CONTEXT

The U.S. has not experienced such a revolutionary change in transportation since the construction of the interstate highway system in the 1950s. Technology and transportation have the potential to create seamless mobility, accessible transit and connectivity.

Potential benefits of autonomous vehicles and driverless cars include improved traffic flow, fewer accidents and enhanced mobility for populations that don't or can't drive. Increasing access to services, community amenities and health care improves community health and well-being. Driverless technology could be the catalyst for creating purposeful and strategic parking, reducing traffic congestion and minimizing financial and environmental costs. However, large-scale infrastructure investments in dedicated lanes, car-free districts and other strategies must be considered to integrate driverless technologies with current transportation systems to significantly improve our community.

Lenexans desire more diverse and connected ways to get around. Robust transportation networks integrate all modes of transportation, including walking, biking and on-demand vehicles services such as car sharing and self-service carpools. With more diverse and equitable transportation options, the way we think about and pay for transportation will change. In the past, taxpayers have funded both roadways and public transportation systems. In the future, transportation costs may be distributed in new ways, such as employers taking a more significant role in providing transportation systems for their workforce.

Technology is also enabling our community to be safer while reducing our environmental impact. Connectivity, data analytics and information sharing create opportunities for proactive service delivery unknown to previous generations.

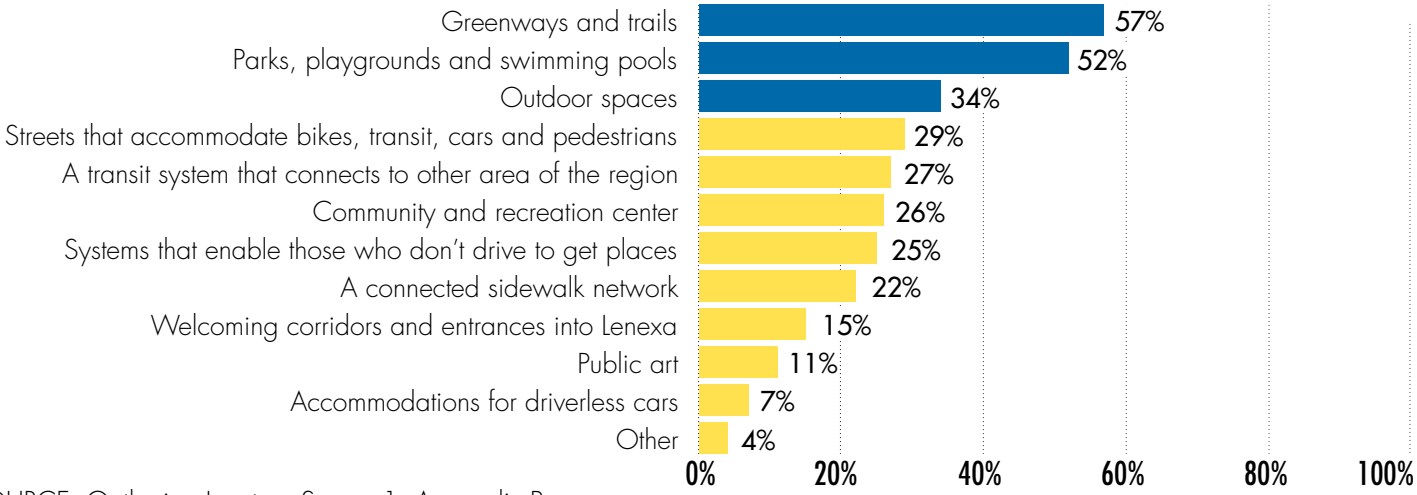
Using technology to improve transportation infrastructure efficiency and reducing energy consumption can mitigate some adverse environmental effects both locally and globally.

With technology intersecting so many facets of community life, Lenexa will use smart city strategies to plan, create and integrate the transportation and infrastructure systems of the future. A smart city approach incorporates information and communication technologies to enhance mobility, public safety, health and efficiency within a community while reducing resource consumption, waste and overall costs. Because the professional, scientific and technical sector is prominent in Lenexa, new technologies to address tomorrow's transportation and infrastructure challenges could be developed here.

SURVEYS

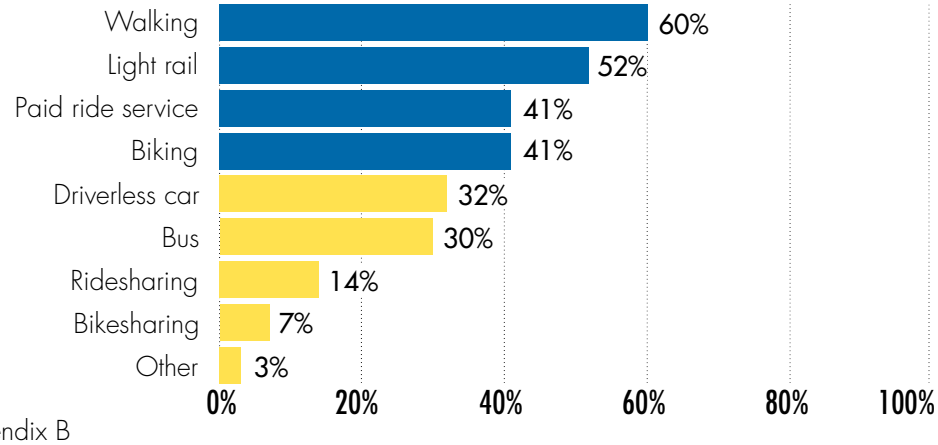
We surveyed the community about a variety of topics regarding infrastructure, facilities and transportation. Their responses are as follows.

In 2040, I'd like Lenexa to have FACILITIES AND INFRASTRUCTURE that include...



SOURCE: Gathering Input — Survey 1. Appendix B

In 2040, if you could not drive a car, what would be your preferred method of transportation?



SOURCE: Where to Focus — Survey 2. Appendix B

STRATEGY 1: REGIONAL TRANSPORTATION SYSTEMS

Support regional initiatives that create a robust multimodal transportation network and provide Lenexans easy access to that system.

CONTEXT

Greater Kansas City's transportation system is a significant economic strength. The regional transportation system includes about 19,000 roadway miles, ranging from interstate highways to local roads, serving 1.8 million registered vehicles that travel some 58 million miles each day. Lenexa's location provides unparalleled access to Interstates 35 and 435, U.S. Highway 69 and Kansas Highways 10 and 7. The Kansas City metro area is the nation's second-largest rail hub, with Burlington Northern and Santa Fe Railway serving Lenexa. Rail and highway access benefit Lenexa's economy.

Lenexa is served by a regional transit system, yet less than 10 percent of metro area jobs are accessible by public transit. In 2019, the Kansas City Area Transportation Authority is testing microtransit in Lenexa using a phone app. On-demand transportation will continue to expand in the region.

Lenexa is part of MetroGreen, a regional trail and greenway system. MetroGreen corridors are designed to serve as an extension for road networks, offering realistic and viable connections between origins and destinations such as work, schools, libraries, parks, shopping areas, historical and cultural sites and tourist attractions. The National Park Services — National Trails Intermountain Region worked with Mid-America

Regional Council and local governments such as Lenexa to develop a concept plan for retracing three historic trails — the Santa Fe, Oregon and California trails. Historic trails will be part of Lenexa's trail system.

TACTICS

We connect to a regional transportation system by:

- Collaborating with other jurisdictions to make regional connections.
- Supporting investments to transportation infrastructure that are not within Lenexa's direct control but will benefit Lenexa and the region (e.g., interchange projects).
- Using technology to get people to and from highways in the most efficient manner.

STRATEGY 2: SEAMLESS TRANSPORTATION

Create a more seamless transportation system that is safe, comfortable, efficient and easy to use. Manage each mode of transportation as part of a total transportation system so the user can move between modes effortlessly.

CONTEXT

Today, the way people and goods move are on the cusp of a radical transformation. A host of new technologies and innovative services, coupled with disruptive demographic and socioeconomic trends, are fundamentally reshaping mobility. From ride-sharing, car-sharing and bicycle-sharing to smart infrastructure (traffic sensors, connected traffic lights, etc.), and soon, the emergence of autonomous vehicles, these developments offer the promise of mobility that is faster, cheaper, cleaner and safer than today. Without appropriate mechanisms to integrate and coordinate across modes and a platform for stakeholder collaboration, these powerful forces will likely exacerbate traffic congestion, air pollution and vehicle traffic.

Lenexa and the Kansas City region will need a mobility system that connects and integrates different modes of travel — pedestrians, bicycles, transit, ride-sharing vehicles, delivery trucks, autonomous vehicles and beyond — to improve overall efficiency and enable more optimized and accessible mobility for people and goods. Because of the changing transportation landscape, the Greater Kansas City Chamber of Commerce named transportation as one of its top five issues. A seamless, robust transportation system is critical to a thriving economy.

TACTICS

We create a seamless transportation system by:

- Making streets comfortable and safe places for all modes of transportation, including pedestrian, bicycle, car and public transit.
- Creating connections by installing new and filling gaps in sidewalk networks so they better connect to places people want to go.
- Using technology to move people and goods more safely and efficiently throughout Lenexa and the region.
- Creating a traffic operations center to maximize the use of technology, gain efficiencies and improve system performance.
- Evaluating current requirements for sidewalk construction in new developments.

A seamless transportation system is one where users can easily change modes of travel (walking, biking, driving or riding transit) all in the same trip.

STRATEGY 3: MANAGING ASSETS

Use technology and data to identify trends, predict needs and make informed decisions for investment in infrastructure, facilities and services.

CONTEXT

As the population increases, the management of infrastructure will have to change to meet demand. Developments like artificial intelligence, the Internet of Things and big data will lead to smart cities. Smart cities will think and react like a human brain. Cities will solve their most pressing problems by effectively, efficiently and sustainably managing physical assets essential to society, including public buildings and infrastructure.

Today, public buildings can monitor data to run at optimum efficiency and also ensure each occupant is safe and comfortable. Innovators in asset management are making decisions based upon lifecycle costing, reducing deferred maintenance and improving performance. The future of asset management will evolve to predict the needs of the user to enhance the quality of life.

TACTICS

We manage assets to proactively address Lenexa's needs by:

- Using available data to identify trends, predict needs and make informed decisions for investments in infrastructure, technology, facilities and services.
- Enhancing technology to maintain effective police, fire and ambulance services and increase first responder safety.
- Sharing infrastructure information with regional partners to improve efficiency and safety of the regional transportation network.
- Allocating facilities, equipment and staff to provide adequate emergency services response times to all areas of the community.

STRATEGY 4: ENHANCING TRANSPORTATION SYSTEM PERFORMANCE

Employ technology and data to move people and goods more safely, efficiently and effectively.

CONTEXT

KC Scout is Kansas City's bistate traffic management system, designed to lessen traffic jams by improving rush-hour speeds, increasing safety by decreasing the number of rush-hour accidents, and improving emergency response to traffic situations by clearing incidents quickly and safely. KC Scout manages traffic on more than 300 miles of freeways in the metropolitan area.

For over a decade, cities in the Kansas City region have collaborated to improve regional transportation system performance on arterial streets. Operation Green Light monitors and manages the existing transportation system through safe and efficient traffic signal operations to reduce travel time, fuel consumption and air pollution. Lenexa has 35 traffic signals participating in Operation Green Light on 87th Street Parkway, 95th Street, Quivira Road and Lackman Road.

Lenexa currently has 35 signals coordinated through the local traffic management system that can communicate with the other traffic signals in Lenexa. With the traffic signal management system, operations can be remotely monitored, timed and controlled to provide more efficient traffic signal operation throughout the city.

Cameras, signal management and a regional system are only the beginning of using technology to enhance transportation system performance. Automakers are shifting production to smart cars and, eventually, driverless vehicles. They need cities to partner with them by building intelligent roads, smart parking, smart on-demand transit and more. The streets of the future will be easy to navigate and provide optimal service to travelers using technological advancements and next-generation Wi-Fi.

TACTICS

We enhance the transportation system performance by:

- Developing partnerships with third-party transportation providers, so consumers get the transportation they desire.
- Planning for pickup, drop-off and waiting areas to accommodate ride-sharing, autonomous vehicles and other evolving transit options.
- Preparing for secure vehicle-to-infrastructure communication as standards develop and the city's role is defined.
- Collaborating with providers to bring next-generation telecommunication connections to the community.

CONCEPTS

The District of Columbia has a collaborative program known as Smarter DC to make investments and drive efficient use of infrastructure and resources using technology to build a more sustainable, green community.

An autonomous car (driverless car, self-driving car, robotic car, etc.) is a vehicle that is capable of sensing its environment and navigating without human input. These types of vehicles are already being tested for their viability in the future.

STRATEGY 5: INVESTING IN SUSTAINABLE INFRASTRUCTURE

Continue to deliver innovative, sustainable facilities and infrastructure by making investments today for future generations.

CONTEXT

Globally, a large and growing shortfall in infrastructure spending means roads, bridges, railways and other critical assets are being pushed to — and sometimes beyond — their breaking point. Many communities across the country have underinvested in infrastructure and have growing deferred maintenance. The American Society of Civil Engineers rated the condition of infrastructure nationwide as a D+ grade. Lenexa's appropriate management of infrastructure has kept the high quality of life.

According to the 2017 Comprehensive Audit and Financial Report, Lenexa's capital assets are valued at approximately $632 million. Public buildings, parks and infrastructure such as streets, storm drainage system, lakes, wetlands and streamways make up the majority of these assets. The City of Lenexa issues debt and cash funds infrastructure investments. Proactive and preventative maintenance of these assets is also budgeted annually. Lenexa is a leader in innovative public facilities and infrastructure. Sustainably managing stormwater as an amenity, using data to efficiently deliver pavement management that extends the life of the streets, and building a multipurpose civic campus are some examples of that innovation.

TACTICS

We invest in infrastructure maintenance and capital improvements by:

- Considering life-cycle costs when determining the most cost-effective methods and materials for constructing and maintaining infrastructure and transportation assets.
- Continuing to allocate long-term, sustainable funding for infrastructure and transportation investments.
- Investing in flexible facilities, equipment and staff to meet current demands and address future needs.
- Pursuing innovative transportation, infrastructure and facility funding opportunities.