CITY OF JOBURG: MANAGED LANES POLICY

1. INTRODUCTION

The City's Growth and Development Strategy for 2040 identifies the need to reduce traffic congestion and its impact on the City residents and competitiveness. It identifies that we need a future where public transport, walking and cycling is the mode of choice.

To achieve a public transport friendly City and reduce congestion, requires policy shifts in many areas of City policy. This policy document looks at the shift in how we use our road space differently by the introduction of managed lanes of various kinds to reduce congestion and promote public transport.

The objective of this policy is to set out short, medium and long term measures to use road space differently in the City of Joburg to reduce congestion and promote public transport. The policy will set out the context, the conditions and criteria that the City should apply when determining if a managed lane should be introduce, what kind of managed lane, with what features and what conditions.

2. BACKGROUND

Acute congestion in the City of Joburg poses challenges to economic competitiveness and quality of life. Traditional capacity expansion has become increasingly expensive, and over time this capacity also gets consumed, resulting in a return to congested travel conditions. Commuters reaching their destinations in a reasonable and reliable manner are an important goal of the City Currently, the existing infrastructure in the City does not provide a system that meets this goal in peak periods.

The most effective long term measure is reduction in travel demand through introduction of public transport and changed land use planning. In this context, managed lanes have a role to play to providing extra capacity for some vehicle classes.

3. DEFINITION OF MANAGED LANES

Managed lanes are designated lanes in which operational strategies are implemented and managed (in real time) in response to changing conditions. A managed lane facility is one that increases roadway efficiency by packaging various operational and design actions. Lane management operations may be adjusted at any time to prevent congestion from occurring.

Strategies for managing lanes typically fall into one of three categories. These include vehicle eligibility restrictions, access control, and pricing. The following list shows some of the common strategies that fall within this classification:

<u>Eligibility</u>

- Occupancy restrictions (HOV lanes)

- Vehicle type restrictions- exclusive lanes for buses, public transport and other high occupancy vehicles such as car sharing.

Access

- By pass lanes/ express lanes with limited access
- Contraflow lanes/ reversible lanes

Pricing

- Decal or sticker registration for use
- Congestion pricing on managed lanes
- Fixed or variable electronic tolling

This policy will focus on the eligibility and access strategies to control the number of vehicles using the lane or roadway.

4. GOALS AND OBJECTIVES

The objective of managed lanes is to achieve travel time savings on the one hand and maximize investment in transportation infrastructure on the other. Public transport or high occupancy lanes can be used as an incentive to encourage people to use public transport. Managed lanes can be an important way of investments in transportation infrastructure, particularly where options to expand roadway capacity is limited.

Managed lanes can:

- Increase average travel speeds and decrease delays in travel.
- Increase access to major activity centers.
- Increase system efficiency.
- Improve public transport on-time performance and reliability.
- Improve air quality and decrease green house gas emissions associated with traffic congestion.

5. INTERNATIONAL EXPERIENCE

Below we set out some examples of the implementation of managed lanes in different parts of the world. As can be seen from the examples, managed lanes are more commonly implemented as part of a broader congestion management programme including pricing or as part of the transformation of public transport where lanes are dedicated for bus rapid transit.

Germany is currently operating distance base truck tolling, dynamic re-routing, temporary use of the right hand shoulder and ramp metering. Netherlands has examples of temporary use of the shoulder, dynamic truck restrictions and ramp metering, also focusing on trucks.

In New Zealand has a number of HOV lanes on their freeways system as well on-ramps in where HOV vehicles, buses and freight vehicles are able to bypass the ramps signals and gain priority access to the motorway.

In many South American countries and now extending to the United States and Asia, bus rapid transit dedicated lanes have been introduced. They can be regarded as a form of managed lane.

In Malta a fully automated system called a Controlled Vehicular Access (CVA) system has been launched in Malta's capital city of Valletta since May 1, 2007. When compared to other countries that make use of congestion charging models, the Maltese system makes use of a wider array of innovations including variable payments according to the duration of stay, flexible exemption rules, including exemptions for residents within the charging zone, and monthly or quarterly billing options for vehicle owners.

Singapore implemented the world's first congestion pricing scheme in 1975 through manual police control around the CBD of an urban area (see Area Licensing Scheme). In September 1998 the system was upgraded with ETC technology, 100% free-flow (see Electronic Road Pricing).

The congestion charges were implemented as part of a comprehensive package of road pricing and harsh ownership restraints, in recognition of the country's land constraints, need of economic competitiveness, and to avoid the traffic gridlock that chokes many cities in the world.

One key aspect of traffic management in Singapore is the restraint of vehicle ownership, either through the imposition of high ownership costs or restriction on the actual growth of the car population. These measures have included high annual road and fuel taxes, custom duties and vehicle registration fees. Fuel taxes are 50% of the final sale price.

The city of Beijing implemented a temporary road space rationing based on plate numbers in order to significantly improve air quality in the city during the 2008 Summer Olympics. Enforcement was carried out through an automated traffic surveillance network, and the restriction was in effect for two months

The measure was so successful in cleaning the air and relieving traffic congestion that a modified version of the restriction was made permanent afterward in October 2008, now banning 20% of the vehicles on a given weekday instead of half the vehicles as implemented during the Olympics.

Also a ban on heavy trucks from entering the city during the day was implemented, and the oldest most polluting automobiles, called "yellow-label" cars, after the sticker fixed to their windshields, are banned from entering the city center.

6. MANAGED LANE STRATEGIES

This section looks at the different kinds of managed lanes strategies

6.1. Eligibility strategies

One of the most commonly used lane management tools is restricting use based on vehicle eligibility. Eligibility can be defined in terms of vehicle type (i.e. buses, trucks, motorcycles, cyclists, pedestrians) or by the number of occupants in a passenger vehicle, such as two or more (HOV 2+) or three or more (HOV 3+) in a vehicle. One of the goals of vehicle eligibility restrictions is to encourage the use of public transport or other high-occupancy modes, or modes that place less of a burden on the transportation system or the environment, such as motorcycles, pedestrians and cyclists. Below are examples of managed lane strategies involving eligibility restrictions are further discussed

6.1.1. High Occupancy Vehicle (HOV) lanes

HOV lanes are separate lanes that are restricted to vehicles with a specified occupancy and generally include public transport vehicles and car pools. They are designed to increase the person-moving capacity of the existing infrastructure.

Most HOV facilities require that vehicles have two or more (2+) occupants to legally use the facility; however, some facilities require three or more (3+) occupants during peak travel times (4). HOV lanes can be implemented on either arterials or freeways. When implemented on major roads, three types of facilities are used—separated roadway, concurrent-flow lanes, and contraflow lanes. The separated roadway facility may be either a two-way facility or a reversible-flow facility

The reversible lane is the most common type of separated lane HOV facility. The reversible lane consists of a separated lane or lanes where the direction of travel changes by time of day. A reversible HOV lane typically operates as an inbound lane in the morning and reverses to an outbound lane in the afternoon. This flow reversal allows maximum use of the lane during peak hours.

6.1.2. Exclusive Lanes

Exclusive lanes provide certain vehicles, usually designated by vehicle type, an exclusive operational lane. The most common types of vehicles designated for this strategy are buses and large trucks

Buses are often given exclusive lanes to provide an incentive for riders by decreasing delay, whereas trucks are separated in an attempt to decrease the effects of trucks on safety and reduce conflicts by the physical separation of truck traffic from passenger car traffic. The current Rea Vaya system is an example of an exclusive bus lane. Exclusive facilities can also be provided for cyclist and/or pedestrians or motorcyclists.

Various forms of truck lanes serve to improve traffic operations and safety, and facilitate the flow of goods. Truck lanes involve lane restrictions on existing mixed use lanes, separated and dedicated roadways, interchange bypass lanes and climbing lanes.

6.2. Access Strategies

Regulating access is another tool to manage the flow of traffic. Limiting access allows traffic on a particular road or managed lane facility to move with minimal disruptive impacts caused by vehicles frequently entering and exiting. Access to a facility can be limited using direct access ramps, physical separation or lane markings with appropriate signage. Limiting right turns on the BRT trunk routes is an example of an access strategy.

6.2.1. Express Lanes

Express lanes are a form of improving mobility by limited access. The term "express lanes" has commonly been used to refer lanes that are segregated from general purpose traffic and are set apart by limiting access to them. Express lanes may operate bi-directionally as a dual-dual roadway, or they may be reversible. Express lanes have a reduced number of entry and exit locations as compared to the general purpose lanes.

6.2.2. By pass lanes and ramps

The separation or bypass lane is a treatment for a specific section or segment of roadway. Several areas have successfully used this management strategy that often addresses a roadway segment that has a unique feature or characteristic, such as a weaving area, a significant grade, high percentage of truck traffic, and/or congestion.

HOV, bus or public transport-only ramp meter by passes represent the most widely applied form of HOV lane treatment. This operational strategy is used to provide priority treatment for HOVs at metered on ramps. Typically, this is accomplished by providing a separate lane on the ramp which allows HOVs to bypass the queue that forms as a result of metering.

7. MANAGED LANE DESIGN CONSIDERATIONS

Each element of a managed lane project should be designed to achieve specific operational goals and fit within the context of a particular design setting. Considerations should also be made to ensure that all design elements work in concert to achieve consistency and efficiency.

The following design considerations are common to the implementation of managed lanes:

- Lane orientation (left or right)
- Lane separation (if concurrent or contraflow)
- Access treatments and system connections
- Enforcement provisions
- Public transport provisions
- Signings and markings
- General ITS provisions

Lane orientation and lane separation will be discussed in more detail below.

7.1. Lane Orientation

Almost all managed lanes are located on the right side such that long distance travel with limited access is facilitated. Long distance trips are more amenable to generating the time savings needed to create demand. Traffic, right-of-way, existing roadway infrastructure and cost considerations generally dictate the design of dedicated roadway facilities.

A right side orientation results in fewer conflicts with mixed traffic since there are few locations were left side ramps intervene. A left side orientation frequently conflicts with local on- and off-movements with the main lanes, so therefore, either the usage of right side orientations needs to be low to mitigate the magnitude of conflicts, or usage must be restricted to select drivers and vehicles such as buses only.

Aside from ramp queue bypasses, right side oriented facilities generally fall into one of the following categories:

- Concurrent flow
- Reversible
- Contraflow

Concurrent flow facilities operate in the same direction of travel. For part-time operation they often take the form of a right most general purpose lane that is restricted for use by eligible vehicles for at least a portion of the day. Exceptions are a designated left side lane or shoulders that are converted to travel lanes during peak period.

Concurrent flow lanes can provide continuous access or can be separated using a physical barrier or painted continuous access buffer or buffer with designated access points. Concurrent flow lanes are best suited to situations where peak period demand is heavy in both directions or directional demand is only addressed through a lane restriction on the leftmost lane inbound in the morning period and outbound in the evening period.

Reversible flow lanes are most appropriate on facilities that experience large directional traffic imbalances and are forecast to do so in the future. . This characteristic is not found on many urban corridors.

Reversible lanes change the directional capacity of a road to accommodate peak directional traffic demands. To warrant reversible lanes, peak-period traffic volumes should exhibit or anticipated to exhibit significant directional imbalance. If warranted, reversible lanes can use right-of-way more efficiently and economically. Reversible lanes on a major arterial or freeway have usually been implemented on a roadway cross-section that includes a completely separated set of lanes in the center of the roadway. These are reversed in accordance with peak demands usually on a time-of-day basis.

Reversible facilities are best suited for long distance trips with limited intermediate access needs along the affected route to minimize traffic disruptions. A directional split of 60/40 is commonly used as a threshold for the level of traffic imbalance needed to warrant a reversible facility. A limitation of implementing a reversible flow design is that it cannot serve congestion that may be present in the off-peak traffic direction.

All reversible lanes must be separated by "Jersey" barriers in a high speed roadway setting. A facility that changes direction to serve morning and afternoon traffic can be an efficient solution since it allocates capacity specifically to the most congested direction of travel.

Disadvantages of reversible lanes include the ability of emergency personnel to respond to incidents on a facility with limited access, need for monitoring and proper deployment/closures during directional changes, signs and markings to indicate traffic directionality and provisions for enforcement.

Contraflow operation requires a select set of conditions in which demand is strong in a peak direction and unused roadway capacity exists in the off-peak direction. One or more off-peak lanes are borrowed for peak direction HOV use by the daily deployment (placement and removal) of moveable barriers or pylons to separate the opposing flows.

A contraflow lane is a lane in the off-peak direction of flow (normally adjacent to the median) that is designated for use by a specific class of vehicles (HOV, public transport vehicles) traveling in the direction of peak flow for at least a portion of the day. Normally, the contraflow lane is separated from the off-peak (or opposite) flow by insertable cones, pylons, or movable concrete barriers.

Contraflow lanes are created only for the specified operating period and returned to general traffic lanes at other times. This strategy requires unique conditions to exist, such as safe places for vehicles to cross-over the median at each end of the project to enter the lane, space to place and store moveable barriers and special moving equipment next to the median, and a commitment to daily operations by a team of trained personnel to move and place barriers or pylons, and activate other traffic control devices.

Contraflow lanes require strong peak period directional demand. This is because a contraflow lane borrows an off-peak direction lane(s) and converts it to peak direction operation. Therefore contraflow designs can only be implemented if there is unused off-peak direction capacity. Creating congestion in this opposing direction is not desirable nor is it publicly acceptable.

Contraflow lanes are operated only during specific periods, and the right most lanes revert to general use otherwise.

Contraflow lanes are rarely applied because of their relatively high operating costs and needs for specialized barrier moving equipment. The ongoing operating costs associated with deploying and removing the lane before and after each peak period can be significant.

Safety must be a top consideration with contraflow traffic operating on the same side of the roadway as the opposing general use traffic. Contraflow lanes with poles planted in the road, cones or other moveable markers can easily be installed and removed however they do not offer the safety and lateral separation between opposing lanes provided by moveable barriers.

Contraflow lanes with poles or cones should only be reserved for buses that are operated by trained, professional drivers operating at a maximum speed limit of 60km/h. Each day, markers must be placed and removed with each change of operation. Ingress and egress gates must be opened and closed. The contraflow lane must be checked to ensure a stalled vehicle or other blockages does not exist before changing operation. Contraflow lanes do present the potential for job creation given the high operational demands it presents.

Alternatively a moveable concrete barrier (MCB) may be appropriate to provide the need for protection. However, moveable barrier and barrier transfer machines have a very high capital cost. Such capital would need to be accompanied by officials to manage and enforce.

7.2. Lane separation

The speed differential created by managed lanes located adjacent to other lanes is perhaps the most important design aspect from a safety perspective. The type of separation treatment used for managed lanes is dictated in part by the intended operation of the lanes. Facilities that are operated part-time and revert to general use during off-peak periods should not be separated in a way that is confusing to drivers during non-restricted periods.

HOV guidelines for many years have advocated that the safest operation can result with some form of barrier separation between concurrent traffic streams, and crash rates for barrier-separated projects do bear out a better overall record than for non-separated lane treatments, all other factors being equal. Enforcement is also made easier with barrier separation.

8. PLANNING MANAGED LANES

8.1. Introduction

In order for managed lane systems and facilities to be properly integrated within the Class 1 and 2 road system, system-planning needs to occur at various levels, including strategic planning, long-range system planning, short-range planning, and service or operations planning.

At the strategic planning level, the COJ need to determine the roles, missions, and types of differential managed lane facilities and services they want to provide in a metropolitan area. Through the long-range planning process, agencies can ensure that managed lane facilities and services are incorporated into the future design of roadway systems and that funding for capital-intensive facilities are programmed into area transportation improvement plans.

Important steps in the planning process include needs identification, goals and objectives, correlation of those goals and objectives to operational strategies, and authorization and requirements determination. These are set out below.

Defining vehicle user groups for a managed lanes facility accomplishes an important step in the planning process. It helps in evaluating financing for the project, establishes the design vehicle used to control the geometrics of the facility design elements, offers insight into driver communication and signing needs, offers insight into potential enforcement opportunities and challenges, and provides a starting point for establishing a long-term “concept of operations,” where variations in user eligibility can be illustrated over time in order to maintain operational performance thresholds and communicate expected changes over time.

The presence of traffic congestion is a fundamental prerequisite for considering many different congestion management strategies and for contemplating managed lanes as a subsystem in particular. The policy framework supporting the consideration and implementation of managed lanes relies on a need to aggressively manage designated lanes to an operational threshold that guarantees a certain level of travel performance and reliability. The supporting context for this rationale includes one or more of the following:

- A mobility policy that encourages choices, either by changing modes to ridesharing or public transport, or willingness to pay or abide by an increasing level of automated traffic management.
- A need to allocate limited spatial resources to a higher and better level of performance, at least during hours of greatest demand when congestion is most prevalent.

- An inability to manage the lane(s) or roadway through more conventional strategies common to road operation.
- A willingness to segregate and prioritize some lanes to meet a variety of regional goals, including improvements in air quality, person and freight movement, and performance.
- A lack of other options for more conventionally expanding capacity among one or more transportation modes.
- A desire to flexibly address demand over time due to changing traffic and corridor conditions, often beyond the respective project design year.

Although managed lanes have traditionally been added as new capacity, the concept does not explicitly require capacity expansion. Instead, the focus of managed lanes is to preserve a reliable trip that is viewed as a preferable alternative over congestion that exists in the general purpose lanes. Therefore, the correct objective for managed lanes is not necessarily congestion relief, but rather, improved management of congestion.

The rationale of implementation does not suggest that incorporation of managed lanes should be a stand-alone strategy. Indeed, the best applications are ones in which managed lanes are an integral component of a comprehensive congestion management and job creation program incorporating an array of other strategies such as the introduction of improved quality public transport.

Environmental issues are concerns for most urban areas. One principal premise of HOV lanes are their potentially favorable impact on air quality and energy savings due to decreased fuel consumption. The actual quantification of these savings should be enhanced to strengthen policy arguments on the basis of environmental criteria.

8.2. Criteria to build a case for a particular road to include a managed lane

In order to build a case for a particular road to include a managed lane, the following questions should be answered in the order presented:

First: Are prerequisite operational needs for managed lanes evidenced?

- Is regular and recurring congestion present or forecast for which an alternative lane or roadway can provide a meaningful benefit if provided?
- Is there enough demand for any type of managed lane?
- Are there potential ways of implementing a managed lane without adversely affecting the design or operation of other lanes?

Second: What types of managed lane operations and designs are most appropriate?

- When is demand evidenced and in what directions?
- What are unique user origin-destination needs both within the corridor and regionally, as reflected from other programs and policies related to transit, ridesharing and potentially mixed traffic or trucking interests?
- What are the operational and design attributes that need to be accounted for?
- What other roadway management strategies are in place or planned that managed lanes could benefit from or be complementary with?

Third: How will managed lanes be implemented and what will be the impacts, now and in the future?

- What are the specific design and its impact on the existing or planned roadway?
- What are the operational attributes (e.g., hours of operation, directionality, user requirements and business rules)?
- How will the lanes be enforced?
- What role should each of the management strategies (i.e., eligibility, access and pricing) play?
- What are costs and benefits associated with the specific operation strategy and design?
- What are environmental impacts and benefits?
- What partners should sponsor, fund, implement, operate, maintain and enforce?
- What consistency, connectivity and phasing issues arise at a corridor or system level?
- What are corridor and regional benefits and impacts on traffic, other modes, mobility, safety, etc.?
- What are the complementary components that comprise the managed lane and congestion management program?
- What locally-specific issues need to be accounted for?
- Does the identified concept have public and political support?

These questions typically are addressed in a study of conceptual feasibility, and refined in the course of the project development process if feasibility is found favorable. If the core principles supporting any type of managed lane are not in evidence, then the planning and development process may stop at each of the successive stages outlined.

8.3. Environmental scan and stakeholder engagement

A key consideration in the initial examination of managed lane opportunities is to understand of the local institutional environment and the identification of key stakeholders. Understanding the institutional environment assists to determine what can realistically be performed in the realm of managed lanes, the willingness to invest in managed lane solutions, and how local laws and regulations may impact the way managed lanes can be operated and enforced.

To properly perform a needs analysis and complete a concept of operations determination, the stakeholders or potential partners in implementing, operating, and maintaining the managed lanes must be identified. Managed lanes must have public support to be successful. Ensuring that the public is involved early and throughout the planning, design, and implementation stages can help ensure this support.

Stakeholders involved in managed lanes will vary depending on the identified problems and treatments but will likely include:

- National, Provincial and Local Transportation Departments/ Agencies
- National, Provincial and local law enforcement agencies with current roles on the affected roadways.
- Law and traffic enforcement agencies
- Public transport operators/ agencies.
- Elected representatives
- Affected communities and neighborhoods; and

- Non governmental organisations

After identifying the affected stakeholders, a consensus about the problems and need for solutions should be developed. Iit is critical to establish support from public representatives and the general public for managed lane concepts. This is particularly important for managed lane concepts that may not affect all motorists equally by the actions that may be implemented, such as eligibility restrictions, tolls and changes in access.

Successfully developing and operating managed lane facilities requires agencies that are responsible for the roadway system and public transport services to actively work together. Interagency cooperation and coordination is critical to the success of a managed lanes project. Whereas this cooperation is vital, experience also indicates that one agency or group needs to have overall responsibility, and that one individual or a small group of individuals (i.e., "champions") can be instrumental in the development, promotion, and support of managed lane projects.

9. MONITORING AND EVALUATION

Managed lanes primarily concern the ongoing and active management of roadway capacity to ensure free flow speeds and travel time reliability. As a result, the operational scheme must be designed to adapt and change to prevailing trends in traffic. Core to this adaptation is establishing a mechanism for regularly evaluating the effectiveness of the managed lane strategies.

It is important to monitor the impacts and benefits of the strategies and techniques to determine if they meet the intended objectives and functions for which they were designed, and, if they continue to provide the benefits over time.

It is also important that the evaluation data be collected so that they can be collated and disseminated in an ongoing manner to elected officials and the general public. In this way, continued funding for these strategies can be obtained more readily, and expansion of activities to further improve facility operations will be more readily accepted.

Evaluating the effectiveness of specific treatments should not be considered a one-time activity, but should be part of a periodic review of the effectiveness of the component and of the overall system.

10. ROLES AND RESPONSIBILITIES

The following roles and responsibilities of different stakeholders within the City of Joburg have been identified

COJ Transportation Department

- Ensure projects are included in necessary planning, programming, and environmental documentation
- Prepare and approve policies concerning managed lane governance
- Custodian of policy Developing operations and enforcement plans
- Designing and operating the facility
- Engaement and co-ordination of stakeholders
- Monitoring and evaluation

Transport Operators (public transport, freight, etc)

- Input and feedback
- Developing or assisting with operations and enforcement plans
- Monitoring or assisting with monitoring facility performance

JMPD

- Assist with development of operations, enforcement, and management plans
- Responsible for enforcement of managed lane facilities
- Responsible for safety management during incidents
- Coordination with other law enforcement and judicial personnel

JRA/ SANRAL/ Gauteng Roads and Public Works

- Connections to managed lane facilities
- Developing or assisting with the operations and enforcement plans
- Conducting or assisting with the design and operations of the facility
- Implementation (construction) on relevant section of the road network
- Participating in a inter-governmental team

11. CONCLUSION

This policy document indicates that a system level assessment should be made of the area experiencing congestion that will determine the feasibility of managed lanes on the system as a whole, or portions of the system.

Specific criteria to be considered in the justification of a managed lane project should include:

a) The presence of congestion;
b) Time savings potential;
c) Adequate demand;
d) Ability to meet minimum design requirements to promote safety;
e) Potential to serve public transport and ridesharing demand;
f) Performance and impacts on performance to adjacent traffic; and
g) Cost effectiveness.

Bearing in mind the overall objective of the City to promote public transport, options to support current and proposed public transport routings and analyzing potential for addressing new public transport markets with HOV lanes and express bus services should be prioritised. Support facilities such as park and rides and public transport hubs are essential to HOV success and should be considered together with an HOV lane project.

A second priority user group for managed lanes should be heavy vehicles. Consideration of heavy vehicles should address trip patterns, demand and safety.

Along with public transport and heavy vehicles, clearly defined emergency vehicles should also considered eligible vehicles on any managed lane project.

When planning projects, the impact to adjacent traffic should be minimized and balanced between the managed lane and adjacent roadway system to the greatest extent possible. Traffic diversion off of the roadway system onto adjacent streets caused by a managed lane should not represent a noticeable adverse impact.

Access treatments should be designed and evaluated to both prioritize travel benefits (minimize travel delay time associated with queuing and merging), and to minimize adverse impacts on adjacent travel lanes.

Managed lanes can only succeed if effective enforcement is in place. Fines relating to managed lanes should be developed, reviewed and modified as needed and additional funding may need to be sourced especially when a project begins

Urban area traffic congestion presents a challenge to the continued growth and economic prosperity of the Gauteng region. Future job creation and economic development are inextricably linked to investment in infrastructure that improves mobility, and in order to maintain its competitive edge, there must be continued focus on improving the transportation network.

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