
Clearer Roads,
Clearer Skies,
And a Brighter Future
For Los Angeles
VISION
LOS ANGELES

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Vision Los Angeles has been driven by a strong and collaborative partnership between Environmental Defense Fund (EDF) and the Los Angeles County Economic Development Corporation (LAEDC). Kathryn Phillips of EDF and William C. Allen of LAEDC have devoted countless hours, valuable expertise and inexhaustible patience in the completion of this project.

It has been Vision Los Angeles' good fortune to have had the wise counsel and strong participation from a group of Los Angeles leaders representing diverse interests and expertise across many key civic sectors (business, labor, environment, health, education, and government). The willingness of these leaders to contribute their time, energy and knowledge was most valuable, but their willingness to collaborate and seek common ground with each other is both invaluable and represents our best hope for a bright Los Angeles future (see adjoining page).

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Executive Summary

Vision Los Angeles seeks to advance economic and environmental success for Los Angeles County by focusing on transportation mobility. It is led and driven by a partnership between a leading national environmental group, Environmental Defense Fund (EDF), and one of the premier business development organizations in California and the Los Angeles region, the Los Angeles County Economic Development Corporation (LAEDC). It is guided by an advisory group of prominent regional leaders from the non-profit, business, and government sectors. It is informed and managed by an expert team of consultants.

It began with a mutual desire to stop the gridlock, figuratively and literally. Through conversation, debate, charrettes, scenario modeling, collaboration, and quantitative and qualitative analysis, project participants helped to develop Vision Los Angeles' ideas and strategies.

These are strategies that:

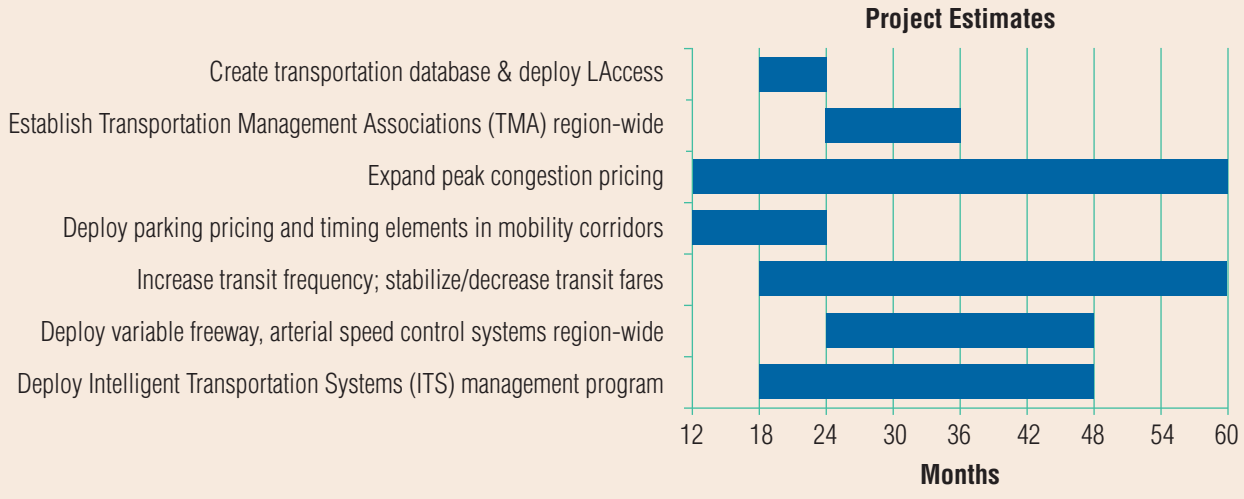
- *Reduce the combined high cost of housing and transportation*
- *Improve transportation access and mobility*
- *Improve air quality and reduce greenhouse gas emissions*

The core strategy is focused on developing an integrated *operating system* that both enhances transportation performance and provides people with more choices for accessing the daily events in their lives (work, home, school, recreation, etc.). Enhancing system performance and increasing access choices lead to reduced congestion and, as a result, improves business and personal economics, the environmental quality of the region, and accessibility for all Angelenos.

What is our transportation *operating system*? By way of example, every computer has an operating system. It is the basis for all that the computer does. The operating system manages the computer hardware. Similarly, a Los Angeles transportation operating system can more efficiently and economically enhance a mix of transportation choices and provide people with the information to make economic, environmental, and personal value choices of how they access the events in their lives.

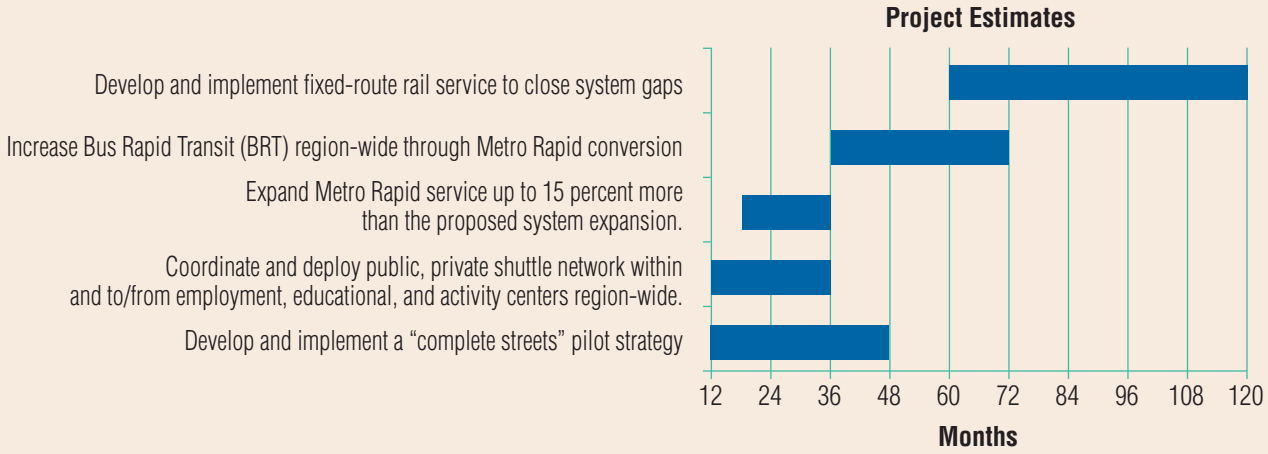
Vision Los Angeles developed an integrated set of strategies for our Los Angeles *Access Operating System, Access Hardware* and *Accessible Lane Use* components that work together synergistically. These strategies include:

Access Operating System

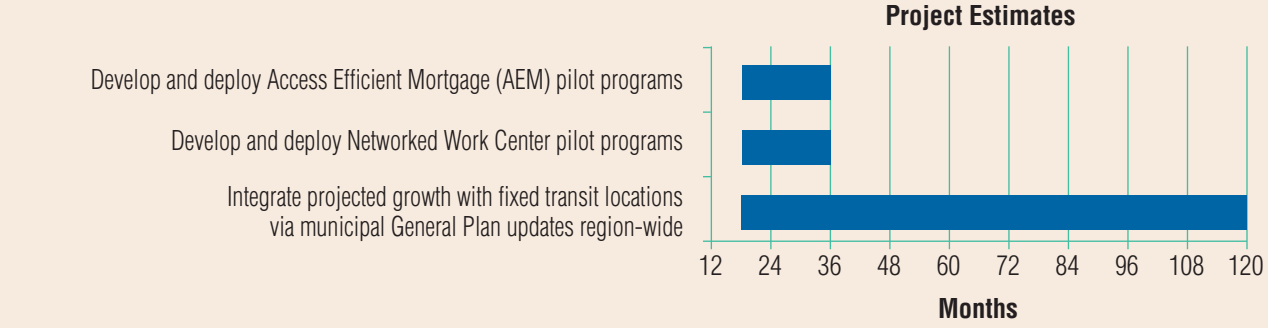


"Fifteen strategies and solutions that will transform transportation in Los Angeles County."

ACCESS HARDWARE



ACCESSIBLE LAND USE



Vision Los Angeles has identified fifteen practical strategies that can be implemented over a short, medium and long-term timeframe. These strategies can provide Los Angeles with better access to jobs, substantial reductions in air pollution, and improvements in mobility that could save billions of dollars a year currently wasted on congestion.

Introduction

We all know the stereotypical image of the Los Angeles area transportation scene. It has car-filled streets and freeways, endless traffic jams, frightened—and scarce—pedestrians, infrequent and mostly empty buses, and bicycling conditions that keep most two-wheelers locked securely in garages and back porches. Hanging over it all are smog-filled skies.[1]

While most stereotypes aren't reality, unfortunately, for many of us who live here, there are many days when the stereotype seems all too real. The Los Angeles region routinely ranks among those most afflicted by traffic congestion. Commuters lose about 70 hours per person per year—the equivalent of nearly ten days—sitting in traffic.[2] That averages to about 485 million wasted hours that cost the region more than $10 billion annually. When surveyed, business leaders routinely rank relieving traffic congestion among the issues that they consider most essential to improving the region's business climate.[3]

Transportation is also a key source of the region's air pollution. More than two-thirds of the smog-forming pollution is emitted from transportation sources, and more than 40 percent of the region's greenhouse gas emissions (GHG) are linked to transportation. Researchers estimate that not meeting federal ambient air quality standards in the South Coast air basin, which includes Los Angeles County, costs about $22 billion annually in lost days at work, lost days at school, health care, and premature death.[4]

Operating our Access System Differently

In short, transportation, as we know it in Los Angeles County, brings with it billions of dollars in hidden costs.

Yet there have been and continue to be bright spots in transportation in Los Angeles County. Twice in the past few decades, Los Angeles transportation mobility worked for its people on a large scale: the 1984 Olympic games (a celebration) and the 1994 Northridge Earthquake (a tragedy). In both cases, we were either cajoled or forced, due to a planned event or natural disaster, to think about how to operate our access system differently.

In the case of the Olympics, government, businesses and individuals chose different modes, different times, and different ways to access those daily events in their lives (i.e., work, home, recreation, etc.). Whether by getting to work later, by vanpool, or by simply taking a different route in one's car, people in Los Angeles County *chose from a variety of options* on how they would access their day.

In the case of the Northridge earthquake and aftermath, the collapse of two freeways yielded two different responses, based on physical conditions and the options available in two very different corridors: a surge in transit ridership from the North Los Angeles County/San Fernando Valley area; and coordinated use of arterial corridors in light of the closure of a freeway on the Westside.

In both cases, alternative transportation choices were provided and used by Angelenos. Circumstances led to crafting these alternatives and necessity led to their use.

And within the last decade, the variety and availability of mass transit, especially in key urban areas, is notable and has been lauded by transportation planners and the general public.[5] A constant desire for improvement to our transportation system and options for accessing the region led Los Angeles County voters in 2008 to pass by a two-thirds vote a sales tax to raise $40 billion for transportation improvements.

[1]For an interesting take on the stereotype, see Eric Morris's New York Times February 5, 2009, Freakonomics blog, and reader comments: http://freakonomics.blogs.nytimes.com/2009/02/05/los-angeles-transportation-facts-and-fiction/. Accessed July 2010.

[2]Texas Transportation Institute. Performance Measure Summary—Los Angeles-Long Beach-Santa Ana, CA. Available at: http://mobility.tamu.edu/ums/congestion_data/tables/los_angeles.pdf. Accessed July 2010.

[3]Los Angeles Business Federation (BizFed) BizPoll, November, 2009.

[4] Hall, Jane, California State University, Fullerton. http://business.fullerton.edu/centers/iees/reports/Benefits_of_Meeting_Clean_Air_Standards_11-13-08.pdf

[5] KABC-TV. "Metro Named America's Best Transit System." October 12, 2006. Available at: http://abclocal.go.com/kabc/story?section=news/local&id=4655039. Accessed July 2010.

"Los Angeles County is one of the world's most diverse and creative regions. Its transportation system should reflect this. We need a system that supports a vibrant and world-leading regional economy, clean air, minimal greenhouse gas emissions, and access to safe, efficient and abundant transportation choices for all."

– Vision Statement, Vision Los Angeles

These bright spots demonstrate that there is general commitment and will to make the transportation system in this County work. But in order for the transportation system to support our economy and environment, it must meet people's needs on a daily basis. We must answer a basic question: *What is needed to make the County's transportation system work for people, for business, and for the environment?*

Vision

"Los Angeles County is one of the world's most diverse and creative regions. Its transportation system should reflect this. We need a system that supports a vibrant and world-leading regional economy, clean air, minimal greenhouse gas emissions, and access to safe, efficient and abundant transportation choices for all." – *Vision Statement, Vision Los Angeles*

This is the focus of *Vision Los Angeles*. Vision Los Angeles proposes to deploy strategies that serve our transportation needs. This approach recognizes the need to address the root problems, not the symptoms. Pollution and congestion are symptoms of an inefficient system. Vision Los Angeles focuses on developing and nurturing a *functional system* as the best option to fully address the ill effects resulting from our current dysfunction.

The plans to improve our infrastructure — *our access hardware* — are important. We need to continue to develop new transit capacity for a growing population and a changing demographic that needs and values myriad transportation choices. But we also must assess whether our systems – including existing and new assets – perform optimally and provide people with the access and mobility they need.

We can't only build new capacity as a means to improving our system – in essence, throwing money at transportation projects with the false hope that we will get a better outcome from the sheer act of spending. Doing the same things that haven't worked before yet expecting a different outcome is the antithesis of common sense.

We need a new *operating system* for accessing *Los Angeles*. We need to make existing and planned infrastructure work as intended, and integrate new elements in a way that complements the existing elements. This will improve the performance of the region's infrastructure. It will make travel times more reliable, improve the transportation experience, help reduce smog, greenhouse gas emissions and other pollution levels. The new operating system will provide individuals with viable, real-time access alternatives — based on time, money and personal values.

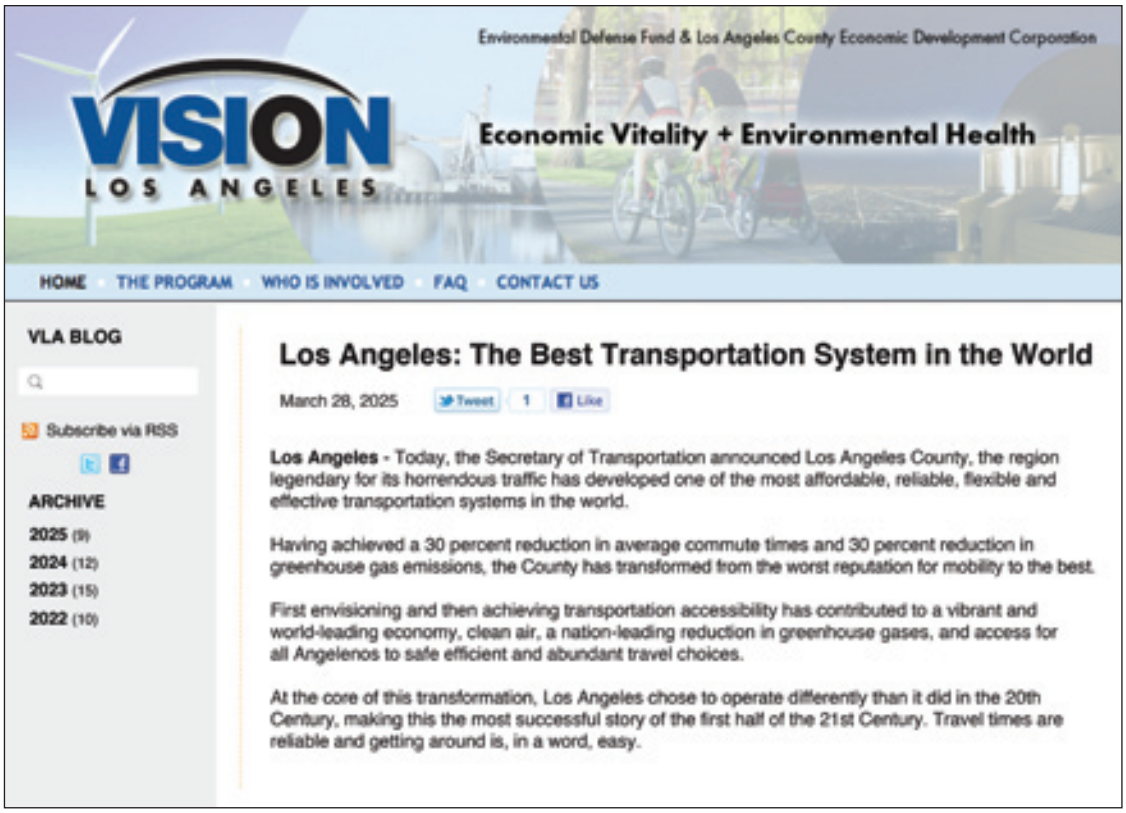
We need the most up-to-date transportation *hardware* to support a globally competitive economy and a healthy environment. But we must also update the transportation *operating system* — "Access Los Angeles" — to meet our current and future mobility needs rather than continue to rely on an antiquated operating system. If we don't do both, our system will fail.

Vision Los Angeles holistically addresses the root problem by building upon our unique character, our assets, and our successes. It is a project organized to advance a series of transportation ideas and strategies that can effectively transform Los Angeles County from a region choked by congestion and pollution to one that is accessible, prosperous, and healthy.

Defining and Pursuing The Vision

Vision Los Angeles seeks to advance economic and environmental success for Los Angeles County by focusing on transportation accessibility. Critical to developing actual sustainable solutions is the need to understand and define the *problem* rather than putting band-aids on the symptoms of the problem. So what are the causes and effects of traffic congestion in Los Angeles?

Vision Los Angeles sets out to make this story (see right) a reality in the coming years. How? On average, the costs of housing and transportation in Los Angeles are among the highest in the nation.[6] Availability of affordable housing near employment centers is lacking. This results in high combined housing and transportation costs due to lengthening commutes that are economically challenging to individuals and working families. In turn, Vehicle Miles Travelled ("VMT") increases and cause more idling in traffic creating more air pollution.



Our high "housing+ tranportation index"[7] hurts the ability of employers to attract and retain employees due both to increased cost of living and the difficulty of the commute for employees. This creates a drag on the regional economy and it hurts the environment. Those who are most negatively affected are individuals, both in their pocketbooks and in their quality of life. Addressing the high cost of housing and transportation is a key component of Vision Los Angeles.

In the past, we built more roads and freeways to connect to a *new* housing supply in the suburbs, the exurbs, and beyond. We did not embed these areas with a variety of transportation choices; rather we chose to rely on an abundance of affordable fuel and putting our public resources into the highway and road systems.

[6] Housing+Transportation Index average for Los Angeles County is 55% of average regional median income ($42,189) as provided by the Center for Neighborhood Technology.

[7] Center for Neighborhood Technology.

Objectives

Equity (People)

- Seeks to ensure the combined cost of housing and transportation is no greater than 40 percent of Average Median Income (AMI);
- Reduce the number of missed days at work and school associated with air-pollution related health impacts to below the national average;
- Increase by five times from today's levels, walking and bicycling as a means of access;
- Increase access to jobs throughout the region with safe, reliable and efficient transportation opportunities (see Table V-5).

Environment (Planet)

- Seeks to ensure that Los Angeles has one of the lowest carbon footprints as a region, ranking in the lowest 10 percent of world regional economies for GHG as measured by annual metric tons of Carbon Dioxide and per capita emissions;
- Rank the region's air quality among the best 10 percent of world regional economies, measured by the World Health Organization (WHO);
- Rank Los Angeles among the top 50 cities in the world, as measured annually by Mercer's Eco Cities ranking.

Economy (Prosperity)

- Seek to ensure the region's economy is consistently ranked in the top 10 regional economies in the world as measured by GDP;
- Rank Los Angeles among the top 50 cities in the world, as measured annually by Mercer's Quality of Living ranking.

Regional agencies and countless civic leaders have worked diligently over the past two decades to plan and implement a system of access alternatives in the form of rail transit, Bus Rapid Transit (BRT), express bus service, local circulator service and shuttles. This increase in the variety of mass transit, especially in key urban areas, is both significant and noticed by the general public.[8]

Transportation accounts for more than two-thirds of the region's air pollution, and about 40 percent of its greenhouse gas emissions.

Yet, while a lot of people use these systems daily, three fundamental conclusions still persist: These significant investments in transit have not resulted in meaningful congestion reduction; transit systems are not viewed as time competitive with the car; and the service is not "people friendly" enough to attract new customers.

A better operating system—one that integrates new elements and makes the existing infrastructure work better—will improve overall transportation performance. It will make travel times more reliable, improve mobility, and help reduce smog, greenhouse gas emissions and other pollution levels.

This applies to *the entire* transportation system that makes Los Angeles unique: freeways, roads, rail and bus transit, private transit, and Intelligent Transportation Systems.

Therefore, Vision Los Angeles is focused on the ideas and strategies that:

- *Reduce the combined high cost of housing and transportation*
- *Improve transportation access and mobility*
- *Improve air quality and reduce greenhouse gas emissions*

The Vision Los Angeles project identifies quantifiable objectives the region needs to achieve to benefit the economy, improve our environment, and provide equity for our people. Our vision extends to well into the future (2035) but is focused on the immediate term (2020). We must have a long-term game plan, but by employing the combination of strategies recommended in this program, many of these objectives can be achieved in the near term.

"In comparing U.S. and European cities, Los Angeles' freeway system is more congested than that of any other city in the U.S., U.K., France, Germany, Belgium and the Netherlands."

— (source: INRIX. http://www.inrix.com/pressrelease.asp?ID=124

[8] KABC-TV. "Metro Named America's Best Transit System." October 12, 2006. Available at: http://abclocal.go.com/kabc/story?section=news/local&id=4655039. Accessed July 2010.

Our Process & Approach

The partners and advisors agreed to the foundational tenet that Vision Los Angeles' ideas and strategies must be empirically based, measurable both at proposal and implementation stages, and predicated upon both technology and resources presently at our disposal. As intriguing as the dream of jetpack-equipped commuters hovering over Los Angeles might be, Vision Los Angeles is based on the here-and-now resources and tools we have available to craft a superior transportation operating system.

Our approach has been to understand the baseline plans for land use growth and transportation infrastructure improvements in the region, to develop the strategies and ideas that will comprise a new *operating system* that effectively and measurably provides people with a series of mobility choices, and to benchmark success upon a series of economic, environmental and social equity objectives for improvement.

Throughout the process, the consultants assumed that not everything would be up to government to initiate and complete. Rather, in alignment with the objective of creating a functional *transportation operating system*, they assumed that every sector represented in Vision Los Angeles would have to take ownership and leadership for components of that system. We are responsible for our own success.

Multi-Step Approach

- Benchmarked the "baseline condition" from the assumed implementation of our current transportation plans and programs;

- Compiled a list of advisory group-generated ideas and strategies that change the operating predicate of the baseline;

- Developed a computerized model with data about travel behavior and conditions in key areas of Los Angeles County to test and compare the effects of operating system improvements over and above baseline outcomes;

- Developed an interactive tool based on *Best Management Practices* (BMP) to test policy and economic solutions;

- Re-inputted results into the model to determine the congestion relieving benefits of a "low", "medium" and "high" deployment of the Vision Los Angeles operating system; and

- Developed a trend line for anticipated ranges of benefit/improvements to the Los Angeles County access system as a result of Vision Los Angeles implementation.

This focus on the *operating system* led to the conclusion that no single "fix" or initiative will yield sustainable success for our transportation system. The Vision Los Angeles consultants followed a multi-step approach to help identify and analyze an appropriate package of solutions. (see side bar)

The Vision Los Angeles team sees this as the beginning of a transformation of mobility in Los Angeles. This initial deployment of actions rather than report recommendations will be the foundational building blocks for a new transportation operating system for Los Angeles.

Success will be defined by taking action. Failure will be defined by doing nothing.

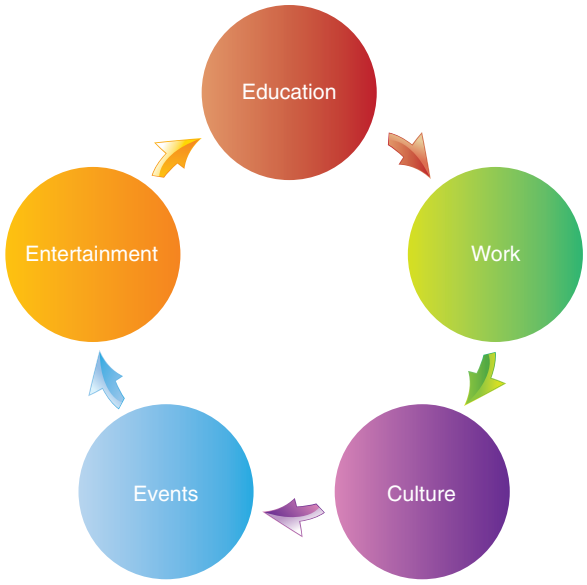
Vision Los Angeles Ideas & Strategies: A New Operating System

What is our transportation *operating system*? By way of example, every computer has an operating system (OS). It is the basis for all that the computer does. The OS manages the computer hardware and "sets the boundaries of what your computer can do and how it can do it, but most people are barely aware that the operating system exists."[9]

We have made great strides and innovations in deploying an operating system for discrete elements of our transportation system (i.e., traffic signal synchronization). But we have not approached our transportation hardware as a system to be managed for efficiencies like a computer. Given the technology we have at our disposal, we could operate our system in a significantly more integrated fashion that is much more responsive to people's needs, and enables people to have and make an informed choice regarding travel. We need to think about our system differently.[10]

And that's where Vision Los Angeles comes in. This project focuses on both updated and expanded hardware and transforming our operating system. (See side bar)

Vision Los Angeles OS focuses on our region as a dynamic and living system that has a different "metabolism" in any given 24-hour period within its active urban sectors



The public, private and institutional sectors all must play an active role in order for this dynamic system to function to our economic, environmental, and individual benefit.

What if:

- Planned transit improvements came on line much sooner than currently planned?
- The success of the 1984 Olympics and the response to the 1994 Northridge earthquake was repeated throughout the region and commutes became reliable anywhere and at any time?
- There were more travel choices available and people operated differently?
- Public and private transportation resources and systems were consolidated and focused on the intended outcome of serving *customers* instead of simply being available?
- The existing and planned transportation infrastructure was treated as an asset to be managed as part of a coordinated *transportation operating system?*
- It was clear that the tools to achieve these goals already existed and were deployable now?

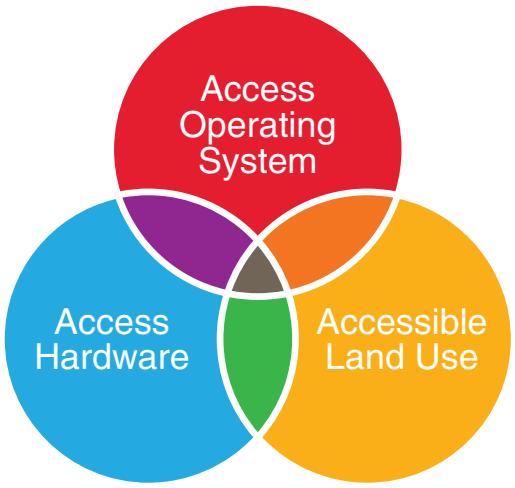
[9] *Free Agent Nation*, Daniel Pink, 2003

[10] http://www.infrastructurist.com/2010/07/08/should-cities-be-run-like-software/

An Accessible Los Angeles: The Integrated Components

No single solution will comprehensively transform Los Angeles' transportation system into a model of accessibility overnight. It will take a system of solutions over a period of time to address the problems presented.

Three key organizing elements — Access Operating System, Access Hardware, and Accessible Land Use — work in concert as an integrated system in the Vision Los Angeles approach to a functioning transportation system.



Component: Access Operating System

A key to Los Angeles' transportation identity is choice. A core tenet of how to operate in a choice-based system is customer service. We have entered an age where people connect to work, education and personal relationships differently than in the past. Many activities compete for our time and attention. The choices we make must add value to our lives based on what is important to us. People want choices for how we access Los Angeles. While we need many improvements to serve a growing economy and population, many resources are available today to achieve a robust system of choices. This will serve as the foundation for a more accessible Los Angeles.

A good choice serves unique, individual needs.

Expanding the *hardware* is only part of what is needed and, by itself, will not transform Los Angeles into the most accessible region in the nation. Our history and culture is defined by choice. Thus, the access system must embed a set of choices that are competitive in terms of time, money and convenience.

While parts of the physical infrastructure may be similar to that of other regions throughout the country such as New York, San Francisco, Dallas or Chicago, the *operating system* must be unique to Los Angeles County. We can begin now, with the assets we have available in our hardware and technology, to coordinate and operate our transportation system to yield a better outcome and experience for Angelenos.

Vision Los Angeles recommends that we create an integrated, dynamic Los Angeles transportation database consisting of all existing and emerging components (i.e., highways, arterials, transit, bicycles, etc.) that powers a comprehensive transportation operating system. We call this *LAccess* and it is designed to dynamically provide information for ever-increasing choices (and the associated costs, time and environmental impact of those choices) for accessing work, home, school and play.

Access Operating System Recommendations

- Create transportation database & deploy LAccess
- Establish Transportation Management Associations (TMA) region-wide
- Expand peak congestion pricing
- Deploy parking pricing and timing elements in mobility corridors
- Increase transit frequency; stabilize/decrease transit fares
- Deploy variable freeway, arterial speed control systems region-wide
- Deploy Intelligent Transportation Systems (ITS) management program

Transportation Agencies:

- Use the data to determine optimal levels of efficiency for freeways, arterials, and transit;
- Regulate freeway speeds to provide more throughput and reduce emission impacts during peak periods; and
- Activate arterial lanes for transit-only to enhance their carrying capacity and headways for public and private operators.

Event venues, in partnership with public transit agencies:

- Increase service frequency based on event protocols (i.e., number of people, time of day, etc.);
- Provide patrons with shuttle access to and from various locations; and
- Dynamically chart predictable, convenient shuttle routes based on patron's geographic location and real-time transportation system information.

Educational institutions:

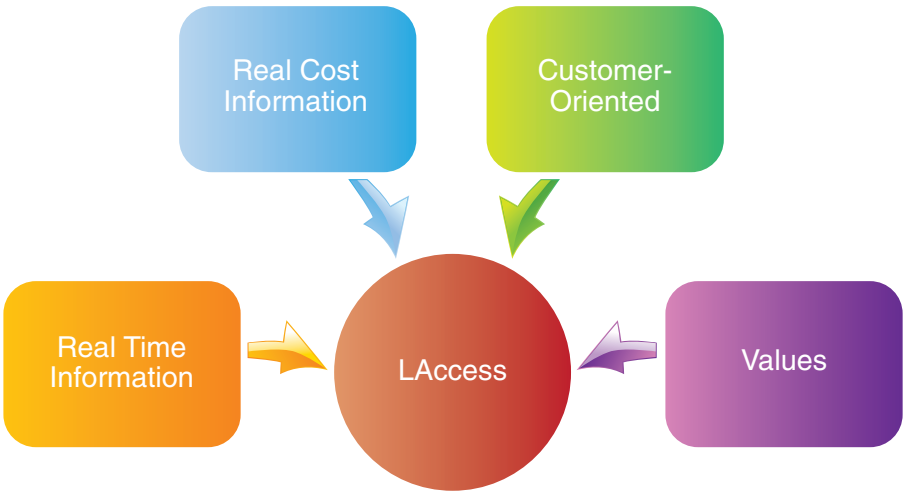
- Deploy and operate shuttles, vanpools, and car share for their employees and students with reliability and enhanced service.

"Accessibility is a measure of the ease of reaching desired services and facilities. It is focused on connecting people to destinations…it should not be confused with mobility, which is the ability to cover distances. While access requires mobility it also requires destinations. Thus a person in a fast car on a smooth, empty highway in the desert would have high mobility but, in the absence of any desirable destinations, would have low access."

— (source: *"Growing Wealthier: Smart Growth, Climate Change and Prosperity"* Chuck Kooshian, Steve Winkelman, Center for Clean Air Policy, January 2011. (Specific cite: Page 15)

The Database

The foundation of a new operating system requires the development of a comprehensive, integrated database for Los Angeles that manages our existing assets, dynamically updates and adds new choices.



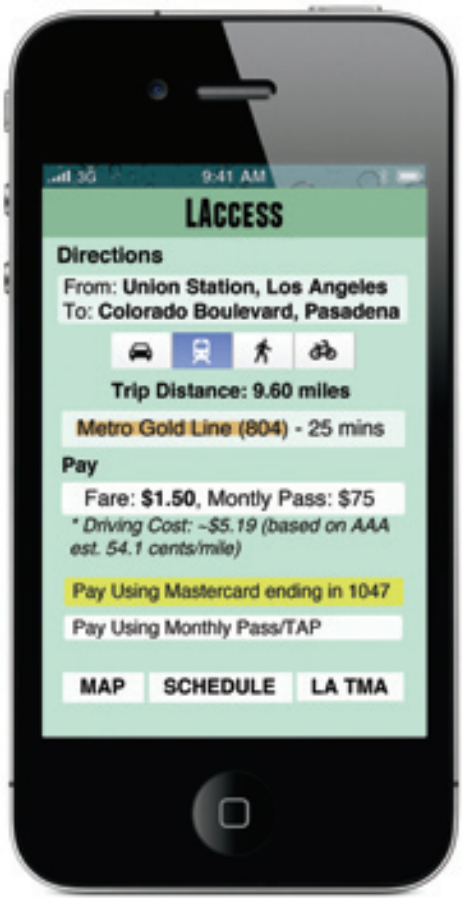
We have large amounts of data on hand today – generated through our regional plans, traffic studies and monitoring systems – to inform and build our transportation operating system.[11] Fiscal constraints have made development of new transportation projects difficult. A modest investment in such an *operating system* would yield immediate improved system performance at a reasonable price.

[11] http://www.infrastructurist.com/2010/06/02/turning-crowded-inefficient-cities-into-smart-cities-the-corporate-way/?ewrd=1

A key benefit of developing an integrated database for improving mobility in Los Angeles comes by serving the access needs of individuals based upon how they work, learn, play and live. The LAccess database will allow millions of people to make a choice from the information provided, and transform our transportation access system. When LAccess is made available to millions of people it will transform our transportation access system. LAccess will empower these people to become *access partners* who have a stake in reliable mobility and whose choices power our vision for the most accessible region in the country.

The fundamental shift to a functional *operating system* is to a *customer* mentality. Within this context, a person could access the transportation database via the Internet, on their interactive television, through their vehicle navigation system or by a phone call. (See side bar)

This database is envisioned to power the LAccess App that a person could conveniently download, set up with personal preferences, and even embed with a credit card to pay for their trip. Choices of service range from solo drive routes to regularly scheduled transit service to demand-based transit service to bicycle access. All of these options provide the customer with price and time comparison based on their preferences.



RECOMMENDATION: ACCESS OPERATING SYSTEM	Create transportation database & deploy LAccess Timing: 18 to 24 months

LAccess

- To reserve a seat on a home-to-work shuttle for a specific time. The person would receive an instant response confirming their reservation, noting the scheduled time and location for pick up, and even sending the person an alert if the window of time for pick-up was to vary from the reservation. *Such a service could be either publicly or privately operated.*
- To check on their options and time it would take to get from Woodland Hills to Culver City. The database would sort through options by user preferences (time, money, mode) and provide a set of options accordingly, enabling the person to make an informed tailor-made travel choice.
- To connect to an event venue with travel options sorted by time, cost, mode, etc.
- To know the time, cost and carbon footprint implications of getting to school by car, train, shuttle, or bicycle.

Transportation Management Associations (TMA)

Vision Los Angeles advocates that all sectors must play a pro-active role in the access operating system. As such, a significant and renewed focus on privately organized and operated TMAs formed within key employment centers, institutional organizations (education, healthcare) and event centers can yield direct benefits for individuals, businesses, and the overall transportation system performance. Where TMAs have been created they have proven to be a powerful employer attraction/retention benefit for employees.

TMAs provide the framework for implementing transportation demand management programs and commuter reduction services. Vision Los Angeles recommends greatly expanding TMAs within employment clusters/centers and to design and deploy TMAs for institutions (i.e., community colleges, universities, healthcare providers, etc.) and major event centers.

A TMA is typically a non-profit, member-controlled organization that provides transportation services in a particular area, such as a commercial district. They consist primarily of area businesses (i.e., Burbank Media District).[12]

The services described below can be contracted to private operators or the public sector. The public sector can compete with the private sector if it re-tools itself to serve customer needs.

Given that roughly 50 percent of all of our region's daily trips occur during an eight-hour period, TMAs should be designed and deployed for more than just employment centers.

Source: UCLA Sustainability

[12] http://www.btmo.org/who/mission.html

It is forecast that between 30 to 40 percent of the projected riders on the new fixed rail transit projects will come from the existing bus system. In some corridors, this extra carrying capacity on buses could be an asset for public transit agencies. Public bus transit could be consolidated and deployed as service tailored to demand and to support TMA transit needs. Economic, education, entertainment and institutional clusters can work cooperatively with existing service and also competitively bid for service to the provider —public or private—that can best serve their needs.

This integration of business clusters with transportation needs creates an environment within which service providers have the opportunity to compete. Enabling such competitive options benefits the Los Angeles economy as it relates directly to the housing+transportation index. It is also good for defining and deploying more transportation options to serve *all* customers in Los Angeles County.

RECOMMENDATION: ACCESS OPERATING SYSTEM

Develop Employment, Educational & Activity Center TMAs regionwide
Timing: 24 to 36 months

Pricing

In any transportation strategy that promotes choice, the automobile is and must be part of the mix. With industry forecasts calling for more electric and electric-hybrid models populating the overall vehicle fleet[13] (up to 10 million such vehicles forecast to be part of the U.S. fleet by 2020), air quality impacts could be greatly reduced. However, congestion would still reign in Los Angeles without a cogent operating system.

The direct costs of transportation impacts travel behavior. When the price of gasoline rose in the summer of 2008, many drivers shared a ride or shifted to transit because it was more economical. Additionally, where parking, insurance, registration and maintenance costs are revealed, travel behavior gravitates to less expensive options. As a baseline, it is important that all travel choices provided through the *LAccess*™ system include the cost to the individual of any given mode of travel (highway, arterial, transit, bicycle, pedestrian).

The playing field should be leveled for all choices and modes of access. The actual cost of operating an automobile per person must be factored into the overall system cost. While Los Angeles has a significantly developed freeway and arterial system of highways, little has been done to operate these systems to maximize efficiency and enable a competitive set of choices for access throughout Los Angeles.

[13] http://www.cleanfleetreport.com/clean-fleet-articles/top-electric-cars-2010/

Congestion Pricing

Los Angeles experiences more than 50 percent of its daily trips in only 30 percent of the day.[14] Most of these trips are by automobile, many of which are on the freeway or arterial system. Part of a competitively balanced and equitable access system would levy some charge for use of the roadway system during peak hours. An equitable access system would recognize that the roads and freeways are not "free" and that there are costs—both direct and indirect—involved in maintenance and operation that are not fully captured through existing gasoline tax funding. Those costs, if born by the users, could and should lead to smarter management of these assets. It could also provide revenues to support other transportation choices such as transit that would simultaneously help reduce congestion, reduce pollution impacts, improve travel reliability, and expand traveler choice *across the entire Los Angeles transportation system.*

This strategy will result in a shift of discretionary trips to non-peak hours or alternative routes with ample capacity. The Vision Los Angeles team supports congestion pricing and looks forward to the results of the pricing program on the I-10 and I-110 freeways. Further, Vision Los Angeles recommends expanding congestion pricing into the overall Los Angeles transportation operating system with a focus on *peak-hour* pricing to be deployed over the next five years.

RECOMMENDATION: ACCESS OPERATING SYSTEM	Expand peak congestion pricing & integrate into LAccess Timing: 12 to 60 months

Parking Pricing

Focusing the same principle of equity on our arterial grid, the existence and price of on street parking directly impacts travel patterns and behavior. The flexibility to operate a high-demand corridor for a variety of modes is compromised due to the location of on street parking during peak hours. Vision Los Angeles supports the approach put forward by *Fixing Angelenos Stuck in Traffic* (FAST) and underpinned by findings of The RAND Corporation that price and timing of such parking impedes the operability of a managed corridor and system.[15] Vision Los Angeles recommends coordinating management of these corridors via operating system for all transportation uses, *including parking, where and when appropriate,* in the choice-based operating system.

Additionally, the option of on-street parking affects individual behavior, in part, because the cost is generally revealed and considered an immediate out-of-pocket cost rather than a sunk cost of automotive travel. Drivers often spend a substantial amount of time cruising for cheap parking without taking the costs of that time into consideration. UCLA Professor Donald Shoup has done extensive research on the parking behavior of drivers in Los Angeles, determining that 30 percent of the congestion in the central business district of Westwood is caused by people seeking inexpensive parking.[16] In contrast, parking that is priced to reflect the true social and material costs involved in creating that parking will make other travel modes more attractive—or at the very least discourage parking for periods longer than needed.

RECOMMENDATION: ACCESS OPERATING SYSTEM	Deploy parking pricing, parking restrictions in mobility corridors & integrate into LAccess Timing: 12 to 24 months

[14] Fehr & Peers

[15] http://www.rand.org/pubs/monographs/MG748/

[16] http://www.uctc.net/access/30/Access%2030%20-%2004%20-%20Crusing%20for%20Parking.pdf

Transit Service Frequency & Fares

Increasing the frequency of transit vehicles makes travel easier and transit use more inviting – and thus, more viable as a customer choice. Decreased headways make commute times shorter and more reliable.

Increased services would serve trips for entertainment and culture (e.g., sporting event, recreation centers, community colleges and university transit frequency). Vision Los Angeles recommends a range of transit service frequency increases – dependent upon geography and type of economic cluster/ activity center – ranging from 30 to 90 percent.

Fares play a key role in the competitiveness of transit, particularly when it can be compared to the overall cost of other options such as operating an automobile by the mile. Sustaining competitive transit fares will be a key variable to be tracked for effectiveness in the regional database (see Appendix for discussion of applicable fare elasticity factor). Vision Los Angeles recommends a range of transit fare approaches, from "no change" in the fare structure and level at today's rates to a 25 percent decrease in transit fares, which would be most aggressive in attracting ridership.

Rapid buses function as an express service by stopping less frequently than standard buses. Rapid buses operate along public streets and may receive priority passage at intersections and along arterials. Rapid buses reach destinations up to 20 percent faster than local service.

RECOMMENDATION: ACCESS OPERATING SYSTEM	Increase transit frequency; stabilize/decrease transit fares Timing: 18 to 60 months

Freeway speed controls can be accomplished through a variety of means

- Reduce speed limit with dynamic speed control.
- Implement variable speed limit ITS system which would adjust the maximum allowable travel speed on a freeway according to congested conditions and impact on both throughput and air quality.
- If congested conditions exist further down the system, speeds would be lowered, thus smoothing out traffic flow, and reducing the "shockwave" effect that typically occurs when vehicles on freeways must suddenly slowdown at congested points.

Results around the world from these deployments have yielded three interesting points:

- Total system throughput increases with overall speed reductions from typical highway speed limits (65 miles per hour), yielding more than 20 percent increases in total vehicle throughput per lane per hour at lower speeds (45 miles per hour);
- Safety increases as a result of decreased speeds;
- Air pollution from automobiles is at optimally low levels when speeds are stabilized at 35 to 55 miles per hour. [17, 18]

Highways & Streets Management Plan

During the 1984 Olympics, the Automated Traffic and Signal Control, or ATSAC, system was rolled out as a way to facilitate surface street movements to and from event venues. ATSAC allowed Los Angeles to utilize the significant capacity provided by the region's street grid in a way that enhanced throughput and reduced delay. The system worked quite well, facilitating the update of this technology to the Adaptive Traffic Control System (ATCS). ATCS operates from information obtained in real-time from loop detectors in roadways to adjust signal green time, and alert transportation professionals of incidents.

Vision Los Angeles recommends integrating the capabilities afforded by ATCS into LAccess (i.e., congestion levels, transit demand, special events, etc.) to yield a more robust and ordered deployment beyond signals and freeway travel time reports.

Freeway Speed Controls

Vehicle speeds impact congestion and air quality. The synergistic "sweet spot" of optimal outcomes for both is between 40 to 45 miles per hour. Specifically, higher speeds require additional fuel and increased space between vehicles for stopping. Regulating speeds during peak periods increases fuel efficiency, reduces emissions and the capacity of the road is better utilized.

RECOMMENDATION: ACCESS OPERATING SYSTEM	Deploy variable freeway, arterial speed control systems regionwide Timing: 24 to 48 months

[17] http://www.uctc.net/access/35/access35.pdf

[18] "Traffic Congestions & Greenhouse Gases", Matthew Barth & Kanook Boriboomsomsin

Freeway Operations

In addition to using ITS and the Vision Los Angeles database to understand when to regulate freeway speeds for optimal reliability and reduced air quality, Vision Los Angeles believes an overall *freeway operating system* can benefit the reliability of the transportation system.

The Los Angeles freeway system was built and improved over a period of decades. Volumes are higher and travel patterns are different than the conditions that the system designers originally anticipated. Additionally, land use patterns have changed over the past 50 years as the region has matured into *multiple centers of employment and activity*.

Vision Los Angeles believes that pilot projects could yield meaningful operating improvements in and around:

- *Employment centers*
- *Universities and colleges*
- *Activity centers (art, culture, recreation, etc.)*

Vision Los Angeles recommends pursuit and implementation of this operational approach – like that developed by the Central City Association and Caltrans through the *Downtown Los Angeles Mobility Partnership* (DLAMP) model, which focuses on mobility to and through the downtown Los Angeles area – as a means of inexpensively and effectively improving overall system reliability. Each sub-region should be the focus of one or more pilot efforts within the same timeframe as noted above under "Freeway Speed Controls"

Vision Los Angeles applauds Caltrans for the use of ITS technology in its test-bed of freeway operations on I-110 at the I-5 north transition road. At this location, Caltrans has deployed lights embedded in the roadway, overhead lighting and freeway information signs to create double-left transition lanes where only one existed for decades.

Arterial System Integration

ITS systems currently control a substantial portion of major signalized intersections throughout Los Angeles County. Coordinating the systems across jurisdictional lines and with other transportation assets – such as the Caltrans ramp metering system – has rarely been pursued or achieved. Vision Los Angeles recommends operating sub-regional systems in a coordinated fashion.

Specifically, the proposed freeway speed controls are coordinated with the operation and speed of adjacent arterial corridors, similar to what has just been deployed in Seattle.[19] These integrated systems are constantly fed into the database, which has the ability to populate back out key information about route, mode and price choices to be made. This initiative is integrated with *Freeway Speed Controls* and *Freeway Operations.*

Flex Transit

Certain corridors in Los Angeles County (e.g., Ventura Boulevard) are equipped with traffic signal coordination with transit vehicles. Signal timing is "tweaked" to the algorithms of the transit schedule to maintain headways to stay on schedule.

Vision Los Angeles recommends utilizing ITS region-wide to support flex transit lanes in key corridors to help operate transit on a dedicated lane basis during peak periods.

Successful ITS-driven operational improvements result from clearly understanding existing and emergent land uses, access patterns and providing reliability to users.

[19] http://www.komonews.com/news/local/105193819.html

Bicycle Access & Safety

Increasing bicycle access and use is an important strategy for Vision Los Angeles. With a Mediterranean climate and a (generally) bicycle-friendly topography, there is no reason that the City of Long Beach's aspiration to be the "…most bicycle friendly urban city in the nation…" cannot be achieved on a region-wide basis.

Bicycling has not been taken seriously enough as a *mode of travel choice* in too many areas of our region. Therefore, integrating the needs of this mode into transportation infrastructure has lagged behind where we need to be.

Vision Los Angeles recommends significant increases in infrastructure for bicycle use as a means of connecting to work, education, and recreation.

RECOMMENDATION: ACCESS OPERATING SYSTEM

Deploy ITS management system for program
Timing: 18 to 48 months

Integrating the ITS technologies will provide:

- Safe management of multiple modes within "complete street" corridors, specifically integrated bicycle lanes, stops, turning movements, etc. While paint is an inexpensive and viable tool for accommodating needed rights of way, loop detectors that integrate lights, signals and lane dividers for bicycles can enhance safety and corridor operation for both motorized and non-motorized trips.

- Flexible technologies to provide added capacity for bicycling (e.g., added bike lane, safety crossings, etc.).

- Way finding and facilities information (i.e., repair, parking, etc.) can be provided for transit, automobiles and bicycles as part of the integrated deployment by the database.

Component: Access Hardware

Los Angeles requires both the *hardware*, or physical infrastructure, and the *software*, the operating system for existing and planned infrastructure, to realize the vision of being the most accessible region in the country. There is much we can and must do to leverage our existing transportation system to yield the outcomes and results we desire. We need to build our physical capacity in a number of areas and modes that lack the infrastructure and/or access services needed to support a thriving economy and quality environment in Los Angeles.

The region's residents have demonstrated support for investing in transportation to complete a regional transit network. Those investments, and more, need to be completed. We need to provide a positive return on our investment by serving people's access needs.

Access Hardware Recommendations

Plan, develop and implement ten additional transit projects – projects listed in Measure R but not included in "30/10" and new projects proposed by Vision Los Angeles – to improve/enhance regional transit connectivity (see Graphic IV-1).

Convert key sub regional Metro Rapid routes to Bus Rapid Transit (BRT).

Expand Metro Rapid services to link employment centers.

Coordinate and deploy public, private shuttle network within and to/from employment, educational and activity centers region-wide.

Develop and implement a "complete streets" pilot strategy

[20] Multiple fixed transit lines identified in the voter-approved Measure R sales tax program would be completed in a ten-year period rather than the thirty-year period identified in the region's long-range transportation plan.

The Regional Transit Network

Central to the Vision Los Angeles strategy is an improved transportation network. The network builds upon the lines and routes that are already planned in LA Metro's Long Range Transportation Plan and Measure R (see Graphic IV-1).

Graphic IV-1 – Vision Los Angeles Transit Network

The *fixed route* transit network recommended by Vision Los Angeles includes:

(Existing/*Planned*/New *)

- Existing Metro Rail network (Red, Blue, Green, Gold lines)
- Existing Bus Rapid Transit Network
- Existing Metrolink routes
- *Planned* Westside Subway Extension to Santa Monica
- *Planned* Westside Subway Extension West Hollywood Spur
- *Planned* Crenshaw Corridor Light Rail
- *Planned* Exposition Light Rail Phase 1[21]
- Planned Exposition Light Rail Phase 2
- *Planned* Gold Line Light Rail Foothill Extension[22]
- *Planned* Green Line Light Rail Extension to LAX
- *Planned* Green Line Light Rail Extension to Southbay Galleria
- *Planned* Santa Ana Branch Light Rail
- *Planned* San Fernando Valley Basin I-405 Transit Connection Light Rail
- *Planned* Orange Line Bus Rapid transit Canoga Extension
- *Planned* San Fernando Valley North/South Rapidway BRT lines on Reseda, Sepulveda, and Van Nuys
- New Harbor Subdivision Light Rail
- New North Hollywood to Metrolink Bus Rapid Transit Connector
- New I-405 Link (Westside to LAX)
- New Harbor Subdivision LRT Connector (South Bay to Long Beach Center/Long Beach Airport)
- New LA Union Station to Bob Hope Airport LRT Connector
- New Katella Avenue Bus Rapid Transit
- New Rosemead Boulevard (SR 19) Bus Rapid Transit
- New SR-134 Transit Corridor: Red Line to Gold Line Transit Connector

* The "new" lines noted above are routes not currently part of existing planned and/or funded improvement sets, but are recommended by Vision Los Angeles to address both the gaps in the existing/planned system, as well as to enhance regional connectivity of our transit system.

[21] Line currently under construction

[22] Line currently under construction

Implementing the Funded Transit Network

We cannot wait 30 years for upgraded and added transit hardware given that funding for a significant portion is already committed. The longer we wait, the more it will cost. Vision Los Angeles fully supports local political, transit, and community leaders'– pursuit of a "30/10" program (now proposed as American Fast Forward).

Completing a large amount of the fixed transit hardware early and under budget saves money, provides competitive choices, and expedites the realization of long-term regional goals. Fixed-route transportation also provides predictability for community investments, ultimately increasing economic development.[23] Implementation of additional fixed transit via the acceleration of our planned 30-year program yields benefits in connectivity and accessibility in our region. Having this in place in the next decade enables the capacity to serve and connect thousands more people to jobs, recreation, and education.

Vision Los Angeles recommends completion of planned Measure R projects as well as "new" fixed-route rail services to close gaps and enhance regional connectivity. These routes include:

- I-405 Link – Light rail from the Westside Subway Extension Wilshire/VA Hospital to the Green Line Aviation station via I-405
- Westside Subway Extension (West Hollywood Spur) – From Hollywood and Highland Station, through West Hollywood to Wilshire/La Cienega Station (as proposed as an option in the Westside Subway Extension project)
- Harbor Subdivision – Light rail from the South Bay Galleria to the Long Beach Transit Mall/Long Beach Airport via the Harbor Subdivision
- Bob Hope Airport Link – Enhanced rail service/new connection from LA Union Station to Burbank Metrolink station at Bob Hope Airport

RECOMMENDATION: ACCESS HARDWARE	Develop, design and implement fixed-route rail service to close system gaps (Westwood to LAX; West Hollywood Spur; South Bay to Long Beach; and Bob Hope Airport to LA Union Station) Timing: 60 to 120 months

[23] http://www.youtube.com/user/lastreetcar

Flex to Fixed

Given the higher cost of fixed route service infrastructure, it is not cost-effective to build multiple new lines or convert large portions of the existing Metro Rapid and express service to a BRT network. However, for certain "gap closures" and for a portion of the existing Metro Rapid service, it may make sense to build and/or convert to BRT.

BRT is an enhanced bus system that uses technology and infrastructure advancements to provide better service than traditional bus service. Traditionally, BRT routes are given a grade separation or priority use of the streets so that higher speeds and greater efficiency can be recognized. A very successful grade-separated BRT was introduced as the San Fernando Valley's Orange Line, which has been traversing the Valley since 2005.[24] Evaluation of the Orange Line found improved traffic flow on Highway 101 running parallel to the bus way and significantly higher speeds for traversing the Valley by transit. The project was also considerably less expensive to build relative to light rail. The Orange Line's success has prompted a four-mile extension to the Canoga Park Metrolink Station to be opened in Summer 2012.

[24] Vincent and Calloway http://www.gobrt.org/BTI_Orange_Line_Jan_23_07.pdf

Vision Los Angeles recommends adding and/or completing the following new BRT lines and converting up to 35 percent of the existing Metro Rapid lines to BRT lines:

- Rosemead Boulevard (SR 19) – running from the Sierra Madre Villa Gold Line Station in Pasadena, east on Colorado, south on Rosemead Boulevard (through where it turns into Lakewood Boulevard) and ending at 2nd Street in Long Beach.
- North Hollywood to Burbank Metrolink – Running from North Hollywood Red Line Station to Burbank Airport Metrolink station via Burbank Boulevard and Hollywood Way.
- Katella Ave BRT – Running from Willow Street Blue Line Station down Willow Street (which turns into Katella Avenue) ending at the Anaheim Metrolink Station.
- SR-134 Transit Corridor – Connecting the Red Line in North Hollywood to the Gold Line in Pasadena via SR-134 right of way.

RECOMMENDATION: ACCESS HARDWARE	Increase BRT region-wide through Metro Rapid conversion, with initial focus on four corridors (San Gabriel Valley to Long Beach; North Hollywood to Bob Hope Airport; Long Beach to Anaheim; and North Hollywood to Pasadena) Timing: 36 to 120 months

Rapid Bus Expansion

Rapid Bus service has proven to be very popular on numerous corridors throughout the region. Metro's existing plans anticipate a Rapid system that serves 400 miles of routing throughout Los Angeles County. Vision Los Angeles recommends expansion of this service by 5 to 15 percent over that proposed system. Specific expansion routes are not endorsed by Vision Los Angeles; however, Metro has been monitoring potential projects and can distinguish viable candidates in the region.

RECOMMENDATION: ACCESS HARDWARE	Expand Metro Rapid service by up to 15% over proposed system expansion. Timing: 18 to 36 months

Area Shuttle Expansion

There are currently numerous circulator shuttles throughout the Los Angeles region. Some are publicly operated, such as Los Angeles' DASH and the Pasadena's ARTS shuttle systems, while others are privately operated, such as the Thomas Properties Group (TPG) shuttles in downtown Los Angeles. All of these systems facilitate travel within specific areas, enabling greater access to housing, businesses, and recreation while simultaneously reducing parking demand and road congestion.

Increased investment and coordination to expand transit provides substantial appeal and a viable option to single-occupant auto travel. Expansion may, in part, be accomplished by deploying existing services to off-peak and underserved venues. As an example, private downtown business shuttles could serve the Fashion Institute of Design & Merchandising (FIDM), Dodger Stadium, Staples Center and other nearby special event venues whose peak demand differs from workday demand.

RECOMMENDATION: ACCESS HARDWARE	Coordinate and deploy public, private shuttle network within and to/from employment, educational, and activity centers region-wide. Timing: 12 to 24 months

Complete streets are ***designed and operated to enable safe access for all users.*** Pedestrians, bicyclists, motorists and transit riders of all ages and abilities must be able to safely move along and across a complete street.

Creating complete streets means transportation agencies must change their orientation toward building primarily for cars. Instituting a complete streets policy ***ensures that transportation agencies routinely design and operate the entire right of way to enable safe access for all users.*** Places with complete streets policies are making sure that their streets and roads work for drivers, transit users, pedestrians, and bicyclists, as well as for older people, children, and people with disabilities."

- National Complete Streets Coalition

Complete Streets: People, Bicycles, Transit & Cars

While updating and expanding parts of our regional transit system is essential for a strong economy and superior environment, we also need to retrofit one of our greatest assets, our arterial street system. An arterial street is one that is developed and used primarily as a thoroughfare for high volumes of traffic rather than to serve adjacent land uses.[25] Los Angeles has almost twice the amount of arterial lane miles of any other region in the country. While these arterial streets may have been originally developed to bring high volumes of vehicles from "point A" to "point B", growth over time has seen significant land uses of all types fill in along these routes throughout Los Angeles County.

Updating some of this arterial system to "complete streets" improves mobility for all modes and enhances the viability of non-automobile travel. It also leverages a key asset in the regional arsenal that is currently underutilized.

Complete streets come in various designs and levels of sophistication. A complete street design can be easily developed for a new roadway. However, modifying an existing right of way within one of our many arterial streets can be achieved as well, (as shown on page 29).

The focus of this initiative will be to identify, develop and deploy an initial " complete streets" pilot program within a sub region to test functionality and better utilize existing carrying capacity for a variety of modes of access.

[25] Bureau of Transportation Statistics

TODAY

TOMORROW

Bicycle Network

Given Los Angeles' mild climate and numerous flat areas, bicycling has vast potential for great use. Consequently Vision Los Angeles recommends significant expansion of bike lane-miles within Los Angeles County. In addition to "complete streets" (see above) and designating roads as bicycle routes and lanes, supporting infrastructure and services such as installing bike racks/storage, shower facilities, and instituting a *bicycle valet* program at employment, entertainment and recreation centers are needed. Cultivating a more bike-friendly environment is both a public and private endeavor.

RECOMMENDATION: ACCESS HARDWARE	Develop and implement a "complete streets" pilot strategy. Timing: 12 to 48 months

Component: Accessible Land Use

Land use has a profound effect on accessibility. Los Angeles is a region neither defined by low-density sprawl nor by vertical high-density. Understanding these dynamics and how they affect travel today enables some immediate-term actions to ease congestion and improve mobility, as well as instruct what longer term changes we need to ensure a sustainable relationship between our land use patterns and our access needs.

These actions need to focus most directly on investing in the economic competitiveness and environmental quality in our region.

Supporting Economy & Environment: Location Efficiency

A key element that impairs accessibility for all Angelenos is the high cost of housing and transportation. The high cost and low supply of housing near employment centers has resulted in a "drive until you qualify" practice to find affordable housing, imposing a burden on our economy and environment. Ultimately, our land use strategies need to be coordinated more closely with our transportation infrastructure, with the bulk of our growth being directed and concentrated within close proximity of the infrastructure that can serve and benefit the people occupying those uses.

Derived from the pioneering and successful Location Efficient Mortgage® project[27],[28], the *Access Efficient Mortgage* is a surgical attraction and retention tool with significant benefits to the employee, the employer and the regional transportation system. The construct and deployment of an *Access Efficient Mortgage* program in Los Angeles is intended neither as a "one size fits all" nor to be universally applied. Vision Los Angeles specifically recommends a focus of this program on key economic clusters, with a cost-benefit analysis of the connection with the cost of employee attraction & retention.

Further, Vision Los Angeles recommends a two-part strategy to align the needs of leading and emergent economic clusters with those of the people that power these economic engines.

In the long-term, our policies and practices need to support reducing the burden of high housing costs coupled with increasing transportation costs.

Accessible Land Use Recommendations

Develop and deploy Access Efficient Mortgage (AEM) pilot programs

Develop and deploy Networked Work Center pilot programs

Integrate projected growth with fixed transit locations via municipal General Plan updates region-wide

[26] The Location Efficient Mortgage® is a service mark owned by the Institute for Location Efficiency.

[27] A joint effort of the Natural Resources Defense Council, the Surface Transportation Policy Project and the Center for Neighborhood Technology

Access Efficient Mortgage (AEM) Program

Vision Los Angeles looked at the effect of investing resources in subsidizing mortgages and rents instead of the price of the housing unit as a strategy that may benefit both employer and employee within certain economic clusters. Additional benefits to the overall operation of the transportation system were also considered. The results of our analysis show that investment of capital into a mortgage/rent assistance revolving fund would have significant benefits to businesses in attracting and retaining its workforce. It would also reduce participants' household transportation costs, meaning more resources for other family needs, such as education or recreation.

The analysis also showed that the benefits to the transportation system in most cases greatly exceeded those of an equal investment in transit hardware. As a measure of effect on the transportation system, Vision Los Angeles compared VMT that would be reduced by the AEM program versus a light rail transit or a BRT investment of the same amount. The results in five test corridors between employment clusters and residential areas averaged 48 percent higher VMT reduction than BRT and a surprising 170 percent higher VMT reduction than light rail transit. (See Technical Appendix Attachment 18).

An AEM program could use privately endowed seed capital to start a revolving fund focused on housing for purchase or rent within a certain close distance of key economic centers within Los Angeles County (e.g., five miles). The AEM program would merely pay the difference between the employee's current monthly housing cost and the cost of housing within the eligible area. Employees/contractors of an eligible business within the economic center volunteer to locate within the AEM area in exchange for an agreement to remain with that employer/industry for a set period of time. Upon the end of that term, if the housing were for purchase, the unit could be sold and the percent amount of assistance provided by the AEM program for the debt would be recouped as part of the sale and deposited into the revolving fund for reuse in the AEM program area.

Such programs already exist in the competitive higher education and healthcare industries. Vision Los Angeles recommends this as a viable strategy to enhance our overall access operating system.

Close monitoring and reporting on the effect of an AEM program will be essential so as not to realize the unintended effect of rising housing costs as a result of subsidized debt in certain specific housing markets.

RECOMMENDATION: ACCESSIBLE LAND USE

Develop and deploy AEM pilot programs linked to key employment sectors/industry clusters.
Timing: 18 to 36 months

Networked Work Centers

Collaborative, secure and connected remote work environments would benefit employees and contractors residing in areas that are not easily connected to the workplace. Networked work centers serve industries that require collaboration such as creative technology design and the many "free agents" who want a professional environment. These facilities can be utilized on a monthly or by-the-hour basis to enable employers to control costs and assess benefits based on productivity.[28]

The strategy goes hand-in-hand with telecommuting, a fact of life in the 21st Century, but goes beyond the isolation, lack of collaboration and lack of support that can be the result of working alone. These centers can function as a "work away from work" facility that offers amenities and services one might find within an established employment centers. For example they may include amenities such as daycare, health club, and mailing services.

RECOMMENDATION: ACCESSIBLE LAND USE	Develop and deploy Networked Work Center pilot programs linked to key employment sectors/industry clusters. Timing: 18 to 36 months

Improving Our Future

Vision Los Angeles suggests that most of our future anticipated growth be aggregated along fixed transit lines and near transit stations. This strategy provides the opportunity to implement a *development-oriented transit* approach whereby growth is supported by a core investment in the transit hardware system. This helps our region essentially *retrofit* the infrastructure-development patterns of investment of the past (i.e., development plus highway/roadway access), thus embedding a new and diverse set of choices for a greater percentage of our population. Specifically, Vision Los Angeles recommends the following approach as part of updating land use plans and programs in the region to benefit and complement a holistic *operating system:*

RECOMMENDATION: ACCESSIBLE LAND USE	Integrate projected growth with fixed transit locations via municipal General Plan updates region-wide. Timing: 18 to 120 months

[28] Daniel Pink defines free agents as the self-employed, independent contractors, and temps that proliferate our employment centers.

Will It Work?

Vision Los Angeles seeks to achieve economic and environmental success for Los Angeles County by focusing on mobility. Critical to developing actual sustainable solutions is the need to understand and define the *problem*. *We define the problem as our region's very high* housing+transportation index. The Vision Los Angeles strategies address this problem through its three integrated solutions sets: *Access Hardware*; *Access Operating System*; and *Accessible Land Use*. These solution sets are pulled together in a holistic operating system and deployed. But will it work?

The model enabled Vision Los Angeles to test the viability of each recommended strategy, measure its effectiveness, and help determine the degree of implementation needed to achieve the best outcome.

Results

Vision Los Angeles' implementation, as measured by Fehr & Peers, results in reductions in the number of automobile trips, VMT, delay, pollutants and GHG emissions.

However, the most significant result is that while *no one strategy alone will solve all our access needs, we have the tools at our disposal to begin immediately to make Los Angeles more* accessible. To reach the level of accessibility that the project aspires to achieve *will require deployment of ALL the strategies recommended in Vision Los Angeles.*

For example, while it would be a wonderful achievement to complete the capital projects suggested in the *Access Hardware* strategies, this alone will not make for an accessible region. The key to the results Fehr & Peers is able to forecast comes from implementing a combined set of the *Access Hardware,* the *Access Operating System* and the *Accessible Land Use* strategies set forth in section 5.[29]

To test the strategies, the Vision Los Angeles consultant team:

1. Developed a *Baseline* against which Vision Los Angeles' recommended actions, projects and policies would be measured.
2. Constructed and ran a Travel Demand Model based on SCAG's model, scaled to Los Angeles County, and inclusive of input from the Vision Los Angeles charettes.
3. Developed a set of performance measures and metrics.
4. Quantified the congestion reduction benefits of the Vision Los Angeles integrated system of project, programs and policies with the *Baseline*.
5. Conducted a pollutant and greenhouse gas emissions (GHG) analysis using the California Air Resources Board's (CARB) 2007 Emissions FACtors (EMFAC2007) model.
6. Developed and ran three test scenarios of varying levels of Vision Los Angeles deployment and/or implementation.

[29] Daniel Pink defines free agents as the self-employed, independent contractors, and temps that proliferate our employment centers.

[29] Examples of Fehr & Peers' measured results of Vision Los Angeles compared to our current forecast trend (i.e., *Baseline*) are detailed in Exhibit 5 and the Technical Appendices, which contain full and detailed results for all specific components.

The Value of Choices

The organizing principle of the Vision Los Angeles operating system is choice. The management of and mechanisms for serving customers must be updated to meet 21st century needs. A functional *operating system* must maximize efficiency by reducing travel time and cost. It must leverage existing assets and develop new options that serve people more effectively by providing them with more effective and relevant choices for access.

The measured outcomes of that improved system of choices in Vision Los Angeles include:

Shorter & Fewer Vehicle Trips

A key indicator of the effect of Vision Los Angeles' approach on the transportation system is in the balancing effect on travel achieved by our strategies. As shown in Table V-1, overall VMT is reduced under all test scenarios (i.e., low, medium, and high). This range of VMT reduction helps to underscore the need to increase the overall operating functionality of our system to achieve even greater balance of mode and route choices.

Indicator	Baseline (Total)	Vision Los Angeles Scenario (Difference from Baseline)		
		Low	Medium	High
Vehicle Trips/VMT				
Daily SOV Trips	8,682,000	-362,500	-682,000	-1,095,500
Cars off the Road	N/A	-135,000	-254,000	-407,500
Daily VMT	69,758,000	-2,007,500	-3,648,000	-5,855,000
Daily VMT Reduced (%)	N/A	-2.90%	-5.20%	-8.40%
% Change in VMT per capita From Existing	+0.08%	-2.80%	-5.10%	-8.30%

Table V-1

Competitive Transit Times

Deployment of the Vision Los Angeles transportation strategies results in transit becoming more competitive with the private automobile in travel time throughout the region. By deploying *flex* transit priority lanes, expanded Metro Rapid and BRT options, and transit-friendly signal priority systems, transit trips are more reliable and less time consuming, making transit a competitive option within an overall improved transportation operating system.

The analyzed change in travel times via transit versus automobile is substantial under Vision Los Angeles compared to our assumed baseline condition and is shown in Table V-2. Note that, in 40 percent of the analyzed travel corridors, transit travel is projected to be more time competitive than automobile travel.

Origin	Destination	Comparison of Transit Travel Time to Auto Travel Time	
		Baseline	Vision Los Angeles
Carson	Hawthorne	224% longer	24% longer
East Los Angeles	Downtown Los Angeles	98% longer	12% longer
Inglewood	Downtown Los Angeles	85% longer	17% shorter
North Hollywood	Westwood	64% longer	39% shorter
Pasadena	Downtown Los Angeles	69% longer	38% longer
Santa Monica	Downtown Los Angeles	57% longer	17% longer
Woodland Hills	Westwood	33% longer	51% shorter

Table V-2

Increased Transit Use

The aggregate impact of increased service frequency, convenience, and an expanded and enhanced system, yields increased boardings. Under current plans for expansion and at the present rate of implementation, transit will have 2,084,500 daily boardings. However a 17 to 35 percent increase above the baseline is feasible with implementation of the above-noted additional strategies. Relative to what is projected under the status quo, this is a dramatic increase, as is noted in Table V-3. Note that the increase of 458,000 boardings shown in the "Medium" scenario is equivalent to *all boardings* made on the rail system of 2008.[30]

Indicator	Baseline (Total)	Vision Los Angeles Scenario (Difference from Baseline)		
		Low	Medium	High
Transit Boardings:				
Daily Transit Boardings	2,084,500	+357,500	+458,000	+726,000
Daily Transit Boardings – Added (%)	N/A	+17%	+22%	+35%

Table V-3

[30] http://www.metro.net/news/pages/ridership-statistics/

Economic Benefits

Implementation of Vision Los Angeles has direct economic impact by yielding reductions in wasted fuel and time, as shown in Table V-4. Improved reliability and reduced delay make business in Los Angeles more efficient for all industries.

Indicator	Baseline (Total)	Vision Los Angeles Scenario (Difference from Baseline)		
		Low	Medium	High
Congestion				
Annual Vehicle Hours of Delay (VHD)	131,903,500	-3,573,000	-7,523,000	-11,927,000
Annual VHD Reduced (%)	N/A	-2.7%	-5.7%	-9.0%
Annual Value of Time	$ 4.74 Billion	-$128.3 Million	-$270.3 Million	-$428.4 Million
Annual Value of Fuel	$752 Million	-$20.4 Million	-$42.9 Million	-$68.1 Million
Total Annual Cost of Congestion	$ 5.49 Billion	-$148.7 Million	-$313.2 Million	-$496.5 Million

Table V-4

Access Efficiency

Vision Los Angeles' *Accessible Land Use* recommendations propose options for Access Efficient Mortgages (AEM) and Networked Work Centers as strategies that can reduce regional trips economically, provide thousands of Angelenos and employers with a significant economic and quality of life benefits, reduced transportation expense, as well as provide for a collective reduction in VMT.

While very clearly not a "one size fits all" approach – and specifically intended to be targeted toward key economic clusters in the Los Angeles region – analytic results show the potential in certain areas of the region to yield positive results that have a cost-benefit well in excess of a similar investment in transportation infrastructure, as shown in Table V-5.

Place of Residence	Place of Work	Daily Commute VMT Saved (AEM)	Daily VMT Saved (LRT)	VMT Saved vs. LRT	% More VMT Savings
Reseda	Burbank	43,752	25,894	17,858	69%
Woodland Hills	Culver City	102,106	25,894	76,212	294%
Altadena	Downtown LA (work) Silver Lake (live)	52,320	25,894	26,426	102%
Palmdale	Burbank	111,834	25,894	85,940	332%

Table V-5

More Access to Jobs

Reducing congestion and offering additional transit options increases the number of jobs accessible by transit throughout the region, as shown in Table V-6. Previously, many jobs were either inaccessible or took longer than 45 minutes to access via transit. This changes under Vision Los Angeles. The reduction in commute time and impact upon the environment is one of the targets of a jobs-housing balance.

Case Study Commute Trip Origin	Additional Jobs Accessible in 30 Minutes via Transit	Additional Jobs Accessible in 45 Minutes via Transit
Carson	1,000	134,000
Inglewood	43,500	222,000
East Los Angeles	3,500	19,500
North Hollywood	77,500	204,000
Pasadena	28,000	45,000
Santa Monica	83,500	171,000
Woodland Hills	0	77,500

Table V-6

Improved Air Quality & Reduced Carbon Footprint

Implementation of Vision Los Angeles results in significant changes in greenhouse gas and pollutant emissions. Table V-7 shows emission reductions compared to the baseline. It also shows the reduction in per capita CO2 emissions compared with existing conditions.

Indicator	Baseline (Total)	Vision Los Angeles Scenario (Difference from Baseline)		
		Low	Medium	High
GHG & Pollutant Emissions (Annual Metric Tons)				
Carbon Dioxide (CO2)	8,336,345.0	-270,195.4	-497.909.5	-790,935.0
Carbon Monoxide (CO)	33,564.6	-1,057.90	-1,937.9	-3,083.60
Oxides of Nitrogen (NOx)	8,701.1	-273.6	-503.6	-802.40
Total Organic Gasses (TOG)	1,842.8	-63.3	-117.5	-185.8
Particulate Matter (PM10)	582.7	-20.0	-37.0	-58.5
Particulate Matter (PM 2.5)	539.5	-18.4	-34.0	-53.8
Diesel Particulate Matter (Diesel PM)	204.0	-6.6	-12.2	-19.4
Sulfur Dioxide (SO2)	107.0	-3.5	-6.4	-10.5
% Reduction in Emissions	N/A	-3.2%	-6.4%	-10.5%
% Reduction in CO2 Emissions per Capita Below Existing Levels	-0.08%	-3.2%	-5.9%	-9.4%

Table V-7

Improved Safety

The changes in travel behavior also improve safety by reducing the number of accidents taking place on local streets and highways, as shown in Table V-8.

Indicator	Baseline (Total)	Vision Los Angeles Scenario (Difference from Baseline)		
		Low	Medium	High
Accidents				
Average Annual Accidents	147,000	-4,200	-7,700	-12,300

Table V-8

Cost

Assigning a price tag to Vision Los Angeles is challenging because variables exist that affect the project costs. Many of the costs and benefits associated with the project are not quantifiable. Vision Los Angeles proposes shifting the approach to new metrics altogether. For example, while public transit operators currently use "farebox return" as one of their metrics, Vision Los Angeles proposes shifting some transit services to private and/or employer-based systems where the metric may be the reduced cost associated with employee attraction/retention for the employer.

There are a number of areas where it is clear that the *Vision Los Angeles* operating system approach can and will have a positive economic impact. For example, and as noted above, the *Vision Los Angeles* operating system yields improved transit travel times that are more competitive with automobile trips, as well as yielding significant increases in transit boardings (Tables V-2 and V-3). For those Angelenos who now have more competitive choices in transit, significant economic savings can be achieved.[31]

Additionally, the *Vision Los Angeles* operating system results in a reduction in vehicle accidents in Los Angeles County, which means significant economic savings. The National Highway Transportation Safety Administration (NHTSA) produced an estimate for the total cost to California for accidents of $20.655 billion in the year 2000.[32] The United States Department of Transportation (USDOT) estimated that there were 2,335,000 car crashes causing fatality, injury and property damage in the United States in 2000.[33] With this information, along with the population in California divided by the United States population in 2000, we can estimate accidents in California. US Census data for 2000 put the US population at 281,421,906[34] and the California population at 33,871,648.[35] This results in a per accident cost of roughly $30,000. Using Caltrans data for highways yields a $46,000 per accident cost in Los Angeles County.[36] Using the more conservative USDOT information, reduced accident costs via the *Vision Los Angeles* operating system can be expressed as follows:

Indicator	Vision Los Angeles Scenario (Difference from Baseline)		
	Low	Medium	High
Accidents			
Average Annual Accidents	-$126,000,000	-$231,000,000	-$369,000,000

Table V-9

[31] American Public Transit Association "Riding Public Transit Saves Individuals $9,242 annually" (2010) http://www.apta.com/mediacenter/pressrelease/2010/Pages/100112 Transit Savings.aspx

[32] NHTSA "The Economic Impact of Motor Vehicle Crashes in 2000" (2002) available at http://www-nrd.nhtsa.dot.gov/Pubs809446.PDF.

[33] USDOT "Fatality Analysis Report System and General Estimating System 2006 Data Summary" (2006) http://www-nrd.nhtsa.dot.gov/Pubs/2006%20DATA%20SUMMARY.PDF

[34] U.S. Census Bureau "Census 2000 Gateway" http://www.census.gov/main/www/cen2000.html

[35] U.S. Census Bureau "Census 2000 Gateway: Census Data for the State of California" http://www.census.gov/census2000/states/ca.html

[36] California Department of Transportation "2008 Collision Data on California State Highways

It would be naïve to ignore the fact that capital projects require funding to build, operate and maintain. However, these costs apply to infrastructure that has been financed and operated in a style that is becoming outdated and insufficient. Vision Los Angeles advocates that projects be funded in more effective ways. Consequently existing cost variables should be used to provide a contextual, general picture, not a cost estimate.

Finally, regular reports and updates should be provided regarding the outcomes of various initiatives, the costs of said initiatives, and the overall effectiveness of its endeavors. The projects that are recommended are the beginning of an on-going process to build the Los Angeles of the future. How these are undertaken, implemented and funded and by which sector will evolve, as will a new set of measurements of effectiveness, dependent upon the target initiative and the funding entity. Overall, Vision Los Angeles moves the paradigm from a focus on *spending* to a focus on *investment*.

Next Steps

No Wrongdoing

The Vision Los Angeles team, first and foremost, respects and supports the work done by our regional transportation agencies in their planning for our region's future. SCAG, Metro and the myriad local municipal transportation departments are all staffed with professional people dedicated to improving access and mobility in the region and in their local cities. Vision Los Angeles is ***not*** supportive of bandying about "what went wrong" for the sake of suggesting that someone or some plan must be flawed in order for us to do it right.

Rather, we all must work together and build upon *what went right* and to improve upon how better to serve people in a thriving economy and quality environment. That is our point of departure for the Vision Los Angeles program. And that underpins our actions going forward.

Pilot Projects

Vision Los Angeles' calls for collective responsibility for success. As such, no one sector (i.e., public) is responsible for Los Angeles' access and mobility success. Rather, all sectors—the private, the public, and the institutional sectors—are responsible for undertaking various initiatives that make good economic sense and are environmentally responsible.

Specific pilot programs within the *Access Operating System, Access Hardware* and *Accessible Land Use* components will be undertaken by these various sectors in locations throughout the region to test, hone and ultimately improve transportation mobility.

Trying Things

As we began this process, the Vision Los Angeles team focused on the examples of where and when transportation mobility in Los Angeles was successful. In both those cases, a series of ideas, strategies and approaches were tried under a series of circumstances. As such, Vision Los Angeles believes it is *essential* to try many versions and approaches of our recommended actions. In trying a variety of approaches as pilots, we can learn what works and what doesn't work, seek constant improvement, and dynamically create our operating system.

"Hope is like a road in the country; there wasn't ever a road, but when many people walk on it, the road comes into existence."

– Lin Yutang

As noted earlier, *success* will be defined by trying things and *failure* will be defined as doing nothing. And with success comes the responsibility to critically evaluate how, where and on what we invest our precious resources. By operating with a focus on people's needs, Vision Los Angeles can realize significant mobility improvements and conserve our resources.

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