

Qualifications for the Bicycle and Pedestrian Master Plan

for



May 3, 2013



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May 2, 2013

James Wagner
INCOG
2 West 2nd, Suite 800
Tulsa, Oklahoma 74103

Re: INCOG Bicycle/Pedestrian Master Plan Statement of Qualifications

Dear Mr. Wagner:

On behalf of LSA Associates, Inc. (LSA), I am pleased to submit this statement of qualifications for your consideration in response to your Request for Qualifications for the INCOG Bicycle/Pedestrian Master Plan.

Our proposed LSA team has been preparing bicycle and pedestrian master plans for almost twenty years in communities throughout the United States. As presented in our qualifications, we believe our team will provide expertise and experience to produce an excellent Bicycle/Pedestrian Master Plan. It is what we do and what we do well

On behalf of LSA Associates, Inc., I want to again thank you for giving us the opportunity to submit our qualifications for this exciting work and look forward to your consideration.

Sincerely,

LSA Associates, Inc.

Ray A. Moe
Managing Principal

LSA ASSOCIATES, INC.

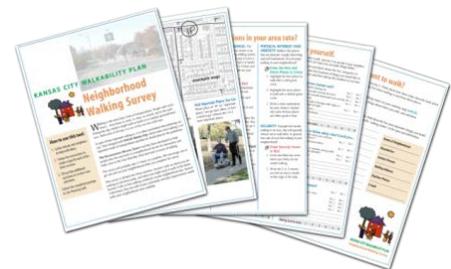
LSA Associates, Inc. (LSA) is a diversified consulting firm specializing in transportation, environmental, and community planning. Owned by its approximately 200 employees, LSA has offered to its client's professional excellence, reliability, and continuity since 1976. Each Principal of the firm is personally responsible for the quality and timeliness of work. Our professionals build long-standing relationships with our clients through sound decision-making, collaboration, and creative solutions. LSA is recognized as an innovator in multi-modal planning and we have developed a reputation among clients and peers as being thorough, innovative, and objective.

The primary focus for LSA's transportation planning unit has been to provide quality technical and planning services for active and multimodal long-range multi-modal transportation plans. We utilize the most comprehensive analysis techniques; and our staff is expert in applying the most modern transportation planning, travel demand modeling and geographic information systems (GIS) software to support our projects.

LSA has been selected three times for national best practices multi-modal transportation plans. We were selected twice for the Institute of Transportation Engineers (ITE) Transportation Planning Council's "Best Practices Plan of the Year Award". In addition, we received the FHWA/FTA Transportation Planning Excellence Award.

LSA has been an innovator in active transportation planning. A brief summary of our work efforts and accomplishments include:

- **Pedestrian Level of Service (LOS):** LSA pioneered the development of the five pedestrian levels of service measurements for directness, continuity, street crossing and visual interest and amenities. These LOS measures have been used by communities throughout the United States for evaluating and planning their pedestrian network.
- **Neighborhood Walking Survey:** LSA has developed procedures for evaluating the pedestrian system at the regional, community, district and neighborhood level. The hands on neighborhood pedestrian assessment survey have been extremely successful and were identified in the Planning Commissions Journal list of top 21 bright ideas to plan our cities.
- **Multi-Modal Corridors:** With a 40% mode split, the City of Boulder wanted to further increase the use of alternative modes to address their transportation needs. This work effort focused on the details of what constitutes a multi-modal corridor, including both the details and design of the bicycle facilities along the corridor with the land use and urban design along the corridor. This project received the Institute of Transportation Engineers' Plan of the Year Award and a DRCOG MetroVision Award.
- **Mobility Report Card:** As a product of the Town of Chapel Hill's Comprehensive Plan, LSA has prepared three Mobility Report Cards that measures bicycle travel and changes to the bicycle



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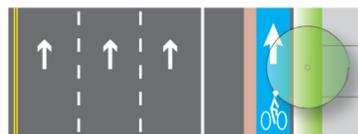
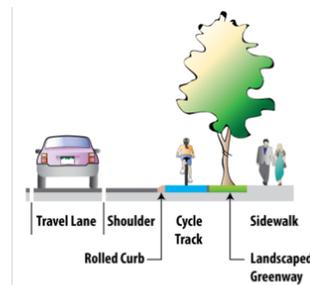
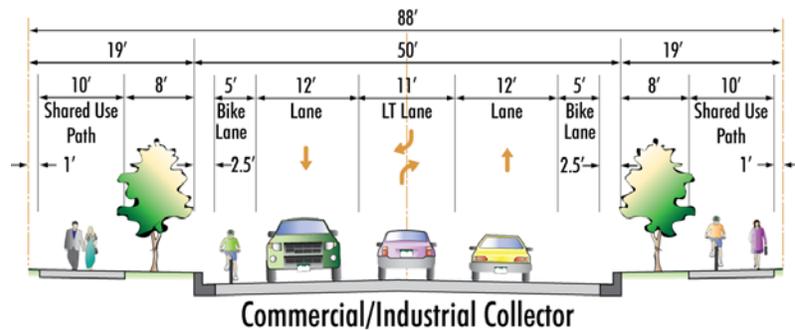
network from which bicycle investments can be evaluated to determine success and refine implementation strategies.



- Bicycle Demand Estimating:** Because traditional travel models do not forecast bicycle trips, we needed a method for determining where potential bicycle trips might occur. A technique that we have developed and used successfully on a number of projects is to assign only the short trips in increments of less than a mile, 1-2 miles, and 2-3 miles. Using bandwidth graphic overlays, the potential bicycle trips stand out and are effective in determining connections and prioritization.

- Pedestrian and Bicycle Transportation Impact Analysis:** Jurisdictions typically have traffic impact analysis guidelines which address vehicle trip impacts. LSA has developed traffic impact guidelines for communities across the United States that incorporates procedures for evaluating pedestrian and bicycle mobility.

- Standards and Guidelines:** LSA has prepared bicycle standards and guidelines for jurisdictions throughout the United States. With each new client, we have been refining and adding new elements that have culminated in a comprehensive list of standards and guidelines that we can share with new clients and that have withstood the scrutiny of traffic engineers, transportation planners, planning commissioners, and city councils across the United States.



REPRESENTATIVE PROJECTS

PIKES PEAK AREA COUNCIL OF GOVERNMENTS REGIONAL NON-MOTORIZED TRANSPORTATION SYSTEM PLAN

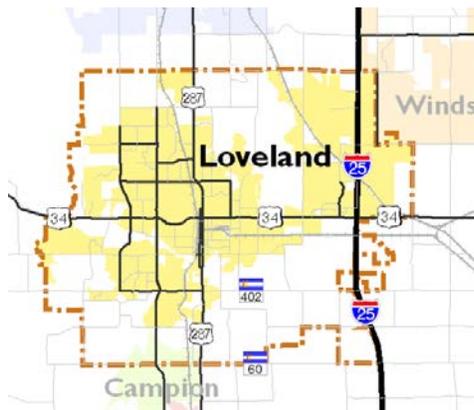
Colorado Springs, Colorado

LSA prepared the Pikes Peak Area Council of Governments (PPACG) Regional Non-Motorized Transportation (Bicycle and Pedestrian) System Plan. This work effort examined existing facilities, identified non-motorized networks, conducted needs assessment, identified design, operations and maintenance standards, and developed an implementation plan. The goal of this plan was to establish a continuous and coordinated regional non-motorized transportation network that will increase the incidence of bicycling and walking, reduce the number of bicycle and pedestrian accidents, injuries, and fatalities, particularly those that involve motorists, encourage organizations with the appropriate interest or authority to improve traffic safety, education and enforcement, promote public awareness and acceptance of non-motorized transportation modes for all destination-oriented trip purposes, and to create a traveling environment in which bicycling and walking are attractive alternatives. One key product of the planning effort was the development of a project selection and prioritization evaluation criteria for selecting bicycle and pedestrian projects. A series of evaluation tiers were developed that pared down all projects to a fundable number of projects.



CITY OF LOVELAND BICYCLE AND PEDESTRIAN PLAN

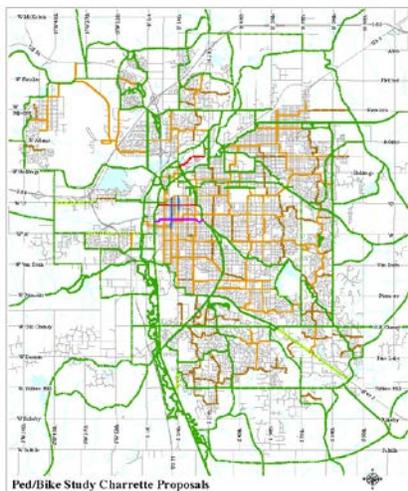
Loveland, Colorado



One of the action items of the City of Loveland's Transportation Master Plan was to develop a focused standalone bicycle and pedestrian plan to address non-motorized transportation demand, mobility for the youth and address safety. LSA was retained by the City and inventoried all bicycle and pedestrian improvements within the City, evaluated those facilities regarding function and condition, and identified gaps to complete the network. An important element of this work effort was the integration of the bicycle and pedestrian plan with the City's Park and Recreation Trails Plan. LSA worked with a bicycle action committee and the public to identify problems and improvements. LSA developed an evaluation process that

ranked and prioritized projects into a top, middle and lower tier.

CITY OF LINCOLN/LANCASTER COUNTY MPO BICYCLE PLAN
Lincoln, Nebraska



LSA recently completed the update to the City of Lincoln/Lancaster County MPO Long Range Transportation Plan. Similar to all MPOs, one of the primary issues has been the lack of future funding to provide all of their capital and maintenance needs for the next thirty years. As part of the outreach, the lack of an integrated bicycle network was identified as the most important new improvement to provide the region for commute bicycling and recreational travel. This was particularly a concern as the roadways did not provide adequate pavement width to accommodate bicycle lanes. LSA worked with an active bicycle committee where they provided a detailed inventory of the entire Lincoln region. Through a series of design charettes the bicycle plan was formed. This bicycle network included a network of lower volume roadways that could provide bicycle routes as a quick and safe bicycle network that could be easily implemented

in the short range.

KANSAS CITY WALKABILITY/PEDESTRIAN PLAN
Kansas City, Missouri



LSA was retained by the City of Kansas City to develop the City's Pedestrian Plan. Pedestrian planning for large cities requires analysis and recommendations at multiple scales. Accordingly, the Pedestrian Plan included the development of methodologies and evaluations of citywide pedestrian demand, development of a mobility index map for the City, and established a consistent pedestrian level of service methodology. On a local level, LSA prepared a self-assessment manual to encourage neighborhood

residents to join in data collection and improvement prioritization efforts. This also included pedestrian standards, procedures for pedestrian evaluations, and both micro and macro level pedestrian mobility goals with specific strategies and actions to prioritize and implement the vision.

DOUGLAS COUNTY 2030 TRANSPORTATION PLAN BICYCLE ELEMENT
Douglas County, Colorado

Douglas County is a rapidly growing county located south of the City of Denver. With a current population of 200,000 and growing to 400,000 by 2030, Douglas County does not have any bicycle facilities other than some occasional trails within some planned communities. LSA prepared the bicycle element as part of the 2030 Multi-Modal Transportation Plan. The bicycle element was developed with a partnership with the Douglas County Bike Club. LSA proved the bike club with maps where members rode each route to determine availability for shoulders and possible use as a bike lane. The plan consisted of an early action 2010 implementation plan where over a 50 miles of bicycle lanes are currently being signed and marked with a rating system similar to ski slopes (Green Circle: Beginners, Blue Square: Intermediate and Black Diamond: Expert).



Phase two, 2020 will include provide critical connections and completion of loops. The long term 2030 plan is to provide shoulders along rural roads as part of road overlay projects.

FORT COLLINS PEDESTRIAN PLAN

Fort Collins, Colorado



LSA staff prepared the Fort Collins Pedestrian Plan, which is part of the overall City Plan process. Key to this work effort was the development of cutting edge pedestrian level of service analysis to evaluate pedestrian mobility via measures of directness, continuity, street crossings, security, and visual amenities. The plan also included specific development requirements for compliance, design standards, policies, and the development of the new pedestrian facilities. The pedestrian level of service methodology was presented to the Institute of Transportation Engineers, and is now being used by numerous communities

across the United States.

OCEANSIDE WALKABLE COMMUNITIES PROJECT

City of Oceanside, California



The intent of Oceanside Walkable Communities Project was to increase the ease of, and broaden the options for, moving about Oceanside's downtown. The downtown had a high level of beachfront activity, but bringing this activity into the downtown area has been challenging. In addition, the dominance of the automobile along downtown roadways has decreased the walkability of the area. The Walkable Communities Plan created an environment that will encourage and allow people, including the young and elderly, to walk comfortably around all parts of the downtown.

CITY OF CHAMPAIGN TRANSPORTATION MASTER PLAN: PEDESTRIAN AND BICYCLE ELEMENTS

City of Champaign

LSA Associates, Inc. prepared the City of Champaign, Illinois Multi-Modal Transportation Master Plan for the City and its growth areas. A critical element of this plan was to address the non-existent bicycle network in this University City and develop a bicycle plan that could quickly be implemented.

Improvements such as sharrows, road diets, and identification of a bicycle grading system all become part of the multimodal vision. The pedestrian element addressed a wide range of pedestrian issues associated with different development periods. LSA's work effort also included the development of land use guidelines and policies to promote multi-modal development and travel, and a multi-modal transportation plan integrated with the proposed mixed use walkable community.

LSA ACTIVE TRANSPORTATION PLANNING STAFF

The LSA staff that will be assigned to this project is presented in the capsule resumes below. These are the same staff members that worked on the example projects previously presented.

RAY A. MOE *Principal*



Mr. Moe is a Principal with LSA and 40 years of experience in comprehensive multimodal transportation planning, non-motorized planning, land use/transportation site design, comprehensive plans, and corridor studies. In 1983, Mr. Moe joined LSA Associates, Inc., where he has directed scores of major long-range multi-modal transportation and vision plans throughout the United States. He has prepared active transportation plans and elements for MPOs and cities throughout the United States. Mr. Moe has introduced concepts such as pedestrian level of service and pedestrian demand analysis. Mr. Moe has developed pedestrian and bicycle transportation impact study guidelines, which analyze a projects pedestrian and bicycle network including directness, continuity, street crossings, visual interest and amenities and security. Ray was the project manager for three multimodal projects which have major pedestrian and bicycle elements that have received national best practices transportation planning awards, including the Institute of Transportation Engineers highest honor twice for the “Best Practices Plan of the Year Award” and the FHWA/FTA Transportation Planning Excellence Award.

SHANNA K. GUILER, AICP *Senior Active Transportation Planner*



Ms. Guiler is an urban, environmental, recreation and trails planner with over 10 years of experience in multimodal active transportation planning, trails planning, parks and open space planning, resource management, and environmental analysis. She is skilled in analyzing data, assessing site conditions, and developing sound management goals and guidelines to assist both public and private entities in achieving desired outcomes. Ms. Guiler has developed best practices in the areas of Complete Streets, bicycle and Pedestrian Mobility, and Land Use/Transportation Integration. She has prepared resource assessment reports and resource inventories, management policies, and design guidelines for various parks, recreation, and open space projects.

JESSICA KRAMER, RLA AND SEGD *Facility Design & Wayfinding*



Jessica Kramer is a Landscape Architect and Community Visioning Specialist with more than 15 years of experience. She specializes in design, planning, and project conceptualization “visioning.” Ms. Kramer has worked on a multitude of streetscape, urban design, and revitalization projects that have successfully integrated within the surrounding environments, while offering a fresh vision. Most of these projects have included public outreach and community workshops, giving her insight into working with stakeholder groups on contextual issues and concerns. Ms. Kramer’s approach to successful

public spaces is to ensure the designs are people-oriented, will function well within their unique context, offer opportunities for flexibility in use, and that such public venues convey a distinct character all their own. Ms. Kramer is a Registered Landscape Architect, experienced in a variety of aspects of computer-driven designs, as well as traditional illustration techniques.

RAVIKUMAR PALAKURTHY

Pedestrian Origins/Destinations, Gap & Barrier Analysis



Mr. Palakurthy is a senior transportation planner with 10 years of experience in travel model development, simulation, multimodal transportation planning and GIS. His professional experience as a transportation planner includes travel demand model development, comprehensive plan preparations, land use forecasting, traffic impact studies, corridor studies, transportation fee programs, and air quality analysis. Mr. Palakurthy is an expert at building the travel demand models and then applying these models in developing performance reports of alternatives and selecting a preferred plan. He has programmed various model performance reporting modules. The performance reporting modules serve as effective and efficient tools in easy testing of various alternatives and lay a technical foundation in the prioritization of transportation alternatives. He is also skilled in the development of visually appealing and readable maps using GIS, presentations and other graphics for communication of information such as travel model results, land use allocation, networks, and trip activity.

KAUSHIK SABBA

GIS, Field Survey, and Bicycle and Pedestrian Analysis



Mr. Sabba is a transportation planner/engineer with 7 years of experience in transportation planning, traffic and safety analysis, travel demand modeling, geographic information systems (GIS) and signal analysis. Mr. Sabba has extensive experience in conducting a wide range of field surveys, including sidewalk and bicycle inventories, summarizing and assessing the data, and creating easy to understand reports and outputs. Kaushik will conduct the field survey for the bicycle inventory and prepare level of service assessments for the bicycle and pedestrian network.

LSA PROJECT UNDERSTANDING AND APPROACH

The Bicycle/Pedestrian Advisory Committee Goals has recommended many lofty goals proposed for the region. These goals include becoming achieving the League of American Bicyclists silver status, reducing accidents by 50 percent, increasing bicycle commuter mode share by 10 fold, dedicating 7% of transportation funding for bicycle and pedestrian mobility and launching a public education campaign.

As lofty as these goals are, they are achievable with a great plan and time. LSA has seen other communities achieve these successes based on plans we have prepared for Boulder, Colorado; Fort Collins, Colorado; Missoula, Montana; Kansas City, Missouri, and Champagne, Illinois. Each of these planning efforts began with the same basic goal to lift the presence of walking and bicycling within the region.

Starting with a good plan, each of these communities have all achieved their initial goals and keep adding even higher and more lofty targets. The City of Boulder experiences a 40 percent mode split with a very active transportation component. Fort Collins started by changing their standards and ordinances to assure future problems would not persist and began chipping away at their older existing problems. Kansas City adopted a traffic impact study review requirement for all new developments to assess how the bicyclist and pedestrian would be accommodated. Champagne passed a local gas tax to fund the accelerated installation of their bicycle network. Missoula, Montana directed what little STPU and CMAQ funds to improving bicycle and pedestrian improvements.



LSA has prepared plans for each of these communities. Each community might take a slightly different path, but the ultimate goal is the same, elevating bicycle and pedestrian mobility. Making strategic and incremental changes beginning today will positively influence the regions culture for bicycling and walking in the future. Preparing these Active Transportation Plans is what LSA does and what we do well.

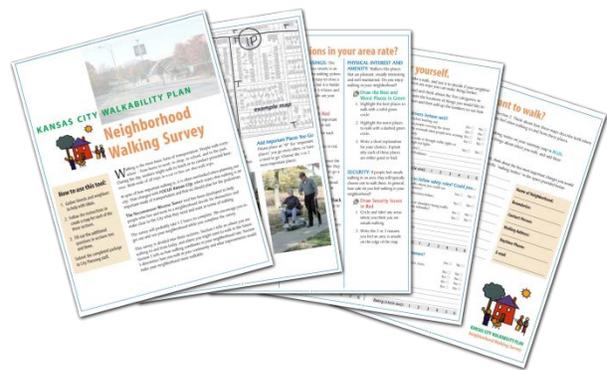
The request from INCOG is to provide a Statement of Qualifications regarding our capabilities in preparing bicycle and pedestrian plans. To this end, we have provided a firm overview, representative projects and capsule resumes of our active transportation planning staff. We also believe it is important to share our approach and some of the technical tools we might use if offered the opportunity to prepare a detailed scope of work. The following therefore presents how an approach might be successful within your region and some tools developed by LSA that could be used to achieve these successes.

Public Involvement

In our experience with bicycle and pedestrian transportation planning from coast to coast, we have consistently found that cyclists and pedestrians are “hands-on” in their approach to citizen participation. They often know the system well and want to share their knowledge by marking on maps and discussing system needs.

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Our approach is to capitalize on this energy and experience. In short, we plan to put cyclists and pedestrians to work gathering data, responding to surveys and helping to weigh the pros and cons of system improvements. It will be important in the development of the plan to go to the people. This public involvement effort will occur in many different ways including a project website and online surveys, stakeholder interviews, working with the local bicycle clubs and attending major bicycle and pedestrian events.



Pedestrian Level of Service

When LSA prepared the City of Fort Collins first pedestrian plan in 1995, we found that there were no available methods to evaluate pedestrian network. Based on some European concepts, LSA developed a simple yet measureable pedestrian level of service evaluation based on five pedestrian principals:

- **Directness** – does the network provide the shortest possible route in the system or are there gaps in the system?
- **Continuity** – are there sidewalks on both sides of the local roadways and arterials?
- **Street Crossings** – can the pedestrian and bicyclist safely cross streets?
- **Visual Interest and Amenities** – is the environment attractive and comfortable to promote bicycle and pedestrian activity?
- **Security** – is the environment secure and well lighted with good line of sight to see the pedestrian and bicyclist?

This initial pedestrian level of service has been used in commutes throughout the United States to evaluate the local, neighborhood, or regional community.



Bicycle Level of Service

The best tool we have found for assessing the quality of the bicycle system is the Bicycle Compatibility Index (BCI) prepared by the FHWA and University of North Carolina. Based on geometrics, traffic operations, parking, and roadside development, they developed a bicycle index where LOS A had an extremely high compatibility index (comfortable for novice riders and families), LOS B, very high (comfortable for occasional riders), LOS C, moderately high (comfortable for the more active riders, LOS D, moderately low (for experienced riders and Level of Serve E, very low and F, extremely low (facilities which should be avoided).

Crash Analysis

One of the B/PAC goals is to reduce fatalities and injuries by 50%. To do this we will need to conduct a thorough crash analysis to identify the type, location, cause and age of the victim. Often members of the public and even decision makers develop an opinion about what might be safe and

Proposal for the Bicycle and Pedestrian Master Plan

not safe. The detailed crash analysis is often a very good tool to eliminate these myths and allow the plan to develop to directly address these safety issues. It should also be noted that it is important to graphically present how traffic volumes, turning vehicles and line of sight impacts safety and will be important in making recommendations for improvement.

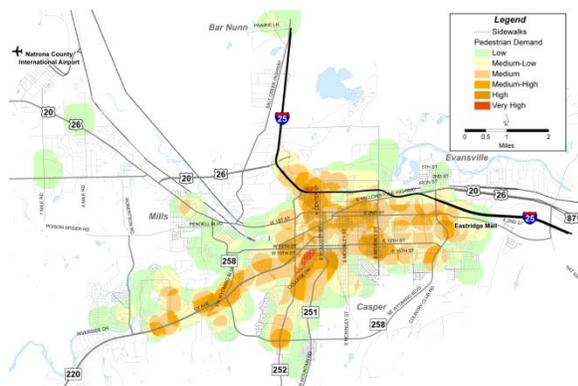
Demand Analysis

Basic questions like where do you want to go and how do you want to get there will require some form of demand analysis. The request for SOQ states that there will need to be some form of survey to assist in determining this demand. We agree and have developed neighborhood and community surveys that will address this request. We have also developed bicycle and pedestrian demand techniques that are analytical and can help determine where this demand is and whether this demand is adequately be provided.

Bicycle Demand: Bicyclists want to ride their bicycles to the same destinations as persons wanting to drive their cars. The difference is distance. Although the likelihood of capturing a trip via a bicycle diminishes over longer distances, a bicyclist might easily ride one, two or three miles if a bicycle facility were available. A method that LSA has developed and have used successfully in a number of planning efforts is the short trip assignment. Using the regional travel demand model, only trips of zero to one-half mile, one-half to one mile, and one to three miles are assigned to the roadway network. Using bandwidth mapping, one can quickly identify potential bicycle demand. If a route with a high potential bicycle demand has restrictions to accommodate a bicycle lane, the bicycle demand map provides guidance for providing alternative routes to serve the same short trip interchanges. Using the BCI as a tool to measure lanes and routes, alternative alignments can be identified and the fabric of bicycle network can be completed.



Pedestrian Demand: Pedestrian demand is a function of trip density and mix of trips, where you have a trip produced and a trip attracted within close proximity to one another. Through the use of the regional travel demand model, it is possible to develop a map that identifies potential high pedestrian demand areas compare to areas with low lower demand. A pedestrian demand indicator can be



based on the travel demand model by traffic analysis zone (TAZ) based on the number of trips produced within the traffic analysis zone, the density of those trips (total trip ends divided by TAZ acreage), and the proportion or mix of trips between trip productions and trip attractions. As an example a TAZ which has a high trip density and a relatively equal proportion of trip productions and attractions will have a potential higher pedestrian demand than a TAZ that has a low trip density and a high proportion of those trips are either productions or attractions.

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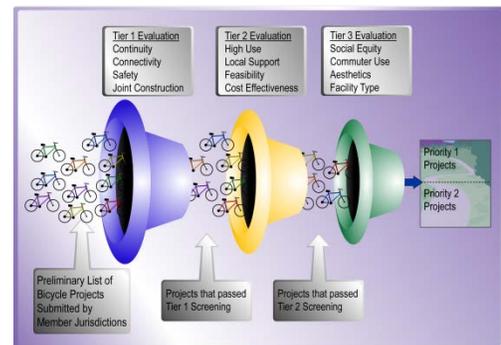
Another tool we use in identifying potential demand areas is through GIS analysis, where destinations such as schools, parks, transit stops, retail centers, etc., are identified and have a one-quarter mile walking buffer added to them. As these layers are added to one another, the potential high pedestrian demand areas begin to emerge.

Best Practices

Over the past 15 to 20 years that LSA has been preparing bicycle and pedestrian plans, we have created a best practices compilation for bicycle and pedestrian improvements continue to update. The objective of providing this product is: 1) to provide a very low cost (because we have already prepared it for other clients) comprehensive compendium of bicycle and pedestrian treatments that staff, the CSC, TAC and public might not be aware of; and 2) it provides the opportunity to begin to think and discuss what solutions or options such as bike boulevards or cycle tracks might be considered when responding to the pedestrian level of service, demand and crash assessment. Providing these Best Practices at public workshops and available on the website will begin the conversation.

Prioritization

Once the bicycle and pedestrian vision plan is developed for the region it will be necessary to evaluate and prioritize projects. Because of the large number of projects that will likely be identified, an approach we have used is to develop a tiered analysis where projects must first pass a basic assessment of need to a second and finally a high priority tier. As an example the first tier might be for a project to providing connectivity, continuity, or mitigation of a known safety concern. If the project passes, then the project can be assessed as to usage, local support, feasibility and cost effectiveness.



Wayfinding

Providing a cohesive Wayfinding system that integrates the region as a whole as well with the surrounding towns, cities, and the surrounding transportation corridors to guide people along key routes and to major destinations in a clear, exciting and navigable way will create a sense of place. The design of engaging a memorable public space is often overlooked in the bicycle and pedestrian planning process but is included in plans developed by LSA. On-street bicycle lanes and off-street trails need to be clearly marked and known to the public to work well.



REFERENCES

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References

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