



PROPOSAL PREPARED FOR THE CITY OF COLUMBUS REDEVELOPMENT COMMISSION

COLUMBUS DOWNTOWN PARKING ANALYSIS

MARCH 29, 2013



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1 TRANSMITTAL LETTER

March 29, 2013

Heather Pope
Redevelopment Director
Columbus Redevelopment Commission
123 Washington Street
Columbus, Indiana 47201-6774

RE: Downtown Parking Analysis for Columbus

Dear Heather,

On behalf of my colleagues at Nelson\Nygaard Consulting Associates, I am pleased to submit this proposal to assist the City of Columbus and the Columbus Redevelopment Commission with a parking analysis to determine how the current and future parking supply can best serve growing development in the downtown area.

Nelson\Nygaard specializes in developing parking plans and management programs that go beyond single-issue parking studies. Our plans focus on creating livable environments, in which we have often found the efficient, fiscally responsible use of parking resources to be a critical component. Our innovative approach to parking management has produced creative solutions for a wide variety of places and been the cornerstone for numerous successful downtown and neighborhood plans. We have helped cement community support for new approaches to parking, and we believe that Columbus is the type of community that stands to gain significantly from an innovative parking management program.

For this Study, we offer our most experienced East Coast parking staff, with **Ralph DeNisco**, as Project Manager, and **Jason Schrieber**, head of Nelson\Nygaard's Parking Team, as Principal-in-Charge. Ralph and Jason each have over 15 years of transportation planning experience, with an emphasis on parking, as the key component to unlocking downtown vitality. Additionally, both have served as municipal transportation officials, with a history of engaging community stakeholders, agency personnel, and elected officials. We have teamed with **Jennifer Pyrz** and **Philip Roth** of Parsons Brinckerhoff in Indianapolis, who have both worked extensively in the Indianapolis area. Jennifer leads the Indianapolis office's traffic engineering team, and Philip recently joined PB after 10 years with the Indianapolis Metropolitan Planning Organization (IMPO). Nelson\Nygaard and PB-Indianapolis are currently working together on a Bus Rapid Transit (BRT) Alternatives Analysis for the IMPO.

Our combined team offers Columbus a unique combination of leading national expertise with a depth of local knowledge. In just the past 10 years, we have executed and prepared dozens of parking analyses for cities, towns, and public agencies of all sizes. Our strengths include:

- The ability to manage accurate and efficient data collection;
- Clear and precise presentation materials and GIS maps;
- Strategies that go beyond just parking and are multi-modal in nature; and

- Analyses to help any audience understand complex parking concepts.

In addition to our renowned experience with parking projects, we bring a project management style that you can trust. To protect ever-constrained public agency resources, our approach is designed to get the job done right the first time. Our key staff consists of veteran project managers committed to producing the highest quality plan on schedule and within budget – each of which is a practitioner who has been in your shoes.

Nelson\Nygaard has been in business for over 20 years and is incorporated in the State of California. Beginning as a small firm in San Francisco, we have built a national reputation for individualized attention to our clients. We currently employ about 75 professionals in seven offices. Because we specialize in parking and transportation demand management, public transit, and multimodal transportation planning, Nelson\Nygaard is able to offer senior staff with uniquely relevant skills and experience at a cost significantly lower than most full-service engineering firms.

Our proposal is submitted in accordance with the terms and conditions outlined in the Request for Proposal (RFP) document. This includes six (6) copies of our proposal. Our proposal will remain in effect for sixty (60) days from the date of submittal, March 29, 2013.

If we can provide any additional information about this proposal, please do not hesitate to let us know. Feel free to contact our proposed Project Manager, Ralph DeNisco at (617) 521-9404, or myself at (415) 284-1544.

We look forward to the opportunity to work with you on this effort.

Sincerely yours,

A handwritten signature in black ink that reads "Paul Jewel". The signature is written in a cursive, flowing style.

Paul Jewel
COO & Principal

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Columbus Redevelopment Commission

Downtown Parking Analysis Proposal



Submitted by
Nelson\Nygaard Consulting Associates
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617-521-9404 FAX 617-521-9409

CONTACT: Ralph DeNisco **TITLE:** Senior Associate
EMAIL: rdenisco@nelsonnygaard.com

2 STATEMENT OF QUALIFICATIONS

2A QUALIFICATION SUMMARY OF THE TEAM

Nelson\Nygaard Consulting Associates Inc.

Nelson\Nygaard Consulting Associates Inc., headquartered in San Francisco, California, is distinguished by its commitment to planning transportation systems and identifying mobility improvements that help build and support vibrant, sustainable communities. A fully multimodal approach, drawn from the real world experiences of industry specialists, is a hallmark of every Nelson\Nygaard project. Covering all modes of transportation, we specialize in parking, transit, transit-oriented development, accessibility and tools that balance the needs of each mode.

Nelson\Nygaard specializes in developing parking plans and management programs that go beyond single-issue parking studies and instead focus on creating livable environments through efficient, fiscally responsible use of parking resources. We are highly experienced in drafting policies, regulatory language and practical implementation plans that set forth successful parking management strategies while understanding the specific needs of a city's administration, advocacy groups, businesses, and residential neighborhoods. Nelson\Nygaard is skilled in helping clients understand the real costs of parking and developing strategies for balancing parking demand with financially feasible levels of supply.

Nelson\Nygaard's innovative approach to parking management has produced creative solutions for a wide variety of places, from major downtowns to national parks, and for clients ranging from public agencies and universities to major private employers. Our advanced on-street parking management plans have been the cornerstone for a number of successful downtown and neighborhood plans that have helped cement community support for new approaches to parking. In doing so, we have been able to help these communities achieve their larger goals for transportation, economic development, and quality of life.

Parsons Brinckerhoff (PB)

Parsons Brinckerhoff is a global consulting engineering firm with a history of excellence that spans more than a century. Founded in 1885, Parsons Brinckerhoff has an established reputation of providing quality services that meet and exceed client needs. PB provides a full range of

engineering, architectural, planning, and construction management services. Parsons Brinckerhoff's success can be attributed to many factors – our commitment to quality, our reputation for technical excellence, the respect of our peers, and most important of all is our positive and service oriented attitude toward our clients. The depth and breadth of our technical expertise combined with our geographic diversity allow us to mobilize our resources to provide clients with efficient services whenever and wherever they are needed.

Since then, Parsons Brinckerhoff has demonstrated its commitment to providing full-service transportation planning and engineering services for Indiana. Parsons Brinckerhoff in Indiana specializes in many aspects of infrastructure planning, design, and construction including transportation planning; highway, road, and bridge design; traffic engineering and signal design; environmental services; construction services; geotechnical engineering, transit services, and wastewater and stormwater management.

The project will be completed from Parsons Brinckerhoff's Indianapolis office. Since opening the Indianapolis office in 1997, we have grown to almost 50 professionals. Growth in design staff has proceeded deliberately, reflecting a focused strategy emphasizing local experience and the right mix of personnel. This strategy has been successful and a core design staff provides superior quality service on any transportation planning, design, and construction project. Parsons Brinckerhoff's commitment to Indiana is demonstrated by the hiring of key senior staff members, experienced engineers, and technicians. The firm will continue to grow by employing competent, skilled individuals from Indiana.

Parsons Brinckerhoff will continue to retain the best professional staff to meet local needs. In addition to providing design services with experienced local staff, Parsons Brinckerhoff will bring the resources of the nation's largest transportation consulting firm to Indiana. This is consistent with the firm's long-standing philosophy of providing local service and national resources to all Parsons Brinckerhoff clients.

2B QUALIFICATION SUMMARY OF STAFF

For complete resumes of project staff, please see Appendix A.

Jason Schrieber, AICP, Principal, Nelson\Nygaard, has nearly 20 years of private and public sector planning experience in the Northeast and nationally, Jason is uniquely qualified to address downtown parking issues with an experienced understanding of municipal needs, private development priorities, and local neighborhood concerns. Jason previously led planning efforts for Cambridge, Massachusetts' municipal parking system with 1500 off-street spaces and 2800 on-street meters while also managing parking regulations for over 20,000 private off-street spaces plus curb regulations citywide. This included setting enforcement policies, payment rates and procedures, valet parking operations, loading zones, metered parking, resident permit parking, etc. Jason also approved parking layouts & garage designs; promulgated safety, slope & sightline guidance; and designed street cross-sections, sidewalks, and curb ramps. Jason now manages downtown planning and parking management projects for Nelson\Nygaard in places like Abu Dhabi UAE, Washington DC, Boston MA, and Denver CO. He is especially skilled at working in smaller downtowns, with recent publicized successes in Lansdale, PA, Salem, MA, and Seaside, FL.



Ralph J. DeNisco, Senior Associate, is the proposed Project Manager for this effort. He has over 14 years of transportation planning experience, with a history of successfully implementing a variety of transportation projects in challenging environments. Working as Project Manager or in providing technical support, Ralph has channeled his understanding of interrelated transportation issues into actions able to win both community and agency support. With 10 years experience as Senior Transportation Planner in the City of Boston's Transportation Department, he has developed City parking policy, implemented new technology, creatively tailored on-street parking regulations, and negotiated parking requirements with developments large and small. He has specialized in working with business, merchant and neighborhood groups on complex parking and transportation issues. Ralph recently completed a parking study in the Newmarket Industrial District in Boston, and is currently working on studies for Boston, MA and Lansdale, PA.



Lisa Jacobson, Associate Project Planner, Nelson\Nygaard, will serve as a planner/analyst for this parking study. Her recent experience focuses on parking management projects, particularly the spatial analysis of location, supply, and demand of on- and off-street parking. She has strong spatial, analytical, and quantitative skills that will contribute to the success of this project. She focuses on comprehensive parking plans throughout the country, where she has become fluent in state-of-the-practice parking technology and parking management structures that balance revenue generation with parking demand and supply. Lisa also focuses on multimodal transportation studies, which encompass best practices for integrating flows among pedestrians, bicyclists, drivers, and transit. Lisa has experience working in places like Kansas City, Greenville SC, and Raleigh NC. Before joining Nelson\Nygaard, Lisa was a fellow with the National Complete Streets Coalition, where she worked on Federal, state, and local policies to encourage street design to incorporate all users, regardless of age and ability.



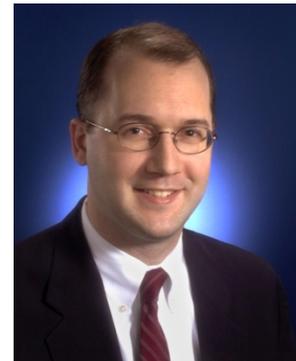
Liza Cohen, Associate, Nelson\Nygaard, supports the firm's expertise in the areas of parking, transit service, and multi-modal planning. Liza has skills in data collection and analysis, GIS mapping, and public outreach. Liza recently completed work on a parking study in Concord, MA, for which she conducted extensive parking counts and facilitated community parking open house dialogue. In addition, Liza helped develop new parking layouts for reverse angled parking in Somerville MA, which has been a great success. She is currently conducting analyses for the ongoing Windsor Center Transit Oriented Development project, including multi-modal street and parking conditions. Liza received her Masters in City Planning from the University of Pennsylvania.



Jennifer Pyrz, PB, leads the traffic engineering team for the Indianapolis office of Parsons Brinckerhoff. She is a supervising civil engineer with experience managing and conducting technical work on a variety of projects ranging from transit architecture and facility upgrades (HVAC, lighting, plumbing) and multimodal planning to environmental analyses and traditional traffic analysis. Jennifer has traffic engineering and transportation planning experience on traffic impact studies, traffic forecasting, parking studies, transit studies, transportation plans, traffic analyses, operational analyses, and safety audits. Jennifer's relevant experience includes technical and public input tasks on numerous parking studies and multimodal studies, including the current Red Line Study for the Indianapolis MPO, a transit Alternatives Analysis with significant stakeholder outreach for which she is project manager, responsible for, among other things, collecting input through variety of formats.



Philip Roth, PB, is a Supervising Planner who recently joined Parsons Brinckerhoff after serving for 10 years with the Indianapolis Metropolitan Planning Organization (IMPO), including eight years as Assistant Director. He also is an adjunct faculty member at the Indiana University-Purdue University Indianapolis, where he lectures on transportation and urban geography. His primary experience is in long-range transportation planning and all its components, including performance management, travel demand forecasting, stakeholder and public outreach. His prior experience includes planning positions in both the public and private sectors. He works in TransCAD travel demand software, and is experienced with ArcGIS, R and SPSS.



Ericka Miller is a lead engineer and project manager in PB's Indianapolis office. Her experience in traffic engineering and transportation planning projects includes work on parking studies, Safe Routes to School planning studies, and traffic analyses to support projects of all sizes. Her work leading and conducting intersection and corridor safety analyses is well-regarded by both the Indianapolis MPO and INDOT. Ericka's experience is well-rounded and includes work on all phases of projects, from data collection, to project documentation, to identification of recommendations and / or mitigation measures.



2C DESCRIPTION OF SIMILAR PROJECTS

For a comprehensive list and description of similar projects and references, please see Appendix B.

3 PROJECT APPROACH

3A SCOPE OF WORK

Columbus is successful because it has the attractions, businesses and recreational opportunities that many communities across the nation strive to attract and attain. Historic attractions, thriving retail, quality restaurants and lively public artwork, architecture, and culture have helped to shape the City's identity as a regional attraction and center for employment. These amenities and place-making characteristics attract both locals and visitors seeking to enjoy all that Columbus' great downtown, active main streets, and historic spaces have to offer. Behind the growing success of this cultural hub are the City of Columbus and the Redevelopment Commission. Both have worked extensively to maintain and support this local asset by actively enhancing the downtown pedestrian environment and creating opportunities for to support mixed-use development. Their efforts have not gone unnoticed.

However, as local growth and development efforts have advanced, so has the need for a comprehensive evaluation and plan for parking in Columbus. The City and Redevelopment Commission have recognized that in order to create and maintain an attractive and vibrant downtown center, parking policies and practices must be in tandem with broader goals for the downtown district and address the realistic needs of locals and visitors. An effective parking management plan that helps to strategically maximize existing parking assets, without compromising the character of the downtown will only help to support the downtown's long-term success.

The Parking Analysis for Downtown Columbus is intended to be a complete analysis that not only looks at today's parking patterns but those of the City's future as well. Thus, not only are current parking supplies, utilization patterns, and trends important; land use and potential future development are integral to the study. The main identified objectives of this effort are to:

- Analyze and identify existing parking trends and regulations,
- Identify concerns of current business owners and downtown stakeholders;
- Develop short and long-term strategies and improvements for parking and way-finding; and
- Evaluate the need and potential for additional parking supply.

Nelson\Nygaard helps communities realize that consensus about parking is a lot closer than many think. Smart communities and stakeholders realize that parking is a tool for economic development, not an end in itself. For business owners and developers, they understand that customer availability is an essential component to economic vitality, and means to ensure that on-street spaces are available – as well as easy-to-access off-street parking – is of utmost importance. Motorists are all motivated to find the “best deal”, and customers all want to park out front. To varying degrees, all users are more or less likely to park further away, use another mode of transportation, or walk between nearby destinations, depending on how demand is influenced.

With the right incentives, parking can be utilized very efficiently, helping to reduce the number of spaces needed on any individual site. Ultimately, parking is about economic development, and Columbus's businesses, property owners, residents and visitors stand to gain by managing parking demand and supply smartly in a shared manner that reinforces the entirety of its business districts – not just individual parcels.

Approach

Nelson\Nygaard has helped communities throughout the United States analyze and successfully implement parking policies and operational programs. We have accomplished this through the development of innovative parking management and pricing strategies that are intelligently balanced by Transportation Demand Management (TDM) policies, commuter information and outreach programs, and wise investments in alternative transportation infrastructure.

Staff

For this Study, we offer our most experienced East Coast parking staff, with **Ralph DeNisco** as Project Manager, and **Jason Schrieber**, head of Nelson\Nygaard's Parking Team as Principal-in-Charge. Jason has nearly 20 years of transportation planning experience, with an emphasis on parking as the key component to unlocking downtown vitality. Ralph and Jason each have over 15 years of transportation planning experience, with an emphasis on parking, as the key component to unlocking downtown vitality. Additionally, both have served as municipal transportation officials, with a history of engaging community stakeholders, agency personnel, and elected officials. We have teamed with **Jennifer Pyrz** and **Philip Roth** of Parsons Brinckerhoff in Indianapolis, who have both worked extensively in the Indianapolis area. Jennifer leads the Indianapolis office's traffic engineering team, and Philip recently joined PB after 10 years with the Indianapolis Metropolitan Planning Organization (IMPO). Nelson\Nygaard and PB-Indianapolis are currently working together on a Bus Rapid Transit (BRT) Alternatives Analysis for the IMPO.

Team

Our combined team offers Columbus a unique combination of leading national expertise with a depth of local knowledge. The Nelson\Nygaard team can not only develop a high level analysis of parking conditions, but also will provide the details necessary to plan for the future, bringing experience from parking work all over the country. Parsons Brinckerhoff brings the knowledge of the local context of Columbus, plus regional experience on similar parking study efforts. Rather than propose rigid "one-size-fits-all" strategies, our team will develop recommendations for the downtown business district that are tailored to the unique local conditions of this and surrounding neighborhoods. Our strengths include the ability to make exceptionally clear and precise presentation materials, GIS maps, and brochures that are tailored to make any audience understand complex transportation concepts.

Coordination with City and Redevelopment Commission Staff

Our approach further involves close coordination with City and Redevelopment Commission staff early on and throughout the project in order to clearly define project priorities, mission-critical tasks, and deadlines. The following work plan generally describes our methodology for this effort. Our team will be available for public and interagency meetings as described in the Tasks below, and we will ultimately follow the direction of City and Redevelopment Commission staff to outline the process. Our budget includes attendance at meetings by Nelson\Nygaard staff, including the Project Manager and/or Principal-in-Charge.

Summary of Services

Nelson\Nygaard's approach for Columbus' downtown parking analysis draws upon our understanding of best practices in parking management and technologies from around the United

States to develop proven solutions that work. In the subsequent List of Tasks, we have elaborated on the Responsibilities as listed in the RFP and included product examples from parking studies we have recently completed. We remain committed to addressing every listed item within the context of our work program.

The proposed tasks are listed with all proposed Memoranda and Deliverables. Unless otherwise requested by the City and Redevelopment Commission, we propose to provide all interim work products in PDF format. We will produce a single draft of all Technical Memoranda/Deliverables and will incorporate feedback into a final version of each Memoranda based on a single set of non-conflicting comments. All electronic files will be provided to the City and Redevelopment Commission.

3B LIST OF TASKS

PROJECT INITIATION

The team will convene a kick-off meeting with City and Redevelopment Commission staff and other key stakeholders to confirm project goals and refine the proposed work plan and schedule. This meeting will also provide an opportunity to identify available data relevant to Columbus' parking and transportation infrastructure. In particular, this meeting will allow the team to review existing policies and practices, including zoning, enforcement, development standards, and administrative authority. Before collecting data and speaking to stakeholders, our team will seek to identify:

- What is the City's current vision for parking?
- What purposes does parking serve today?
- What are the tensions among users' various goals?

During the kick-off meeting, our team will confirm the exact streets and area to be included in the study.

Deliverables	Final Project Scope
	Study Area Boundaries
	Schedule
	Study Goals

TASK 1 – EXISTING PARKING CONDITIONS AND RECOMMENDATIONS

Task 1 is the most comprehensive task of this RFP, because a complete understanding of parking demand and the factors driving demand is essential to a coherent and cost-effective parking program. This task focuses on collecting as much existing use information as is necessary to determine current parking conditions, and this data will be used in Task 2 to evaluate future needs.

Some of the relevant questions that we will be trying to answer during this initial analysis of Columbus' existing parking conditions include:

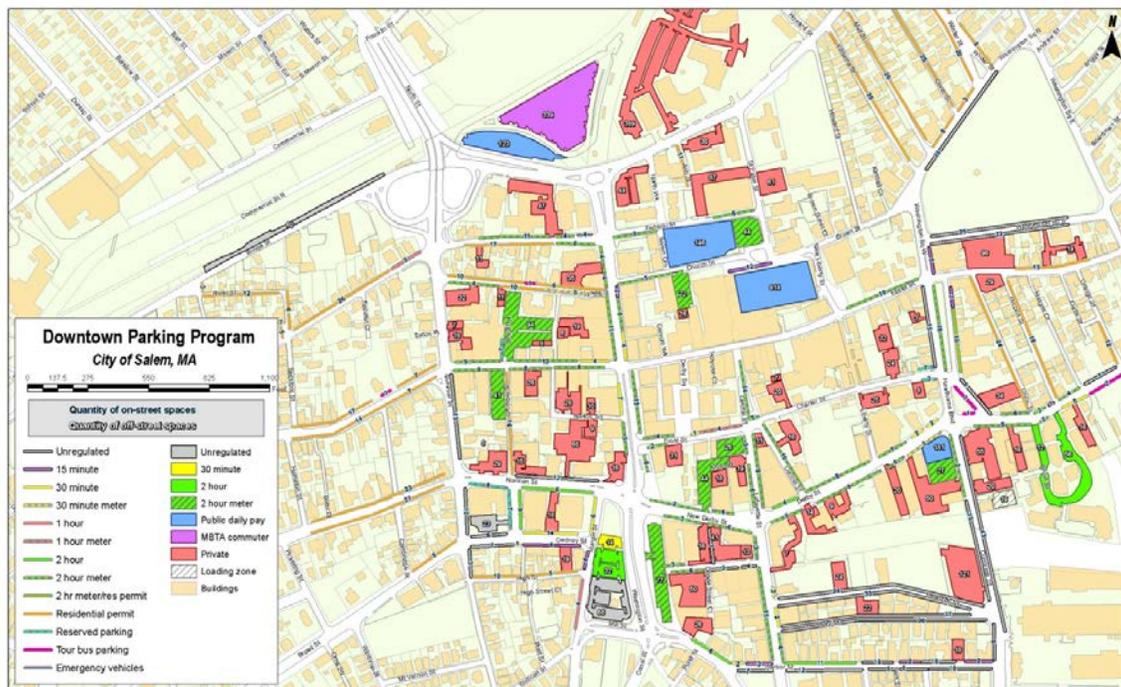
- To what extent are parking locations being set aside for residents, commuters, visitors, shoppers, deliveries, persons with disabilities and other uses?

- There may be a big difference between perceived parking availability and actual availability. How can we help stakeholders understand the actual dynamics of parking in a given area and assist motorists to find a convenient space as easily as possible?
- How can the unique parking demand during events or on weekends be managed efficiently? These events may set the driver's perception of parking deficits, when in reality the year-round condition is much less congested.
- How does current parking management affect congestion management downtown? What is the upper limit for effective parking supply relative to land use and development, and where should this parking be located in order to minimize traffic impacts?

To answer these questions, the team will perform the following subtasks. These subtasks include all tasks outlined in the RFP:

1.1 Identify and Map Existing Conditions

Utilizing our in-house Geographic Information Systems (GIS) skills and experience at preparing detailed parking inventories, the team will prepare a parking inventory database and maps of all public on-street spaces and off-street parking facilities located within the study area. We are also able to capture up to ten (10) significant private off-street parking facilities. We will utilize any existing GIS inventory, and supplement with aerial images, existing land use information, and finally thorough field observations. We will then prepare a final inventory database with maps of off-street lots and on-street locations by block face. Database and maps will include the number of spaces and be categorized based on, among other things, regulations, permits, enforcement period, special use restrictions, and price.



Upon completion of this subtask, the team will have compiled at a minimum:

- A complete inventory of publicly-owned on- and off-street (lots and garages) spaces, plus up to ten (10) privately-owned parking spaces within the study area. Spaces will be identified by potential use, e.g. those available to the general public (on- and off-street) and restricted for special uses or a limited population (special parking zones, loading zones, persons with disabilities spaces, pick-up/drop-off, etc.)
- Clear and comprehensive mapping of existing parking locations and quantity of public off-street supply and on-street supply, plus limited private parking supply.

1.2 *Parking Utilization and Turnover*

The team will conduct field surveys of parking accumulation and utilization for all identified publicly and privately owned parking lots and all on-street parking within the study area. These surveys will establish the peak daily parking accumulation and daily utilization for the study area's parking. Surveys will be conducted every two hours for 10-12 hour periods on one (1) weekday (Tuesday, Wednesday or Thursday) and one (1) Saturday.

A more intensive parking turnover analysis, tracking length of stay and number of vehicles in a given time period, will be assessed during the peak periods on each of the data collection days. Turnover will be collected on up to five (5) key block faces, identified as key focus areas during the kick-off meeting.

Upon completion of this subtask, the team will have compiled at a minimum:

- Daily peak accumulation and occupancy counts and estimates for publicly-accessible parking spaces during at least six time periods – weekday morning, weekday daytime, weekday evening, Saturday morning, Saturday daytime, and Saturday evening
- Length of stay / turnover data for up to two (2) time periods at up to five (5) key locations
- Categorization of parking supply by time period (short and long term), including duration of stays where available and parking utilization rates

Our team will develop detailed maps of parking supply versus utilization for downtown Columbus to identify patterns of use over time and space.



Parking Patterns by Time Period
Source: Columbus Center Parking Study

1.3 Evaluate Pedestrian Traffic Patterns

Connectivity between parking locations and destinations in downtown Columbus is of utmost importance. Columbus is a wonderful place to walk, with many downtown destinations under a five-minute walk from each other. With wonderful building rehabilitation, park, and public plaza projects, the City will continue to improve the pedestrian environment through improved sidewalks, streetscaping, and crosswalks. These improvements are critical for motorists seeking to park in Columbus, because every motorist becomes a pedestrian upon exiting the car. In places where the pedestrian environment is lacking or connections to other downtown destinations are difficult, parking is less desirable.

The team will evaluate how a parker would access destinations from parking locations throughout the City on foot. This will include the identification of specific barriers to walking such as lack of street furniture, incomplete or inadequate sidewalk networks, and lengthy intersection crossings.



Crosswalk Analysis and Suggested Improvements
Source: Natick Center Parking Strategy

1.4 Review Current Way-Finding System

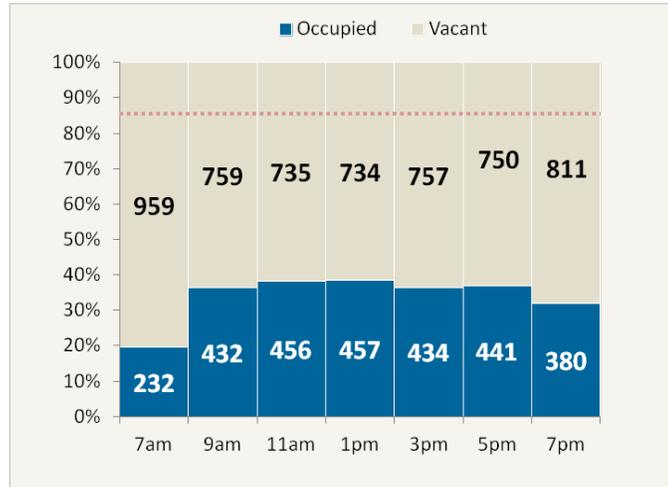
An analysis of the existing signage will be conducted to identify strengths and deficiencies in the signage system. The team will recommend signage and way-finding best practices. Signage recommendations will be developed in Task 2 and will aim to create the most suitable directional, easy-to-understand, and informational way-finding system for different user types.

The field evaluation of signage conditions will occur in conjunction with the evaluation of parking location conditions in Task 1.1, to make the most efficient use of staff time. A set of criteria for evaluation of signage will be developed together with the client and team, and are likely to include location, consistency, clarity, effectiveness, and enforceability.



1.5 Evaluate/Analyze Current Parking Demands

Parking utilization rates and patterns will be analyzed to assess the capacity for the existing supply to meet current demand. The analysis will evaluate systemwide demand as well as subgroups such as public parking lots, garages, employee spaces, identified private lots, on-street three-hour time-limited spaces. Data by user groups (visitors, employees, residents) will be tabulated to understand behaviors and trends among particular population subsets. Charts will be created to represent the dynamics of the supply and demand relationship throughout the day and throughout the study area, by the different facility types, and by user groups.

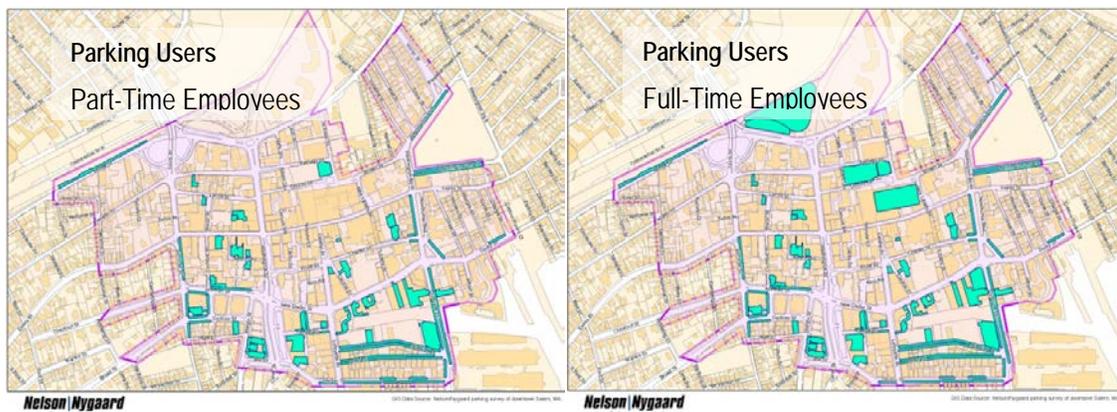


On-Street Parking Utilization and Supply
Source: Columbus, MA Parking Study

Parking serves an accessibility function only when legal, convenient spaces are available. Tracking the number of available spaces at any given time is therefore the primary measure of the extent to which supply meets demand. Parking efficiency is best measured based on the consistency of available spaces — a few, but not too many, in all places at all times. For instance, with on-street parking, such a target should be 15% availability, which results in roughly 1 to 2 empty spaces on a typical block face at all times.

Identifying Parking Location Preferences

Based on data from the parking inventory (Task 1.1) and utilization survey (Task 1.2/1.5), and the user survey and stakeholder interviews (Task 1.7 below), the team will generate an area-wide parking profile that, among other things, outlines parking preferences. For instance, mapping parking areas for full-time/part-time employees, residents, and customers can make clear distinctions between parking preferences evident.



Distinctions between Parking Preferences by User Group
Source: Salem Comprehensive Parking Study

1.6 *Parking Zoning Requirements*

The team will analyze the City's existing zoning regulations. The team will make recommendations on how development controls such as minimum parking requirements can be updated to ensure adequate off-site parking is provided for new development while also encouraging economic development and investment in the downtown area. This analysis will use our experience with evaluating the parking systems in comparable towns to consider the impacts of Columbus' existing regulations and how they could be changed. Regulations to consider include:

- Parking minimums
- Parking maximums
- Mixed-use or shared parking requirements
- In-lieu fees
- Design standards, including access lanes, stall dimensions, aisle widths, sight-lines, screening, bicycle parking standards, landscaping, accessibility, etc.
- Development review standards
- Leased parking requirements
- Ground-floor or screening use mixes

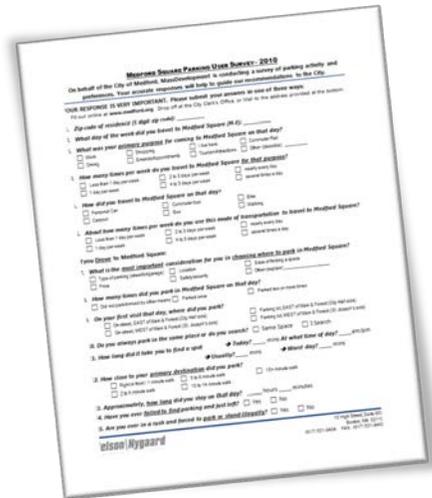
1.7 *Parking User Surveys, Interviews and Meeting*

User Surveys

Nelson\Nygaard understands that just parking utilization and other transportation data does not tell the whole story of the parking situation in a downtown: hearing from employers and their employees on the day-to-day and seasonal issues helps to paint a more complete picture. Hearing first-hand why parking works in some parts of town, does not work in others, what signage is confusing, whether or not time-limits impact behavior, etc. can substantially help determine how Columbus' parking functions.

To gain a better understanding of employee, employer, and customer behaviors and needs in Columbus, the consultant team will work with City and Redevelopment Commission staff to develop a simple questionnaire to be administered to as many downtown business owners and employees as possible. The team will work to determine the best methods for distributing and collecting this survey data.

The team recommends supplementing these more targeted surveys with an online user survey, accessible from the City's website, City email lists, local employers, and/or other sources as identified by the team. The survey's website will be prominently included on any leave-behind



Sample Survey

Source: Medford Square Parking Garage Feasibility Study

surveys. Information collected from surveys will be used to identify use patterns, perceptions of the Columbus parking system, and the potential willingness to accept changes. An online format allows respondents to be anonymous and candid, without being influenced by others in the room during in-person interviews.

These surveys will address the following end-user issues:

- Demographic information
- Parking location
- Parking location preference
- Reasons influencing location selection
- Distance traveled
- Final destination
- Length of stay
- Purpose of visit
- User type (retail employee, service customer, office employee, etc.)
- Perception of parking availability
- Perception of parking costs & price sensitivity
- Awareness of alternate parking locations
- Use of alternate parking locations
- Conditions for use of alternate parking locations
- Awareness of alternate mode options
- Use of alternate mode options



Sample Survey Results
Source: Columbus Center Parking Study

Stakeholder Interviews

To help inform the project, the team will conduct up to ten (10) in-person or phone interviews with stakeholders, including key property owners, developers, employers, small business owners, neighborhood groups, etc., as well as City and Redevelopment Commission staff. Specific interviewees, or “key stakeholders”, will be identified by the City and Redevelopment Commission staff with input from the project team. These interviews will provide a forum to gather input on project topics, uncover potential project challenges, and convey accurate project information.

Charrette-Style Workshop on Parking Issues

The team will lead one (1) widely advertised public meeting, which will be led as a charrette-style workshop. At this meeting, we will invite participants to share their concerns, needs, and issues with visiting and parking in Columbus. The meeting will allow the team to gain an understanding of parking perceptions and concerns from a wide range of users. Though the actual format of the

public outreach is something to be worked out during the kick-off meeting, this format provides the public with the ability to participate in the study process from early on. This provides the City with a process that builds support among the citizen body, garnering public promotion for any recommended changes resulting from the study.



As noted in the Project Schedule, this workshop will occur before the parking utilization is underway, but after the parking inventory is complete. Participants will understand and be able to discuss the study area and initial results from the online survey and stakeholder interviews, and submit input and comments on parking issues in the downtown.

1.8 *Recommendations*

This subtask will make recommendations that will address ways to maximize the City's existing parking resources. This will include both supply and demand strategies. Nelson\Nygaard is a national expert in creative, affordable solutions that take full advantage of existing parking supply and other strategies to allow for continued growth of the downtown while avoiding construction of expensive garages until absolutely necessary.

Balancing the needs of all users is essential to successful parking management. Revised regulations may include a range of residential and employee parking permits and boundaries and a variety of pricing strategies for on and off-street public parking spaces. The team will draw upon its experience studying and developing parking management programs around the country to identify the best solutions for Columbus. Our recommendations will focus on implementing sound management strategies for off-street facilities and on-street parking. These strategies or suites of strategies will consider the following elements:

- **Advanced parking technologies**, such as pay stations, electronic occupancy signs, cell-phone enabled occupancy and payment information, etc.
- **Optimization of existing spaces**, including signing, wayfinding and real-time information about parking availability.
- **Pricing strategies**, including employee parking pricing, unbundling residential parking costs, parking cash out, leasing of private spaces, graduated parking rates, on-street meters, etc.
- **Parking regulation strategies**, including refined minimum and maximum parking requirements, shared parking, changes to on-street time-limits, and parking benefit districts.
- **Phased supply strategies**, such as those that utilize zoning and financial incentives to maximize public-private partnering in the phased development of new parking capacity.
- **Bicycle facility strategies**, including and not limited to rack placement, rack type, short and long term parking needs, and access by cyclists.

The team will also create and provide an inventory of various parking technology products to illustrate the variety and their relative strengths and weaknesses. Technologies to review may include: multi-space meters (e.g. pay and display, pay by space, or pay by license plate), electronic

single-space meters, in-car parking meters, etc. In addition, the team will determine which technologies and practices might be applicable in the City's on-street parking environments and which ones work best with City-owned parking lots and garages.



The team will explore several creative supply-side strategies to help maximize the parking areas that exist today. Strategies that could be used include:

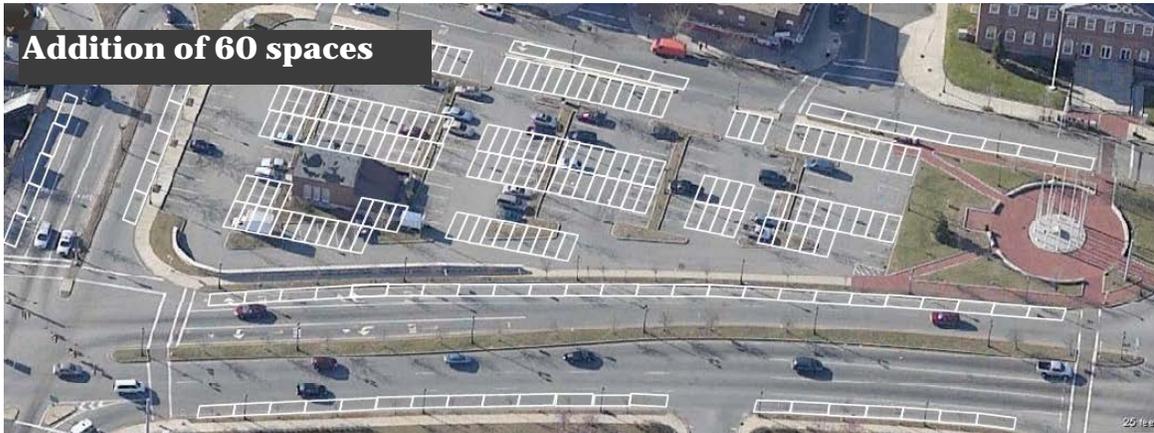
- Obtaining additional off-street surface parking through lease or purchase of private property
- Angled back-in on-street parking to allow for more parked cars in one block
- Shared use of parking arrangements (see example below)
- Feasibility of restriping efficiencies (see example below)
- Identify locations best suited for additional parking supply

Sample Shared Parking Reconfiguration



Needham Shared Parking Pilot Program 2009

Additional Spaces Gained by Re-Striping Parking Lot



Salem Comprehensive Parking Program 2010

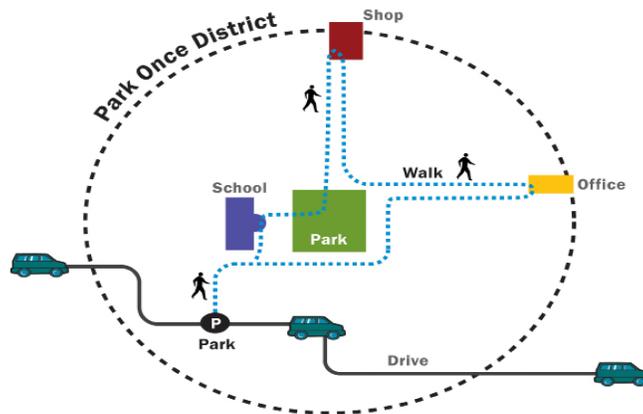
The team will make recommendations on specific safety and access improvements and geographical areas where the City can be most strategic in improving access to the available supply of parking. A complicated intersection can be simplified with simple design interventions, making crossings shorter and safer for pedestrians and having fewer conflict points with vehicles. A pedestrian improvement can expand the functional supply of parking by reducing the walk time to access additional spaces.

When walking conditions are of high quality, i.e. short crosswalks, adequate benches, good lighting, and a buffer between the sidewalk and the street, motorists are more likely to “park once” and walk to various destinations. In a Park Once District, drivers become pedestrians and experience more of downtown the way it was meant to be experienced. Below, a combination of traffic calming, signal improvements, and streetscaping can make Medford Square's intersection safer, faster, and more pleasant, as well as opening up access to a parking lot within a five minute's walk of downtown.



Simple Design Interventions for Pedestrian Safety
Source: Medford Square Parking Garage Feasibility Study

A Park Once strategy helps to make remote employee parking more attractive, as well as drawing visitors to more remote parking areas that have a lower fee.



Based on an original illustration by Walter Kulash.

Often, the revenue generated from parking can be used to directly benefit paying customers by funding conspicuous improvements in downtown streetscapes and open spaces. If the public and downtown businesses can draw a direct connection between the price of parking and improvements that affect them, they are more likely to see the merit in the price being charged. Parking revenues can also be dedicated to improving transportation and parking options, including funding off-street parking options.

Elements to improve the safety and attractiveness to access parking are:

- Well-defined crosswalks
- Adequate pedestrian-scale lighting
- Aesthetic landscaping
- Median refuges
- Speed tables or raised intersections
- Special paving treatments in “pedestrian zones”
- Clear signage for wayfinding for parking, major destinations, and streets
- Advertisement of parking availability, facilities, fees, time limitations, relocation of previous facilities, etc.

TASK 1 FINAL MEETING AND DELIVERABLES

At the culmination of Task 1, the team will have completed analyses and reports on existing conditions and user profiles for parking in Downtown Columbus that will answer the following questions:

- How much parking exists in Columbus, and how is it utilized? What are the periods of high and low demand and why?
- Does Columbus have enough parking to satisfy peak demand?
- What are barriers to accessing parking (pedestrian, way-finding, etc.)?
- What are the tensions among users' various goals?
- What are strategies to best manage Columbus' parking supply and demand?

DOWNTOWN PARKING ANALYSIS
Columbus Redevelopment Commission

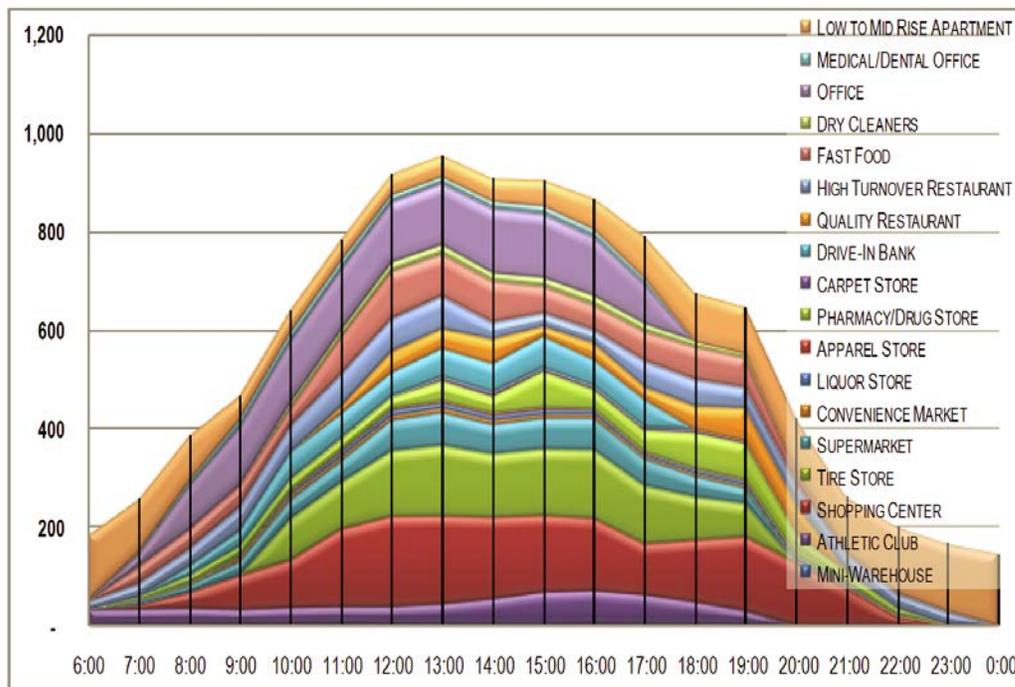
At this point, the consultant team will meet with the City to present and discuss materials generated from Task 1. The study team will then decide if Task 2 warrants the addition or omission of any subtasks.

Meetings	Charrette-Style Workshop on Parking Issues Final Presentation to the City and Redevelopment Commission
Deliverables	Technical Memorandum - Existing Parking Conditions and Recommendations Existing Conditions Parking User Profile Zoning Analysis Parking Management Strategies/Recommendations

TASK 2 – FUTURE PARKING NEEDS AND RECOMMENDATIONS

2.1 Identify Future Parking Demand

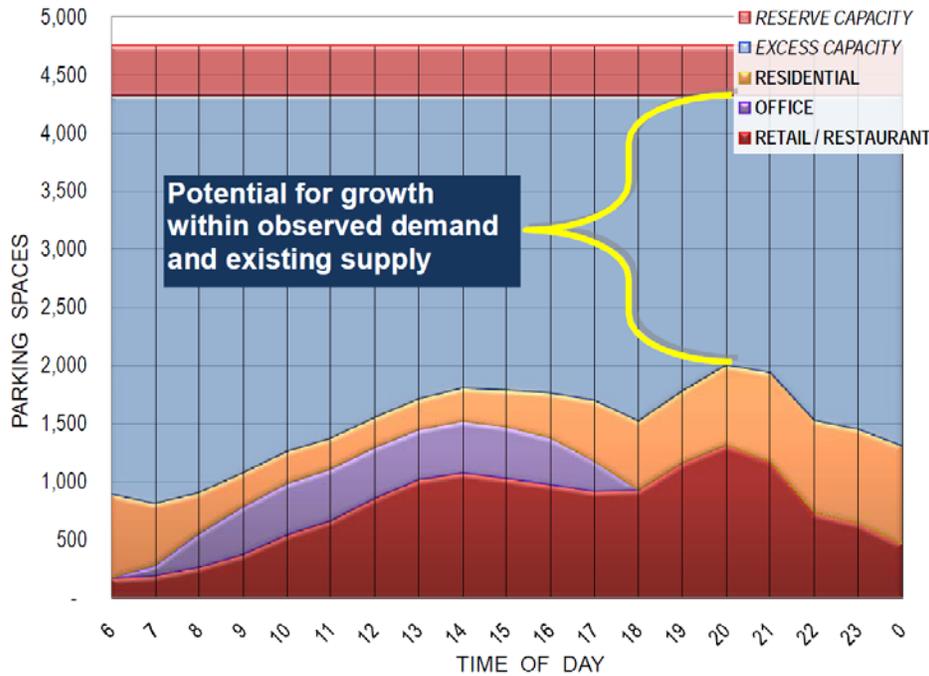
This task will account for potential parking demand from new developments expected in downtown Columbus. Existing land use and projections will be based on information provided from the City, Redevelopment Commission, and primary stakeholders in the study. In similar studies, we have found that projections using standard Institute of Transportation Engineers (ITE) parking rates overstate demand. We have demonstrated that these projections are unrealistic for a mixed-use downtown environment like Columbus. In particular, mixed-use areas such as downtown Columbus offer the opportunity to share parking spaces between various uses, thereby reducing the total number of spaces required compared to the same uses in stand-alone developments. This is a primary benefit in mixed-use contexts present in village-style centers. Instead, we will develop detailed projections of future demand based on a full analysis of supply, user demand characteristics, City regulations, pricing factors, and other market influences, drawing upon Urban Land Institute (ULI) methodologies.



Projected Parking Demand
Source: Reading Downtown Parking Program

In the chart on the next page, the parking demand by time of day for residential (orange), office (purple), and red (retail/restaurant) are shown below. Around 8:00pm, the chart shows that the demand for parking is highest (about 2,000 parking spaces). In this Town Center, there are about 4,750 spaces. The area in pink is the reserve parking, and the area in blue shows the amount of development that the downtown’s current parking supply can handle before parking supply expansion is necessary.

Sample of Growth Potential with Existing Supply Constraint



Mueller Town Center Parking Study 2010
Data Analyzed by NelsonNygaard

2.2 Parking Facility Site Evaluation and Recommendations

Based upon the Task 1 and Task 2.2 analysis, we will review the future known surface parking lots, the existing parking structure designs in downtown, as well as other information to identify potential sites for additional parking. These locations will be evaluated for new or expanded surface parking or parking structures. This will include:

- Review of the site geometry and ability to accommodate parking layouts efficiently;
- Summary of ownership, management, and existing uses and/or users;
- Review of entry and exit points relative to parking layout, existing curb cuts, nearby intersections, etc.;
- Site constraints, such as steep grades, setback concerns, zoning limitations, impacted abutters, etc.; and
- Analysis of location relative to high parking demand zones, adequacy of walking connections, competing facilities.

As part of the review of locations for adding future parking supply we will identify if land acquisitions will be beneficial to enhance any known site or if a new location is identified that would serve well as a surface parking lot or a parking structure. The team will also identify if other uses (office, retail, residential) could or should be included in the structure, and how those land uses would impact parking demand.

Finally, we will develop planning-level capital cost estimates for each facility and a simple pro forma using national or local (where available) unit costs for various facility types.

DOWNTOWN PARKING ANALYSIS
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Typical Parking Facility Financial Costs

Type of Facility	Land Costs Per Acre	Land Costs Per Space	Construction Costs Per Space	O & M Costs Annual, Per Space	Total Cost Annual, Per Space	Daily Cost Per Space
Suburban, On-Street	\$50,000	\$200	\$2,000	\$200	\$408	\$1.36
Suburban, Surface, Free Land	\$0	\$0	\$2,000	\$200	\$389	\$1.62
Suburban, Surface	\$50,000	\$455	\$2,000	\$200	\$432	\$1.80
Suburban, 2-Level Structure	\$50,000	\$227	\$10,000	\$300	\$1,265	\$5.27
Urban, On-Street	\$250,000	\$1,000	\$3,000	\$200	\$578	\$1.93
Urban, Surface	\$250,000	\$2,083	\$3,000	\$300	\$780	\$3.25
Urban, 3-Level Structure	\$250,000	\$694	\$12,000	\$400	\$1,598	\$6.66
Urban, Underground	\$250,000	\$0	\$20,000	\$400	\$2,288	\$9.53
CBD, On-Street	\$2,000,000	\$8,000	\$3,000	\$300	\$1,338	\$4.46
CBD, Surface	\$2,000,000	\$15,385	\$3,000	\$300	\$2,035	\$6.78
CBD, 4-Level Structure	\$2,000,000	\$3,846	\$15,000	\$400	\$2,179	\$7.26
CBD, Underground	\$2,000,000	\$0	\$25,000	\$500	\$2,645	\$8.82

This table illustrates the direct financial parking facility costs under various conditions. (CBD = Central Business District; Assumes 7% annual interest rate, amortized over 20 years.)

Source: Victoria Transportation Policy Institute, 2005

2.3 Improvements to Way-Finding System and Parking Technology

Parking signage, including way-finding for pedestrians and those in cars, is especially important to the success of the parking management program. Recent advances in parking technologies allow parking way-finding signs to be enhanced with electronic messages, occupancy tracking systems, and user interface devices to provide real-time pricing and occupancy data to motorists. This information can be conveyed to motorists once they are at their parking destination (via pole signs, wall signs, or on parking pay stations/facilities), when motorists are on their way to the parking destination (via cell phone or roadside signs), or even before the motorist has left the house (via the Internet).



Such “smart” signage systems can help reduce traffic congestion and improve traffic safety by reducing conflicts and collisions between autos and other modes. For example, transportation researchers have found that an average of 30% of traffic congestion (with a range of 8 to 78%) on urban streets is due to drivers “cruising” for on-street parking.¹

The team will take the local transportation system conditions of downtown Columbus into account when recommending appropriate parking signage and technological, keeping in mind the

¹ Shoup, Donald. *The High Cost of Free Parking*. Chicago: APA Planners Press (2006), pp. 279-91 and 358-61.

historic and scale of downtown. Technologies that make real-time parking data available to the user via a web browser or app, to explore include:

- Smart meters
- Garage and gated-lot real-time information displays
- Crowdsourced information
- In-street sensors

2.4 *Recommendations*

The team will summarize all work in Task 2 in a Technical Memorandum, including an implementation plan to move forward, if deemed necessary, in further pursuing feasibility of constructing additional parking facilities.

TASK 2 FINAL MEETING AND DELIVERABLES

At the culmination of Task 2, the team will have an extensive understanding of:

- The expected future parking demand in Columbus,
- Specific sites for the possible expansion of parking facilities, and
- Improvements to the wayfinding system and parking technology to provide a better customer experience.

Meetings Final Presentation to the City and Redevelopment Commission

Deliverables Technical Memorandum – Future Parking Needs and Recommendations

3C PROJECT SCHEDULE

The RFP requests that the project be completed within 90 days after execution of contract.

Task	Description	May				June				July				
		6	13	20	27	3	10	17	24	1	8	15	22	29
1	Existing Parking Conditions and Recommendations													
1.1	Identify and Map Existing Conditions	M												
1.2	Parking Utilization and Turnover													
1.3	Evaluate Pedestrian Traffic Patterns													
1.4	Review Current Way-Finding System													
1.5	Evaluate/Analyze Current Parking Demands													
1.6	Parking Zoning Requirements													
1.7	Parking User Surveys, Interviews, and Public Meeting								M					
1.8	Recommendations													M
D	Task 1 Meeting and Deliverables													
2	Future Parking Needs and Recommendations													
2.1	Identify Future Parking Demand													
2.2	Parking Facility Site Evaluation and Recommendations													
2.3	Improvements to Way-Finding System and Parking Technology													
2.4	Recommendations													
D	Final Meetings and Deliverables													M

DOWNTOWN PARKING ANALYSIS
Columbus Redevelopment Commission

4 FEE PROPOSAL

4A FEE: TWO TASKS

Task 1

Task Description	Nelson\Nygaard Labor Costs								Subconsultant Costs						Total Project Hours	Total Project Cost	
	Billing Rate	Jason Schrieber \$180.00	Ralph DeNisco \$149.00	Lisa Jacobson \$125.00	Liza Cohen \$75.00	Intern \$50.00	Hours	Cost	Parsons Brinckerhoff								
									Jennifer Pyrz \$160.00	Philip Roth \$135.00	Ericka Miller \$125.00	Data Collectors \$45.00	Hours	Cost			
1 Existing Parking Conditions and Recommendations																	
1.1 Identify and Map Existing Conditions		2		4		12	20	\$1,758		2		8		10	\$1,320	30	\$3,078
1.2 Parking Utilization and Turnover			2	4		8	14	\$1,198		2		8	80	90	\$4,920	104	\$6,118
1.3 Evaluate Pedestrian Traffic Patterns		2	8			12	22	\$2,452				4	8	12	\$860	34	\$3,312
1.4 Review Current Way-Finding System			2			8	8	\$1,298				4		4	\$500	22	\$1,798
1.5 Evaluate/Analyze Current Parking Demands		4	12	12	8		36	\$4,608		4	4	2		10	\$1,430	46	\$6,038
1.6 Parking Zoning Requirements		4	4	12	4		24	\$3,116						0	\$0	24	\$3,116
1.7 Parking User Surveys, Interviews, and Public		2	24	24		12	62	\$7,536		12	12	8		32	\$4,540	94	\$12,076
1.8 Recommendations		12	12	8	24	8	64	\$7,148		8	12	4		24	\$3,400	88	\$10,548
D Task 1 Meeting and Deliverables		4	12	24	8	8	56	\$6,508		8	4	4		16	\$2,320	72	\$8,828
Task Total		30	78	88	64	56	316	\$35,622		36	32	42	88	198	\$19,290	514	\$54,912
PROJECT INITIATION AND MANAGEMENT		4	12				16	\$2,508						0	\$0	16	\$2,508
TOTAL HOURS		34	90	88	64	56	332			36	32	42	88	198		530	
TOTAL COST		\$ 6,120	\$ 13,410	\$ 11,000	\$ 4,800	\$2,800		\$38,130		\$ 5,760	\$ 4,320	\$ 5,250	\$ 3,960		\$19,290		\$57,420

NN Direct Costs

PB Direct Costs

Direct Expenses		Units				#	Cost				#	Cost	Total Project
Travel													
Air Fare	trips		2			2	\$ 800				0	\$ -	
Hotel	nights		2			2	\$ 300				0	\$ -	
Per Diem	days		4			4	\$ 160	1			4	\$ 200	
Rental Cars and Gas	days		4			4	\$ 300	1			2	\$ 225	
Other Ground Trans. (Mileage, Transit, Parking)	days		4			4	\$ 80	1			4	\$ 100	
Communication/Postage							\$ 50					\$ 50	
Printing/Reproduction/Supplies							\$ 100					\$ 100	
Meeting Materials							\$ 100					\$ 100	
Subtotal - Direct Expenses							\$ 1,890					\$ 675	

Total Cost by Firm (Labor + Direct Expenses)							\$ 40,020					\$ 19,965	\$ 59,985
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DOWNTOWN PARKING ANALYSIS
Columbus Redevelopment Commission

Task 2

Task Description	Nelson\Nygaard Labor Costs							Subconsultant Costs							Total Project Hours	Total Project Cost
	Billing Rate	Jason Schrieber	Ralph DeNisco	Lisa Jacobson	Liza Cohen	Intern	Hours	Cost	Parsons Brinckerhoff				Hours	Cost		
									Jennifer Pyrz	Philip Roth	Ericka Miller	Data Collectors				
	\$180.00	\$149.00	\$125.00	\$75.00	\$50.00			\$160.00	\$135.00	\$125.00	\$45.00					
2 Future Parking Needs and Recommendations																
2.1 Identify Future Parking Demand		4	8	16	4	32	\$2,996					0	\$0	32	\$2,996	
2.2 Parking Facility Site Evaluation and Recommendations	4	4	8			16	\$2,316	8	12	12		32	\$4,400	48	\$6,716	
2.3 Improvements to Way-Finding System and Parking	2	4		8	8	22	\$1,956	4	4			8	\$1,180	30	\$3,136	
2.4 Recommendations	4	12		8		24	\$3,108	8	8			16	\$2,360	40	\$5,468	
D Final Meetings and Deliverables		8	8	8	8	32	\$3,192	8	8			16	\$2,360	48	\$5,552	
Task Total	10	32	24	40	20	126	\$13,568	28	32	12	0	72	\$10,300	198	\$23,868	
TOTAL HOURS	10	32	24	40	20	126		28	32	12	0	72		198		
TOTAL COST	\$ 1,800	\$ 4,768	\$ 3,000	\$ 3,000	\$ 1,000		\$13,568	\$ 4,480	\$ 4,320	\$ 1,500	\$ -		\$10,300		\$23,868	

NN Direct Costs

PB Direct Costs

Direct Expenses														
Travel	Units					#	Cost					#	Cost	Total Project
Air Fare	trips	1				1	\$ 400					0	0	
Hotel	nights	1				1	\$ 150					0	0	
Per Diem	days	2				2	\$ 80	1				1	40	
Rental Cars and Gas	days	2				2	\$ 150	1				1	75	
Other Ground Trans. (Mileage, Transit, Parking)	days	2				2	\$ 40	1				1	20	
Communication/Postage							\$ 25						\$ 50	
Printing/Reproduction/Supplies							\$ 50							
Meeting Materials							\$ 50							
Subtotal - Direct Expenses							\$ 945						\$ 185	

Total Cost by Firm (Labor + Direct Expenses)							\$14,513						\$10,485	\$24,998
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4B FEE: CHANGES IN SCOPE

Changes in scope or additional tasks can be negotiated between the consultants and the City and Redevelopment Commission. See above budgets for hourly rates for each key staff member.

APPENDIX A

Resumes

Jason Schrieber, AICP

Principal



With 19 years of private and public sector national experience, Jason provides multi-modal planning and design skills with a unique understanding of municipal needs, community concerns, and institutional priorities. Jason previously led planning efforts for Cambridge, Massachusetts' municipal parking system while also managing parking regulations for private parking and curb space citywide. This included setting policies, payment rates, permit programs, etc. Jason also approved parking layouts & garage designs; promulgated safety, slope & sightline guidance; and designed street cross-sections and walking infrastructure. Jason now manages downtown planning and parking management projects for Nelson\Nygaard in places like Portland Maine, Denver Colorado, and Napa California. Jason regularly presents on parking and TDM around the country.

EDUCATION

Bachelor of Science, Urban Planning
University of Massachusetts, Amherst

EXPERIENCE

Nelson\Nygaard Consulting Associates Inc.
Principal, 2006–Present

Parking Policy and Management. Helping communities re-prioritize their downtown transportation systems:

- **Lansdale, PA.** Leading an effort to change parking policy and governance to expand commercial activity and control commuter demand. Recommendations have enabled the Borough to have a private developer turn a municipal parking lot into a prime TOD in the heart of downtown.
- **Orange, MA.** In support of a downtown revitalization team, led the parking demand evaluation to ensure that a site could be redeveloped without needing new on-site parking by evaluating shared use of and connections to multiple downtown parking locations.
- **Boston, MA.** Leading the development of parking policy changes, including new green transportation and TDM initiatives, as well as the creation of Boston's first comprehensive parking database, to be designed as an open source, integrated government and public information platform.
- **Salem, MA.** Led the complete re-structuring of downtown parking operations to create a forward-thinking system that is customer-friendly, neighborhood-protective, and accommodating of employees and commuters. With broad stakeholder support, the City has recently implemented the full plan.
- **Reading, MA.** Completed a Comprehensive Parking Program for downtown that evaluated the need for a parking garage versus economical management strategies that maximized untapped parking and alternative access. Recommendations have enabled a new 40R infill development with minimal parking.
- **Mammoth Lakes, CA.** Developed shared parking plans and on-street management strategies to accommodate several new developments in this mountain resort community. Includes developing new TDM policies and transit routes.

Transit-Oriented Development. Applying the latest principles to TOD developments nationwide:

- **Columbia, MD.** Led the evaluation of new walking, biking and transit investments associated with the Downtown Columbia TOD master plan, including application of the Federal URBEMIS land use & transportation model.
- **Denver, CO.** Led an effort to implement on-and off-street parking management policies and TDM programs at a suburban TOD next to the new Belleview Station. This effort integrated directly with Nelson\Nygaard's recent TOD station typology work for the Denver RTD.



Jason Schrieber, AICP
Principal

- **Angwin, CA.** Led the development of a sustainable transportation and parking plan for a Pacific Union College campus expansion and new residential “eco-village,” including dedicated new shuttle service, a shared parking plan, parking permit program, unbundled residential parking, and car-sharing.
- **Lowell, MA.** Identified TOD opportunities in this historic downtown as part of a team planning two extensions of the historic streetcar network. Involved a pioneering model for property value growth based on national case study data.

Non-Motorized Access Planning. Applying the latest thinking and infrastructure programs to promote access to communities by foot and bicycle:

- **Elm Street Crosswalks, Smith College, Northampton, MA.** Led the planning, conceptual design, and design development for six major pedestrian crossings on State Route 9 through the historic heart of campus. Through an inclusive charrette process, Nelson\Nygaard developed a mixed traffic calming, signing and education strategy acceptable to public works and public safety departments in the City. Construction was completed in 2010 and has spawned a push for similar treatments elsewhere in the city.
- **Essex Transportation Study, Essex, CT.** Created a number of detailed designs and programs with cost-effective implementation steps to preserve town character and improve safety, ranging from school access improvements and new bike rack programs to notable traffic calming and shared space designs.
- **Medford Square Intersection Redesign, Medford MA.** As part of a parking demand assessment for a garage feasibility study led by MassDevelopment, revealed that walking improvements could bring as many vacant spaces within reach as a new garage would, helping to reprioritize infrastructure efforts in the square. Included a redesign of a major intersection to dramatically improve PLOS.

PREVIOUS EXPERIENCE

City of Cambridge, MA

Transportation Planner, Traffic, Parking, and Transportation Department, 2000–2006

Head of transportation and parking planning and development approval for 80-person department.

- **Transit-Oriented Development Planning and Design.** Oversight for several large land development projects in Cambridge that required skillful negotiation and management of architectural designs, transportation analyses, zoning compliance, and community process.
- **Parking & Demand Management.** Led planning efforts for a comprehensive municipal parking system with 1500 off-street spaces and 2800 meters while managing parking regulations for over 35,000 private off-street spaces and curb regulations citywide. Responsible for ensuring compliance with Cambridge’s innovative Parking & Transportation Demand Management ordinance.

Cambridge Systematics, Inc

Associate, 1993-2000

Project manager for planning & policy studies as consultant to local, regional, & national clients.

PROFESSIONAL MEMBERSHIPS AND AFFILIATIONS

- Certified Planner, American Institute of Certified Planners (AICP)
- Member, American Planning Association, Massachusetts Chapter
- Member, Association of Pedestrian and Bicycle Professionals
- Member, Congress for the New Urbanism

Ralph DeNisco

Senior Associate



Ralph DeNisco has over 16 years of transportation planning experience, with a history of successfully implementing a variety of parking and transportation projects in challenging environments. Informed by 10 years experience as Senior Transportation Planner in the City of Boston's Transportation Department, he has developed City parking policy, implemented new technology, creatively tailored on-street parking regulations, and negotiated parking requirements with both large and small developments. He specializes in working with business, merchant, and neighborhood groups on complex parking and transportation issues.

EDUCATION

M.A., Urban Affairs , Boston University Metropolitan College
B.A., Economics, Boston College

EXPERIENCE

Nelson\Nygaard Consulting Associates Inc.

Senior Associate, 2010–Present

- **Newmarket Industrial District Parking Demand Study, Boston Redevelopment Authority, Boston, MA.** Working as Deputy Project Manager, Ralph led outreach efforts, and directed the data analysis and recommendations to determine the demand for a structured parking facility in Boston's Newmarket Industrial District. The Study showed that despite high employee utilization, and unique operating characteristics, that current parking demand is not able to financially sustain a parking structure. The Study further determined the observed parking demand rates, highlighted needed pedestrian and connectivity improvements to expand the pool of desirable parking, recommended physical and regulatory changes that would create over 50 additional onstreet parking spaces, and completed land use analysis to project scenarios in which a garage would be required.
- **Boston Off-Street Parking Policy.** Mr. DeNisco is leading a comprehensive analysis of existing parking management in Boston as well as the development of parking policy changes. The review includes the Air Pollution Control Commission (APCC) regulations, current parking ratio guidelines, and transportation demand and parking management strategies required of developers. Based on an extensive review of peer cities, these changes include new green transportation and TDM initiatives. The project also includes the creation of Boston's first comprehensive parking database, designed as an open source, integrated government and public information platform.
- **Lansdale Comprehensive Parking Study, Borough of Lansdale, Lansdale, PA.** As project manager, Ralph led efforts to review parking use, policy, and governance in service to downtown redevelopment efforts. Lansdale's historic downtown also hosts one of the busiest SEPTA stations in the system. With outdated parking management systems, underpriced parking, and concentrated local demand, Ralph is working with Borough staff, the Lansdale Parking Authority, and local merchants to understand and develop parking recommendations to allow for transformative new development on a Borough owned lot, while preserving the current businesses and operations in Lansdale.
- **Kendall and Central Square (K2C2) Planning Study.** Building upon the success of these distinct, adjacent areas, the City of Cambridge seeks to grow them as a globally significant source of innovation and regionally significant center of cultural diversity without adding any new SOV trips. K2C2 plans collectively add over six million square feet of office, commercial, retail, and housing space to accommodate the live, work, and play needs of many of the world's leading innovation companies. Identifying policies and strategies to continue to grow while improving non-auto share and reducing overall automobile trips is critical to the City and all stakeholders. Ralph DeNisco led the transportation analysis for this effort. He reviewed and enhanced Cambridge's progressive transportation and sustainability policies to promote transit use, biking, and walking. Ralph managed a detailed transit capacity analysis, developed potential new transit connections, and promoted transportation demand management programs. Ultimately, the

plan outlined streetscape, transportation, and land use strategies that enhance connectivity between Central and Kendall, their adjoining neighborhoods, and the region at large.

- **Children’s Memorial Hospital Redevelopment TDM, McCaffery Interests, Chicago, IL**
As Lead Planner, Ralph and Nelson\Nygaard are working with McCaffery Interests on this planned 1.4 million square foot mixed-use redevelopment. Building on work previously completed by Nelson\Nygaard for the South Chicago LEED ND initiative, Ralph is helping McCaffery develop one of the first Transportation Demand Management (TDM) plans for a development in Chicago. Plans include developing a set of realistic parking and TDM strategies to better quantify expected vehicle trip reductions based on site and development factors. Strategies are designed to encourage convenient use of alternate modes for accessing and traveling to and from the site among all users and include ridesharing tools, guaranteed rides home, universal transit passes, and a transportation management association.
- **Comprehensive Parking Program, Town of Reading, MA.** Senior Planner: Spearheaded data collection efforts for downtown Reading and its environs as part of the development of a Comprehensive Parking Program. Working with Nelson\Nygaard Associates, the program’s intent is to develop an overall parking strategy for Reading’s business district, station area, and adjacent residential streets. Recommendations to be considered include construction of a parking facility, demand management approaches and tailored curbside regulations. Working directly for the Town Manager, the program’s process includes coordination with town departments, the Board of Selectmen, Chamber of Commerce, and individual merchants and residents.
- **Comprehensive Parking Program, Salem, MA.** Served as Lead Planner on the complete re-structuring of downtown parking operations to create a forward-thinking system that is customer-friendly, neighborhood-protective, and accommodating of employees and commuters. With broad stakeholder support, the City is moving forward with implementation.
- **Comprehensive Parking Program, Haverhill, MA.** As Lead Planner, worked to craft recommendations to implement a parking management strategy in response to growth in downtown vitality. Key issues included a burgeoning residential population, an active restaurant/nightlife district, and a soon to open parking structure serving the commuter rail line. Recommendations include implementing pricing for onstreet spaces and a resident/employee permitting program.

PREVIOUS EXPERIENCE

McMahon Associates, Boston, MA
Project Manager, 2007–2010

Boston Transportation Department, Boston, MA
Senior Transportation Planner, 1996–2007

- **Development Review, Boston, MA.** As lead reviewer, Mr. DeNisco reviewed proposed developments to access transportation impacts and developed mitigation strategies. Developed Mode Share and Trip Distribution numbers to be used in the preparation of Impact Assessments throughout the City of Boston. Provided and reviewed scope for transportation analysis, review all project elements including Site Plan, proposed access, traffic impacts, parking plans, pedestrian circulation and accommodation, and transit accessibility. Determined compatibility with surrounding land uses and transportation system. Participated in the community review process, developed mitigation, completed agreements and monitored compliance. Major development projects reviewed included Boston Medical Center/BioSquare, Crosstown Center, South Bay Center expansion, Boston State Hospital, and Liberty Place.

SELECTED LECTURES AND PUBLICATIONS

- International Health Impact Assessment Conference, Quebec City, 2012
- National Main Streets Conference, Presentation on Parking Policy and Management, Baltimore, MD, 2012
- FTA New and Small Starts Roundtable in Pittsburgh in 2008

Lisa Jacobson

Associate Project Planner



Lisa Jacobson has transportation planning experience in the public, private, and non-profit sectors. Her recent experience focuses on parking management projects, particularly the location, supply, and demand of on- and off-street parking. She has strong spatial, analytical, and quantitative skills. Lisa recently worked on a parking implementation project in Nantucket, where she became fluent in state-of-the-practice parking technology and parking management structures that balance revenue generation with parking demand and supply. Lisa also focuses on multi-modal transportation studies, which encompass best practices for integrating flows among pedestrians, bicyclists, drivers, and transit. Before joining Nelson\Nygaard, Lisa was a fellow with the National Complete Streets Coalition, where she worked on federal, state, and local policies to encourage street design to incorporate all users, regardless of age and ability. Lisa's work at the Coalition was recently published in an AARP report, "Planning Complete Streets for an Aging America".

EDUCATION

Master of City and Regional Planning, Concentration in Transportation, University of Pennsylvania, 2010
Bachelor of Arts, The George Washington University, 2004

EXPERIENCE

Nelson\Nygaard Consulting Associates Inc.

Associate Project Planner, 2012–Present, Associate, 2010–2012; Intern, 2009

Parking Management Projects

- **Concord Comprehensive Parking Management Study, Concord, MA 2012.** Analyzed data and patterns, developed shared parking model and projections, created recommendations and presented to the public.
- **Natick Center Parking Study, Natick, MA 2012 Belo Horizonte, Brazil, 2011.** Assisted in study to help establish parking inventory, observe trends, and develop short- and long-term strategies
- **Portsmouth Parking Supply and Demand Study, Portsmouth, NH, 2011.** Managed parking data collection inventory and collection efforts and conducted existing and future land use analyses to help City determine the need for a new parking garage.
- **Newmarket Industrial District, Boston, MA, 2010-11.** Created and analyzed growth scenarios based on current parking supply and demand and existing and future land use.
- **Haverhill Parking Study, Haverhill, MA, 2010.** Analyzed downtown parking utilization and regulations and identified potential strategies to improve parking.
- **Lexington Parking Study, Lexington, MA, 2010.** Identified areas of greatest and least demand, created pricing structure, and calculated revenues based on parking utilization.
- **Winchester Parking Study, Winchester, MA, 2010.** Conducted stakeholder interviews and created several maps of the project area.
- **Nantucket Parking Study, Nantucket, MA, 2010.** Created matrix of all possible combinations of parking strategies and technologies to evaluate the best approach for downtown parking.
- **Salem Comprehensive Parking Study, Salem, MA, 2009.** Designed, organized, and conducted an extensive parking utilization data collection effort in downtown.

Multi-Modal Transportation Projects

- **Complete Streets and Downtown Livability Plan, Deerfield, MA, 2012** Site analysis and graphics, best practices research, and concept plan designs.
- **East Franklinton Creative Community District Revitalization Plan, Columbus OH, 2012** Evaluation of the existing multi-modal transportation network and developed concept plans and strategies for site build-out.
- **SUNY Old Westbury, Jericho, NY, 2011.** Analyzed existing condition and created alternatives in campus re-design, including reducing road capacity, introducing roundabouts, and creating a more walkable and bicycle-friendly environment.
- **Columbia Transportation Services, Columbia, MD, 2010.** Analysis of transit dependent populations, barriers to access, and impact of proposed development.
- **Essex Town Transportation Study, Essex, CT, 2010.** Identified and mapped pedestrian, bicycle, and parking existing conditions, including pedestrian level-of-service, and assessed needs for future identification of multi-modal strategies.
- **Wampanoag Tribe Transportation Study, Aquinnah, MA, 2009.** Conducted best practice research and interviews, created an existing services profile, identified alternative funding sources, and made recommendations.
- **Buffalo State University, Buffalo, NY, 2009.** Created an inventory and review of all relevant university policies, including a comparison to best practices.

PREVIOUS EXPERIENCE

National Complete Streets Coalition

Fellow, 2008

- Completed a review of nearly 100 complete streets policies around the country; results published in 2008 AARP/ITE/Complete Streets report entitled “Planning Complete Streets for An Aging America”.

AWARDS

- C. Britton Harris Award for Excellent Work in Transportation Planning, University of Pennsylvania, School of Design, 2010
- TRB Transportation Finance Scholarship: Forging a Sustainable Future, New Orleans, LA, 2010

ARTICLES, PUBLICATIONS, AND PRESENTATIONS

- Parking Management: A Key to Revitalizing Massachusetts Downtowns. The New Planner, American Planning Association, Winter 2011.
- ARRA Stimulus Spending: The Impact on Transit. Poster presentation at Transportation Research Board, Washington, DC. January 2011.
- TCRP F-13: ADA Complementary Paratransit Vehicle Operator Recruitment, Retention, and Performance, 2009: Conducted case studies and interviews, and created best practices synthesis. Published Fall 2010.

LEADERSHIP

- Founding member and current board member, Young Professionals in Transportation-Boston

Liza Cohen

Associate



Liza has experience with GIS analysis, data collection and visualization, and community engagement. She has worked on a range of projects, ranging from parking and multi-modal studies to transit analyses. Recently, Liza has led large survey efforts and spatial analyses for transit service evaluations. She also has experience in drafting and data visualization.

EDUCATION

Master of City and Regional Planning, Concentration in Transportation, University of Pennsylvania, 2012
B.A. Urban Studies, Bowdoin College, 2008

EXPERIENCE

Nelson\Nygaard Consulting Associates Inc.
Associate, 2012

Parking and Multimodal Projects

- **Complete Streets and Downtown Livability Plan, Deerfield, MA.** Facilitated three day community charrette, created maps and graphics, and made recommendations.
- **McGrath Highway De-Elevation Study, Somerville, MA.** Performed alternatives analysis using quantifiable metrics related to walkability, community health, and connectivity.
- **Windsor Center TOD Planning and Facilitation Program, Windsor, CT.** Created shared parking model for town center, analyzed and mapped transportation connections at a regional and local level.
- **New Haven Downtown to the Hill, New Haven, CT** Analyzed and mapped parking supply and created shared parking model of demand. Completed comprehensive assessment of multimodal transportation networks.

Transit Projects

- **Campus System Evaluation, University of Wisconsin, Madison WI.** Led a campus-wide survey and analyzed results, assisted in community meeting facilitation, performed “blank slate” analysis of ridership generators such as population density and points of interest to determine service routing on campus.
- **Fairfax Countywide Transit Study, Fairfax, VA.** Innovative GIS analysis focused on walkability, transit dependent populations, value capture, and other characteristics to determine station placement for countywide transit corridors.

JENNIFER PYRZ, P.E.

Supervising Engineer

Years of Experience

17 (7 with PB; 10 with others)

Education

M.S., Civil Engineering, Purdue University, 1997; B.S., Civil Engineering, Purdue University, 1995

Professional Affiliations

Institute of Transportation Engineers, WTS, Eno Foundation: Fellow; Circle City Community Development Corporation Board Member, Indianapolis 2012 Super Bowl Host Committee Volunteer – Transportation and Parking Sub-Committee

Professional Registrations

Professional Engineer: Indiana, 2001 (10001153); Ohio, 2008 (72943)

Certifications

Environmental Consultant Certification, 2006, Indiana Department of Transportation (INDOT) and Federal Highway Administration (FHWA)

Key Qualifications

Jennifer Pyrz is a supervising civil engineer with Parsons Brinckerhoff (PB), experienced in traffic engineering and transportation planning. Jennifer's experience includes managing projects and providing technical analysis for traffic impact studies, traffic forecasting, parking studies, transit studies, transportation plans, operational analyses, and safety audits. Jennifer is familiar with various types of civil engineering, traffic simulation, capacity analysis, and related software.

Her experience conducting parking analyses for PB includes:

- Old Dominion University Parking Operation Plan, Norfolk, Virginia: Project engineer responsible for review of documentation, procedures and recommendations developed for ODU's campus parking plan.
- Centene Parking Study, Clayton, Missouri: Traffic engineer responsible for determining the parking impact of a proposed development in the central business district of Clayton, Missouri. Recommended various parking management strategies to reduce parking demand and evaluated each option based on the specific site characteristics.
- Parsons Avenue Corridor Study, Columbus, Ohio: Project manager for analysis and documentation of on and off-street parking supply and demand and development of recommendations for more efficient use of parking resources.

Prior to joining PB, Jennifer's project experience with other engineering consulting firms includes:

- Purdue University Transportation and Parking Study, West Lafayette, Indiana: project engineer responsible for the technical aspects of a long-range transportation study of Purdue's campus. Jennifer prepared schematic design plans and conducted field observations, traffic volume counts, quantitative analyses, and an alternative evaluation. The purpose of the study was to determine the long-range transportation and parking plan for the University in consideration of the new U.S. 231 by-pass construction, substantial growth of academic facilities, and changes in parking and mass transit policies. Safety of pedestrians, cyclists, and motorists was evaluated and given thorough consideration through the use of traffic calming measures, bicycle routes, roadway design, and pavement treatments.
- Indianapolis Museum of Art Parking and Circulation Study, Indianapolis, Indiana: project manager responsible for analysis of parking and circulation at the Indianapolis Museum of Art

in response to a planned expansion. Work included facilitation of multiple charrettes with key stakeholders, analysis of current and future parking demands, analysis of current and future circulation problems and opportunities, and development of alternatives for accommodating

- Pennsylvania Gaming Control Board Traffic Impact Study Review, Various locations, Pennsylvania: senior engineer responsible for reviewing Traffic Impact Studies submitted to the Gaming Board by various consultants. Jennifer reviewed six studies in detail for conformance to Pennsylvania Department of Transportation (PennDOT) and Institute of Transportation Engineers (ITE) standards and reasonableness of assumptions, methods, and findings. Separate reports were prepared to summarize each submittal's completeness and adherence to these standards. The Pennsylvania Gaming Control Board received a total of 22 applications for slot parlor licenses throughout the Commonwealth of Pennsylvania.
- Indianapolis International Airport Parking Study, Indianapolis, Indiana: lead engineer and planner responsible for developing a five-year parking master plan for the Indianapolis Airport's main terminal. The study included inventory of existing facilities and operations, determination of parking utilization rates, and alternative and economic analyses. A final plan was presented to the Board of Directors that included recommendations for location, employee pricing and operations, and short- and long-term parking facilities.
- University of Indianapolis Parking Study, Indianapolis, Indiana: project manager and lead planner for developing a long-range parking master plan for the University of Indianapolis campus. Jennifer conducted various stakeholder meetings, including a half-day charrette, developed occupancy data and turnover for the entire campus, and prepared projections of demand. The final plan recommended a combination of new parking facilities, policies, and circulation improvements.

PHILIP D. ROTH, AICP

Supervising Planner

Years of Experience

20

Education

Candidate, Doctor of Philosophy, Transportation Geography, Indiana University-Bloomington (defense anticipated in 2014); Master of Regional Planning, University of North Carolina-Chapel Hill, 1992; B.A., Anthropology, Grinnell College 1990

Additional Studies/Training: FHWA "red flag environmental" and performance measures training, 2012; APA Planning and Climate Change Webinar series, 2011-present; New Starts training course (Don Emerson, Parsons Brinckerhoff), 2011; Motivating Employees training course, 2011; Multimodal travel demand forecasting, 2003-2004; Leadership principles training (situational leadership model), 2001; Project management principles training, 1998-2001; Economic Development Finance Training, including Real Estate Analysis, Underwriting Principles, Loan Packaging and Negotiation, National Development Council, 1992

Professional Registrations

American Institute of Certified Planners (AICP), 1996 (#098760)

Key Qualifications

Philip Roth recently joined Parsons Brinckerhoff after serving for 10 years with the Indianapolis Metropolitan Planning Organization (IMPO), including eight years as Assistant Director. He also is an adjunct faculty member at the Indiana University-Purdue University Indianapolis, where he lectures on transportation and urban geography. His primary experience is in long-range transportation planning and all its components, including performance management, travel demand forecasting, stakeholder and public outreach and air quality consultation processes and analyses. His prior experience includes planning positions in both the public and private sectors. He works in TransCAD travel demand software, and is experienced with ArcGIS, R and SPSS. He is highly proficient with several geographic information systems (GIS) platforms and travel modeling software. He is also familiar with LIMDEP, Microsoft Visual Basic.NET and Microsoft VBA.

Previous Experience

Mr. Roth's experience prior to joining Parsons Brinckerhoff includes:

- Strategic Planning and Unified Planning Work Program (UPWP) Development, Indianapolis, Indiana: as Assistant Director for the Indianapolis Metropolitan Planning Organization (IMPO), Mr. Roth identified and directed the agency's priorities and assigned resources to accomplish those ends.
- IndyConnect, Indianapolis, Indiana: along with other IMPO staff, Mr. Roth participated in an award-winning public and stakeholder outreach process for a regional transit vision plan for central Indiana.
- Major Review of Long-Range Transportation Plan, Indianapolis, Indiana: Mr. Roth served as the principal and project manager for the IMPO's first major review of its transportation plan in over a decade, and which incorporated performance management features into resource commitments and project identification.
- Major Review of Travel Demand Model, Indianapolis, Indiana: Mr. Roth convened an IMPO and federal agency peer review panel that resulted in a multi-year program for improving the IMPO's travel demand forecasts and transit ridership projections.
- DiRecTionS Regional Transit Study, Indianapolis, Indiana. Mr. Roth managed the regional transit planning effort that first identified the radial transit corridors that are major components of the transit vision plan recently developed by the IMPO.

- Northeast Corridor Study Major Investment Study/Draft Environmental Impact Statement (DEIS), Indianapolis, Indiana: conducted the (tier 1) environmental impact assessments for a joint transit-highway major investment study.
- Warren County Airpark, Bowling Green, Kentucky: conducted the economic analysis and stakeholder outreach for a new economic development airpark proposed in Bowling Green, Kentucky.
- Comprehensive Land Use Plan, St. Joseph County, Indiana: project manager for the update of a countywide general plan, including the city of South Bend, with emphases on land use, transportation and agricultural preservation.
- Comprehensive Land Use Plan, Delaware County, Indiana: project manager for the update of a countywide comprehensive plan that included the area of the city of Muncie, with a special emphasis on strategies for urban renewal.

Awards

- Advanced Toastmaster-Silver, City-County Communicators Toastmasters Club, 2004
- Advanced Leader, City-County Communicators Toastmasters Club, 2004
- Ralph A. Leubben Anthropology Award, 1990 (Grinnell College)
- Phi Beta Kappa, 1989 (Grinnell College)

Publications/Presentations

- Lecturer, IUPUI. Introduction to Transportation Geography (GEOG 302/502). Fall semesters, 2008-present.
- Lecturer, IUPUI. Urban Geography (GEOG 314). Spring semesters, 2008-present.
- "Indy Connect: Visioning and Planning for a Major Expansion of Regional Transit Service in Central Indiana" (co-author), paper delivered at 2011 Transport Chicago conference, June 2011.
- Roundtable on the future of transportation, Joseph Taylor Symposium, IUPUI, February 2011
- Presentation at State Law and Energy Policy: Initiatives and Ideas Powering the Future: Mass Transit Symposium, Program on Law and State Government's 9th Annual Symposium, IU School of Law-Indianapolis, February, 2009
- Lecturer, IUPUI. Introduction to Human Geography (GEOG-110). Fall 2007.
- Roundtable on air quality conformity, Indiana Government Center-South, November 2007.
- Guest Lecturer, "The Geography of Tourism", IUPUI, November 2005
- Various Rapid Transit Study presentations, numbering over 50, 2003-2005.
- "Transportation Planning", invited lecturer at IUPUI, Fall 2002
- "Regional Transportation Issues", invited lecturer at Butler University, Fall 2002
- "Job Opportunities for Starting Planners", Indiana Statewide Fall 2001 Planning Conference
- "Affordable Housing Planning", presentation to Hancock County League of Women Voters, May 2000
- "Large Lot Zoning and Agricultural Preservation", Scanning Planning, Spring 2000

ERICKA W.H. MILLER, P.E.

Senior Engineer

Years of Experience

9 (4 with PB; 5 with others)

Education

B.S., Civil Engineering, Washington University in St. Louis, 2004

B.A., Math & Physics, Kenyon College, 2002

Professional Affiliations

Institute of Transportation Engineers (ITE)

Professional Registrations

Professional Engineer: Indiana, 2008 (PE10810175)

Key Qualifications

Ericka Miller is a civil engineer with Parsons Brinckerhoff (PB), experienced in traffic engineering and transportation planning. Ms. Miller's experience includes managing projects and providing technical assistance for traffic impact studies, traffic forecasting, parking studies, operational analyses, safety studies, transportation plans, and Safe Routes to School Plans. She also has a small amount of experience in roadway design, including the preparation of roadway design calculations, plans, quantity computations and cost estimates. Ms. Miller is familiar with various types of civil engineering, traffic simulation, capacity analysis, and related software.

Parking Studies

- Parsons Avenue Corridor Study, Columbus, Ohio: traffic engineer responsible for analysis and documentation of on and off-street parking supply and demand and corresponding recommendations.
- Cincinnati Streetcar Project, Cincinnati, Ohio: traffic engineer responsible for evaluation and documentation of on-street parking supply and corresponding impacts due to proposed streetcar.

Traffic/Safety Analysis

- Corridor Safety Studies, northeast side of Indianapolis, Indiana: project manager for the Indianapolis MPO's 2012 Safety Studies Project, focused on safety-related assessments of four identified high-crash corridors in the Indianapolis MPO Area. Project work included: filtering and summarizing crash data for the study corridors from 2009-2011; creating associated crash-maps using available latitude/longitude information and aerial imagery; gathering traffic count data, signal timings, and related project information; conducting field-checks, capacity-analyses using SYNCHRO software; signal warrant analyses as necessary, and safety performance evaluations using HAT-software; summarizing identified issues; developing draft recommendations to mitigate identified issues; coordinating and facilitating input meetings with representatives from the MPO, the City of Indianapolis, and INDOT, in addition to police representatives & neighborhood liaisons; preparing associated probable costs for final recommendations; and completing final summary reports.
- Safety Studies, various locations within the Indianapolis MPO Area, Indiana: project manager for the Indianapolis MPO's 2010 & 2011 Safety Studies Projects, which have culminated in the technical review of approximately 71 locations (intersections and segments) throughout the Indianapolis MPO Area that were identified on INDOT's 2009 & 2010 "Five Percent" Lists of locations exhibiting the most severe safety needs. This effort included filtering crash data for each site based on information from the ARIES database, compiling existing traffic counts, computing safety ratings using the Hazard Analysis Tool (HAT) software, performing capacity

analyses using Highway Capacity Software (HCS), and conducting field investigations of existing conditions. Input meetings were coordinated with representatives from various agencies, including the appropriate INDOT District, City/Town/County officials, police representatives, and neighborhood liaisons to discuss the safety deficiencies and potential remedies. The range of recommended improvements included lower-cost maintenance items, such as signage and pavement markings, and higher-cost capital improvements such as reconstruction or added travel lanes. The final report for each site included cost estimates for the recommended improvements and a scoring system to evaluate each site's need for improvements and the anticipated cost-efficiency of those improvements.

- On-Call Traffic Forecasting, Various Locations, Indiana: project engineer responsible for providing long-range traffic forecasts to support the Indiana Department of Transportation. These on-call assignments are for facilities ranging from isolated rural intersections to complex urban freeway systems. Recent projects include SR 8 forecasts in DeKalb County, SR 912 forecasts in Lake County, and forecasts for the intersection of SR 64 & SR 162 in Dubois County and the intersection of SR 130 & County Line Road in Porter County.

Transportation Planning

- Sign Inventory, Assessment & Replacement, Richmond, Indiana: project manager for sign inventory & replacement project funded through HSIP. All signs within the City's jurisdiction were inventoried & assessed, and signs/posts in need of replacement were identified. Sign plans were developed for the replacement of over 1,400 signs and construction observation is being facilitated. Ericka has guided the team in plan-development and coordinated with the City of Richmond, the vendor responsible for inventory & assessment, and the sub-consultant leading construction observation.
- Richmond Transportation Plan, Richmond, Indiana: project manager for preparation of a transportation plan for Richmond, Indiana, a small city located east of Indianapolis on I-70. As a part of the larger plan, Transit and Aviation Reports were also prepared, with PB acting as a subconsultant to LSL Planning. Alternate scenarios were evaluated and discussed with the steering committee and local agencies using a variety of platforms.
- IndyGo Stop Improvements, Indianapolis, Indiana: project engineer responsible for the design of improvement plans for existing IndyGo bus stops. Tasks include field investigation of existing conditions, determining a site layout that meets ADA requirements and fits within the physical restraints of each site, preparing construction documents and computing material quantities. In addition to bus shelters, site-plans are also tailored for benches and bike racks.
- Safe Routes to School Plan, Immaculate Heart of Mary School and Indianapolis Public School No. 84, Indianapolis, Indiana: interim project manager for preparation of a Safe Routes to School plan for two urban and adjacent schools in Indianapolis. Immaculate Heart of Mary (IHM) is a private school. Indianapolis Public School 84 (IPS) is a public school located directly across from IHM. A single plan was developed and coordinated between the two schools. Recommendations in the areas of education, encouragement, enforcement, and engineering were developed and an extensive public involvement and data collection effort was conducted.
- Safe Routes to School Plan, The Project School, Indianapolis, Indiana: project engineer involved in preparation of a Safe Routes to School plan for The Project School, a charter school located in the Martindale neighborhood of Indianapolis. In addition to developing a comprehensive plan focusing on engineering, education, encouragement and enforcement initiatives, PB focused on "green" initiatives and sustainability, keeping in line with the school's principles.

APPENDIX B

Qualifications

A Different Kind of Transportation Firm

Nelson\Nygaard Consulting Associates Inc. is distinguished by its commitment to planning transportation systems and identifying mobility improvements that help build and support vibrant, sustainable communities.

A fully multi-modal approach, drawn from the real world experiences of industry specialists, is a hallmark of every Nelson\Nygaard project. Covering all modes of transportation, we specialize in planning, operations, and implementation, balancing the goals of each community with the advantages provided by each mode including transit, paratransit, pedestrian, bicycle, auto, and parking.

Since its inception in 1987, Nelson\Nygaard has grown into a nationally recognized firm with seven offices across North America. Today, our personnel work with a wide variety of clients including public transit operators, regional and state planning organizations, city and county municipal departments and private sector customers, and our projects span the globe.

Transportation Specialists in:

- Campus Planning
- Climate Action and CO2 Reduction
- Paratransit and Community Transportation
- Parking
- Pedestrian and Bicycle Plans
- Traffic Engineering
- Transit
- Transportation and Land Use
- Transportation Demand Management



PARKING STRATEGIES

Nelson\Nygaard believes effective parking management is the key to unlocking multiple community goals, from economic development to congestion management and historic preservation. With more than 50 projects completed for cities, public agencies, developers, universities and nonprofits, we can analyze and share best practices from all sides of the table.

Parking Policy

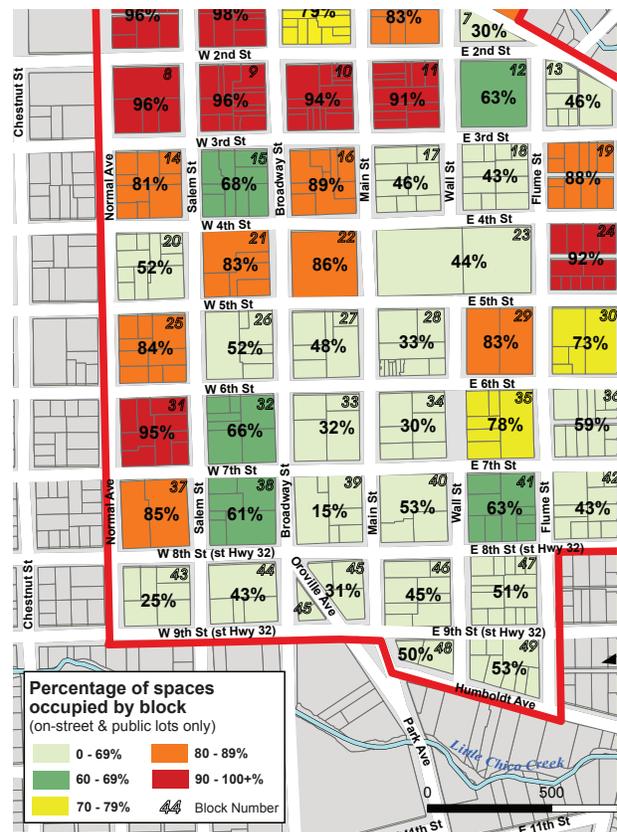
From citywide parking strategies to neighborhood plans, Nelson\Nygaard has developed policies for small downtowns and major metropolitan centers. Our outreach tools help foster community consensus on policy objectives, and translate these into decisions on specific management policies. The firm is also at the cutting edge of new policy formulation: we have written best practice guides for the EPA, taught training courses for the American Planning Association, and developed our in-house best practice database.

Demand Analysis

Nelson\Nygaard helps developers and cities to go beyond the Parking Generation manual and accurately quantify parking demand for a new development, neighborhood plan or zoning ordinance. The firm's integrated financial and transportation models incorporate the impacts of density, transit access, pricing and demand management, and the potential for shared parking. We can analyze when more parking is needed, and when it is more effective to invest in alternatives to driving.

Parking Management

Our senior staff includes former parking managers who can lead clients through the implementation process for parking cash-out, shared parking, residential permit parking and other programs. We advise on how to take advantage of new payment and enforcement technologies, and implement customer-friendly information systems.



Recent Projects include:

- **Downtown Brooklyn Council** — Residential Parking Permit Program Feasibility Study
- **Ann Arbor Downtown Development Authority** — Downtown Parking Study
- **Philadelphia Planning Commission** — Center City Parking Policy Evaluation

GEOGRAPHIC INFORMATION SYSTEMS (GIS)



Geographic Information Systems (GIS) software is used to visualize, analyze and synthesize spatial data such as transit routes, demographics, and travel patterns. Nelson\Nygaard's GIS expertise has become integrated into the transportation planning process, providing strong quantitative data to support difficult planning decisions. Using ESRI's ArcGIS software, the firm offers:

Geospatial Statistical Analysis

How many employees can walk to a train station or bus stop? How many trips originate outside the ADA boundary? Nelson\Nygaard uses GIS to answer these and other geographic questions. The firm analyzes statistics for a variety of transportation projects, from bus service design to parking studies. We work with clients to frame questions, develop a methodology to find answers, and communicate results clearly and concisely.

Transit Evaluations and Service Design

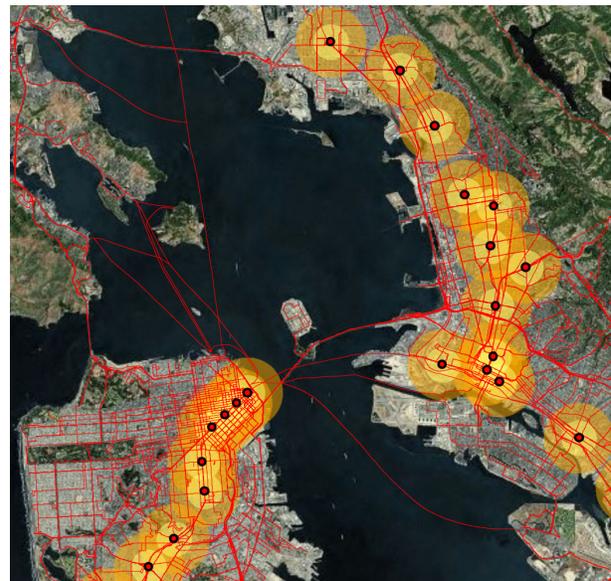
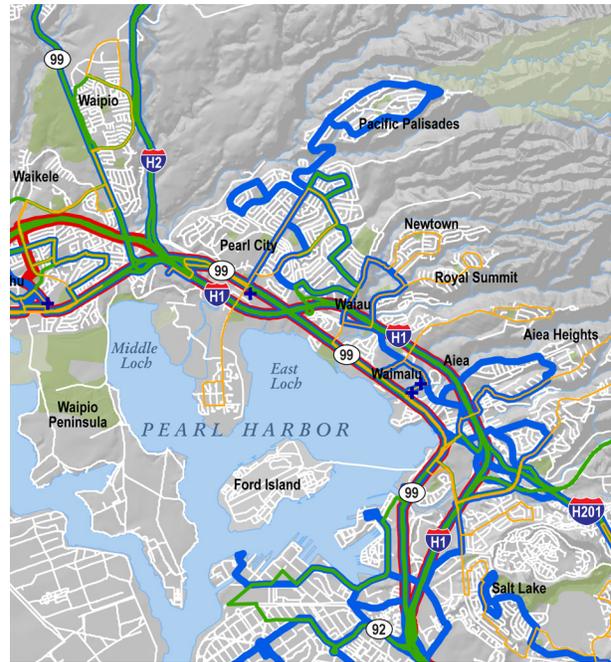
Analysis of the spatial relationships between existing transit routes and potential riders indicate the optimal locations for future transit routes and areas for route realignment. Using GIS, we map present and future population and employment concentrations against existing route structures to identify areas that are or will be under-served.

GIS Database Development

GIS databases are often developed as part of project analyses and can be provided as deliverables. We can build on what you have, whether you already have a robust enterprise GIS or are just starting out.

Cartography and Map Production

The firm's cartographers produce exceptional, high-quality maps that communicate geographic information successfully, as end-user products (brochures, station displays) or process tools visually representing planning goals.



Recent Projects include:

- **Transit Cooperative Research Project, Washington DC** — Car-Sharing Market Analysis
- **Minnesota Department of Transportation** — Central Minnesota Area Commuter Study
- **Seattle, Washington** — Urban Village Transit Network Study

DOWNTOWN PLANNING

Everything comes together downtown, where cars, buses, bikes, trains, and pedestrians compete over the most limited space for access to the greatest number of retail stores and services. Nelson\Nygaard's unique planning tools help downtowns carefully balance each mode of transportation to help achieve both economic growth and livability goals.

Tools and Typologies

Tools that are useful in the suburbs are not always sufficient downtown. Nelson\Nygaard can help downtown planners look beyond simplistic "arterial," "collector" and "local" street typologies by more specifically defining the functions of downtown streets, and by measuring each street's importance in terms of retail, transit, pedestrian, or service access use. Similarly, we can help engineers supplement conventional measures of operational success to include Level of Service indicators for all modes.

Accommodating Growth

If streets are already congested, how can a downtown continue to grow? Nelson\Nygaard helps cities calculate precisely how much mode shift is necessary to allow for continued economic development – and what projects and programs can achieve such a mode shift. Travel in single occupant vehicles consumes at least 10 times as much roadway space as other modes, so even slight modal shifts provide room for significant growth.

Investment Strategy

Nelson\Nygaard works with all downtown stakeholders to determine the capital projects and operating programs that are the most cost-effective tools to expand access to downtown for shoppers, employees, visitors, and residents.



Recent Projects include:

- **Seattle Department of Transportation, Washington** — Center City Circulation Study
- **Ventura, California** — Downtown Parking and TDM Plan
- **Glendale, California** — Mobility Plan
- **Philadelphia, Pennsylvania** — Benjamin Franklin Parkway Circulation Transit and Parking Study

Salem, MA



Comprehensive Downtown Parking Plan

Salem has a notorious reputation for parking problems in its historic downtown, especially during its peak tourist month of October. Throughout the year, residents, visitors, employees, and commuters vie for limited quantities of on-street spaces. Some garages are often filled while others remain empty. After years of lobbying, and the development of a new judicial center, the City received official notice that a new parking garage would be built over its MBTA commuter rail station to relieve problems.

Nelson\Nygaard was hired to evaluate current and future demand for parking and develop a management plan before the completion of the new judicial center and MBTA garage. However, the Team documented that there were already 1,500 empty spaces within a short walk of the garage site at peak, but given complicated regulations the perceived parking problems at prime spaces went unabated. After a detailed evaluation process, Nelson\Nygaard demonstrated that an entirely new management system would eliminate the current hodgepodge of regulations, excessive ticketing, and frustrated travelers.

Nelson\Nygaard's recommendations would greatly simplify parking in Salem by creating a three-tiered pricing system for customers and visitors and a three-tier system for residential and employee permits. With a vote from city council to manage each curb face to a 15 percent availability goal, Salem is currently in the process of finalizing its implementation plan.

The "radical" change has been received positively by the community, and the City hired Nelson\Nygaard again to identify the capital investments that would be necessary to implement the plan and to project the potential annual operating budget under the new system. The program has been in place for over a year with dramatically positive feedback from the business community, residents, and visitors.



Project Duration: 2009-Present

Total Budget: \$42,000

For more information:

City of Salem, MA
120 Washington Street
Salem, MA 01970

Contact:

Tom Daniel
Economic Development Manager
978-619-5687
tdaniel@salem.com

Lansdale, PA

Comprehensive Parking Study



The Lansdale Parking Authority retained Nelson\Nygaard and McMahon Associates to undertake a comprehensive parking study of downtown Lansdale. Lansdale is actively seeking to facilitate the redevelopment of the borough's downtown area as a vibrant, healthy, safe, and pedestrian-friendly destination. The goal of the study was to provide a framework upon which the Borough could integrate sound parking policy and realistic parking information into its downtown development plans.

Lansdale, located 20 miles northwest of Philadelphia, seeks to capitalize on its compact downtown area and excellent transit access with a busy SEPTA rail station. Yet the city struggles with an antiquated parking system in terms of regulations, pricing, governance, and enforcement. With a recently completed Main Street streetscape project, and the potential development of a 200+ space municipal parking lot adjacent to the rail station, the Nelson\Nygaard team documented the existing parking supply and utilization. Working with community stakeholders, the Lansdale Parking Authority, and Borough Staff, the team established a base understanding of how parking works in Lansdale and developed recommendations to update the parking management system so that it supports larger Borough goals while accommodating current users. The recommendations, approved by the Parking Authority, would:

- Establish a Demand Responsive Pricing system for on- and off-street parking in the core area around Lansdale Station to create availability for customers
- Organize parking policy and governance functions under the direction of the Parking Authority, while maintaining current staffing levels and responsibility
- Enhance the Downtown Business Overlay District Zoning to incorporate the most progressive parking provision policies
- Eliminate time limits and establish unpaid parking in area's highest availability
- Remove antiquated meters and consolidate best existing technology into most utilized areas
- Recommend signage, wayfinding, and physical infrastructure improvements to encourage a park and walk system in Downtown Lansdale.



Project Duration: 2011-present

Total Budget: \$80,000

Nelson\Nygaard Budget: \$55,000

For more information:

Lansdale Parking Authority
1 Vine Street
Lansdale, PA 19446

Contact:

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rmcdyre@lansdalepd.org

Haverhill, MA

Downtown Parking Study



Recognizing the growing pressure on their downtown parking supply, the City of Haverhill hired Nelson\Nygaard to develop a comprehensive strategy for addressing parking needs in advance of the regional transit agency completing a new parking garage at the commuter rail station. Haverhill's 2007 Master Plan for downtown called for the creation of a vibrant, urban, pedestrian-friendly environment that can only exist in an area with a functional parking system.

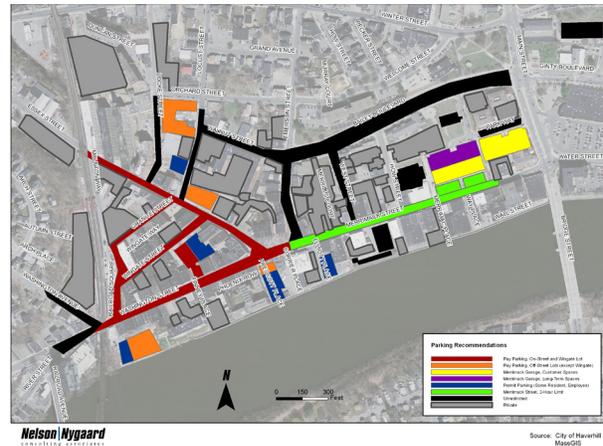
Downtown Haverhill experiences parking pressures from residents, employees, customers, commuters, and visitors. Competition for parking in certain areas can at times be intense. Meanwhile, the overall supply of parking is never more than 63% utilized, allowing room to dedicate guaranteed spaces for specific user groups. With the RTA's garage opening soon—and a burgeoning downtown residential population—Haverhill recognized that it needed to act. The city needed several changes to be able to manage its downtown parking system in a way that would accommodate its continued vitality.

A detailed counting program mapped utilization throughout the downtown area and multiple workshops identified areas of need. Nelson\Nygaard then developed several guiding principles underlying the program:

- Provide convenient, available parking for customers and clients
- Establish permitted parking for residents and employees
- Protect publicly available parking from commuter pressures
- Return any excess parking funds generated to downtown improvements
- Make the parking system user friendly

A thorough parking program was developed that:

- Implements paid parking in the busiest places to encourage availability/turn-over
- Eliminates most time-limits
- Uses in-car meters for new permit parking
- Establishes a clear enforcement policy



In September of 2011, the Haverhill City Council approved the program; the City is now moving ahead with full implementation and Nelson\Nygaard's on-going assistance.

Project Duration: 2010

Total Budget: \$30,000

Nelson\Nygaard Budget: \$24,950

For more information:

City of Haverhill
4 Summer Street
Haverhill, MA 01830

Contact:

David Van Damm
Mayor's Chief of Staff
(978)-374-2300

Downtown Parking Study — Phases I and II

The City of Ann Arbor requires no on-site parking for as-of-right development within its downtown, while providing 5,770 public spaces throughout the district. By policy, these spaces are self-funding, reigning in urges to overbuild. Some believe this has led to insufficient supplies, with years-long wait lists for monthly permits. Conversely, many longtime residents maintain strong opposition to adding any new parking in the district.

In the summer of 2006, Nelson\Nygaard was contracted to conduct a comprehensive review of downtown parking conditions. The project team inventoried the Ann Arbor Downtown Development Authority (DDA)'s on- and off-street parking spaces and documented utilization during three key time periods. On-site interviews and windshield surveys solicited parker input on parking and transportation conditions. Results were summarized and presented during a public workshop in December. By quantifying existing conditions, this phase re-shaped and clarified the impassioned debate over whether downtown has too little, too much, or just enough parking.

In January, 2007, Nelson\Nygaard was contracted to use Phase I findings as a basis for developing recommendations for a comprehensive parking policy for downtown. This process began with a week-long round of stakeholder outreach activities intended to present Phase I findings and to frame policy options. Feedback informed preliminary policy and implementation recommendations, which were then vetted through a second round of outreach meetings. A final set of recommendations was presented to the City Council. All recommendations were adopted unanimously in June, 2007.



Project Duration: 2006–2007

Total Budget: \$180,000

Contact:

Phase I

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Phase II

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Seattle, WA

South Lake Union On-Street Parking Management Plan



Washington State
American Planning Association
Merit Award

The neighborhood of South Lake Union in Seattle is home to Amazon.com, Group Health, and other technical and health sciences employers, and is expected to add 40,000 more jobs and 20,000 new residents over the next 20 years. The Seattle Department of Transportation (SDOT) hired Nelson\Nygaard to develop an On-Street Parking Management Plan for this dynamic downtown neighborhood. Implemented in 2007, this project was one of the first and largest parking value-pricing demonstrations in the United States, covering about 100 blocks.

Nelson\Nygaard's recommendations included the adoption of a market-rate pricing scenario to ensure that on-street parking would be available for business customers, residents, and employees at all times. Modern pay-station meters were installed to collect real-time parking data, allowing city parking managers to employ more accurate and flexible parking strategies.

The core recommendation of the plan was to manage short- and long-term on-street parking demand in South Lake Union through innovative pricing strategies. Rates are set and adjusted periodically to maintain an 85% occupancy standard (so that at least one space on every block is available). Additionally, a residential parking zone was established to provide a minimum amount of exclusive parking for existing residents.

In 2008, the South Lake Union On-Street Parking Study received the first ever Washington State American Planning Association Merit Award given to a parking project.



Project Duration: 2005–2006

Total Budget: \$60,000

For more information:

Seattle Department of Transportation
700 5th Avenue, Ste. 3800
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Contact:

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Portsmouth, NH

Downtown Parking Supply and Demand Analysis



Through historic preservation measures, the City of Portsmouth has been able to maintain its downtown as a pristine seaport village, making it one of the top places to live, work, and visit in New England. In addition to the high number of tourists who flock to Portsmouth each year, recent efforts have increased the number of people living and working in the City. Consequently, the number of people wanting to park has and will continue to increase. Each of the aforementioned groups has unique parking needs and these competing needs have strained key parts of downtown Portsmouth's parking supply, while other parking areas have been largely unutilized.



The City's 2010 Report on Downtown Parking and Economic Vitality concluded that there is a need for additional parking spaces in the downtown area, now and in the future. However, the report concedes that the data collected for the report is limited and not readily accessible for analysis.

Nelson\Nygaard Consulting Associates was hired to refine the supply and demand analysis estimates in the 2010 study and to determine whether additional off-street parking facilities would be needed in the next three to ten years. Key components of this study are the analysis of supply and demand by sub-group, particularly because the study area has expanded, and the comparison of supply and demand on a more finite level.

In October 2011, Nelson\Nygaard sent a team of data collectors to record the current parking supply and demand of nearly 6,000 parking spaces for the hours of 8am to 10pm on a weekday and a weekend day. The results showed that Portsmouth's overall parking supply is not fully utilized, and that capacity remains in parts of the City where parking is difficult to access or restricted. A full land use analysis, including accounting for vacancies in the downtown, also showed that Portsmouth has enough parking supply to satisfy demand. Due to these results, plus other more detailed analyses, the City decided not to pursue building a parking garage, but instead look toward implementing demand-management strategies, including pedestrian access, shared parking, and pricing.

Project Duration: 2011-2012

Total Budget: \$20,000

N\N Budget: \$20,000

For More Information:

City of Portsmouth
City Hall
1 Junkins Avenue
Portsmouth, NH 03801

Contact:

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Parking Study

In spring 2009, the Montgomery County Department of Transportation (MCDOT) and the Maryland-National Capital Park and Planning Commission (M-NCPPC) contracted with Nelson\Nygaard to complete a Parking Study to review both the County's Parking Lot District (PLD) program and its parking requirements for urban, mixed-use districts.

The primary objectives of this study were to:

- Bring the County's PLD program in line with current best practices for parking management districts;
- Bring the County's parking requirements in line with current best practices for urban, mixed-use areas; and
- Ensure that the revamped PLD program and the revised parking requirements extract the maximum synergistic value from each other—and work together to promote sustainable, walkable, vibrant urban centers across Montgomery County.

Nelson\Nygaard produced a review of peer programs and best practices to define a new series of Parking Benefit Districts, where parking revenues are directed toward the PLD program as well as County congestion, transit, and downtown investment programs.

In the second phase, Nelson\Nygaard developed a custom approach for defining parking standards for the new PBDs, resulting in a requirement framework that:

- Provides a range of as-of-right supply options, including significantly reduced minimum requirements and parking maximums for non-shared parking;
- Provides options to build outside of this range in return for providing financing or direct investments to offset potential negative impacts.



- Promotes public, shared parking between developments; and
- Creates a highly flexible regulatory framework that addresses the development complexities both common to urban areas and unique to the Washington, D.C. region.

Project Duration: 2009–2011

Total Budget: \$150,000

Contacts:

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Nantucket, MA

Downtown Parking Strategies and Parking Management Implementation Program



Like most bucolic seaside destinations, the inhabitants and government stakeholders of the island of Nantucket find themselves compelled to protect the island's charms from the impacts of both its tremendous appeal to mainland populations and the modern transportation means that make the island more accessible. This is a particular challenge during the summer months when tourists and vacation-home owners increase the town's population from around 10,000 inhabitants to between 50,000 and 60,000.

During this busy season, the Town encourages visitors to limit the use of cars by providing a seasonal shuttle transit system. There are also miles of town-maintained bike paths and the downtown is highly walkable. Yet, as pointed out in several recent studies, the combination of modern travel sensibilities and a lack of demand-responsive parking management practices currently work against reducing the impact of local vehicle trips on the historic downtown.

In 2010, Nelson\Nygaard was hired to identify possible modern parking management solutions that can help support transit and other multi-modal investments, by minimizing the disruptive impacts of personal vehicles competing for a limited supply of parking and help to protect the historic charm of downtown Nantucket. The study presented various options identified as possible parking management strategies for use on Nantucket, and placed these various options in a context that helped citizens and civic leaders decide on policies that best fit the needs of Nantucket.

Based on public outreach results identifying parking strategies appropriate for meeting the unique needs and goals of Nantucket, Nelson\Nygaard assembled a potential parking management package. The initial results were so well received that Nelson\Nygaard is now guiding the community through the process of developing and implementing a downtown parking management program.



Project Duration: 2010-Ongoing

Total Budget: \$120,000

Contact:

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Downtown DC BID Parking Study

The Downtown DC Business Improvement District (DBID) retained Nelson\Nygaard to assist in completing a Parking Benefit District feasibility assessment for downtown Washington.

Planners from our New York and Boston offices assisted the DBID in this process by first developing a comprehensive Survey Toolkit for completing Inventory, Occupancy, and Duration surveys within the downtown curbside parking inventory. This Toolkit included all necessary materials for field implementation, data entry, and findings analysis for all three survey types. Upon receipt of the Toolkit, the DBID completed a series of surveys and delivered all resulting data to Nelson\Nygaard for analysis. Nelson\Nygaard used Toolkit resources to fully analyze the capacity, occupancy, and duration data that DBID collected and entered. Finally, we used the Toolkit instruments to develop a full evaluation of curbside performance across the surveyed inventory — based on industry-standard utilization metrics for optimal curbside performance — and projected the performance and financial impacts of a short series of performance-based price change recommendations.

Implications of our findings included the potential to generate millions of dollars in new revenues by recalibrating meter rates based on measured demand. This would not only create new, direct revenue, but would improve overall mobility performance (especially surface transit) by reducing parking-related congestion, and make available parking spaces consistently easier to find.

Thus, it was concluded that, not only were revenues significant enough to make it worth establishing a Parking Benefit District, but that doing so was the best means of ensuring that curbside management was effective in responding to observed conditions, and that resulting revenue gains were used to maximize the residual, long-term benefits of well-managed downtown street parking.



Project Duration: 2011

Total Budget: \$30,000

For more information:

Downtown DC Business Improvement District
1250 H Street, NW, Suite 1000
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www.downtowndc.org

Contact:

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Director of Infrastructure and Sustainability
202-638-3232
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Medford Square Parking and Circulation



Nelson\Nygaard was hired as a subconsultant by Utile Architecture who was preparing a garage feasibility study in Medford on behalf of MassDevelopment, the State's economic development arm. The City sought to rebuild a garage that had to be torn down years earlier. Nelson\Nygaard recommended that a full parking study accompany the feasibility study for the new garage in order to understand how much supply was really needed and how it should be managed.

Nelson\Nygaard's approach was to look comprehensively at the entire public parking supply and associated access within a five-minute walking radius of the proposed garage site. This included a traffic operations study at key intersections, a full parking inventory, utilization counts, public workshops, parking surveys, and field observations.

By assessing how a parker would access destinations from the garage on foot, Nelson\Nygaard identified key traffic signal and intersection improvements that would significantly, reduce pedestrian crossing delays, bringing more destinations within a short walk. This also demonstrated that more existing vacant spaces could also be made closer, helping lead the City to prioritize better management of the existing parking supply before building a new garage.

The project team proceeded to develop a park-

ing pricing structure using demand-based zones and demonstrated that on-street parking and a new-permit program could adequately cover the costs of a new parking facility and bring in additional revenue.

As of summer 2010, the City's first priority is a parking management plan that may extend to other parts of the city. This work in Medford Square has demonstrated the value of a highly-walkable space for improved parking access that reflects Nelson\Nygaard's technical creativity in solving multimodal transportation challenges.

Project Duration: 2010

Total Budget: \$134,904

Nelson\Nygaard Budget: \$36,012

For more information:

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Boston, MA 02110

Contact:

Rhonda Spector
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(617) 330-2000
rspector@Massdevelopment.com

Centene Parking Management Study

Clayton, Missouri

Client:

City of Clayton

PB conducted a Parking Management Study to identify the parking impacts and recommend mitigation measures for a new development in downtown Clayton, Missouri. The proposed development included over 800,000 SF of mixed-use development including office, retail, and restaurant. Approximately 1,600 parking spaces were proposed to be constructed in a garage adjacent to the site. PB prepared a summary of existing parking supply and occupancy rates in vicinity of the site, including both off-street (garage) and on-street (metered) spaces. An estimate of future parking demand was developed for the subject site using ITE Parking Generation. Parking management strategies were evaluated and recommendations were made to mitigate the parking impacts and reduce demand to meet proposed supply levels. Alternatives that were considered for mitigation included unbundling parking, providing bicycle facilities, implementing alternative work schedules, regulating parking, orchestrating parking agreements, providing transit benefits, and others.



City of Chicago Pedestrian Plan

The City of Chicago has an extensive transportation network, including a well-developed pedestrian infrastructure. However, the number of pedestrian fatalities and incidents has caused concern, and the City sees the issue as critical to improving public health and quality of life for residents, workers and visitors. As a result of this, PB has been selected to perform the development of a pedestrian plan for the City of Chicago.

The pedestrian plan will address the issue of pedestrian safety as well as define goals and future priorities for the city's pedestrian network. PB is working with the Mayor's Pedestrian Advisory Council, an interdisciplinary group, comprised of a number of city agencies as well as public health advocates, civic organizations and business associations, to develop the plan.

The plan development process will entail:

- Conducting stakeholder and agency interviews
- Selecting and analyzing seven high-crash sites
- Providing an analysis of best practices in two peer cities
- Conducting public involvement meetings
- Developing goals, objectives, and performance measures for the plan

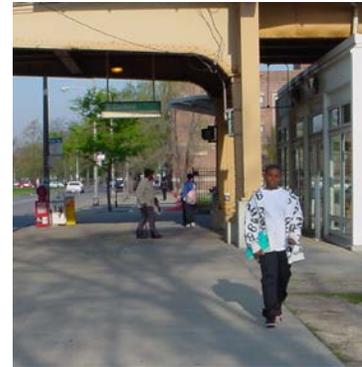
- Identifying potential funding sources for improvements
- Developing prioritization criteria for improvements

The stakeholder and agency interviews will provide an overview of existing conditions, policies, and programs related to pedestrians throughout the city. PB will use these interviews as the basis for the existing conditions chapter of the final plan.



To address the issue of pedestrian safety, PB will select and analyze seven sites throughout the city that have been identified as high pedestrian-motor vehicle crash locations. This site review will include an assessment of current conditions and propose a set of countermeasures that can improve conditions for pedestrians at the site, as well as similar locations in the city.

The site locations will address transit access, signal timing, infrastructure changes, signing and striping, corridor speed, land use and other influences on pedestrian and motorist behavior.



Public meetings will be held to engage residents and workers in the discussion on how to improve pedestrian conditions. In addition to improving pedestrian safety, the city is interested in encouraging pedestrian activity and public input will help the city establish priorities and programs that users will respond to.

The final plan document will contain approved goals, objectives, and performance measures, along with prioritization criteria will help guide future investments in pedestrian infrastructure and programs. The identification of funding sources will ensure that recommended improvements can be implemented.

Client Contact:
Kiersten Grove
Pedestrian Program
Coordinator
Chicago Dept. of
Transportation
30 N. LaSalle, Suite 500
Chicago, IL 60602
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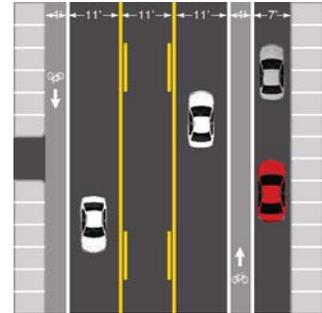
PARSONS AVENUE CORRIDOR IMPROVEMENTS

Columbus, Ohio

Client Reference

Gary Wilfong
City of Columbus
109 North Front Street
Columbus, Ohio 43215
614-645-1704

A feasibility study was completed to develop solutions for traffic operations and safety problems that exist along the Parsons Avenue Corridor. The area encompassed a two mile section of Parsons Avenue from Livingston Avenue to Hosack Street. The study included analysis of traffic operations, preparation of collision diagrams and a crash data analysis for a three year period. The study also included parking and transit analysis. Three alternatives were presented to the public that included traffic signal optimization opportunities, a three lane (road diet) alternative with alternating parking and a three lane (road diet) alternative with alternating parking and bicycle lanes. Recommendations also included traffic calming measures such as bump outs, median islands, flashers at mid-block crossings, new traffic signals with countdown pedestrian signals, additional bus shelters, decorative lighting and other streetscape improvements. In addition to the study, a traffic simulation was prepared to show the public the forecasted traffic under three alternatives. Project implementation included short-term, intermediate term and long-term improvements. Construction cost estimates were provided within the study areas as well as strategies to implement various projects within each area.



Parsons Brinckerhoff was selected to prepare final construction drawings for improvements to the Parsons Avenue Corridor between Livingston Avenue and Hosack Street. The project will convert the corridor from an existing four-lane section to a three-lane section with full time parking on one side. The project included preparation of roadway resurfacing and drainage plans, traffic signal plans for seven intersections, traffic control plans and maintenance of traffic plans.

