

City of Biddeford
City Council - Workshop
February 02, 2017 5:30 PM Council Chambers

1. Workshop Discussion Items

- 1.1. Consideration of PACTS Submittal
[PACTS Project Funding-Intersections-MEMO.pdf](#)
- 1.2. Parking Facility Report from Review Team
[Parking Facility Consultant-MEMO.pdf](#)
[1 G-P Final Report 2006 For Web.pdf](#)
[2 Mill District MP 2009 Excerpt.pdf](#)
[3 Downtown Parking Study 2012 Final Report.pdf](#)
[4A Mill District Parking Feasibility Study Presentation.pdf](#)
[4B Mill District Parking Feasibility Study Presentation.pdf](#)
[5 Analysis of Costs of Free Parking Staff Report 052016.pdf](#)
[6 Structured Parking Financing Presentation 110116.pdf](#)
[Operating Costs-Budget.pdf](#)
[7 Structured Parking Consideration of Sites Jan 2017.pdf](#)
[Federal Street Lot Site.pdf](#)
[Foss Street Lot Site.pdf](#)
[Maine Energy Lot Site.pdf](#)
[Mill Lot Site.pdf](#)
[Police Dept Lot Site.pdf](#)



City of Biddeford

Public Works Department / Engineering Division
P.O. Box 586 • 205 Main Street, Suite 301
Biddeford, ME 04005
Phone: (207) 284-9118 • Fax: (207) 571-0662

To: Biddeford City Council

From: Tom Milligan, PE City Engineer

Date: January 25, 2017

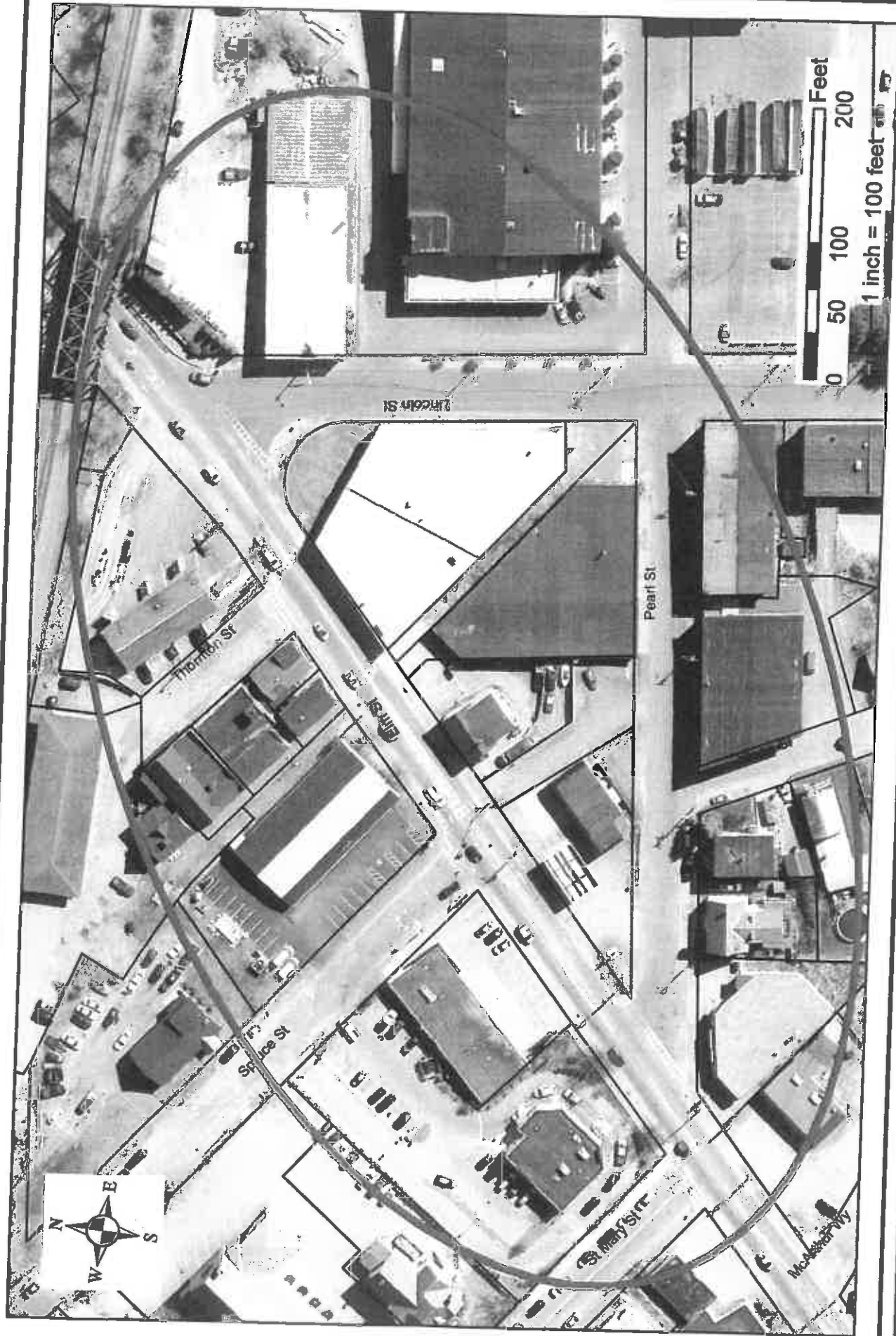
Cc: Alan Casavant, Mayor; Jim Bennett, City Manager; John McCurry, City Council President; Guy Casavant, Director of Public Works; Daniel Stevenson, Economic Development Director; Greg Tansley, City Planner

Re: Intersections Redesign/Re-configuration Project PACTS Complex Project Funding Category Summary

As part of the application process for funding of PACTS complex projects, PACTS requires a letter of support for the proposed project from the local governing body. Funding for approved projects will be included in the 2020-2021 MDOT/PACTS TIP project list. A municipality is required to have a preliminary design report completed (part of funding) and provide a local match often in the 10 to 25 % range.

The project involves the redesign/re-configuration of several street intersections onto and adjacent to Elm Street in the area between Lincoln Street and St. Mary's Street. The new intersections will significantly improve auto, pedestrian, bicycle and multi modal traffic access to the developing mill district.

Reconfiguration of the intersections will also provide for better access and traffic flow into and out of the downtown area. The project will address significant safety issues at several intersections, and will address current congestion issues. Modification to the traffic signal and lane configuration on Elm Street will allow for controlled movements into and of the area. See attached map which outlines the area of proposed work.



The City of Biddeford, Maine
 Engineering Department - GIS Mapping
 205 Main Street · P.O. Box 586 · Biddeford, Maine 04005-0586
 Tel. 207 284-9118 · Fax 207 286-9388



**INTERSECTION REDESIGN
 RECONFIGURATION PROJECT AREA**

ESRD
Special Achievement
 in GIS Mapping
 2002



City of Biddeford

Public Works Department / Engineering Division
P.O. Box 586 • 205 Main Street, Suite 301
Biddeford, ME 04005
Phone: (207) 284-9118 • Fax: (207) 571-0662

To: Biddeford City Council

From: The Parking Facility Review Committee
Tom Milligan, PE City Engineer, Staff rep

Date: January 25, 2017

Cc: Alan Casavant, Mayor; Jim Bennett, City Manager; John McCurry, City Council President; Guy Casavant, Director of Public Works; Daniel Stevenson, Economic Development Director; Greg Tansley, City Planner

Re: Recommendation for a Parking Facility Consultant

Background:

The Parking Facility Consultant Review Committee determined that all the consultant teams were qualified to provide the desired services and therefore elected to conduct interviews with the five firms submitting proposals for the project. The five firms were:

Winton Scott
O&S Associates
Platz Associates
Oak Point Associates
Desman Design Management

The five members of the review committee are:

Marc Lessard, Councilor at Large
Bob Mills, Councilor Ward 5
Daniel Boucher
Spiros Droggitis
Richard (Chico) Potvin

Tom Milligan, City Engineer, staff

Process:

As part of the interview process, each firm was asked to provide a twenty minute presentation of their firm's qualifications and experience, followed by twenty minutes to discuss the five pre-prepared, pre-distributed interview questions, followed by a twenty minute general question and answer period.

The five provided interview questions to be discussed were:

1. Please describe viable locations where you would site a parking facility. Discuss advantages and disadvantages of each location and what style/type you would propose for each location.
2. Garages are often constructed of either steel or concrete. Please discuss each type of construction and provide the advantages and/or disadvantages of each including construction costs, operation and maintenance costs, etc.
3. How many garages would you recommend be constructed and why. What would be a recommended size of each?
4. Discuss expansion ability of a facility including challenges and costs.
5. Fees and Costs provided in the RFPs vary widely. Please provide a spread sheet summarizing your costs by category/Phase and provide total hours assign for each category. Also discuss your assignment of costs in each category, whether they are fixed or variable costs and list any additional costs that should be expected.

After the interview process was completed, the review committee met to discuss each firms qualifications, their response to the prepared questions, their presented scope of work, their overall experience and general understanding of parking garages and the their understanding of the City's needs.

Recommendation:

Based on a thorough review of each firm's qualifications and experience, their responses to the questions, and their overall stated approach to the project, the committee unanimously felt that Desman Design Management was the most qualified and responsive firm and therefore recommends to the City Council that they be awarded the contract to provide the requested services to the city.

The following bullets present some of the strong points made by Desman Design Management that were viewed by the committee as important issues.

- Desman's primary focus is that they only do parking facilities
- They have many garage projects either currently in design phase or under construction
- They indicated that they would provide a detailed O&M manual when the garage was completed
- They would present cost and financing options

- They would provide a “Matrix” for siting a facility currently used by them that includes costing, location, public input, etc
- They exhibited an in depth knowledge of construction techniques and construction materials
- They have done O&M on garages and understand O&M issues and design their facilities to minimize O&M needs
- They have done many projects involving garage retrofits and understand what works and use this gained knowledge in designing facilities, i.e. what to include in the design and what not to
- Familiar with architectural types and options that will fit into an area
- Demonstrated enthusiasm for the work
- The only firm that followed up with a “thank you” email after the interview

In Summary, the committee believes Desman Design Management will be responsive to the city’s needs, will listen to input, will include the city in the process, will be flexible in addressing the needs of the City and will serve the City well in the development of a parking facility,

Milligan, Tom

To: Morris, Carmen
Cc: Bennett, James
Subject: council workshop items
Attachments: final letterhead.docx; coucil memo.docx; Lincoln_Pearl_Elm 8x11.pdf

Carmen

Here are two items for the Feb 2 council workshop

- 1 Parking garage memo from committee 1st attachment herein
- 2 PACTS intersection project next two attachments

Thank you Tom



*Gorrill-Palmer
Consulting
Engineers, Inc.*

**FINAL REPORT
DOWNTOWN BIDDEFORD
PARKING & TRAFFIC
STUDY**

November 2006

Traffic Engineering

- Impact Studies
- Corridor Studies
- Parking Studies
- Pedestrian Studies
- Roadway Design
- Peer Review
- Traffic Calming

Civil Engineering

- Site Plan Design
- Stormwater
Management
- Erosion Control
- Utility Design
- Permitting
- Feasibility Studies

15 Shaker Rd.
PO Box 1237
Gray, ME 04039
207-657-6910



Downtown Traffic Circulation and Parking Management Plan

Biddeford, Maine

Table of Contents

Acknowledgements.....	i
Executive Summary.....	1
Project Background.....	1
Study Area.....	1
Future Development Forecast.....	2
Traffic Circulation.....	2
Traffic Circulation – Improvement Alternatives.....	2
Traffic Circulation – Recommendations.....	3
Parking Management.....	3
Parking Management Plan – Recommendations.....	4
Introduction.....	7
Project Background.....	7
Study Area.....	7
Project Goals.....	7
Traffic Circulation.....	9
1. Existing Conditions.....	9
Data Collection.....	11
Bicycle and Pedestrian Amenities.....	11
Transit Facilities.....	11
Capacity and Level of Service.....	11
Collision History.....	15
Traffic Forecast for Year 2025.....	18
Summary of Existing Deficiencies.....	19
2. Identification of Improvement Alternatives.....	20
Alternative 1 – Retime traffic signals.....	20
Alternative 2 – Relocate access to North Dam Mill to better align with Water Street.....	20
Alternative 3 – Eliminate Hill Street access to Main Street and Water Street.....	20
Alternative 4 – Construct roundabout at Main Street at Hill Street/Water Street.....	21
Alternative 5 – Install all-way stop at Main Street/Alfred Street/Laconia Street.....	21
Alternative 6 – Install all-way stop at Jefferson Street/Adams Street.....	21

Alternative 7 – Install traffic signal at Main Street/Alfred Street/Laconia Street.....	21
Alternative 8 – Eliminate select on-street parking spaces to improve sight lines and safety.....	21
Alternative 9 – Close Main Street from Alfred Street to Adams Street.....	22
Alternative 10 – Create turn lanes at Alfred Street and Main Street.....	22
3. Operational Evaluation of Alternatives.....	23
2025 Analysis with retiming of traffic signals and relocated mill access.....	24
Elimination of Hill Street access to Main Street.....	27
Construction of roundabout at Main Street at Hill Street/Water Street.....	31
Closure of Main Street from Alfred Street to Adams Street.....	34
4. Recommendations.....	38
Suggested Implementation Phasing.....	39
Parking Management.....	40
5. Existing Conditions.....	40
Off-Street Parking Supply.....	41
On-Street Parking Supply.....	41
Average Usage of Municipal Parking.....	42
6. Future Parking Demand and Recommendations.....	44
7. Parking Management Plan.....	46
Parking Fees and Fines.....	46
Implementation and Phasing.....	47
Conclusion.....	49

Report Tables

Table 1.1: Peak Hour Pedestrian Volumes – 2005.....	11
Table 1.2: Level of Service Criteria for Unsignalized Intersections.....	12
Table 1.3: Level of Service Criteria for Signalized Intersections.....	12
Table 1.4: Level of Service for Downtown Signalized Intersections – 2005.....	13
Table 1.5: Level of Service for Downtown Unsignalized Intersections – 2005.....	13
Table 1.6: Queue Analyses for Downtown Signalized Intersections – 2005.....	14
Table 1.7: Queue Analyses for Downtown Unsignalized Intersections – 2005.....	15
Table 1.8: MaineDOT Crash Data for 2002-2004: Intersections with CRF>1.00.....	16
Table 1.9: MaineDOT Crash Data for 2002-2004: Roadway Segments with CRF>1.00.....	17
Table 1.10: Anticipated Downtown Development by 2025.....	18
Table 3.1: Level of Service Criteria for Unsignalized Intersections.....	23
Table 3.2: Level of Service Criteria for Signalized Intersections.....	23
Table 3.3: Level of Service for Downtown Signalized Intersections – 2025.....	24
Table 3.4: Level of Service for Downtown Unsignalized Intersections – 2025.....	25
Table 3.5: Queue Analyses for Downtown Signalized Intersections – 2025.....	26
Table 3.6: Queue Analyses for Downtown Unsignalized Intersections – 2025.....	27
Table 3.7: Level of Service for Downtown Signalized Intersections – No Hill Street Access.....	28
Table 3.8: Level of Service for Downtown Unsignalized Intersections – No Hill Street Access.....	29
Table 3.9: Queue Analyses for Downtown Signalized Intersections – No Hill Street Access.....	30
Table 3.10: Queue Analyses for Downtown Unsignalized Intersections – No Hill Street Access.....	31
Table 3.11: Level of Service for Downtown Signalized Intersections – Roundabout.....	32
Table 3.12: Level of Service for Downtown Unsignalized Intersections – Roundabout.....	32
Table 3.13: Queue Analyses for Downtown Signalized Intersections – Roundabout.....	33
Table 3.14: Queue Analyses for Downtown Unsignalized Intersections – Roundabout.....	34
Table 3.15: Level of Service for Downtown Signalized Intersections – Main St Closed.....	35
Table 3.16: Level of Service for Downtown Unsignalized Intersections – Main St Closed.....	35
Table 3.17: Queue Analyses for Downtown Signalized Intersections – Main St Closed.....	36
Table 3.18: Queue Analyses for Downtown Unsignalized Intersections – Main St Closed.....	37
Table 5.1: Off-Street Parking Supply – Municipal Lots.....	41
Table 5.2: On-Street Parking Supply.....	41
Table 5.3: Average Usage of Municipal Parking Lots.....	42
Table 5.2: On-Street Parking Supply.....	42

Table 6.1: Parking Requirements for Anticipated Downtown Growth.....	44
Table 6.2: On-Street Parking Restrictions – Recommended Changes.....	45
Table 6.3: Municipal Parking Lot Restrictions – Recommended Changes.....	45
Table 7.1: Comparison of Parking Fines.....	47

Appendices

Appendix A.....	Study Area Map and 2005 Traffic Volumes
Appendix B.....	Collision Diagrams
Appendix C.....	Forecasted 2025 Traffic Volumes
Appendix D.....	Capacity and Queuing Analyses
Appendix E.....	Parking Survey Data Sheets
Appendix F.....	Parking Garage Concepts
Appendix G.....	Public Comments
Appendix H.....	Meeting Notes

Appendix Figures

Figure A.1.....	Overall Study Area Map
Figure A.2.....	2005 Raw Volumes – PM Peak Hour
Figure A.3.....	2005 Adjusted Volumes – PM Peak Hour
Figure A.4.....	Historical Traffic Volumes
Figure B.1.....	High Crash Locations
Figure B.2 to B.14.....	Collision Diagrams
Figure C.1.....	Future Downtown Development Volumes – PM Peak Hour
Figure C.2.....	Projected 2025 Volumes – PM Peak Hour
Figure C.3.....	Main Street/Hill Street/Water Street Projected 2025 Volumes – PM Peak Hour
Figure C.3A.....	No Access From Hill Street Projected 2025 Volumes – PM Peak Hour
Figure C.4.....	Main Street Projected 2025 Volumes – PM Peak Hour
Figure C.4A.....	Main Street Closed Projected 2025 Volumes – PM Peak Hour
Figure C.5.....	Roundabout Concept for Main Street/Hill Street/Water Street/North Dam Mill
Figure C.6.....	Concept of no Hill Street access to Main Street
Figure F.1.....	Potential Parking Garage Site
Figure F.2.....	Potential Parking Garage – Typical Level
Figure F.3.....	Potential Parking Garage - Isometric

Acknowledgements

The Consultant Team wishes to acknowledge the valuable assistance of the members of the Downtown Parking and Traffic Advisory Committee and City Staff in preparing this study for the City of Biddeford. (Listed in alphabetical order.)

Advisory Committee Members

Chris Betjemann – Property Owner
John Duncan – Director, PACTS
Kenneth Farley – City Councilor
David Flood – Heart of Biddeford
Brian Keely – Downtown Development Commission
John McCurry – City Councilor
David O'Connor – University of New England
Rachael Weyand – Heart of Biddeford

City Staff

John Bubier – City Manager
Robert Dodge – Economic Development Director
Tom Milligan – City Engineer
Greg Tansley – City Planner

Executive Summary

Project Background

Biddeford, with a population of approximately 22,000 people, is a thriving community with ever-increasing transportation demands. Downtown Biddeford, once home to a strong textile mill center, is being redeveloped with a blend of technology-based businesses, service-based businesses, retail and residential uses. The City is seeing a renewed interest in the Downtown, via the redevelopment of existing buildings and the potential for redevelopment within the Mill District.

As downtown redevelopment and growth continues, traffic destined to and from downtown businesses and residences will likely increase. The street network of Downtown Biddeford will need to continue to accommodate a variety of users, including through traffic, truck, bicyclists and pedestrians. With this increased activity and traffic will come the need for an efficient parking management plan and the creation of new parking.

As part of the City's strategy to providing safe and efficient travel, as well as adequate parking, the City and PACTS retained Gorrill-Palmer Consulting Engineers Inc. to conduct both a traffic circulation and a parking management study for Downtown Biddeford. An Advisory Committee was formed, consisting of City Staff and Elected Officials, and downtown business and property owners. This committee served the role of advisors to Gorrill-Palmer Consulting Engineers Inc. and provided valuable input throughout the study process. Regular meetings were held, with the process moving forward by a consensus of the committee.

This plan will outline the existing conditions, including deficiencies, with the traffic circulation and parking supply and demand within the downtown, as well as the future needs scenarios, based on anticipated growth and development. The major purpose of this plan is to develop a set of alternatives that will improve the overall operations, safety and efficiency of Downtown Biddeford. This plan will also identify potential locations for new parking, and recommendations to manage this parking.

Study Area

The overall study area is bounded by Main Street, Lincoln Street, Pearl Street, Elm Street, Mason Street, Graham Street, Birch Street, and Hill Street. As the study progressed, the Committee determined that the study should really focus on the core downtown area, which is the Main Street corridor and the immediate vicinity. The study area thus focused on the streets that really define downtown Biddeford, and is shown in Figure 1 in Appendix A. It should be noted that the Mill District was not included as part of the study area.

This area is well served by transit. The ShuttleBus operates the daily Tri-Town service between Biddeford, Saco and Old Orchard Beach, as well as daily Intercity service that connects to Scarborough, South Portland, and Portland. An Amtrak station, for the Downeaster service between Portland and Boston, is located on Saco Island, just a short walk from Downtown Biddeford. The Regional Transportation Program, Inc. (RTP) is available for those who require door-to-door service for medical appointments, work, etc. In addition, there are multiple taxicab

companies that provide service to and through downtown Biddeford. The City of Biddeford should continue to encourage the use of alternative transportation to help reduce vehicle dependency, which can reduce traffic and parking in the Downtown.

Future Development Forecast

City staff prepared a twenty-year build out scenario of future development of over 100,000 square feet within the Downtown, based on existing square footage of available space and an anticipated mix of uses. From a traffic standpoint, this scenario includes only a portion of the Mill District, and does not realize the full potential for development within the former mill buildings. Additionally, for the purposes of parking management, the Committee determined that this plan should not account for any significant redevelopment within the Mill District. The consensus was that any redevelopment within the mills would likely be of such a scale that on-site parking, within the Mill District itself, would be part of the development plans.

Traffic Circulation

The streets within the Downtown area are two-lane roadways, most with on-street parking, that carry between 5,000 and 14,000 vehicles per day. These volumes and the many varied turning movements at the intersections combine to create an inefficient traffic circulation system that is operating at or beyond capacity. Given the geometrics of the Downtown, and the bounds created by the Saco River, the two major intersections that control the overall traffic flow are Main Street at Elm Street, and Main Street at Hill Street and Water Street. Currently, both of these intersections are operating at a Level of Service (LOS) “F” during the peak hours. This results in congestion, excessive delays, and overall inefficient circulation throughout the Downtown.

Traffic Circulation – Improvement Alternatives

This study considered ten alternatives to improve traffic circulation within the Downtown. Of these ten alternatives, four combinations were evaluated in depth. These four alternative combinations include:

- Relocate the access to the North Dam Mill and retime the traffic signals throughout Downtown. (These improvements are assumed to be inherent to the other alternative combinations, and will not be directly identified.)
- Eliminate Hill Street access to Main Street. Hill Street would remain a two-way street, but the northbound lane would be dead-ended just prior to the Main Street intersection. Traffic would still be able to enter Hill Street from Main Street.
- Construct a roundabout at the intersection of Main Street with Hill Street, Water Street, and the access to North Dam Mill. This also includes the installation of all-way stop control for the intersection of Main Street and Alfred Street.
- Close a portion of Main Street to vehicular traffic, from Alfred Street to Adams Street and Lincoln Street. This alternative evaluation also includes the installation of all-way stop control at the Jefferson Street and Adams Street intersection, as well as the Main Street, Adams Street, Lincoln Street intersection.

Traffic Circulation - Recommendations

A combination of alternatives will be required to truly provide improved operational efficiency throughout Downtown Biddeford. Listed below are the improvements or combinations of alternatives that should be implemented in order to maintain or improve operational efficiency and safety within Downtown.

Steps that could be taken in the immediate future include the following:

- Retime all the traffic signals throughout the Downtown, maintaining the coordination of the Elm Street signals at Spruce Street and Main Street;
- Extension of the left-turn lanes at the intersection of Main Street and Elm Street;
- Re-stripe all marked crosswalks;
- Install new and/or additional Pedestrian Crossing signage at crosswalks.

Steps that could be planned for the 2008-2009 Biennial Capital Work Plan include:

- Relocate access to/from North Dam Mill to better align with Water Street, so that it becomes part of the intersection;
- Consider the implementation of an all-way stop at Jefferson Street and Adams Street;
- Rehabilitate existing sidewalks and ramps to meet the Americans with Disabilities Act (ADA) standards (This could be done as a stand alone project to include all intersections; or as an addition to other projects at each intersection, as they move forward);
- Upgrade all traffic signals to 12-inch lenses with back plates and provide one signal head per lane. (This also could be completed as a stand alone project, or as part of other intersection improvement projects.)

Steps that would be appropriate to plan for 2010 and beyond include:

- Construct a roundabout at the intersection of Main Street, Hill Street, Water Street, and the North Dam Mill;
- Implement all-way stop at the intersection of Main Street, Alfred Street and Laconia Street (This is critical if the roundabout is constructed as described above).

Parking Management

Within the focused area of this study, there are 940 public parking spaces, and an additional 429 off-street private parking spaces. This study only looked at the management of the 940 public parking spaces, which include a mix of on-street and off-street (municipal parking lots) parking. On November 17, 2005, Gorrill-Palmer Consulting Engineers Inc. conducted an hourly count of usage of all municipal parking spaces within the study area. The summary data sheets from this count are included in Appendix E.

This survey showed that within Downtown, regular parking demand is at approximately 60-percent of the available supply. However, some locations operate at near full capacity, while other locations for parking are severely underutilized. For example, the City Hall Lot and the Franklin Street Lot are both used at upwards of 80-percent of their capacity. Conversely, the

on-street parking along Main Street, from Hill Street to Alfred Street, sees usage of less than 25-percent.

When parking demand begins to approach 80 to 90 percent of capacity, the supply begins to seem inadequate. There needs to be some excess parking supply throughout the Downtown to allow for circulation, peak usage, and finding available spaces. There are roughly 150 excess parking spaces available today before reaching that 80-percent threshold. However, there are spot shortages within some sub-areas. This excess could easily be consumed by just one or two development projects. The City is taking a proactive approach by anticipating future growth and needs. By having a parking management plan in place, the City of Biddeford will be ready when future development or redevelopment opportunities come along.

Based on the future development scenario developed by City staff, Downtown Biddeford will see a parking deficit of approximately 100 spaces, assuming 100-percent usage. To allow for circulation and finding an available space, the City of Biddeford should be looking to create between 200 and 300 additional parking spaces within the next twenty years. Given the lack of available land, construction of a parking structure should be considered.

Gorrill-Palmer Consulting Engineers Inc. contracted with Carl Walker, Inc. to prepare a conceptual layout of a parking structure on the Franklin Street Lot. This location is centrally located within the Downtown, is already owned by the City, and is currently used for parking and would therefore not require the displacement of businesses or residences. In this location, a four-level structure would be needed to accommodate the needed parking, with a net increase of approximately 275 spaces.

Parking Management Plan - Recommendations

An effective parking management plan requires a combination of actions that will create the appropriate balance of short-term parking (customers, clients, etc.) and long-term parking (eight-hour, employee, etc.), as well as an adequate supply of overnight parking for residents. Short-term parking should continue to be located on-street and closest to the businesses, with employees parking further away, typically in the municipal lots. Improved signage, including wayfinding signage, can assist with encouraged use of underutilized parking lots. Continued enforcement of parking restrictions, time limits, etc, will also be very effective in managing municipal parking. Parking meters and/or permit parking systems should also be considered. Meters, or some other type of pay to park system, aide in keeping the 'prime' locations available for high turnover. Finally, the City of Biddeford should be planning for construction of a parking structure to meet the demand of future downtown growth and development.

The phasing described in this section is based on priorities, as well as an awareness of the City Council review process and funding and budget cycles. The phasing is a suggestion. Development may dictate changes to the priorities.

Phase I

The following measures are recommended in the short-term horizon:

- Replace or install new signage for wayfinding and locations of parking
- Revise City Ordinances to reflect changes in parking time restrictions

- Establish or revise parking fee and fine structures as necessary

It should be noted that as signage is installed, great care should be taken to prevent an unnecessary proliferation of parking and/or directional signs within the downtown. By designating entire lots all for the same time limits, signs need not be installed at each individual parking space; rather they can be installed only at the entrance to the lots. The same theory holds true for on-street parking. By keeping entire streets or segments of streets to the same time limits, the number of signs can be minimized.

Phase II

The following measures are recommended in the mid-term horizon:

- Install parking meters
 - On-Street
 - Main Street
 - Alfred Street
 - Adams Street
 - Washington Street
 - Lincoln Street
 - Municipal Lots
 - Alfred Street Lot
- Implement parking permit system (could be an alternative to metered parking) in the following Municipal Lots
 - Federal Street (Old Courthouse) Lot
 - Franklin Street Lot
 - Washington Street Lot
 - Foss Street Lot

Phase III

The need for a parking structure is directly tied to the rate and types of growth and development within the downtown. The construction of a parking structure should be considered for long-term implementation. The planning and design for this structure should be an on-going process beginning with the adoption of this parking management plan. Various options exist for the construction of this parking garage.

- The City could have the foundation and structure designed for a five or six level parking structure, but only actually construct the first three levels at the onset, with the additional levels built when needed at a later date. This phased construction will require careful coordination with the engineer/designer of the structure. The cost effectiveness of such a plan will need to be thoroughly evaluated with the engineer at that time.
- The parking structure could be constructed in conjunction with the construction of a new office building or other such large scale redevelopment. A large enough development could create the critical need for a parking structure; and a public/private partnership of sorts could be used for the garage construction. A certain number of

spaces would be dedicated to the new development, while the remainder of the structure would be available for public use.

Upon acceptance or adoption by the Biddeford City Council, the implementation of this parking management plan will be an on-going process. This plan is also intended to be a dynamic plan for the City of Biddeford, which should be evaluated on a regular basis, and updated as needed.

Part I - Introduction

Project Background

Biddeford, with a population of approximately 22,000 people, is a thriving community with ever-increasing transportation demands. Downtown Biddeford, once home to a strong textile mill center, is being redeveloped with a blend of technology-based businesses, service-based businesses, retail and residential uses.

Traffic volumes in Downtown Biddeford have remained relatively constant since 2000. With the on-going interest in locating in the downtown, and the potential for redevelopment of the Mill District, the area is poised for significant new traffic, particularly with its proximity to the Amtrak station. As the downtown corridor for the City, it is critical for Main Street to remain a viable and usable transportation corridor, not only for motorized vehicles, but for pedestrians and bicyclists as well.

With this increase in development, and increased traffic, comes the need for an efficient parking management plan, which will likely include the creation of new parking within the Downtown.

Biddeford's Comprehensive Plan calls for "safe and efficient travel throughout the existing roadway system" as well as the need to provide "adequate parking to accommodate existing conditions and future development". As part of that strategy, Gorrill-Palmer Consulting Engineers Inc. was retained by PACTS and the City of Biddeford to conduct both a traffic circulation and a parking management study for Downtown Biddeford. A Downtown Traffic and Parking Committee was formed, consisting of City Staff, City Councilors, and downtown business and property owners.

Study Area

The overall study area is bounded by Main Street, Lincoln Street, Pearl Street, Elm Street, Mason Street, Graham Street, Birch Street, and Hill Street. As the study progressed, the Committee determined that the study should really focus on the core downtown area, which is the Main Street corridor and the immediate vicinity. The study area thus focused on the streets that really define downtown Biddeford, and is shown in Figure 1 in Appendix A:

- Main Street, Hill Street/Water Street to Elm Street
- Lincoln Street, Main Street to Pearl Street
- Elm Street, Pearl Street to South Street
- South Street, Elm Street to Adams Street
- Jefferson Street, Main Street to Alfred Street
- Adams Street, Main Street to end
- Alfred Street, Jefferson Street/Pool Street to Main Street

Project Goals

The main purpose of this study is to develop a set of alternatives that will improve the operations, safety and efficiency of the roadways of Downtown Biddeford, without negatively impacting the various business and residential uses.

Although it is of the utmost importance to provide long-term designs for Main Street and the adjacent streets as carriers of vehicular traffic, other concerns must be kept in mind as well. Downtown Biddeford, like the downtowns of most cities, is very densely developed, with many buildings located very close to the roadways. This limits the availability of right-of-way for any potential road widening. Given the sensitivity of this area to short and long-term traffic growth, any improvement plan must keep the needs of residents as well as businesses in mind.

As is to be expected in a vibrant, thriving Downtown, pedestrian and bicyclist activity is widespread. The diversity of uses in the downtown, including residential, office and retail, among others, creates the potential for increased multi-modal travel. The plan for this corridor should strive to balance the needs of these other users with that of vehicular traffic.

Part II - Traffic Circulation

Chapter 1 Existing Conditions

Main Street is the primary corridor through downtown Biddeford. As such, it accommodates a variety of users along the roadway, including through traffic, bicyclists, pedestrians, and traffic destined to/from downtown businesses or residences. Main Street is a two-lane roadway with on-street parking, and a posted speed limit of 25 miles per hour within the study area. Main Street, which is also State Route 9 from the Saco city line to Alfred Street, is one of the connections over the Saco River between the Cities of Biddeford and Saco.

The other roadways within the study area are described as follows:

Lincoln Street

Lincoln Street is a two-lane roadway that runs in a generally north-south direction between Main Street and Elm Street. There is on-street parking along both sides of the road, from Main Street to Pearl Street. Lincoln Street provides access to the MERC facility, as well as into the 'Mill District'.

Elm Street

Elm Street, which is U.S. Route 1, connects the Cities of Biddeford and Saco, over the Saco River. As U.S. Route 1, Elm Street carries a significant amount of through traffic. Within the study area, Elm Street is a two-lane roadway with limited on-street parking in the vicinity of Center Street and South Street.

South Street

Within the study area, South Street is a local two-lane roadway between Elm Street and Adams Street. However, from Jefferson Street, South Street is one-way to Adams Street. South Street runs in a generally east-west direction, and has on-street parking on both sides, from Green Street to Adams Street. From Elm Street to Green Street, there is parking along the north side of the street only.

Jefferson Street

Jefferson Street is a two-lane roadway from Alfred Street to Main Street. From Alfred Street to South Street, Jefferson Street is a parallel route to Main Street. Parking is prohibited along most of the corridor. On-street parking is only allowed on the easterly side of the street, from South Street to Main Street.

Adams Street

Adams Street intersects with Main Street opposite Lincoln Street, and continues southerly to its end southwesterly of Jefferson Street. Adams Street provides access to the City Hall parking lot. There is on-street parking along both sides of Adams Street, from Main Street to the end.

Alfred Street

Alfred Street is State Route 111, which runs from downtown Biddeford to Alfred. Within the study area, Alfred Street is a two-lane road with on-street parking along both sides of the road, from Main Street to Franklin Street.

Data Collection

In order to evaluate existing and future traffic flow, and to assist in the evaluation of alternatives, our office collected the following PM peak hour turning movement counts:

- November 10, 2005:
 - Alfred Street at Birch Street
 - Alfred Street at Pool Street
 - Main Street at Alfred Street
 - Main Street at Hill Street/Water Street
- November 14, 2005:
 - Elm Street at South Street
 - Main Street at Adams Street
 - Main Street at Elm Street
 - Main Street at Jefferson Street
- November 15, 2005:
 - Jefferson Street at Adams Street
 - Jefferson Street at South Street/Crescent Street
- July 17, 2006:
 - Hill Street at Pool Street/Jefferson Street
 - Main Street at Spruce Street

In addition to the turning movement counts, our office collected directional ATR data, including traffic volumes and vehicle classifications from Wednesday afternoon, November 9, 2005, through Saturday morning, November 19, 2005, at four locations within the downtown. The Annual Average Daily Traffic volumes for each are as follows:

- Alfred Street, between Main Street and Bacon Street – AADT 8,430 vehicles
- Elm Street, between Cutts Street and Center Street – AADT 13,810 vehicles
- Main Street, between Elm Street and Jefferson Street – AADT 6,830 vehicles
- South Street, between Wentworth Street and Green Street – AADT 4,980 vehicles

A review of historical data obtained from the Maine Department of Transportation (MaineDOT) shows that the average volumes within the downtown, while fluctuating slightly within the past ten years, have remained relatively stable. Graphs of these historical trends are included in Figure 4 of Appendix A.

The raw turning movement volumes and the ATR data are shown on Figure 2 of Appendix A.

Bicycle and Pedestrian Amenities

Our office conducted a visual survey of the downtown area to collect information on bicycle and pedestrian amenities. There are no bicycle lanes within the downtown, and the current traffic volumes, combined with the relatively narrow travel lanes and on-street parking, make for a less than ideal situation for bicycle riders. There are sidewalks throughout the downtown that generally vary in width from five feet to seven feet or more. Marked crosswalks exist at virtually all of the intersections, varying from on one to all legs of the intersections. As part of the collection of turning movement data, our office also collected data on the number of pedestrian movements at the intersections during the peak hour. This pedestrian data is summarized below:

Table 1.1: Peak Hour Pedestrian Volumes – November, 2005

Intersection	Number of Pedestrians
Main Street @ Hill Street/Water Street	12
Main Street @ Alfred Street	18
Main Street @ Adams Street/Lincoln Street	85
Main Street @ Jefferson Street	137
Main Street @ Elm Street	39
Elm Street @ South Street	37
Jefferson Street @ South Street	68
Jefferson Street @ Adams Street	29
Alfred Street @ Jefferson Street/Pool Street	65
Alfred Street @ Birch Street	45

Transit Facilities

Downtown Biddeford is served well by transit. The ShuttleBus operates the daily Tri-Town service between Biddeford, Saco and Old Orchard Beach, as well as daily Intercity service that connects to Scarborough, South Portland, and Portland. An Amtrak station, for the Downeaster service between Portland and Boston, is located on Saco Island, just a short walk from Downtown Biddeford. The Regional Transportation Program, Inc. (RTP) is available for those who require door-to-door service for medical appointments, work, etc. In addition, there are multiple taxicab companies that provide service to and through downtown Biddeford.

Capacity and Level of Service

Our office performed an analysis of the capacity and level of service of the existing conditions in terms of delays and queues. All analyses were done using the Synchro/SimTraffic software. Level of service rankings are similar to the academic ranking system where an 'A' is very good with little control delay and an 'F' represents very poor conditions with long delays. A Level of Service (LOS) 'D' or higher is desirable for a signalized intersection. At an unsignalized intersection, if the level of service falls below a 'D', an evaluation should be made to determine if a traffic signal is warranted.

The following tables summarize the relationship between control delay and level of service:

Table 1.2: Level of Service Criteria for Unsignalized Intersections

Level of Service (LOS)	Control Delay per Vehicle (sec)
A	Up to 10.0
B	10.1 to 15.0
C	15.1 to 25.0
D	25.1 to 35.0
E	35.1 to 50.0
F	Greater than 50.0

Table 1.3: Level of Service Criteria for Signalized Intersections

Level of Service (LOS)	Control Delay per Vehicle (sec)
A	Up to 10.0
B	10.1 to 20.0
C	20.1 to 35.0
D	35.1 to 55.0
E	55.1 to 80.0
F	Greater than 80.0

The Synchro/SimTraffic software model was used to evaluate the 2005 conditions to get a baseline of information for comparison with future growth and needs. The results of the capacity and queue analyses are shown in the following tables:

Table 1.4: Level of Service for Downtown Signalized Intersections - 2005

Intersection/ Approach	2005 Volumes		Intersection/ Approach	2005 Volumes	
	Delay (sec)	LOS		Delay (sec)	LOS
Main St & Elm St			Jefferson St & Alfred St		
Main St – EBL	64.0	E	Jefferson St – EBL	>100	F
Main St – EBTR	47.8	D	Jefferson St – EBTR	>100	F
Elm St – NBL	64.0	E	Alfred St – NBL	>100	F
Elm St – NBTR	46.9	D	Alfred St – NBTR	>100	F
Main St – WBL	34.9	C	Jefferson St – WBL	87.9	F
Main St – WBTR	15.7	B	Jefferson St – WBTR	>100	F
Elm St – SBL	82.2	F	Alfred St – SBL	64.8	E
Elm St – SBTR	40.5	D	Alfred St – SBTR	41.9	D
Overall Intersection	41.1	D	Overall Intersection	>100	F
South St @ Elm St			Main St & Hill St/ Water St		
South St – EBLTR	55.6	E	Main St – EBTR	47.9	D
Elm St – NBLTR	>100	F	Hill St – NBL	>100	F
South St – WBLTR	40.7	D	Hill St – NBR	>100	F
Elm St – SBLTR	28.0	C	Water St - NBL	>100	F
Overall Intersection	>100	F	Main St - WBTL	25.0	C
Hill St @ Pool St			Overall Intersection	87.0	F
Pool St – EBL	49.5	E	Elm St @ Spruce St		
Pool St – EBTR	19.5	B	Spruce St – EBLR	22.8	C
Hill St – NBLTR	>100	F	Elm St – NBL	19.8	B
Pool St – WBL	>100	F	Elm St – NBT	4.9	A
Pool St – WBTR	>100	F	Elm St – SBTR	27.7	C
Hill St – SBLTR	26.2	C	Overall Intersection	18.2	B
Overall Intersection	79.5	E			

Table 1.5: Level of Service for Downtown Unsignalized Intersections – 2005

Intersection/ Approach	2005 Volumes		Intersection/ Approach	2005 Volumes	
	Delay (sec)	LOS		Delay (sec)	LOS
Main St & Jefferson St			Jefferson St & Adams St		
Main St – EBTR	28.3	D	Jefferson St – EBLTR	31.3	D
Jefferson St – NBLR	38.0	E	Adams St – NBLTR	70.7	F
Main St – WBLT	3.1	A	Jefferson St – WBLTR	26.3	D
Overall Intersection	20.1	C	Adams St – SBLTR	>100	F
Main St & Lincoln St/Adams St			Overall Intersection	46.9	E
Main St – EBLTR	62.1	F	Jefferson St & South St		
Adams St – NBLT	16.8	C	South St – EBLTR	>100	F
Adams St – NBR	6.3	A	Crescent St – EBLTR	82.4	F
Main St – WBLTR	68.2	F	Jefferson St – NBLTR	21.5	C
Lincoln St – SBLTR	>100	F	Jefferson St – SBLTR	25.2	D
Overall Intersection	>100	F	Overall Intersection	60.9	F
Main St & Alfred St			South St & Adams St		
Main St – EBLTR	7.9	A	South St – EBLR	>100	F
Alfred St – NBLTR	88.6	F	Adams St – NBT	0.4	A
Main St – WBLTR	43.9	E	Adams St – SBT	95.1	F
Overall Intersection	50.3	F	Overall Intersection	88.5	F

The tables above indicate that, overall, the downtown area is currently operating at congested levels during the peak hour. This is not unusual for an urban area such as Biddeford.

Table 1.6: Queue Analysis for Downtown Signalized Intersections - 2005

Intersection/Approach	Available (Ft)	50th Percentile (Ft)	95th Percentile (Ft)
Main St & Elm St			
Main St – EBL	55	25	65
Main St – EBTR	500	140	355
Elm St – NBL	65	15	50
Elm St – NBTR	550	285	650
Main St – WBL	70	50	105
Main St – WBTR	350	105	240
Elm St – SBL	60	40	90
Elm St – SBTR	520	390	655
South St @ Elm St			
South St – EBLTR	500	150	345
Elm St – NBLTR	1000	865	1240
South St – WBLTR	400	105	970
Elm St – SBLTR	500	230	885
Jefferson St & Alfred St			
Jefferson St – EBL	40	60	85
Jefferson St – EBTR	550	345	705
Alfred St – NBL	60	45	95
Alfred St – NBTR	350	490	895
Jefferson St – WBL	115	25	100
Jefferson St – WBTR	350	315	675
Alfred St – SBL	60	45	95
Alfred St – SBTR	300	225	450
Hill St & Pool St			
Pool St – EBL	50	15	45
Pool St – EBTR	375	100	220
Hill St – NBLTR	650	205	515
Pool St – WBL	75	40	100
Pool St – WBTR	600	295	700
Hill St – SBLTR	420	115	255
Elm St & Spruce St			
Spruce St – EBLR	125	50	90
Elm St – NBL	100	20	50
Elm St – NBT	300	60	170
Elm St – SBTR	400	205	495
Main St & Hill St/ Water St			
Main St – EBT	500	310	580
Main St – EBR	20	35	60
Hill St – NBL	700	610	1240
Hill St – NBR	20	45	60
Water St – NBL	280	100	175
Main St – WBL	500	125	185
Main St – WBT	500	135	150

Table 1.7: Queue Analysis for Downtown Unsignalized Intersections - 2005

Intersection/Approach	Available (Ft)	50th Percentile (Ft)	95th Percentile (Ft)
Main St & Jefferson St			
Main St – EBTR	450	45	215
Jefferson St – NBLR	100	70	170
Main St – WBLT	400	30	115
Main St & Lincoln St/Adams St			
Main St – EBLTR	450	95	365
Adams St – NBLT	300	30	65
Adams St – NBR	55	15	45
Main St - WBLTR	450	135	510
Lincoln St – SBLTR	700	335	740
Main St & Alfred St			
Main St – EBLTR	300	25	125
Alfred St – NBLTR	250	400	720
Main St - WBLTR	150	275	580
Jefferson St & Adams St			
Jefferson St – EBLTR	200	65	190
Adams St – NBLTR	500	15	50
Jefferson St – WBLTR	250	70	370
Adams St – SBLTR	200	120	205
Jefferson St & South St			
South St – EBLTR	250	160	555
Crescent St – EBLTR	300	55	170
Jefferson St – NBLTR	150	75	145
Jefferson St – SBLTR	200	50	130
South St & Adams St			
South St – EBLR	200	80	210
Adams St – NBT	150	N/A	N/A
Adams St – SBT	200	95	250

As the above tables indicate, the available storage lengths of most of the intersection approaches within the downtown area are adequate for the average queues during the peak hour. However, the 95th percentile queues either approach or exceed the available storage lengths on many of the approaches. This creates spillback through adjacent intersections, further exacerbating the congestion problems.

Collision History

Our office obtained the collision history for the downtown area from the Maine Department of Transportation (MaineDOT). A location is classified as a High Crash Location (HCL) if it meets both of the following criteria:

1. Eight or more crashes over a three-year period, and;
2. A Critical Rate Factor (CRF) of 1.00 or greater for the same three-year period. A CRF compares the actual crash rate of each intersection or road segment to the Statewide crash rate of similar locations. A CRF less than 1.00 indicates a lower than average crash rate.

The following tables summarize the collision history for the study area for the three-year period 2002-2004.

Table 1.8: Maine DOT Crash Data for 2002-2004: Intersections with CRF >1.00

Node	Intersection	# of Collisions	CRF	HCL?
7141	Route 1 (Elm St) at Lincoln St	13	1.41	Yes
7139	Route 1 (Elm St) at Spruce St	12	1.58	Yes
7134	Route 1 (Elm St) at South St	29	1.08	Yes
9232	Main St at Lincoln St/Adams St	18	4.07	Yes
9233	Main St at Washington St	6	1.11	No
5065	Main St at Alfred St	10	1.54	Yes
5068/5069	Main St at Hill St/Water St	27	2.03	Yes
9315	Hill St at Bacon St	9	2.19	Yes
5056	Route 111 (Alfred St) at Birch St	11	1.69	Yes
9424	Birch St at Graham St	3	1.13	No
5059	Route 111 (Alfred St) at Washington St	7	1.11	No
9314	Foss St at Bacon St	7	3.72	No
5045	Foss St at Pool St (Route 9)	6	1.23	No
9507	Federal St at Washington St	2	1.04	No
9504	Washington St at Jefferson St	16	3.48	Yes
9503	Adams St at Jefferson St	9	2.30	Yes
9490	Green St at Center St	1	1.73	No
9509	Center St at Kossuth St	1	1.88	No

Table 1.9: Maine DOT Crash Data for 2002-2004: Road Segments with CRF>1.00

Nodes	Street	From	To	# of Collisions	CRF	HCL?
7138-9253	Elm St	St Mary's St	Pearl St	4	1.45	No
7137-7138	Elm St	Main St	St Mary's St	8	1.44	Yes
7136-7137	Elm St	Cutts St	Main St	6	1.20	No
7135-7136	Elm St	Center St	Cutts St	7	1.42	No
7137-9231	Main St	Elm St	Jefferson St	12	3.53	Yes
9231-9232	Main St	Jefferson St	Adams St	11	2.25	Yes
9232-9233	Main St	Adams St	Washington St	7	2.50	No
5056-5057	Alfred St	Birch St	Cote Ct	3	1.02	No
5060-5061	Alfred St	Summer St	Southerly of Jefferson St	5	1.35	No
5061-5062	Alfred St	Southerly of Jefferson St	Jefferson St	4	1.33	No
5065-5066	Main St	Alfred St	Foss St	5	1.52	No
5066-5067	Main St	Foss St	Emery St	5	1.25	No
5067-5068	Main St	Emery St	Hill St	6	1.46	No
9216-9217	South St	Jefferson St	Adams St	4	4.08	No
9490-9509	Center St	Green St	Kossuth St	1	1.69	No
9502-9509	Center St	Kossuth St	Jefferson St	1	1.37	No
9251-9254	Lincoln St	Pearl St	Stone St	6	2.06	No
9232-9254	Lincoln St	Main St	Stone St	5	2.63	No
5044-5045	Pool St	Hill St	Foss St	7	1.60	No
9218-9232	Adams St	South St	Main St	4	3.58	No
9218-9503	Adams St	South St	Jefferson St	3	1.25	No
9503-9506	Adams St	Jefferson St	End	5	23.51	No
9233-9507	Washington St	Main St	Federal St	3	1.11	No
9504-9507	Washington St	Jefferson St	Federal St	2	1.00	No
5068-9315	Hill St	Main St	Bacon St	6	1.20	No
9500-9501	Crescent St	Graham St	Jefferson St	1	1.14	No
5045-9317	Foss St	Pool St	King St	2	1.72	No
9314-9317	Foss St	Bacon St	King St	1	1.02	No

As shown in the tables above, there are thirteen High Crash Locations within the downtown study area. Our office examined the collision reports for all of these thirteen locations, and prepared a collision diagram for each, which are shown in Appendix C.

It is interesting to note that within the three-year period of our evaluation of the thirteen high crash locations, there were eight separate collisions involving a total of ten pedestrians. Of these collisions, seven occurred with the pedestrian(s) within the marked crosswalk. There were also three collisions involving bicyclists during this same period. Based on the crash reports, visibility appears to be a contributing factor in most of these collisions.

Overall, within the Downtown area, the general safety issues can be broken down into the following categories:

- Disregard of traffic control devices/failure to yield;
- Lack of left turn lanes/inadequate turn lanes at some intersections;
- Sight distance obstructions due to on-street parking; or
- Improper lane changes and improper turns.

Traffic Forecast for Year 2025

The design year for alternatives for Downtown Biddeford is the year 2025. The turning movement volumes were adjusted to 2025 volumes based on anticipated future development within the Downtown area. The information relative to future development was provided by City Staff. Our office then determined the expected trip generation for each development area based on commonly accepted data from the Institute of Transportation Engineers (ITE). These additional trips were then applied to the study area based on current travel patterns. The 2025 adjusted volumes are shown in Appendix C. The following table outlines the development included in this growth and its anticipated additional traffic volumes in the study area.

Table 1.10: Anticipated Downtown Development by 2025

Development Area	Size	Trips Generated (PM Peak)	Assumptions	Enter/Exit Development
Lincoln Street Area	10,000 s.f. Office 10,000 s.f. Retail	79	30% of retail trips are primary	26/53
Main Street Area 1 (Adams St, South St area)	10 Residential Units 7,000 s.f. Office 7,000 s.f. Retail	68	30% of retail trips are primary	26/42
Main Street Area 2 (Washington St, Franklin St area)	20,000 s.f. Office 20,000 s.f. Retail	150	30% of retail trips are primary	53/97
Main Street Area 3 (Hill St to Alfred St)	750 s.f. Office 750 s.f. Retail	8	All primary trips	3/5
North Dam Mill Redevelopment	Approximately one-third of developable building area	186	Mixed use: residential, retail, office, & commercial spaces (20% shared trips; 30% of retail trips are primary)	74/112

Our office also reviewed the forecasts from the regional TRIPS model, maintained by PACTS, as part of the design year forecasting. This model, while very useful at a regional level, is sometimes harder to understand at a 'sub-regional' level. A function of the TRIPS model is that as roads reach capacity, the traffic is shifted to an alternate route, using something of an 'all or nothing' assignment. For this reason, given the capacity restraints of the downtown road network, the TRIPS model actually shows a slight decrease in traffic volumes along sections of Main Street, while showing fairly significant increases within other areas of Downtown.

Upon review of the model output with both City staff and PACTS staff, the determination was made that as Downtown Biddeford continues to redevelop, traffic will continue to increase. Even though there will be congestion and delay, drivers will still need to be going to or through Downtown to get to employment or residences. As mixed uses continue to develop, there is the potential for more people to both live and work in Downtown, thereby reducing some vehicle trips. The City of Biddeford should strive for a mix of development, including residential, so that residents can also shop and work in the downtown, thereby reducing dependency on vehicles. However, for the purposes of this study, we are evaluating the design year traffic conditions based on the anticipated future development.

Summary of Existing Deficiencies

As the preceding data indicates, the street network in downtown Biddeford is currently functioning near capacity during the peak hours, even exceeding capacity in some locations, most notably the intersection of Main Street with Hill Street and Water Street and the access for the North Dam Mill. There are excessive queues at the signalized intersections and some unsignalized intersections as well, a large number of collisions throughout the downtown, including many collisions involving pedestrians, and heavy volumes of both vehicular and pedestrian traffic.

The presence of cars parked along the corridor often limits the sight distances for those trying to access the corridor from the side streets and driveways. Also, vehicles merging from on-street parking spaces into the travel lanes create additional conflicts and add to the high rate of crashes within the downtown area. Additionally, this on-street parking reduces the capacity of the roadway. While on-street parking is appropriate for traditional downtown uses, the impact on the roadway capacity needs to be considered. Some on-street parking could be eliminated in order to improve the overall safety and efficiency of the Downtown. However, adequate and appropriate sites for additional off-street parking will need to be determined.

With the continued ‘in-fill’ redevelopment within the downtown, as well as the proposed redevelopment of the North Dam Mill on Main Street and numerous other projects in Biddeford, the downtown area is poised for significant new traffic. As the downtown corridors for the City, as well as part of the connection to the Maine Turnpike, it is critical for Main Street, Alfred Street, and Elm Street to remain viable and usable transportation corridors.

Chapter 2

Identification of Improvement Alternatives

A variety of improvement alternatives are available for consideration within the downtown. Given the myriad of deficiencies and prospective growth of the downtown as a whole, a combination of alternatives could be implemented to ensure that Main Street, Alfred Street and Elm Street remain viable and usable transportation corridors through the Downtown of the City. Following are descriptions of ten different improvements that can be considered. Many of these improvement alternatives are the direct result of comments and ideas from the Advisory Committee.

Improvement Alternative 1 – Retime traffic signals

When evaluating various improvement alternatives, one needs to always consider the baseline for comparison, which is typically considered to be the ‘do nothing’ alternative. In this case, this alternative would consist of the re-timing of the traffic signals throughout the downtown, with no other improvements.

For evaluation purposes, retiming of the traffic signals is an inherent aspect of all other alternatives.

Improvement Alternative 2 – Relocate Access to North Dam Mill to better align with Water Street

As redevelopment of the North Dam Mill continues, access should be evaluated. The current location of the Mill access is slightly off-set from the intersection of Main Street with Hill Street and Water Street. Moving the access to the south, where the corner most building is today, will align the entrance with Water Street, thereby making the Mill access part of the signalized intersection.

For evaluation purposes, this alternative is assumed to be part of all other alternatives.

Improvement Alternative 3 – Eliminate Hill Street access to Main Street and Water Street

This signalized intersection currently has to run as four separate phases because of the conflicting movements and the high volumes. In order to improve the operational efficiency of this signal, one movement should be eliminated. The most logical of these movements to eliminate is the approach from Hill Street. Traffic would still be able to enter Hill Street from Main Street, but Hill Street would not outlet onto Main Street. Traffic will have to be redirected to Water Street via surrounding streets, such as High Street and Clifford Street.

Improvement Alternative 4 – Construct roundabout at Main Street at Hill Street/Water Street

An alternative to the traffic signal at this intersection is the construction of a roundabout. Gorrill-Palmer Consulting Engineers Inc. contracted with Michael Wallwork of Alternative Street Designs, to investigate the feasibility of a roundabout at this intersection. While noting that the elevation changes within the vicinity may be troublesome, a roundabout does appear to be feasible here.

Improvement Alternative 5 – Install all-way stop at Main Street/Alfred Street/Laconia Street

The left turn from Main Street to Alfred Street includes a significant volume of traffic, which is opposed by a fairly heavy northbound through volume on Main Street. An all-way stop at this intersection can create the gaps necessary for the heavy left-turn volumes. This can improve the overall efficiency of this intersection without the need to create additional travel lanes or turn lanes.

Improvement Alternative 6 – Install all-way stop at Jefferson Street/Adams Street

Traffic on Jefferson Street currently has the right of way at this intersection, while the Adams Street southbound approach carries a high volume of left-turning vehicles. The heavy volumes of traffic on Jefferson Street make it difficult for vehicles on Adams Street, especially left-turning traffic, to find the necessary gap to proceed. An all-way stop at this intersection can create the gaps necessary for the heavy left-turn volumes. This can improve the overall efficiency of this intersection without the need to create additional travel lanes or turn lanes.

Improvement Alternative 7 – Install traffic signal at Main Street/Alfred Street/Laconia Street

The left turn from Main Street to Alfred Street includes a significant volume of traffic, which is opposed by a fairly heavy northbound through volume on Main Street. A traffic signal with a protected left turn at this intersection can create the gaps necessary for the heavy left-turn volumes. However, in order to gain the most improvement from this alternative, the Main Street westbound approach will need a left turn lane.

Improvement Alternative 8 – Eliminate select on-street parking spaces to improve sight lines and safety

While on-street parking should be maintained within the downtown area, the presence of on-street parking can impede sight lines from intersecting streets or driveways. For this reason, some selected parking spaces along Main Street should be eliminated in favor of increased safety.

These spaces include:

- The north side of Main Street, east of the Lincoln Street intersection;
- The north side of Main Street, between Lincoln Street and the driveway to Bank of America.

Improvement Alternative 9 – Close Main Street from Alfred Street to Adams Street to create pedestrian mall

There has been considerable discussion regarding the closure of a portion of Main Street to create a pedestrian mall. The section of Main Street between Alfred Street and Adams Street would be the most likely section that could be converted to pedestrian use only. Jefferson Street is parallel to Main Street in this area, and the connections via Alfred Street and Adams Street already exist. This alternative would shift heavy volumes of traffic onto Jefferson Street, which would require additional turn lanes and travel lanes on the affected streets to carry these volumes.

Improvement Alternative 10 – Create turn lanes at Alfred Street and Main Street

The predominant movement at the intersection of Main Street and Alfred Street is left turns from Main to Alfred and right turns from Alfred to Main. The addition of turn lanes for these two movements, even short “pockets” will help improve the efficiency of this intersection. In order to create these lanes, approximately two parking spaces on the east side of Alfred Street will need to be eliminated, as well as approximately three parking spaces on the north side of Main Street.

Chapter 3

Operational Evaluation of Alternatives

Our office performed an analysis of the capacity and level of service of various combinations of the improvement alternatives discussed above, in terms of delays and queues. All analyses were done using the Synchro/SimTraffic software. The software model was used for the 2005 conditions to get a baseline of information, then again for each of four various combinations of the most viable improvement alternatives. The tables are all based on the SimTraffic software reports. Level of service rankings are similar to the academic ranking system where an 'A' is very good with little control delay and an 'F' represents very poor conditions with long delays. A Level of Service (LOS) 'D' or higher is desirable for a signalized intersection. At an unsignalized intersection, if the level of service falls below a 'D', an evaluation should be made to determine if a traffic signal is warranted.

The following tables summarize the relationship between control delay and level of service:

Table 3.1: Level of Service Criteria for Unsignalized Intersections

Level of Service	Control Delay per Vehicle (sec)
A	Up to 10.0
B	10.1 to 15.0
C	15.1 to 25.0
D	25.1 to 35.0
E	35.1 to 50.0
F	Greater than 50.0

Table 3.2: Level of Service Criteria for Signalized Intersections

Level of Service	Control Delay per Vehicle (sec)
A	Up to 10.0
B	10.1 to 20.0
C	20.1 to 35.0
D	35.1 to 55.0
E	55.1 to 80.0
F	Greater than 80.0

Some of the improvement alternatives are really only effective when constructed in conjunction with other improvements. Therefore, the improvement alternatives were not evaluated individually. This combining of improvements that operate efficiently together resulted in four distinct combinations to be evaluated.

Alternatives 1 and 2: 2025 Analysis with Retiming of Traffic Signals and Relocated Mill Access

This analysis looks at the impact of the increased traffic on the existing roadway network with only the retiming of the signals within the Downtown. The results for the capacity and queue analyses are shown in the following tables:

Table 3.3: Level of Service for Downtown Signalized Intersections - 2025

Intersection/ Approach	2025 Volumes		Intersection/ Approach	2025 Volumes	
	Delay (sec)	LOS		Delay (sec)	LOS
Main St & Elm St			Hill St & Pool St		
Main St – EBL	>100	F	Pool St – EBL	13.6	B
Main St – EBTR	>100	F	Pool St – EBTR	10.3	B
Elm St – NBL	>100	F	Hill St – NBLTR	>100	F
Elm St – NBTR	>100	F	Pool St – WBL	>100	F
Main St – WBL	59.9	E	Pool St – WBTR	>100	F
Main St – WBTR	25.1	C	Hill St – SBLTR	>100	F
Elm St – SBL	>100	F	Overall Intersection	>100	F
Elm St – SBTR	76.1	E	Main St & Hill St/ Water St		
Overall Intersection	>100	F	Main St – EBL	>100	F
South St & Elm St			Main St – EBT	>100	F
South St – EBLTR	>100	F	Main St – EBR	>100	F
Elm St – NBLTR	>100	F	Hill St - NBLTR	>100	F
South St – WBLTR	>100	F	Water St - NBLT	>100	F
Elm St – SBLTR	66.5	E	Main St – WBL	37.5	D
Overall Intersection	>100	F	Main St – WBT	72.4	E
Jefferson St & Alfred St			Main St – WBR	5.8	A
Jefferson St – EBL	>100	F	North Dam Mill – SBLT	>100	F
Jefferson St – EBTR	>100	F	North Dam Mill – SBR	>100	F
Alfred St – NBL	>100	F	Overall Intersection	>100	F
Alfred St – NBTR	>100	F	Elm St @ Spruce St		
Jefferson St – WBL	>100	F	Spruce St - EBLR	>100	F
Jefferson St – WBTR	>100	F	Elm St – NBL	24.5	C
Alfred St – SBL	49.1	D	Elm St – NBT	8.9	A
Alfred St – SBTR	49.0	D	Elm St – SBTR	>100	F
Overall Intersection	>100	F	Overall Intersection	>100	F

Table 3.4: Level of Service for Downtown Unsignalized Intersections – 2025

Intersection/ Approach	2025 Volumes		Intersection/ Approach	2025 Volumes	
	Delay (sec)	LOS		Delay (sec)	LOS
Main St & Jefferson St			Jefferson St & Adams St		
Main St – EBTR	>100	F	Jefferson St – EBLTR	>100	F
Jefferson St – NBLR	>100	F	Adams St – NBLTR	>100	F
Main St – WBLT	23.3	C	Jefferson St – WBLTR	62.1	F
Overall Intersection	>100	F	Adams St – SBLTR	>100	F
Main St & Lincoln St/Adams St			Overall Intersection	>100	F
Main St – EBLTR	>100	F	Jefferson St & South St		
Adams St – NBLT	13.4	B	South St – EBLTR	>100	F
Adams St – NBR	6.3	A	Crescent St – EBLTR	>100	F
Main St – WBLTR	>100	F	Jefferson St – NBLTR	59.8	F
Lincoln St – SBLTR	>100	F	Jefferson St – SBLTR	>100	F
Overall Intersection	>100	F	Overall Intersection	>100	F
Main St & Alfred St			South St & Adams St		
Main St – EBLTR	35.9	E	South St – EBLR	>100	F
Alfred St – NBLTR	>100	F	Adams St – NBT	0.4	A
Main St – WBLTR	>100	F	Adams St – SBT	>100	F
Overall Intersection	>100	F	Overall Intersection	>100	F

As the above tables indicate, while the retiming of the signals can improve a few individual intersections, the existing Downtown roadway network configuration cannot handle the additional traffic volumes without any improvements. With the projected development, many of the intersections will be operating at or beyond capacity. The primary intersection for the downtown, Main Street at Hill Street and Water Street, will continue to fail due to volumes exceeding the current capacity.

Table 3.5: Queue Analysis for Downtown Signalized Intersections - 2025

Intersection/Approach	Available (Ft)	50th Percentile (Ft)	95th Percentile (Ft)
Main St & Elm St			
Main St – EBL	80	16	57
Main St – EBTR	N/A	396	855
Elm St – NBL	100	7	42
Elm St – NBTR	N/A	377	966
Main St – WBL	95	35	100
Main St – WBTR	N/A	83	241
Elm St – SBL	100	57	137
Elm St – SBTR	N/A	335	623
South St @ Elm St			
South St – EBLTR	N/A	381	792
Elm St – NBLTR	N/A	691	1185
South St – WBLTR	N/A	172	443
Elm St – SBLTR	N/A	228	709
Jefferson St & Alfred St			
Jefferson St – EBL	40	56	69
Jefferson St – EBTR	N/A	509	679
Alfred St – NBL	60	18	67
Alfred St – NBTR	N/A	604	865
Jefferson St – WBL	115	14	69
Jefferson St – WBTR	N/A	548	789
Alfred St – SBL	60	20	65
Alfred St – SBTR	N/A	137	380
Hill St & Pool St			
Pool St – EBL	75	3	19
Pool St – EBTR	N/A	40	117
Hill St – NBLTR	N/A	388	700
Pool St – WBL	50	16	57
Pool St – WBTR	N/A	521	916
Hill St – SBLTR	N/A	420	984
Elm St & Spruce St			
Spruce St – EBLR	N/A	146	374
Elm St – NBL	100	11	37
Elm St – NBT	N/A	29	121
Elm St – SBTR	N/A	220	538
Main St & Hill St/ Water St			
Main St – EBL	75	2	25
Main St – EBT	N/A	279	700
Main St – EBR	20	21	51
Hill St – NBLTR	N/A	148	365
Water St – NBLT	N/A	99	166
Main St – WBL	N/A	72	175
Main St – WBT	N/A	110	138
Main St – WBR	40	6	29
North Dam Mill – SBLT	N/A	28	80
North Dam Mill – SBR	N/A	35	115

Notes: N/A – Not applicable in travel lane

Table 3.6: Queue Analysis for Downtown Unsignalized Intersections - 2025

Intersection/Approach	Available (Ft)	50th Percentile (Ft)	95th Percentile (Ft)
Main St & Jefferson St			
Main St – EBTR	N/A	162	453
Jefferson St – NBLR	N/A	118	259
Main St – WBLT	N/A	27	117
Main St & Lincoln St/Adams St			
Main St – EBLTR	N/A	250	562
Adams St – NBLT	N/A	21	58
Adams St – NBR	55	7	30
Main St - WBLTR	N/A	433	960
Lincoln St – SBLTR	N/A	500	832
Main St & Alfred St			
Main St – EBLTR	N/A	48	218
Alfred St – NBLTR	N/A	495	734
Main St - WBLTR	N/A	483	883
Jefferson St & Adams St			
Jefferson St – EBLTR	N/A	136	256
Adams St – NBLTR	N/A	50	145
Jefferson St – WBLTR	N/A	73	348
Adams St – SBLTR	N/A	142	191
Jefferson St & South St			
South St – EBLTR	N/A	499	1081
Crescent St – EBLTR	N/A	145	296
Jefferson St – NBLTR	N/A	73	175
Jefferson St – SBLTR	N/A	138	283
South St & Adams St			
South St – EBLR	N/A	168	297
Adams St – NBT	N/A	N/A	N/A
Adams St – SBT	N/A	162	281

Notes: N/A – Not applicable in travel lane

As the above tables indicate, the queues are either approaching or exceeding the available storage capacity at virtually all of the intersections. The Main Street southbound queues at the Hill Street/Water Street intersection extend back into Saco, much like the 2005 conditions. Overall, the simple retiming of the traffic signals provides very little improvement to the flow of traffic through Downtown Biddeford. It becomes readily apparent that additional improvements must be incorporated.

For evaluation purposes, the relocated mill access and the retiming of the traffic signals, are assumed to be inherent to all other alternatives and combinations and will not be directly identified.

Alternatives 1, 2, 3 and 10: Elimination of Hill Street access to Main Street

This analysis looks at the impact of eliminating access from Hill Street to Main Street. This will eliminate one approach to that intersection, thereby allocating that additional green time to the other approaches. Traffic can still access Hill Street from Main Street. A conceptual plan of this alternative is shown in on Figure C.6 in Appendix C. The majority of the volumes from the Hill Street approach, approximately 250 vehicles in the PM peak hour, have been redirected to the Water Street approach via High Street and Clifford Street. The remaining vehicles, approximately 25 in the PM peak hour, have been shifted to Alfred Street. The analysis includes

the addition of a short right turn lane on Alfred Street as well. The results for the capacity and queue analyses are shown in the following tables:

Table 3.7: Level of Service for Downtown Signalized Intersections – No Hill Street Access

Intersection/ Approach	2025 Volumes		Intersection/ Approach	2025 Volumes	
	Delay (sec)	LOS		Delay (sec)	LOS
Main St & Elm St			Jefferson St & Alfred St		
Main St – EBL	46.4	D	Jefferson St – EBL	>100	F
Main St – EBTR	35.1	D	Jefferson St – EBTR	>100	F
Elm St – NBL	33.9	C	Alfred St – NBL	>100	F
Elm St – NBTR	18.2	B	Alfred St – NBTR	>100	F
Main St – WBL	36.9	D	Jefferson St – WBL	55.1	E
Main St – WBTR	28.7	C	Jefferson St – WBTR	80.8	F
Elm St – SBL	43.2	D	Alfred St – SBL	55.6	E
Elm St – SBTR	19.4	B	Alfred St – SBTR	47.7	D
Overall Intersection	24.5	C	Overall Intersection	95.2	F
South St @ Elm St			Main St & Hill St/ Water St		
South St – EBLTR	54.3	D	Main St – EBL	>100	F
Elm St – NBLTR	>100	F	Main St – EBT	92.8	F
South St – WBLTR	47.7	D	Main St – EBR	95.1	F
Elm St – SBLTR	20.2	C	Water St – NBLT	46.3	D
Overall Intersection	96.0	F	Main St – WBL	24.6	C
Hill St @ Pool St			Main St – WBT	7.3	A
Pool St – EBL	19.3	B	Main St – WBR	0.2	A
Pool St – EBTR	14.3	B	North Dam Mill – SBLT	48.8	D
Hill St – NBLTR	28.2	C	North Dam Mill – SBR	6.9	A
Pool St – WBL	39.9	D	Overall Intersection	43.8	D
Pool St – WBTR	28.0	C	Elm St @ Spruce St		
Hill St – SBLTR	15.5	B	Spruce St – EBLR	21.4	C
Overall Intersection	22.3	B	Elm St – NBL	14.3	B
			Elm St – NBT	3.3	A
			Elm St – SBTR	5.3	A
			Overall Intersection	5.5	A

Table 3.8: Level of Service for Downtown Unsignalized Intersections – No Hill Street Access

Intersection/ Approach	2025 Volumes		Intersection/ Approach	2025 Volumes	
	Delay (sec)	LOS		Delay (sec)	LOS
Main St & Jefferson St			Jefferson St & Adams St		
Main St – EBTR	2.2	A	Jefferson St – EBLTR	16.2	C
Jefferson St – NBLR	22.5	C	Adams St – NBLTR	15.5	C
Main St – WBLT	3.3	A	Jefferson St – WBLTR	2.1	A
Overall Intersection	8.7	A	Adams St – SBLTR	83.7	F
Main St & Lincoln St/Adams St			Overall Intersection	27.1	D
Main St – EBLTR	14.6	B	Jefferson St & South St		
Adams St – NBLT	19.0	C	South St – EBLTR	58.5	F
Adams St – NBR	6.6	A	Crescent St – EBLTR	44.2	E
Main St – WBLTR	30.0	D	Jefferson St – NBLTR	10.7	B
Lincoln St – SBLTR	>100	F	Jefferson St – SBLTR	13.2	B
Overall Intersection	68.2	F	Overall Intersection	28.1	D
Main St & Alfred St			South St & Adams St		
Main St – EBLTR	6.5	A	South St – EBLR	>100	F
Alfred St – NBLT	>100	F	Adams St – NBT	0.4	A
Alfred St – NBR	79.9	E	Adams St – SBT	37.4	E
Main St – WBL	14.0	B	Overall Intersection	45.1	E
Main St – WBTR	28.0	D			
Overall Intersection	32.6	D			

As the above tables indicate, the elimination of one approach to this heavily traveled intersection significantly improves the efficiency of the intersection, as well as other downtown intersections.

Table 3.9: Queue Analysis for Downtown Signalized Intersections – No Hill Street Access

Intersection/Approach	Available (Ft)	50th Percentile (Ft)	95th Percentile (Ft)
Main St & Elm St			
Main St – EBL	80	28	78
Main St – EBTR	N/A	158	298
Elm St – NBL	100	16	58
Elm St – NBTR	N/A	172	336
Main St – WBL	95	70	133
Main St – WBTR	N/A	180	331
Elm St – SBL	100	37	98
Elm St – SBTR	N/A	251	497
South St @ Elm St			
South St – EBLTR	N/A	161	299
Elm St – NBLTR	N/A	892	1235
South St – WBLTR	N/A	138	262
Elm St – SBLTR	N/A	216	438
Jefferson St & Alfred St			
Jefferson St – EBL	40	64	79
Jefferson St – EBTR	N/A	378	690
Alfred St – NBL	60	58	107
Alfred St – NBTR	N/A	509	892
Jefferson St – WBL	115	24	93
Jefferson St – WBTR	N/A	287	602
Alfred St – SBL	60	48	96
Alfred St – SBTR	N/A	279	507
Hill St & Pool St			
Pool St – EBL	75	8	38
Pool St – EBTR	N/A	104	197
Hill St – NBLTR	N/A	123	289
Pool St – WBL	50	38	78
Pool St – WBTR	N/A	139	354
Hill St – SBLTR	N/A	94	181
Elm St & Spruce St			
Spruce St – EBLR	N/A	46	84
Elm St – NBL	100	18	46
Elm St – NBT	N/A	28	91
Elm St – SBTR	N/A	84	249
Main St & Hill St/ Water St			
Main St – EBL	75	13	54
Main St – EBT	N/A	552	818
Main St – EBR	20	37	53
Water St – NBLT	N/A	58	108
Main St – WBL	N/A	127	158
Main St – WBT	N/A	91	155
Main St – WBR	45	1	9
North Dam Mill – SBLT	N/A	24	71
North Dam Mill – SBR	N/A	0	0

Notes: N/A – Not applicable in travel lane

Table 3.10: Queue Analysis for Downtown Unsignalized Intersections – No Hill Street Access

Intersection/Approach	Available (Ft)	50th Percentile (Ft)	95th Percentile (Ft)
Main St & Jefferson St			
Main St – EBTR	N/A	9	59
Jefferson St – NBLR	N/A	82	189
Main St – WBLT	N/A	31	100
Main St & Lincoln St/Adams St			
Main St – EBLTR	N/A	44	200
Adams St – NBLT	N/A	41	86
Adams St – NBR	55	19	49
Main St – WBLTR	N/A	106	459
Lincoln St – SBLTR	N/A	284	653
Main St & Alfred St			
Main St – EBLTR	N/A	62	202
Alfred St – NBLT	N/A	352	693
Alfred St – NBR	50	68	106
Main St – WBL	100	99	151
Main St – WBTR	N/A	152	480
Jefferson St & Adams St			
Jefferson St – EBLTR	N/A	50	164
Adams St – NBLTR	N/A	15	42
Jefferson St – WBLTR	N/A	10	99
Adams St – SBLTR	N/A	117	200
Jefferson St & South St			
South St – EBLTR	N/A	116	355
Crescent St – EBLTR	N/A	51	158
Jefferson St – NBLTR	N/A	76	138
Jefferson St – SBLTR	N/A	45	95
South St & Adams St			
South St – EBLR	N/A	79	215
Adams St – NBT	N/A	0	0
Adams St – SBT	N/A	66	208

Notes: N/A – Not applicable in travel lane

As the above tables indicate, the queues are still either approaching or exceeding the available storage capacity at many intersections. The Main Street southbound queues at the Hill Street/Water Street intersection extend back into Saco, much like the 2005 conditions. Overall, however, the queues and delays are lessened throughout the Downtown.

This alternative would have the greatest impact on adjacent neighborhoods. Approximately 250 vehicles would be redistributed through primarily residential streets in the peak hour. In addition to these streets being primarily residential in nature, they are also narrow and steep, and are not designed for those volumes of traffic.

Alternatives 1, 2, 4 and 5: Construction of roundabout at Main Street at Hill Street/Water Street

This analysis looks at the impact of eliminating the traffic signal at this intersection in favor of a single lane roundabout. A conceptual plan of this alternative is shown in Figure C.5 in Appendix C. In this alternative, all existing approaches to the intersection remain. As the

efficiency of this major intersection improves, traffic reaches the intersection of Main Street and Alfred Street more quickly. With no improvements at that intersection, congestion and failure will occur there instead. Therefore, the analysis of the roundabout also includes an all-way stop at the intersection of Main Street and Alfred Street. The results for the capacity and queue analyses are shown in the following tables:

Table 3.11: Level of Service for Downtown Signalized Intersections - Roundabout

Intersection/ Approach	2025 Volumes		Intersection/ Approach	2025 Volumes	
	Delay (sec)	LOS		Delay (sec)	LOS
Main St & Elm St			Jefferson St & Alfred St		
Main St – EBL	44.1	D	Jefferson St – EBL	55.2	E
Main St – EBTR	27.8	C	Jefferson St – EBTR	38.3	D
Elm St – NBL	36.8	D	Alfred St – NBL	69.2	E
Elm St – NBTR	19.3	B	Alfred St – NBTR	45.9	D
Main St – WBL	35.5	D	Jefferson St – WBL	24.0	C
Main St – WBTR	24.8	C	Jefferson St – WBTR	36.8	D
Elm St – SBL	36.7	D	Alfred St – SBL	38.5	D
Elm St – SBTR	17.2	B	Alfred St – SBTR	22.0	C
Overall Intersection	22.2	C	Overall Intersection	39.0	D
South St @ Elm St			Main St & Hill St/ Water St		
South St – EBLTR	64.8	E	Main St – EBLTR	41.8	D
Elm St – NBLTR	>100	F	Hill St – NBLTR	7.7	A
South St – WBLTR	53.3	D	Water St – NBLTR	6.3	A
Elm St – SBLTR	18.9	B	Main St – WBLTR	21.9	C
Overall Intersection	99.5	F	North Dam Mill – SBLTR	>100	F
Hill St @ Pool St			Overall Intersection	27.3	C
Pool St – EBL	17.1	B	Elm St @ Spruce St		
Pool St – EBTR	12.3	B	Spruce St – EBLR	20.3	C
Hill St – NBLTR	11.7	B	Elm St – NBL	11.9	B
Pool St – WBL	24.4	C	Elm St – NBT	3.3	A
Pool St – WBTR	10.8	B	Elm St – SBTR	4.5	A
Hill St – SBLTR	11.8	B	Overall Intersection	5.1	A
Overall Intersection	12.2	B			

Table 3.12: Level of Service for Downtown Unsignalized Intersections – Roundabout

Intersection/ Approach	2025 Volumes		Intersection/ Approach	2025 Volumes	
	Delay (sec)	LOS		Delay (sec)	LOS
Main St & Jefferson St			Jefferson St & Adams St		
Main St – EBTR	1.8	A	Jefferson St – EBLTR	1.5	A
Jefferson St – NBLR	15.9	B	Adams St – NBLTR	10.7	B
Main St – WBLT	2.3	A	Jefferson St – WBLTR	2.1	A
Overall Intersection	6.1	A	Adams St – SBLTR	15.9	C
Main St & Lincoln St/Adams St			Overall Intersection	5.8	A
Main St – EBLTR	1.6	A	Jefferson St & South St		
Adams St – NBLT	16.4	C	South St – EBLTR	11.0	B
Adams St – NBR	6.8	A	Crescent St – EBLTR	7.5	A
Main St – WBLTR	2.9	A	Jefferson St – NBLTR	10.1	B
Lincoln St – SBLTR	43.7	E	Jefferson St – SBLTR	7.7	A
Overall Intersection	16.2	C	Overall Intersection	9.5	A
Main St & Alfred St			South St & Adams St		
Main St – EBLTR	94.6	F	South St – EBLR	6.4	A
Alfred St – NBLTR	20.2	C	Adams St – NBT	0.3	A
Main St – WBLTR	88.9	F	Adams St – SBT	2.1	A
Overall Intersection	62.7	F	Overall Intersection	2.4	A

As the above tables indicate, the construction of a roundabout at such a key location within the Downtown has significant impacts throughout the area. The overall efficiency improves dramatically, with most intersections operating at greatly improved levels of service, even with higher traffic volumes.

Table 3.13: Queue Analysis for Downtown Signalized Intersections - Roundabout

Intersection/Approach	Available (Ft)	50th Percentile (Ft)	95th Percentile (Ft)
Main St & Elm St			
Main St – EBL	80	26	69
Main St – EBTR	N/A	132	231
Elm St – NBL	100	19	69
Elm St – NBTR	N/A	189	337
Main St – WBL	95	70	134
Main St – WBTR	N/A	163	287
Elm St – SBL	100	39	103
Elm St – SBTR	N/A	223	422
South St @ Elm St			
South St – EBLTR	N/A	179	349
Elm St – NBLTR	N/A	851	1253
South St – WBLTR	N/A	154	284
Elm St – SBLTR	N/A	195	402
Jefferson St & Alfred St			
Jefferson St – EBL	40	63	79
Jefferson St – EBTR	N/A	235	471
Alfred St – NBL	60	60	103
Alfred St – NBTR	N/A	297	604
Jefferson St – WBL	115	26	85
Jefferson St – WBTR	N/A	182	333
Alfred St – SBL	60	51	97
Alfred St – SBTR	N/A	189	307
Hill St & Pool St			
Pool St – EBL	75	8	39
Pool St – EBTR	N/A	103	183
Hill St – NBLTR	N/A	95	170
Pool St – WBL	50	35	70
Pool St – WBTR	N/A	82	142
Hill St – SBLTR	N/A	86	152
Elm St & Spruce St			
Spruce St – EBLR	N/A	52	100
Elm St – NBL	100	18	46
Elm St – NBT	N/A	29	85
Elm St – SBTR	N/A	83	211
Main St & Hill St/ Water St			
Main St – EBLTR	N/A	274	590
Hill St – NBLTR	N/A	58	103
Water St – NBLTR	N/A	59	77
Main St – WBLTR	N/A	247	728
North Dam Mill - SBLTR	N/A	56	108

Notes: N/A – Not applicable in travel lane

Table 3.14: Queue Analysis for Downtown Unsignalized Intersections - Roundabout

Intersection/Approach	Available (Ft)	50th Percentile (Ft)	95th Percentile (Ft)
Main St & Jefferson St			
Main St – EBTR	N/A	3	19
Jefferson St – NBLR	N/A	71	148
Main St – WBLT	N/A	29	80
Main St & Lincoln St/Adams St			
Main St – EBLTR	N/A	11	50
Adams St – NBLT	N/A	39	73
Adams St – NBR	55	20	46
Main St - WBLTR	N/A	12	38
Lincoln St – SBLTR	N/A	174	365
Main St & Alfred St			
Main St – EBLTR	N/A	290	506
Alfred St – NBLTR	N/A	166	408
Main St - WBLTR	N/A	477	894
Jefferson St & Adams St			
Jefferson St – EBLTR	N/A	9	53
Adams St – NBLTR	N/A	10	33
Jefferson St – WBLTR	N/A	8	94
Adams St – SBLTR	N/A	83	143
Jefferson St & South St			
South St – EBLTR	N/A	57	103
Crescent St – EBLTR	N/A	25	56
Jefferson St – NBLTR	N/A	77	134
Jefferson St – SBLTR	N/A	41	67
South St & Adams St			
South St – EBLR	N/A	30	48
Adams St – NBT	N/A	0	0
Adams St – SBT	N/A	5	37

Notes: N/A – Not applicable in travel lane

As the above tables indicate, the queues are either approaching or exceeding the available storage capacity at many of the intersections. However, the queues at the roundabout are much shorter and move much quicker than for a traditional signalized intersection.

Alternatives 1, 2, 6 and 9: Closure of Main Street from Alfred Street to Adams Street

This analysis looks at the impact of closing Main Street to vehicular traffic, from Alfred Street to Adams Street. Traffic is redistributed to Jefferson Street via Alfred Street and Adams Street. In order to accommodate the increased turning movements at the impacted intersections, all-way stops are included at the Main Street/Adams Street/Lincoln Street intersection and the Jefferson Street/Adams Street intersection. The results for the capacity and queue analyses are shown in the following tables:

Table 3.15: Level of Service for Downtown Signalized Intersections – Main St Closed

Intersection/ Approach	2025 Volumes		Intersection/ Approach	2025 Volumes	
	Delay (sec)	LOS		Delay (sec)	LOS
Main St & Elm St			Jefferson St & Alfred St		
Main St – EBL	>100	F	Jefferson St – EBL	>100	F
Main St – EBTR	>100	F	Jefferson St – EBTR	>100	F
Elm St – NBL	29.0	C	Alfred St – NBL	>100	F
Elm St – NBTR	>100	F	Alfred St – NBTR	>100	F
Main St – WBL	36.5	D	Jefferson St – WBL	>100	F
Main St – WBTR	26.1	C	Jefferson St – WBTR	>100	F
Elm St – SBL	>100	F	Alfred St – SBL	>100	F
Elm St – SBTR	41.9	D	Alfred St – SBTR	>100	F
Overall Intersection	>100	F	Overall Intersection	>100	F
South St @ Elm St			Main St & Hill St/ Water St		
South St – EBL	>100	F	Main St – EBL	30.1	C
South St – EBTR	>100	F	Main St – EBT	29.2	C
Elm St – NBLTR	>100	F	Main St – EBR	29.8	C
South St – WBL	58.3	E	Water St – NBLT	>100	F
South St – WBTR	>100	F	Main St – WBL	17.9	B
Elm St – SBLTR	34.4	C	Main St – WBT	45.2	D
Overall Intersection	>100	F	Main St - WBR	0.3	A
Hill St @ Pool St			North Dam Mill – SBLT	>100	F
Pool St – EBL	26.4	C	North Dam Mill – SBR	>100	F
Pool St – EBTR	16.6	B	Overall Intersection	52.9	D
Hill St – NBLTR	>100	F	Elm St @ Spruce St		
Pool St – WBL	>100	F	Spruce St – EBLR	>100	F
Pool St – WBTR	>100	F	Elm St – NBL	12.4	B
Hill St – SBLTR	>100	F	Elm St – NBT	2.9	A
Overall Intersection	>100	F	Elm St – SBTR	>100	F
			Overall Intersection	>100	F

Table 3.16: Level of Service for Downtown Unsignalized Intersections – Main St Closed

Intersection/ Approach	2025 Volumes		Intersection/ Approach	2025 Volumes	
	Delay (sec)	LOS		Delay (sec)	LOS
Main St & Jefferson St			Jefferson St & Adams St		
Main St – EBTR	>100	F	Jefferson St – EBLTR	63.6	F
Jefferson St – NBLR	72.1	F	Adams St – NBLTR	>100	F
Main St – WBLT	61.8	F	Jefferson St – WBLTR	>100	F
Overall Intersection	>100	F	Adams St – SBLTR	>100	F
Main St & Lincoln St/Adams St			Overall Intersection	>100	F
Main St – EBLR	>100	F	Jefferson St & South St		
Adams St – NBLT	7.3	A	South St – EBLTR	>100	F
Lincoln St – SBTR	>100	F	Crescent St – EBLTR	>100	F
Overall Intersection	>100	F	Jefferson St – NBLTR	69.5	F
Main St & Alfred St			Jefferson St – SBLTR	>100	F
Alfred St – NBTR	1.6	A	Overall Intersection	>100	F
Main St – WBTR	>100	F	South St & Adams St		
Overall Intersection	86.1	F	South St – EBLR	>100	F
			Adams St – NBT	0	A
			Adams St – SBT	>100	F
			Overall Intersection	>100	F

As the above tables indicate, the closure of a section of Main Street results in increased delay at virtually every intersection, which translates into decreased levels of service.

Table 3.17: Queue Analysis for Downtown Signalized Intersections – Main St Closed

Intersection/Approach	Available (Ft)	50 th Percentile (Ft)	95 th Percentile (Ft)
Main St & Elm St			
Main St – EBL	80	18	64
Main St – EBTR	N/A	333	788
Elm St – NBL	100	8	42
Elm St – NBTR	N/A	316	830
Main St – WBL	95	20	68
Main St – WBTR	N/A	74	191
Elm St – SBL	100	48	123
Elm St – SBTR	N/A	259	549
South St @ Elm St			
South St – EBL	75	16	51
South St – EBTR	N/A	298	733
Elm St – NBLTR	N/A	853	1248
South St – WBL	75	24	79
South St – WBTR	N/A	105	316
Elm St – SBLTR	N/A	164	529
Jefferson St & Alfred St			
Jefferson St – EBL	40	61	84
Jefferson St – EBTR	N/A	370	730
Alfred St – NBL	60	81	94
Alfred St – NBTR	N/A	631	883
Jefferson St – WBL	115	15	72
Jefferson St – WBTR	N/A	462	743
Alfred St – SBL	60	31	91
Alfred St – SBTR	N/A	508	683
Hill St & Pool St			
Pool St – EBL	75	5	27
Pool St – EBTR	N/A	71	152
Hill St – NBLTR	N/A	276	611
Pool St – WBL	50	23	69
Pool St – WBTR	N/A	368	813
Hill St – SBLTR	N/A	198	425
Elm St & Spruce St			
Spruce St – EBLR	N/A	110	309
Elm St – NBL	100	12	39
Elm St – NBT	N/A	19	70
Elm St – SBTR	N/A	164	460
Main St & Hill St/ Water St			
Main St – EBL	75	6	33
Main St – EBT	N/A	170	367
Main St – EBR	20	27	55
Water St – NBLT	N/A	90	159
Main St – EBL	N/A	73	175
Main St – WBT	N/A	97	150
Main St – WBR	45	1	8
North Dam Mill – SBLT	N/A	23	66
North Dam Mill – SBR	N/A	33	109

Notes: N/A – Not applicable in travel lane

**Table 3.18: Queue Analysis for Downtown Unsignalized Intersections –
Main St Closed**

Intersection/Approach	Available (Ft)	50th Percentile (Ft)	95th Percentile (Ft)
Main St & Jefferson St			
Main St – EBTR	N/A	151	424
Jefferson St – NBLR	N/A	73	269
Main St – WBLT	N/A	59	204
Main St & Lincoln St/Adams St			
Main St – EBLR	N/A	256	534
Adams St – NBLT	N/A	32	83
Lincoln St – SBTR	N/A	531	847
Main St & Alfred St			
Alfred St – NBTR	N/A	0	0
Main St - WBLR	N/A	408	886
Jefferson St & Adams St			
Jefferson St – EBLTR	N/A	91	222
Adams St – NBLTR	N/A	54	178
Jefferson St – WBLTR	N/A	368	696
Adams St – SBLTR	N/A	163	189
Jefferson St & South St			
South St – EBLTR	N/A	643	1260
Crescent St – EBLTR	N/A	145	300
Jefferson St – NBLTR	N/A	125	186
Jefferson St – SBLTR	N/A	104	305
South St & Adams St			
South St – EBLR	N/A	169	299
Adams St – NBT	N/A	0	7
Adams St – SBT	N/A	190	269

Notes: N/A – Not applicable in travel lane

As the above tables indicate, the queues are either approaching or exceeding the available storage capacity at virtually all of the intersections. The closure of a portion of Main Street results in near grid-lock conditions during the peak hour.

Chapter 4

Recommendations

As the preceding data indicates, a combination of alternatives will be required to truly provide improved operational efficiency throughout Downtown Biddeford. Any improvements are limited by the overall constraints within the area. The close proximity of buildings to the streets and limited right-of-way effectively prevent widening of the roadways. Additionally, given the nature of a vibrant downtown like Biddeford's, the availability and accessibility of parking must be maintained, as well as the accessibility, comfort and safety of pedestrians and bicyclists.

The following improvements or combinations of should be implemented in order to maintain operational efficiency throughout Downtown at approximately the same levels of service as 2005 or better, as well as to improve safety and efficiency within Downtown:

- Relocate access to/from North Dam Mill to better align with Water Street, so that it becomes part of the intersection;
- Retime all the traffic signals throughout the Downtown, maintaining the coordination of the Elm Street signals at Spruce Street and Main Street;
- Construct a roundabout at the intersection of Main Street, Hill Street, Water Street, and the North Dam Mill;
- Implement all-way stop at the intersection of Main Street, Alfred Street and Laconia Street (This is critical if the roundabout is constructed as described above);
- Construct left-turn lanes at the intersection of Main Street and Alfred Street if the intersection does not become an all-way stop;
- Consider the implementation of an all-way stop at Jefferson Street and Adams Street;
- Extension of the left-turn lanes at the intersection of Main Street and Elm Street;
- Re-stripe all marked crosswalks;
- Rehabilitate existing sidewalks and ramps to meet the Americans with Disabilities Act (ADA) standards;
- Install new and/or additional Pedestrian Crossing signage at crosswalks;
- Upgrade all traffic signals to 12-inch lenses with back plates and provide one signal head per lane.

While some improvements need to be undertaken together to gain the full benefit, some can be implemented in phases or individually. At a minimum, the traffic signals should all be retimed based on latest traffic volumes. The installation of Pedestrian Crossing signage, the re-striping of the crosswalks, and the upgrade of sidewalks to be ADA compliant should all be done. The extension of the left-turn lanes at Main Street and Elm Street can be completed regardless of any other alternatives. The relocation of the access for North Dam Mill should be completed as redevelopment proceeds there.

Conversely, some of the improvement alternatives should only be undertaken if other improvements are not implemented. For example, left-turn lanes at Alfred Street and Main Street should only be installed if the intersection does not become all-way stop controlled.

Suggested Implementation Phasing

Steps that could be taken in the immediate future include the following:

- Retime all the traffic signals throughout the Downtown, maintaining the coordination of the Elm Street signals at Spruce Street and Main Street;
- Extension of the left-turn lanes at the intersection of Main Street and Elm Street;
- Re-stripe all marked crosswalks;
- Install new and/or additional Pedestrian Crossing signage at crosswalks.

Steps that could be planned for the 2008-2009 Biennial Capital Work Plan include:

- Relocate access to/from North Dam Mill to better align with Water Street, so that it becomes part of the intersection;
- Consider the implementation of an all-way stop at Jefferson Street and Adams Street;
- Rehabilitate existing sidewalks and ramps to meet the Americans with Disabilities Act (ADA) standards (This could be done as a stand alone project to include all intersections; or as an addition to other projects at each intersection, as they move forward);
- Upgrade all traffic signals to 12-inch lenses with back plates and provide one signal head per lane. (This also could be completed as a stand alone project, or as part of other intersection improvement projects.)

Steps that would be appropriate to plan for 2010 and beyond include:

- Construct a roundabout at the intersection of Main Street, Hill Street, Water Street, and the North Dam Mill;
- Implement all-way stop at the intersection of Main Street, Alfred Street and Laconia Street (This is critical if the roundabout is constructed as described above);

Part III – Parking Management

Chapter 5 Existing Conditions

Downtown Biddeford is home to a variety of uses, ranging from office to commercial/retail to light industrial to residential. All of these uses combine to create varied and dynamic parking needs. These various uses all have their own typical parking requirements concerning number of parking spaces and time of day of usage, as well as duration of usage. For example, an office likely requires that long-term parking (eight-hours) be available from approximately 8:00 AM to 6:00 PM. Retail establishments may require more parking spaces than an office, but for shorter durations. Parking for residential uses typically is at its peak in the evening hours.

In order to best evaluate the parking needs within Downtown Biddeford, an accurate outline of the parking supply and demand is required. In November 2005, Gorrill-Palmer Consulting Engineers Inc. surveyed Downtown Biddeford to determine the parking supply. All on-street parking spaces were counted and diagramed, as well as all off-street municipal parking lots. This survey also identified all parking restrictions, such as Handicap, Time Limits, etc., by space. The number and type of parking spaces within private parking lots were also counted.

Within the focused study area, there are 567 on-street parking spaces, 373 off-street parking spaces in municipal lots, and an additional 429 off-street parking spaces in privately owned lots. The following tables summarize the municipal parking space supply in Downtown Biddeford.

Table 5.1: Off-Street Parking Supply – Municipal Lots

Location	Type of Space	Number of Spaces
Washington Street Lot		33
	Unrestricted	31
	Handicap	2
Foss Street Lot		43
	Unrestricted	43
Downtown Lot		26
	2-Hour	24
	Handicap	2
Franklin Street Lot		88
	Unrestricted	88
Alfred Street Lot		86
	Police	20
	Police, Handicap	2
	2-Hour	42
	4-Hour	22
City Hall Lot		47
	Unrestricted	32
	1-Hour	10
	Reserved	3
	Handicap	2
Federal Street (Old Courthouse) Lot		50
	Unrestricted	30
	2-Hour	6
	Handicap	1
	Reserved & Bank	13
Total Municipal Parking Lot Spaces		373

Table 5.2: On-Street Parking Supply

Type of Space	Number of Spaces
Unrestricted	333
2-Hour	216
15-Minute	6
Handicap	7
Loading	2
Taxi	3
Total On-Street Spaces	567

With this information a detailed eight-hour parking count was conducted. On November 17, 2005, all parking spaces within the study area were counted and notation was made of which spaces were being used. The counts were conducted hourly, beginning at 9:00 AM and ending at 5:00 PM. Within the municipal lots, where parking duration is limited, vehicle license plate information was also collected. This information was used to determine vehicle turnover rates to help determine the adequacy of current parking restrictions and time limitations. The following tables summarize the typical parking demand. The count data sheets are included in Appendix E.

Table 5.3: Average Usage of Municipal Parking Lots

Location	Type of Space	Number of Spaces	Average Number of Spaces Used
Washington Street Lot		33	19
	Unrestricted	31	19
	Handicap	2	0
Foss Street Lot		43	26
	Unrestricted	43	26
Downtown Lot		26	15
	2-Hour	24	15
	Handicap	2	0
Franklin Street Lot		88	79
	Unrestricted	88	79
Alfred Street Lot		86	67
	Police	20	13
	Police, Handicap	2	1
	2-Hour	42	35
	4-Hour	22	18
City Hall Lot		47	38
	Unrestricted	32	28
	1-Hour	10	7
	Reserved	3	2
	Handicap	2	1
Federal Street (Old Courthouse) Lot		50	38
	Unrestricted	30	26
	2-Hour	6	2
	Handicap	1	1
	Reserved & Bank	13	9
Total Municipal Parking Lot Spaces		373	282

Table 5.4: Average Usage of On-Street Parking Spaces

Type of Space	Number of Spaces	Average Number of Spaces Used
Unrestricted	333	157
2-Hour	216	105
15-Minute	6	3
Handicap	7	3
Loading	2	0
Taxi	3	0
Total On-Street Spaces	567	265

These counts show that the municipal lots, on average, are used more extensively than the on-street parking. The seven Municipal Parking Lots averaged 75-percent occupancy during that count, versus slightly less than 50-percent occupancy of the on-street parking spaces. However, as is the case in most areas, some municipal lots operate at much closer to capacity than others.

Also, some sections of the Downtown experience near full usage of the on-street parking spaces, while other spaces go mostly unused all day.

Looking at the data by sub-areas provides additional information. For example, the Downtown Lot, the Foss Street Lot, and the Washington Street Lot all average around 60-percent occupancy, while both the City Hall Lot and the Franklin Street Lot are consistently being used at upwards of 80-percent of their capacity. Perhaps the most noticeable variation in parking demand is along Main Street itself. Less than 25-percent of the parking spaces along Main Street, between Hill Street and Alfred Street, are used regularly. However, the other end of Main Street, from Adams Street to Elm Street, sees usage of the on-street parking spaces at around 70-percent of capacity. This variation in parking demand is likely due to a combination of factors, including concentration and intensity of uses in some areas, as well as type of uses and parking needs for various uses.

Overall, within the immediate Downtown area of Biddeford, parking supply today is sufficient for current development levels. Typical parking demand is around 60-percent of the available supply. When parking demand begins approaching 80 to 90 percent of the capacity, the supply begins to seem inadequate. There needs to be some excess supply throughout the downtown to allow for circulation and finding available parking spaces. There are roughly 150 excess parking spaces available before reaching that 80-percent threshold. This excess could be consumed by just one or two developments within the Downtown, such as a call center. The City is now at a critical stage in planning and preparing for the future of its Downtown.

Chapter 6

Future Parking Demand And Recommendations

City staff has completed a thorough assessment of potential redevelopment in the downtown. The majority of this development would come in the form of conversion of uses, for example from industrial to retail or office. This development, projected to occur within the twenty-year horizon of this study, could result in over 75,000 square feet of new business and residential uses. This square footage does not include any redevelopment within the Mill District, adjacent to Main Street. For the purposes of parking supply, the Committee determined that any redevelopment within the Mills would likely be of such a scale that on-site parking, within the Mill District, would be included as part of the development. The anticipated breakdown of building square footage by general use, with typical parking requirements, is as follows:

**Table 6.1: Parking Requirements for
Anticipated Downtown Growth**

Development Area	Size	Parking Spaces Required
Lincoln Street Area	10,000 s.f. Office 10,000 s.f. Retail	79
Main Street Area 1 (Adams St, South St area)	10 Residential Units 7,000 s.f. Office 7,000 s.f. Retail	68
Main Street Area 2 (Washington St, Franklin St area)	20,000 s.f. Office 20,000 s.f. Retail	150
Main Street Area 3 (Hill St to Alfred St)	750 s.f. Office 750 s.f. Retail	8
TOTAL		305

This mix of development results in an overall parking deficit of approximately 100 spaces, assuming 100-percent usage. If we include between ten to twenty percent excess, 200 to 300 additional parking spaces would be required within the Downtown in the next twenty years.

Given the lack of available land for surface parking, the construction of a parking structure should be considered in the future. The Committee concluded that the Franklin Street area is the best location for a municipal parking structure. That area encompasses the Franklin Street Lot, the Downtown Lot, and the Federal Street (Old Courthouse) Lot. The land is centrally located to the Downtown of Biddeford and is already owned by the City and is currently used for parking. Therefore, conversion of this land to a parking structure would not result in the relocation of businesses or residents.

Gorrill-Palmer Consulting Engineers Inc. contracted with Carl Walker, Inc. to prepare a conceptual layout of a parking structure on the Franklin Street lot. This concept identifies a

structure that is approximately 120 feet wide by 235 feet long. With this layout, a four-level structure would be needed to accommodate the parking required for future growth and development. A four-level structure would provide approximately 365 parking spaces, which would be a net increase of approximately 275 spaces since the area is currently used for surface parking. The conceptual layout for this parking structure is included in Appendix E.

In addition to the need for new parking spaces, the parking restrictions that are currently in place need to be re-evaluated. As business uses change, parking needs also change accordingly. As such, certain time restrictions for parking no longer make sense. One such example is along Main Street, from Hill Street to Alfred Street, where the typical parking spaces are signed as a two-hour limit. However, the majority of uses in that area now tend to be more office based, which often times require eight-hour parking.

The following tables outline the recommendations to the current parking ordinances.

Table 6.2: On-Street Parking Restrictions – Recommended Changes

Street	Location	Current Restrictions		Recommended Restrictions	
		Type	Number of Spaces	Type	Number of Spaces
Main Street	Hill Street to Alfred Street	15-Minute	2	15-Minute	2
		2-Hour	35	2-Hour	10
		Unrestricted	2	Unrestricted	27
Water Street	Main Street to Pierson's Lane	2-Hour	4	4-Hour	4
Adams Street	Main Street to Jefferson Street	Unrestricted	22	Unrestricted	15
				1-Hour	7

Table 6.3: Municipal Lot Parking Restrictions – Recommended Changes

	Current Restrictions		Recommended Restrictions	
	Type	Number of Spaces	Type	Number of Spaces
Municipal Lot				
Downtown Lot	2-Hour	24	2-Hour	12
	Handicap	2	Handicap	2
	Unrestricted	0	Unrestricted	12
City Hall Lot	Unrestricted	32	Unrestricted	26
	1-Hour	10	1-Hour	16
	Reserved	3	Reserved	3
	Handicap	2	Handicap	2

Chapter 7

Parking Management Plan

An effective Parking Management Plan for the downtown will require a combination of actions. There needs to be an appropriate balance of short-term (i.e. one-hour or two-hour) parking for customers, clients, etc. and long-term (i.e. day long) parking for employees. There also needs to be an adequate supply of overnight parking for residents.

The short-term parking should continue to be located closest to the businesses, with employee parking shifted further away. One of the best tools for this to happen effectively is signage. Throughout most of Downtown, adequate signage is already installed. However, improved wayfinding signage could help encourage the use of some the under-utilized municipal parking lots, such as the Foss Street Lot, the Washington Street Lot, and the Downtown Lot. Combined with signage is the need for continued parking enforcement.

The City of Biddeford currently maintains a parking enforcement officer position through the Police Department and has a parking fine structure in place. This is an effective tool for the management of municipal parking, and this program should be continued. The City could also consider the creation of a separate Downtown Parking District, where a portion of the parking fees generated within that District are used to provide infrastructure improvements or enhancements to the Downtown.

Parking meters should also be considered as an effective tool for parking management. The eventual installation of on-street parking meters, as well as in some of the municipal lots, will aide in keeping the 'prime' parking locations available for high-turnover use. Parking meters can also be used as an effective precursor to a parking structure. Streets that could be managed with parking meters include the following: Main Street, Alfred Street, Adams Street, Washington Street, and Lincoln Street. In addition to on-street parking, the Alfred Street Lot could be suitable for parking meters as well.

An alternative to parking meters could be the implementation of a parking permit system. The Federal Street (Old Courthouse) Lot, as well as the Franklin Street, Washington Street, and Foss Street Lots could all be suitable locations for permit parking.

Parking Fees and Fines

With parking enforcement comes the need for parking fees and or fines. The City of Biddeford's parking fine structure has not been updated since 1998. A comparison of the parking fine structure for Biddeford to that of Portland, Lewiston, and Westbrook, shows that while some of the fines in Biddeford are lower than the average, they are still comparable.

The following table provides the comparison of parking fines between the Cities of Biddeford, Portland, Lewiston and Westbrook

Table 7.1: Comparison of Parking Fines

Parking Violation	Biddeford	Portland	Lewiston	Westbrook
Parking exceeding time limit	\$10.00	\$15.00	\$15.00	\$20.00
Parking in taxi stand, bus stop, or loading zone	\$15.00	\$20.00	\$20.00	\$40.00
Parking all night	\$10.00	\$10.00	\$20.00	\$20.00
Parking double	\$25.00	\$20.00	\$20.00	\$40.00
Parking too near fire hydrant	\$25.00	\$25.00	\$30.00	\$60.00
Parking in prohibited area	\$20.00	\$20.00	\$20.00	\$40.00
Parking on wrong side of street	\$10.00	\$20.00	\$20.00	\$20.00
Parking too near cross or corner	\$20.00	\$20.00	\$20.00	\$20.00
Parking in fire lane	\$25.00	\$25.00	\$20.00	\$60.00
Parking in crosswalk	\$20.00	\$25.00	\$20.00	\$40.00
Obstructing snow removal	\$10.00	\$20.00	\$25.00	\$60.00
Parking in handicapped space (State Legislation \$200)	\$100.00	\$200.00	\$75.00	\$40.00
Parking in front of public or private driveway	\$25.00	\$20.00	\$20.00	\$40.00
Other		\$100.00		\$20.00

The introduction of parking meters and the ultimate construction of a parking structure will present the need for parking fees. A suggested fee structure for metered parking is as follows:

- All meters have a two-hour maximum to help eliminate confusion;
- Twenty-five cents for every 30 minutes

For a parking garage, the committee recommends both short-term and monthly parking rates. Suggested rates, based on 2006 data, are as follows:

- Short-term parking rates:
 - \$1.00 per hour, with first half hour free.
 - Consider a “Park-n-Shop” program, where customers can park for free with validated parking tickets (stamped by the businesses)
- Monthly parking rates:
 - \$60.00-\$80.00 per month

A quick survey of local communities with parking garages or surface lots for paid parking shows that monthly parking rates vary from \$35.00 to \$48.00 per month in Lewiston-Auburn, and from \$65.00 to \$110.00 per month in Portland.

Implementation and Phasing

Upon acceptance or adoption by the Biddeford City Council, the implementation of this parking management plan will be an on-going process. This plan is also intended to be a dynamic plan for the City of Biddeford, which should be evaluated on a regular basis, and updated as needed.

The phasing described in this section is based on priorities, as well as an awareness of the City Council review process and funding and budget cycles. The phasing is a suggestion. Development may dictate changes to the priorities.

Phase I

The following measures are recommended in the short-term horizon:

- Replace or install new signage for wayfinding and locations of parking
- Revise City Ordinances to reflect changes in parking time restrictions
- Establish or revise parking fee and fine structures as necessary

It should be noted that as signage is installed, great care should be taken to prevent an unnecessary proliferation of parking and/or directional signs within the downtown. By designating entire lots all for the same time limits, signs need not be installed at each individual parking space; rather they can be installed only at the entrance to the lots. The same theory holds true for on-street parking. By keeping entire streets or segments of streets to the same time limits, the number of signs can be minimized.

Phase II

The following measures are recommended in the mid-term horizon:

- Install parking meters
 - On-Street
 - Main Street
 - Alfred Street
 - Adams Street
 - Washington Street
 - Lincoln Street
 - Municipal Lots
 - Alfred Street Lot
- Implement parking permit system (could be an alternative to metered parking) in the following Municipal Lots
 - Federal Street (Old Courthouse) Lot
 - Franklin Street Lot
 - Washington Street Lot
 - Foss Street Lot

Phase III

The need for a parking structure is directly tied to the rate and types of growth and development within the downtown. The construction of a parking structure should be considered for long-term implementation. The planning and design for this structure should be an on-going process beginning with the adoption of this parking management plan. Various options exist for the construction of this parking garage.

- The City could have the foundation and structure designed for a five or six level parking structure, but only actually construct the first three levels at the onset, with the additional levels built when needed at a later date. This phased construction will require careful

coordination with the engineer/designer of the structure. The cost effectiveness of such a plan will need to be thoroughly evaluated with the engineer at that time.

- The parking structure could be constructed in conjunction with a new office building or other such large scale redevelopment. A large enough development could create the critical need for a parking structure; and a public/private partnership of sorts could be used for the garage construction. A certain number of spaces would be dedicated to the new development, while the remainder of the structure would be available for public use.

Preliminary Opinion of Probable Construction Costs

Carl Walker, Inc. performed a preliminary opinion of the probable construction costs associated with a parking garage, based on three different options. These costs are based on the following assumptions: there are no land purchase costs; soil conditions are adequate for spread footings; no shoring/resupport of adjacent buildings is required; minor architectural treatments are assumed. The three options and cost opinions are as follows:

- Construction of a four-level parking garage, for an approximate net increase of 200 spaces - \$4,300,000
- Construction of a two-level parking garage, but with the foundation to accommodate up to five or six levels, for an initial net increase of approximately 72 spaces - \$2,400,000 (initial construction costs; does not include the costs for expansion at a later date)
- Construction of a six-level parking garage, for a net increase of approximately 386 spaces - \$6,100,000

These cost estimates are based on early 2006 costs, which were increased by four-percent to reflect late 2006 costs.

Conclusion

The recommended parking management plan will involve a combination of short-term and long-term parking, parking meters, continued enforcement of parking regulations, and the future construction of a parking structure. Implementation of this plan will need to occur over a period of time.

Additionally, this parking management plan is meant to be a dynamic plan; one that is reviewed and updated on a regular basis. It is the intent of this plan that action by the City Council will be required in order for any portions of the plan to be implemented. The Advisory Committee anticipates that a more detailed study to determine the preferred location and layout for a parking structure will be conducted prior to any final decisions being made by the City Council.

Appendix A

Study Area Map

2005 Traffic Volumes

Historical Traffic Volumes

Appendix B

Collision Diagrams

Appendix C

Forecasted 2025 Traffic Volumes

Appendix D

Capacity and Queuing Analyses

Appendix E

Parking Survey Data

Appendix F

Parking Garage Concepts

Appendix G

Public Comments

Appendix H

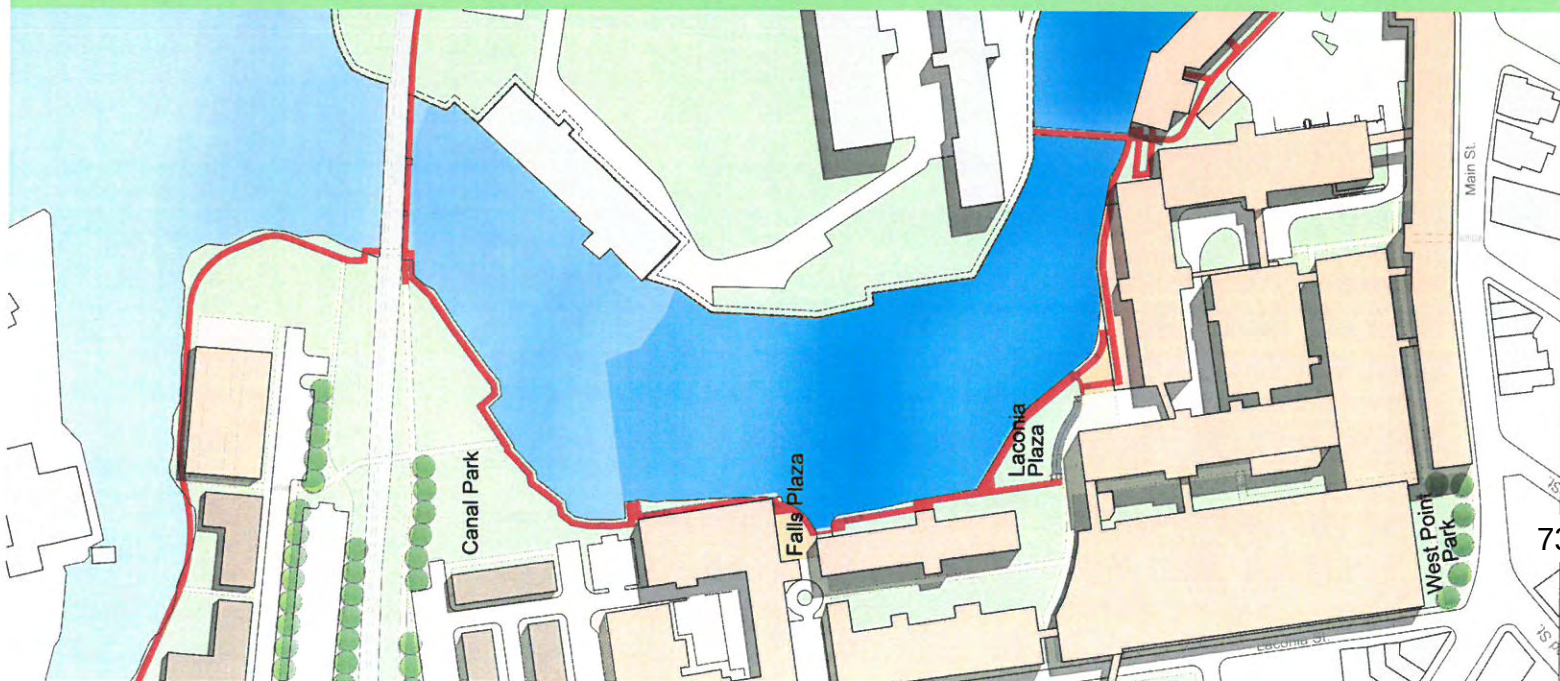
Meeting Notes

Biddeford Mill District Master Plan



October 2009

Biddeford 



develop an infrastructure system with the flexibility to accommodate and support that mix.

Some space (for example WestPoint Building 36, with approximately seven foot floor to ceiling heights and small windows) will most likely continue as storage space because of the difficulty in making it suitable for habitable purposes. Significant interior reconfiguration of these buildings involving the removal of floors to create double-height spaces may be possible, although because of the large amount of available, more easily usable building space, it is unlikely that this would happen for a number of years. It has been suggested that WestPoint Building 36 could be used as a parking structure. The dimensions of the building and existing column placement would make interior circulation difficult. A more detailed study of the building would be required to determine the feasibility of this reuse.

New buildings are shown on the MERC property, on the vacant Saco & Lowell Machine Shop property north of the railroad tracks, and on the site of the single-story additions to the Precision Screw building. A few smaller buildings are also shown on scattered small sites such as on York Street by the former WestPoint Company Store.

On the MERC property south of the railroad tracks, new buildings line Lincoln Street, creating new gateways on Lincoln Street at Pearl and Elm Streets. These could be either residential or office buildings with ground floor retail, depending on the market.

Continuing east on Pearl Street, the illustrative plan shows a garage across from Bugbee Brown (see Parking below) and a cluster of residential buildings across from Riverdam, leading to Canal Park. The residential buildings are shown as three-story row-houses with parking tucked underneath. Trees screen the residential buildings from the railroad tracks.

These new buildings could house a variety of different uses. The key principles are that they create an edge to Pearl Street leading to Canal Park, continue the Lincoln Street building line created by the Lincoln Mill and create a strong street edge on the street on the east side of Lincoln Mill, connecting to a potential Visitor Center at the former WestPoint Company Store on York Street.

North of the railroad tracks, Gooch Street is shown shifted slightly to the south to create better water-side parcels. Three-level row houses line the north side of Gooch Street, ending with the rehabilitated Precision Screw building which could be used for either housing or artist space. The building is shown with a patio facing east to Canal Park.

PARKING

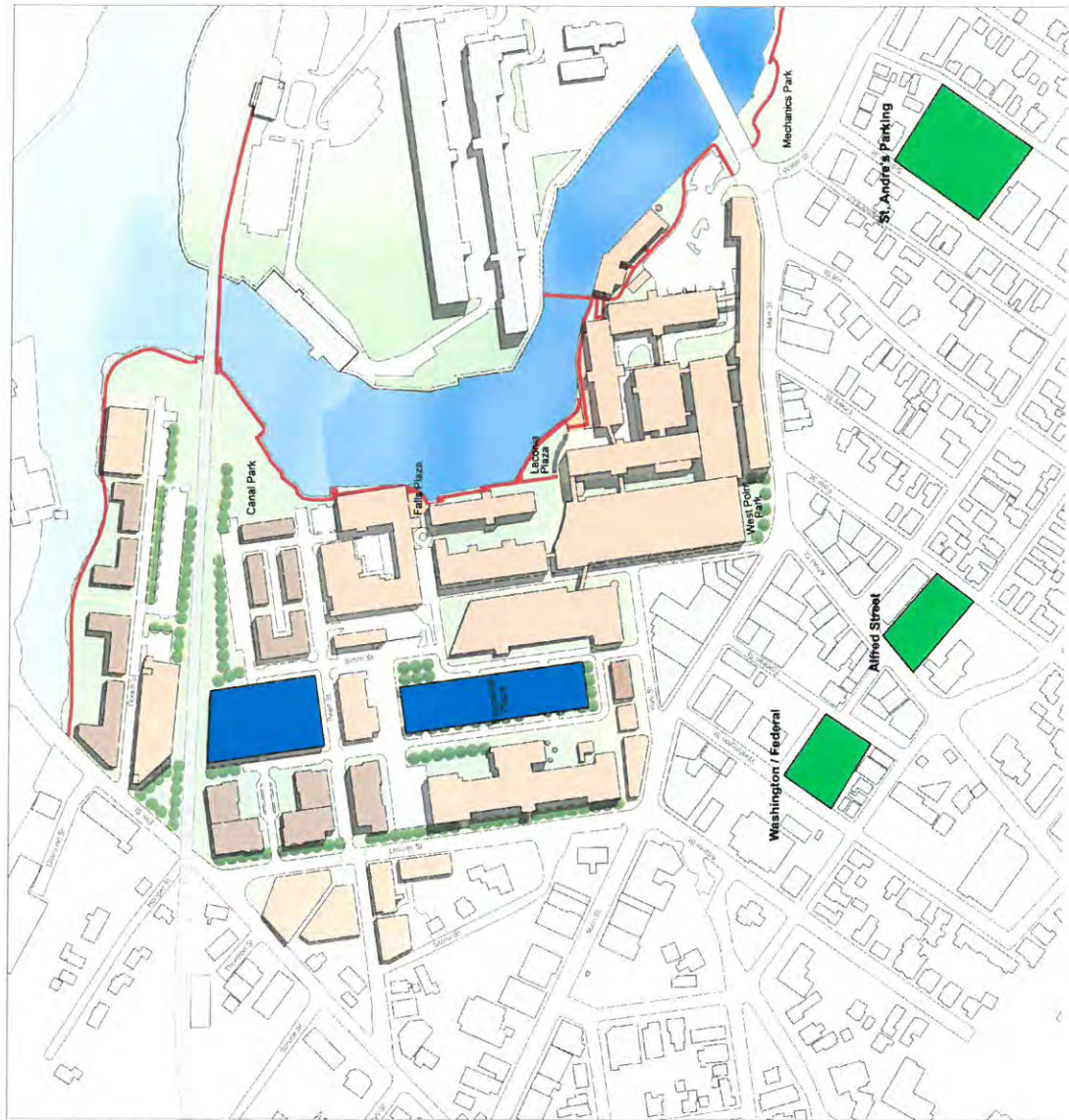
Based on the full buildout of the Mill District described above, potential parking requirements are estimated at approximately 2,500 to 3,000 spaces. Parking ratios used for this calculation are:

- 1 space/residential unit
- 1.5 spaces per 1,000 square feet of light industrial space
- 3 spaces per 1,000 square feet of office and retail space

These ratios are relatively low and take into account the mixed use nature of the district which reduces parking demand. Parking demand should continue to go down over time as individuals become more conscious of reducing automobile use. The mixed-use nature of the Mill District and the proximity to Downtown will allow people to live, work and shop without driving.

There are approximately 676 existing surface spaces within the Mill District, 361 south of the railroad tracks and 315 north of the railroad tracks. In the short to mid-term, these spaces will be available to help meet the parking demand. In the long-term, many of these surface lots may be redeveloped for other uses (as shown in the illustrative plan on page 29), resulting in the loss of the parking spaces as well as demand for more parking spaces in other locations.

In many instances, individual property owners will not be able to accommodate potential long-term parking needs on-site. Parking facilities should be developed for shared-use among different property owners, maximizing the efficiency of parking solutions and minimizing the need for each property



owner to satisfy parking requirements with on-site surface lots or garages.

Because of the dense building configuration, there are limited options for developing new parking facilities. Several locations for structured parking, both within and outside of the District, have been identified. Although locating spaces within the district certainly provides for convenient parking, locating a structured parking facility or facilities outside of the district would help to encourage visitors to walk between downtown and the Mill District, supporting businesses in both locations.

Within the district, locations identified for potential structured parking include the existing surface lot at WestPoint. This lot could be combined with the lot at Lincoln Mill. Because of the grade change between the two lots, it would be possible to create a structure with two to three levels of below-grade parking, with a combination of a pedestrian plaza/surface parking at the grade of the existing Lincoln Mill parking lot. With two below-grade levels, this parking facility could accommodate approximately 865 spaces. In the spring of 2009, the City commissioned a geotechnical study of the site to determine the feasibility of this garage. The conclusion of the study was that the site is suitable for the proposed construction.

Potential parking garage locations have been identified both within the Mill District and in Downtown Biddeford.



Section illustrating existing conditions (top) and a proposed below-grade parking structure, with at-grade parking and a plaza on the existing Lincoln Mill/WestPoint surface lots (bottom).

A second parking structure is shown on a portion of the existing MERC parcel. A five floor garage in this location would hold approximately 830 cars and could serve the new buildings on Lincoln Street as well as the Saco & Lowell Machine Shop Building.

Approximately 33 on-street parking spaces to serve the new residential buildings on Gooch Street are shown between Gooch Street and the railroad tracks. An additional approximately 40 spaces are shown between the railroad tracks and the new housing along Pearl Street.

Locations identified for Downtown parking garages, serving both Downtown and the Mill District, include:

- The existing city-owned surface lot at Washington and Federal Streets, behind the courthouse, which could be redeveloped for structured parking. A five-story garage on this lot could accommodate approximately 650 spaces.
- Existing city-owned surface lot on Alfred Street between Bacon and Pool Streets, adjacent to the Police Station. A five-story garage on this lot could accommodate approximately 310 spaces.
- Existing surface lot at St. Andre's housing on Sullivan Street. A five-story garage on this lot could accommodate approximately 620 spaces.

Significant vacant land on Saco Island may also be available for parking, and with the introduction of pedestrian bridges across the river, would be within a 1/4 to 1/2 mile walking distance of the Biddeford Mill District.

Exact parking requirements will depend on the final land use mix, the successful implementation of shared-use parking, the popularity of bicycle and transit options, and the effectiveness of Transportation Demand Management (see Chapter 8). Parking facilities should be implemented incrementally as redevelopment progresses and parking requirements become more specific, with vacant land used for surface parking in the interim.



Final Report

Downtown Parking Study



October, 2012



Rich & Associates, Inc.
Parking Consultants - Planners
www.richassoc.com

Table of Contents

Overview	1
Study Area.....	1
Map 1 – Study Area	2
Parking Supply	3
Table A – Parking Supply Summary.....	3
Table B - - Parking Supply	4
Map 2 - Parking Supply.....	5
Turnover and Occupancy Study	6
Occupancy	6
Table C – Occupancy Summary.....	6
Graph 1 – Thursday Parking Occupancy	7
Turnover	8
Table D – Turnover Summary	8
Table E – Occupancy Thursday October 27, 2011	9
Map 3 – Turnover and Occupancy Peak	10
Parking Demand Analysis	11
Table F – Parking Demand Matrix.....	14
Map 4 – Surplus / Deficit	15
Map 4.1 – 5 Year Demand.....	16
Public Input	17
Parking Recommendations.....	19
Table G – Parking Lot Overview	20
Table H – Lighting.....	22
Add Bicycle Racks	22
Signage.....	25
Marketing	30

Special Events Parking Plan.....	31
Discourage Development of New Private Lots Downtown	32
Parking Duration / Allocation.....	32
On-Street Parking	33
Off-Street Parking	33
Stripe all On-Street Parking Spaces.....	34
Create a Sinking Fund for Maintenance and Upgrades	35
Parking Enforcement.....	35
Handheld Technology for Enforcement.....	36
Parking Tickets / Courtesy Tickets.....	36
Charging for Parking	38
On-Street Meters	39
Funding Options for Operational Improvements and Additional Parking.....	40

Appendix

Overview

This study, prepared for Biddeford, ME serves to examine the current parking conditions in the downtown area and prepare a parking study. Rich and Associates has examined the existing parking system from both a qualitative and quantitative standpoint. The parking study involves an inventory and review of the existing parking, how it is currently being used and potential future changes to the downtown area exclusive off the Mill District. A number of issues were examined including bicycle parking, enforcement operations, current parking demand, development scenarios, and future parking needs.

This study began with a field study, several stakeholder interviews and surveys. Data collected as background material was analyzed using methods that involve statistical analysis and survey feedback from user groups. The study drew on standards developed by the Institute of Transportation Engineers (ITE) and the Urban Land Institute (ULI), which were modified according to the survey results from Biddeford in order to suit the unique circumstances present in the study area.

Study Area

The study area, as determined by the City of Biddeford is illustrated in **Map 1**, located on **page 2**. Rich and Associates evaluated the parking conditions, parking supply and parking activity in the roughly 23 block study area. Areas outside of the study boundaries were examined for parking supply opportunities and potential impacts on parking.



PARKING STUDY
FOR
THE CITY OF BIDDEFORD

BIDDEFORD, MAINE



Parking Consultants
Architects - Engineers
Planners
20877 Northwestern Hwy., Suite 208
Southfield, Michigan 48033
Tel: 248.353.5080
Fax: 248.353.3830
Lutz, Florida
Tel: 813.949.9860
www.RichAssoc.com

LEGEND:

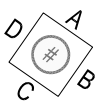
BLOCK NUMBER

— CBD STUDY AREA

— MILL 1 STUDY AREA

— MILL 2 STUDY AREA

BLOCK FACE KEY PLAN:



Sheet Title:

STUDY AREA

File No.	1210
Scale	NTS
Date	10-05-2012
Checked By	AN
MAP Number:	MAP 1


Page Number: 2

82

Parking Supply

Field work for this study entailed a review of the buildings and parking within the study area.

Table A summarizes the existing parking supply in the study area. There are a total of 1,427 parking spaces in the study area. Of these spaces, 367 are on-street and 276 are off-street public spaces. There are 784 private off-street spaces.

Table B on **page 4** is a detailed parking supply listing types and durations of parking by block and is followed by **Map 2** on **page 5**, which is a spatial view of the parking supply. In cases where parking spaces were not marked, the number of parking spaces was estimated. For the purpose of the study any parking marked reserved or privately owned was designated as private parking. Parking that is available for use by the general public was designated as public parking.

Biddeford manages and controls 45 percent of the parking within the study area. Based on Rich and Associates' experience and best practices, we have found that to successfully manage municipal parking in small downtowns it is especially desirable for the municipality to have control of at least 50 percent of the parking supply. This allows the municipality to effectively manage the parking in terms of allocation, reaction to changing demand, market pricing, and allows the parking to be enforced with greater efficiency. Currently Biddeford is not meeting this benchmark.

Table A
Parking Supply Summary

On-Street Parking Totals	367 (26%)
Public Off-Street Parking Totals	<u>276</u> (19%)
Public Parking Totals	643 (45%)
Private Parking Totals	<u>784</u> (55%)
Total Parking in Study Area	1,427

Table B

Parking Supply																			
Block >	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	TOTALS
On-Street																			
Barrier Free			2			1		2		2	2								9
LZ		4											3						7
LZ 6am-noon, 2 hr noon-5pm									2										2
15 minute												3	7				1		11
30 minute																	6		6
1 hour						2													2
2 Hour		5	28	13		15			21	15	16	19	9			15		7	163
2 Hour Motorcycle			1								1	1							3
Unmarked	43	2	11	1	25	24	14	8	5					11	6		11		161
Reserved															2				2
Taxi			1																1
																			367
Off-Street																			
<u>Public</u>																			
1 hr Parking						4													4
2 hr Parking										6		22			42				70
4 hr Parking															20				20
Long term parking																	43		43
Public Reserved						41							41	31	18				131
Barrier Free						2						2		2					6
Taxi															2				2
																			276
<u>Private</u>																			
Private/Reserved	36	40	187	22	37	65	14	28	8	44	30	15	48	92	34	17	27	23	767
Motorcycle																			0
Barrier Free	1	1	2			3	1	3		1				3	2				17
																			784
Summary	80	52	232	36	62	157	29	41	36	68	49	62	108	139	126	32	88	30	1,427
Source: Rich and Associates Fall 2011																			



PARKING
STUDY
FOR
THE CITY OF
BIDDEFORD

BIDDEFORD, MAINE



LEGEND:

BLOCK NUMBER

CBD STUDY AREA

MILL 1 STUDY AREA

MILL 2 STUDY AREA

ON STREET PARKING

BARRIER FREE

UNMARKED

2 HR.

1 HR.

15 MIN.

30 MIN.

MOTORCYCLE

RESERVED

TAXI

LOADING ZONE

OFF STREET PARKING

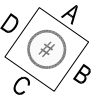
PUBLIC

PRIVATE

BARRIER FREE

T TAXI

BLOCK FACE KEY PLAN:



Sheet Title:

PARKING
SUPPLY

File No.	1210
Scale	NTS
Date	10-05-2012
Checked By	AN



MAP Number:

Page Number:

MAP 2

5

Turnover and Occupancy Study

A turnover and occupancy study of the public and private parking within the study area was completed Thursday October 27, 2011 from 8:00 A.M. to 6:00 P.M. The turnover and occupancy study was an observation of both public and private on-street and off-street parking in the core downtown.

The number of parking spaces occupied was observed during each two-hour circuit. The turnover portion of the analysis, where license plate numbers were recorded, applied to short term (two hour) parking spaces to determine how long specific vehicles remained parked in the same on-street space. The turnover information also yields occupancy results for the parking area and therefore for each circuit a composite occupancy can be derived. Turnover is an indicator of how often a parking stall is being used by different vehicles throughout the course of the day.

Occupancy is an important aspect of parking because it helps us to understand the dynamic of how parking demand fluctuates thought the day. Likewise, the occupancy can be used to illustrate how parking demand is impacted by events in the downtown area. Overall, the occupancy data is used by Rich and Associates to calibrate the parking demand model. The results for the occupancy counts are separated by on-street vs. off-street and public vs. private parking.

Occupancy

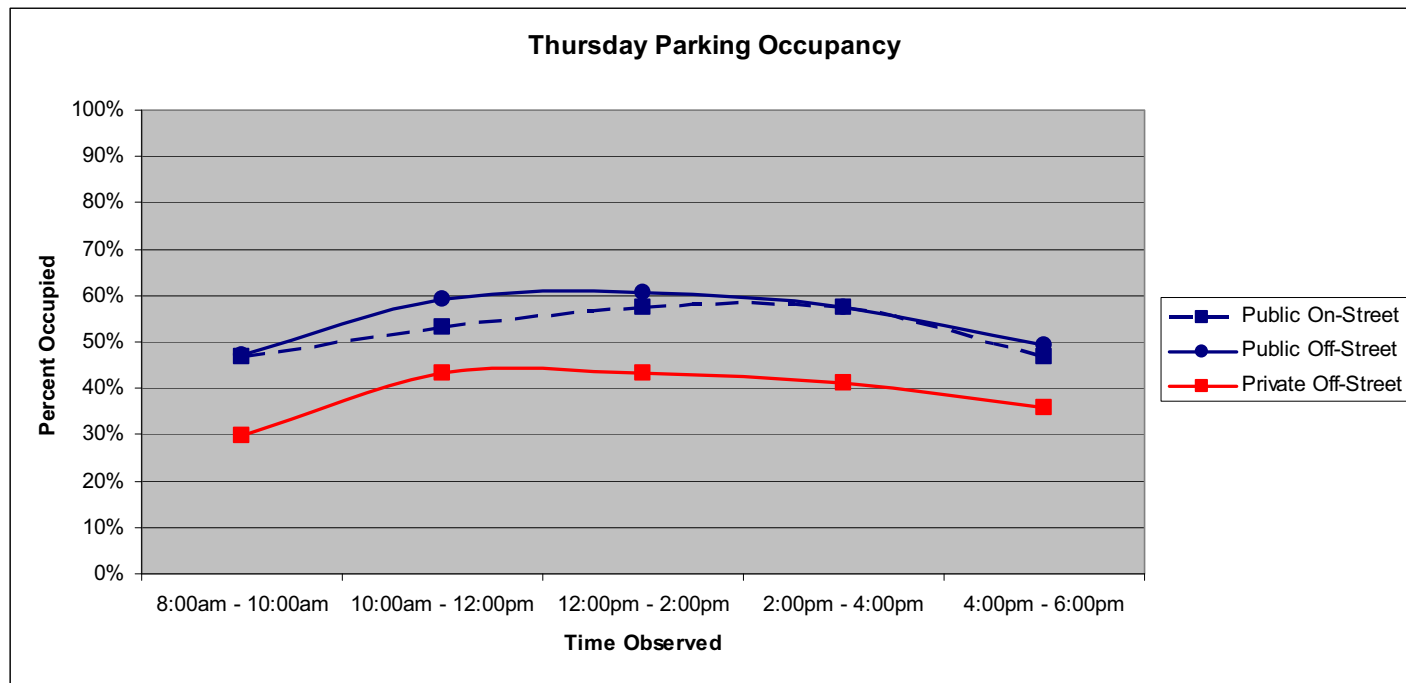
A summary of the occupancy results can be found in **Table C** and **Graph 1**. The full occupancy results are found in **Table E** on **page 9**, and are spatially represented on **Map 3** on **page 10**.

Table C

Occupancy

	# of Spaces observed	8:00am - 10:00am	% Occ.	10:00am - 12:00pm	% Occ.	12:00pm - 2:00pm	% Occ.	2:00pm - 4:00pm	% Occ.	4:00pm - 6:00pm	% Occ.
Public On-Street Totals	424	198	47%	226	53%	244	58%	244	58%	199	47%
Public Off-Street Totals	301	142	47%	178	59%	182	60%	173	57%	148	49%
Public Combined Totals	725	340	47%	404	56%	426	59%	417	58%	347	48%
Private Off-Street Totals	1257	376	30%	543	43%	543	43%	517	41%	450	36%
Overall Totals	1982	716	36%	947	48%	969	49%	934	47%	797	40%

Graph 1



The key findings of the occupancy counts are:

- The overall peak observed occupancy for all on and off-street parking in the study area was 49 percent and occurred between 12:00 P.M. and 2:00 P.M.
- Overall public on and off-street parking reached 59 percent occupancy during the 12:00 P.M. to 2:00 P.M. time frame.
- A point to consider regarding the parking supply and demand is that motorists in general perceive off-street spaces with occupancies greater than 85 percent to be at capacity, depending on the overall capacity of the parking area. The greater the capacity, the less this perception is valid. When 85 percent occupancy occurs, motorists will begin to re-circulate to seek other parking, adding to downtown traffic congestion and the driver's perception that there is no parking available in the downtown.
- The 4:00 P.M. – 6:00 P.M. occupancy dropped down to 40 percent occupancy showing that there is currently not an evening parking problem.

Turnover

Table D below is the summary results of the turnover findings of the two hour on-street parking spaces. There were 502 vehicles observed parking in the two hour on-street parking spaces within the study area during the hours of 8:00 A.M. - 6:00 P.M. Eighty percent of the vehicles observed remained less than two hours. There were 60 vehicles (11 percent) parked from two to four hours in the same parking space, 13 vehicles (2 percent) that remained in the same parking space between four and eight hours and 20 vehicles (3 percent) that remained in the same space between eight and ten hours.

Overall, the turnover of vehicles parking on-street was high with 80 percent of the vehicles observed staying less than two hours in a parking space. The 36 vehicles observed staying between four and ten hours in the same parking space are most likely business owners or employees. The violation rate at two hour spaces was 20 percent. Typically, a violation rate of six to seven percent is acceptable.

The violations for the on-street parking area for customers and visitors to the study area had 60 violators that stayed between two and four hours, and then 36 that stayed four to ten hours. The main concern should be the parkers that are parking in excess of four hours on-street as these are most likely employees who are taking up prime customer parking spaces. It is important to encourage employees of the downtown to park in appropriate places.

Table D

Turnover Summary

Parking Turnover Summary (by type)	On-Street 2 Hour or less Parking
Vehicles that remained less than 2 hours	406 (80.8%)
Vehicles that remained between 2 and 4 hours	60 (11.9%)
Vehicles that remained between 4 and 6 hours	13 (2.5%)
Vehicles that remained between 6 and 8 hours	20 (3.9)%
Vehicles that remained between 8 and 10 hours	3 (less than 1%)
Total number of vehicles analyzed (8:00 A.M. - 6:00 P.M.) in 2 hour stalls	502
Total number of 2 hour stalls analyzed	300

Source: Rich and Associates Field Observations, Thursday October 27, 2011

Table E
Occupancy Thursday October 27, 201'

Block/ Face	Description	# of Spaces observed	8:00am - 10:00am	% Occ.	10:00am - 12:00pm	% Occ.	12:00pm - 2:00pm	% Occ.	2:00pm - 4:00pm	% Occ.	4:00pm - 6:00pm	% Occ.
	Transit Center Taxi	2	1	50%	0	0%	0	0%	0	0%	0	0%
	Transit Center 30 Minute	3	0	0%	0	0%	0	0%	1	33%	1	33%
	Transit Center Lot A	89	8	9%	11	12%	10	11%	10	11%	9	10%
	Transit Center Lot B 2 hour	59	13	22%	20	34%	21	36%	25	42%	30	51%
	Transit Center Lot B HC spaces	4	0	0%	0	0%	0	0%	1	25%	0	0%
	Transit Center Lot C	54	13	24%	11	20%	12	22%	9	17%	14	26%
	The River Gate Customer	29	9	31%	24	83%	22	76%	20	69%	16	55%
	Island Terrace Condos	113	50	44%	40	35%	32	28%	24	21%	32	28%
	Island Pointe	246	27	11%	90	37%	116	47%	103	42%	84	34%
1	Private along Plant	25	14	56%	15	60%	15	60%	15	60%	19	76%
1C	2hr on-street	25	0	0%	0	0%	1	4%	1	4%	3	12%
5C	Private	6	2	33%	2	33%	3	50%	3	50%	4	67%
5C	2 hr on-street	6	2	33%	3	50%	3	50%	6	100%	4	67%
5D	on-street unmarked	25	13	52%	15	60%	20	80%	18	72%	14	56%
6	Head Start	7	1	14%	7	100%	5	71%	3	43%	0	0%
6	Private lot's combined	11	4	36%	2	18%	1	9%	2	18%	2	18%
6	Pearl Street Building	9	2	22%	3	33%	3	33%	4	44%	4	44%
6	Private lower lot	17	3	18%	3	18%	7	41%	2	12%	7	41%
6A	on-street unmarked	14	0	0%	0	0%	0	0%	0	0%	11	79%
6B	on-street unmarked	17	8	47%	10	59%	16	94%	10	59%	0	0%
6D	on-street unmarked	10	10	100%	11	110%	9	90%	6	60%	4	40%
7	Gravel corner lot	10	1	10%	1	10%	1	10%	2	20%	1	10%
7	on-street unmarked	2	0	0%	0	0%	2	100%	0	0%	0	0%
7	F.W. Web	4	3	75%	2	50%	0	0%	0	0%	0	0%
7	Car Quest	6	3	50%	2	33%	2	33%	1	17%	1	17%
7	Car Quest corner lot	8	5	63%	6	75%	7	88%	3	38%	3	38%
7D	2 hr on-street	5	0	0%	0	0%	2	40%	0	0%	1	20%
8	Library lot	15	4	27%	9	60%	11	73%	11	73%	10	67%
8	Private residential	6	0	0%	0	0%	1	17%	2	33%	1	17%
8	Chinese Wok-N-Roll	22	2	9%	4	18%	6	27%	5	23%	9	41%
8	Trans Market	9	3	33%	6	67%	6	67%	5	56%	5	56%
8	Residential	7	5	71%	5	71%	5	71%	4	57%	4	57%
8	Private lot	40	23	58%	25	63%	20	50%	20	50%	17	43%
8	Biddeford Savings	58	17	29%	38	66%	34	59%	37	64%	26	45%
8	lower lot Biddeford savings	6	5	83%	4	67%	4	67%	5	83%	3	50%
8	Alley	3	2	67%	1	33%	1	33%	2	67%	1	33%
8	Bank of America	15	6	40%	8	53%	9	60%	7	47%	3	20%
8A	on-street unmarked	4	3	75%	1	25%	3	75%	1	25%	1	25%
8B	on-street unmarked	7	7	100%	9	129%	8	114%	10	143%	4	57%
8C	2 hr on-street + Taxi space	4	0	0%	3	75%	2	50%	2	50%	2	50%
8D	2 hr on-street	24	14	58%	25	104%	21	88%	20	83%	20	83%
9	private lot	20	7	35%	10	50%	5	25%	5	25%	6	30%
9A	2 hr on-street	13	8	62%	11	85%	5	38%	11	85%	8	62%
9C	on-street unmarked	21	8	38%	9	43%	8	38%	12	57%	10	48%
10A	on-street unmarked	21	11	52%	11	52%	10	48%	10	48%	9	43%
11	Dupe Lewis	4	0	0%	2	50%	3	75%	1	25%	1	25%
11	Residential	2	0	0%	1	50%	1	50%	1	50%	1	50%
11	1 hr City Hall	9	4	44%	5	56%	3	33%	4	44%	5	56%
11	City Hall lot reserved + permit	38	28	74%	31	82%	28	74%	29	76%	23	61%
11	private lot	27	21	78%	26	96%	23	85%	19	70%	13	48%
11A	2 hr on-street	16	5	31%	10	63%	9	56%	12	75%	8	50%
11A	Biddeford Savings	29	6	21%	15	52%	8	28%	12	41%	6	21%
11C	on-street unmarked	9	9	100%	9	100%	9	100%	8	89%	3	33%
11C	private lot	10	5	50%	9	90%	5	50%	3	30%	1	10%
11C	1 hr on-street	2	1	50%	2	100%	0	0%	1	50%	0	0%
11D	on-street unmarked	15	10	67%	13	87%	11	73%	11	73%	10	67%
12	Peoples Bank	15	5	33%	6	40%	5	33%	6	40%	7	47%
12A	on-street unmarked	10	10	100%	9	90%	9	90%	9	90%	4	40%
12C	on-street unmarked	4	4	100%	4	100%	4	100%	3	75%	3	75%
13	Bangor Bank lot	8	2	25%	3	38%	3	38%	4	50%	0	0%
13	Court employee lot	15	14	93%	15	100%	16	107%	14	93%	6	40%
13	Butcher lot	8	0	0%	2	25%	1	13%	5	63%	1	13%
13/14B	2 hr on-street	11	4	36%	8	73%	8	73%	11	100%	4	36%
13/14D	on-street unmarked	15	14	93%	11	73%	14	93%	15	100%	4	27%
14A	2 hr on-street	10	4	40%	3	30%	5	50%	8	80%	3	30%
15	Bangor lot	9	8	89%	8	89%	8	89%	7	78%	4	44%
15	private lot	24	19	79%	23	96%	19	79%	22	92%	19	79%
15	private reserved	12	1	8%	2	17%	3	25%	2	17%	2	17%
15	2 hr along Palace Diner	6	1	17%	3	50%	1	17%	2	33%	0	0%
15A	2 hr on-street	7	1	14%	6	86%	4	57%	7	100%	5	71%
15D	2 hr on-street	9	5	56%	5	56%	5	56%	8	89%	5	56%
16	Private residential	25	8	32%	8	32%	10	40%	11	44%	12	48%
16	On-street private	5	2	40%	3	60%	4	80%	3	60%	4	80%
16D	2 hr on-street	19	9	47%	8	42%	14	74%	7	37%	13	68%
17	Public 2 hr lot	26	3	12%	12	46%	25	96%	20	77%	16	62%
17A	2 hr on-street	9	1	11%	2	22%	3	33%	3	33%	6	67%
17B	combined on-street	12	5	42%	6	50%	8	67%	2	17%	9	75%
17B	private lot	6	2	33%	4	67%	4	67%	5	83%	6	100%
17D	private lot	6	1	17%	2	33%	2	33%	3	50%	3	50%
18	Bangor Bank lot	38	28	74%	30	79%	27	71%	26	68%	13	34%
18	Court Parking	10	3	30%	7	70%	6	60%	8	80%	6	60%
18	Public lot	41	15	37%	26	63%	25	61%	26	63%	20	49%
18C	on-street 15 minute	7	0	0%	1	14%	3	43%	2	29%	1	14%
18D	2 hr on-street	9	4	44%	2	22%	4	44%	5	56%	2	22%
19	7-11	9	4	44%	2	22%	6	67%	3	33%	4	44%
19	Post Office Employee	15	2	13%	5	33%	4	27%	3	20%	2	13%
19	Post Office Customer	22	2	9%	8	36%	11	50%	11	50%	14	64%
19	Washington St. Lot	43	10	23%	10	23%	9	21%	9	21%	10	23%
19D	on-street unmarked	11	9	82%	0	0%	0	0%	0	0%	0	0%
20	Police Reserved spaces in lot	18	13	72%	13	72%	13	72%	11	61%	11	61%
20	Municipal 2 hr lot	42	31	74%	30	71%	33	79%	25	60%	24	57%
20	Municipal 4 hr lot	20	13	65%	18	90%	16	80%	16	80%	16	80%
20	Bank	36	1	3%	2	6%	6	17%	8	22%	3	8%
20B	on-street unmarked	6	5	83%	5	83%	5	83%	5	83%	4	67%
21	private lot	14	5	36%	6	43%	6	43%	6	43%	7	50%
21	private lot	3	3	100%	3	100%	3	100%	3	100%	2	67%
21C	2 hr on-street	6	4	67%	4	67%	4	67%	4	67%	2	33%
21D	3 hr on-street	9	2	22%	4	44%	1	11%	7	78%	6	67%
22	It's A Hair Thing lot	22	7	32%	14	64%	15	68%	14	64%	15	68%
22	Municipal lot	43	20	47%	21	49%	18	42%	20	47%	13	30%
22A	30/15 minute on-street	7	0	0%	0	0%	2	29%	1	14%	3	43%
22B	on-street unmarked	6	2	33%	1	17%	3	50%	2	33%	4	67%
22C	on-street unmarked	5	3	60%	1	20%	2	40%	1	20%	2	40%
23A	2 hr on-street	7	1	14%	1	14%	3	43%	2	29%	3	43%
Totals		1982	716	36%	947	48%	969	49%	934	47%	797	40%

Parking Demand Analysis

Projections were made to determine the current and future parking demands and the need for parking in the study area. The data collected and compiled by Rich and Associates to calculate the parking demand included:

- An inventory of the study area's on and off-street parking supplies.
- Turnover and occupancy study for public and private on and off-street parking areas.
- Block-by-block analysis of the square footage and land use of every building in the core study area. Biddeford staff provided the building inventory of the downtown.

The parking demand analysis of land use contains two levels of analyses to determine the number of spaces needed. First is a mathematical or hypothetical model of parking demand based on the building gross floor area. The mathematical model multiplies a parking demand generation ratio by the floor area of specific land uses to derive the number of spaces needed. The second method uses field observations to calibrate the mathematical model and help to establish projected parking spaces needed.

Future parking demand assumed a re-occupancy rate for vacant space in the study area; re-occupancy at a rate of 40 percent in five years and 80 percent in ten years. Calculating parking spaces required for the study area is based on an analysis of the number of spaces demanded and/or needed to serve the size and type of land uses present in the downtown and for future re-occupancy planned or proposed. Most parking requirements are based on the floor area of a particular development and the actual generation rate or parking ratio is tied to the land use type. In general, the ITE parking generation ratios are assumed to be higher than necessary in a downtown setting where shared use and linked trips help to address the peak parking needed for various uses at different times of the day.

Rich and Associates is recommending that consideration be given to using the ratios the firm developed for the Biddeford study found in **Table F** as a guideline for determining parking need for various development proposals. These ratios are designed around a peak daytime need. The parking demand that is calculated using these ratios is consistent with the observed parking occupancy from the study completed on Thursday, October 27, 2011.

Once a parking generation model is developed that illustrates the surpluses and deficits of parking numerically and graphically, we then compare the model with actual field observations, specifically the turnover and occupancy counts. The comparison serves as a test of the demand model and allows Rich and Associates staff to make further revisions or adjustments where necessary to ensure accuracy, as well as to fully understand the overall parking dynamic in the downtown area.

The assumptions used for the parking demand calculations are:

Assumption 1: It was assumed that parking demand per block was dependent on the gross floor area contained in the block. Parking demand computed for one block was not affected by the amount of gross floor area available on surrounding blocks. Therefore, a block with surplus parking supply is not used to offset shortfalls on adjacent blocks.

Assumption 2: The parking demand calculations were derived under the assumption that currently occupied properties would remain occupied at existing, or higher than existing levels into the future.

Assumption 3: Parking demand is not affected by parking availability, use, location and price.

The gross square footage of individual buildings was collected and then sorted by land use categories. The different land uses for each block are in general multiplied by a parking generation ratio of parking spaces required per 1,000 square feet. The resulting number of parking spaces demanded is deducted from the available supply on each block and a surplus or deficit for each block is then calculated. A summary of the parking demand is found in **Table F** on **page 14** and is represented spatially in the Surplus/Deficit **Map 4** on **page 15**.

The following are issues that are considered when developing the number of parking spaces needed:

- Building size, purpose and special use conditions,
- Socioeconomic characteristics of the downtown populations and visitors of the downtown.
- Alternative modes of transportation, which includes availability, use, attractiveness and policy impacts.
- Proportion of the downtown trips that are multiple-use or linked.
- Vehicle traffic.
- Cost of parking.

The parking generation ratios developed for each land use reflect the peak daytime and night conditions. In the current daytime situation there is an overall surplus of 200 parking spaces within the study area.

The five year projection (**Map 4.1 page 16**) assumes a re-occupancy of 40 percent and the ten year scenario assumes 80 percent re-occupancy of vacant space. The five year surplus is projected to reduce to 141 parking spaces and the ten year surplus is further reduced to 81 parking spaces. The future scenarios only include the re-occupancy of vacant space.

The Parking Demand Matrix used in this analysis will be provided to Biddeford to use as a tool in helping to determine the amount of parking needed for each new development. The table can be updated with any changes in use or square footage to keep up with current and future parking needs.

Conclusions that can be drawn from the parking demand analysis are:

1. The calculated surplus of 200 parking spaces in the current condition, represents a peak weekday. Based on this, we believe that there is sufficient parking in the study area today.
2. There are areas where the parking is tight and there are some shortages on blocks. This can be alleviated with allocation, signage and marketing changes to the parking system.
3. The parking demand for the City Theater is primarily at night and on weekends. Though there is high utilization of on-street parking during events, the City's off-street parking can provide ample parking supply for this land use.

Table F

Parking Demand Matrix																	
A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R
Block	Office	Retail	Mixed Use	Service	Restaurant/ Bar	Residential (per unit)	Library	Police Dept.	Community	Government	Warehouse	Vacant	Demand (current)	Parking Supply	Surplus/ Deficit (current)	Surplus/ Deficit (5 years)	Surplus/ Deficit (10 years)
Parking Generation Ratios	2.85	1.88	2.24	3.00	6.00	1.00	2.00	1.25	0.60	2.65	0.20	2.81					
6	0	0	0	0	6,300	0	0	0	0	0	6,150	0	39	80	41	41	41
7	0	1,652	0	0	0	0	0	0	0	0	28,164	0	9	52	43	43	43
8	33,937	15,683	2,770	0	1,607	0	16,000	0	0	0	0	1,956	174	232	58	56	54
9	4,712	0	17,434	0	0	16	0	0	0	0	0	7,757	68	36	-32	-41	-50
10	0	0	0	0	0	0	0	0	3,828	0	7,608	0	4	62	58	58	58
11	17,515	0	2,278	0	0	8	0	0	0	33,541	0	0	152	157	5	5	5
12	2,728	0	0	0	0	0	0	0	0	0	0	0	8	29	21	21	21
13	0	2,595	0	0	0	0	0	0	0	38,168	0	0	106	41	-65	-65	-65
14	2,680	868	1,029	1,598	7,162	50	0	0	0	0	0	859	109	36	-73	-74	-75
15	3,702	0	0	0	0	18	0	0	0	0	0	5,200	29	68	39	34	28
16	0	8,460	14,528	2,964	0	30	0	0	0	0	0	4,960	87	49	-38	-44	-49
17	6,370	18,575	3,965	2,200	6,452	61	0	0	0	0	0	22,080	168	62	-106	-131	-156
18	864	2,301	0	2,610	6,099	7	0	0	0	0	0	4,964	58	108	50	44	39
19	0	1,024	0	2,522	1,844	0	0	0	0	0	0	0	21	139	118	118	118
20	7,116	0	0	0	0	0	0	41,818	0	0	0	0	73	126	53	53	53
21	0	5,766	0	1,848	8,585	1	0	0	0	0	7,150	2,936	70	32	-38	-42	-45
22	0	0	1,879	1,275	4,322	3	0	0	0	0	10,320	1,897	39	88	49	47	45
23	0	7,109	0	0	0	0	0	0	0	0	0	0	13	30	17	17	17
	79,624	64,033	43,883	15,017	42,371	194	16,000	41,818	3,828	71,709	59,392	52,609	1,227	1,427	200	141	81
													(stalls)	(stalls)	(stalls)	(stalls)	(stalls)



PARKING
STUDY
FOR
THE CITY OF
BIDDEFORD

BIDDEFORD, MAINE



LEGEND:

- # BLOCK NUMBER
- CBD STUDY AREA
- MILL 1 STUDY AREA
- MILL 2 STUDY AREA

SURPLUS OF PARKING

- +100
- 0 through 99

DEFICIT OF PARKING

- 99 through -1
- 100 +

BLOCK FACE KEY PLAN:



Sheet Title:

SURPLUS/
DEFICIT
(CURRENT)

File No.	1210
Scale	NTS
Date	10-05-2012
Checked By	AN



MAP Number:

Page Number:

MAP 4

15



PARKING STUDY FOR THE CITY OF BIDDEFORD

BIDDEFORD, MAINE



LEGEND:

BLOCK NUMBER

CBD STUDY AREA

MILL 1 STUDY AREA

MILL 2 STUDY AREA

SURPLUS OF PARKING

+100

0 through 99

DEFICIT OF PARKING

-99 through -1

-100 +

BLOCK FACE KEY PLAN:



Sheet Title:

**SURPLUS/
DEFICIT
(5 YEARS)**

File No.	1210
Scale	NTS
Date	10-05-2012
Checked By	AN



MAP Number:	Page Number:
MAP 4.1	16

Public Input

Surveys were employed for gaining input from the community. The surveys were available on the Biddeford web site and the Heart of Biddeford (HOB) web site. Additionally, the HOB sent out emails informing businesses on the parking study and requesting participation on the survey. There were three surveys developed; the first was a business operator survey, the second an employee survey and the third a parking user survey. The surveys collected are as follows:

On-Line Parking Survey Results:

- Business Operator: 13 Responded
- Employee: 72 Responded
- Parking User Survey: 74 Responded

The number of respondents to the employee and business operator survey was average. The number of parking user surveys turned in was a bit low, though all three surveys asked opinion questions on parking in the downtown. The surveys that were completed provided Rich and Associates with the parking users view of how the system works in the downtown.

The surveys included a series of questions pertaining to how individuals traveled downtown, where they parked, how many businesses they visited, and how long they stayed. These questions along with business specific questions on size of commercial area, number of employees, hours of operation and number of customers helped the team determine the average amount of parking each block in Biddeford needed.

Additional questions provided an opportunity for participants to offer an opinion on various aspects of the parking system. Questions ranged from fine amounts to overall parking adequacy. Some of the key responses to questions from the surveys are listed under Key responses. Results of the opinion based questions are found at the end of the report.

Key responses:

Business Operator

- 50 percent of employers do not have a policy encouraging/requiring their employees to reserve the most desirable spaces for customers/visitors.
- 23.1 percent disagree that customer parking is reasonable close to their businesses.

- 77 percent disagree that there is enough customer/visitor parking in the downtown, while 7.7 percent did not agree or disagree with the statement, and 15.4 percent responded that there is enough parking.

Employee

- 93.1 percent drive alone and park, 2.8 percent walk and 4.2 ride the bus, carpool or are dropped off.
- 70.9 percent stated that there is not enough downtown employee parking, though 76.3 percent agreed that parking was reasonably close to their place of work.
- 73.6 percent feel that there is not enough customer/visitor parking in the downtown.

Parking User

- 90.4 percent drive and park when visiting the downtown.
- 73 percent responded that they generally stay less than two hours when coming downtown.
- 46 percent responded that it is easy to find an on-street parking space in the downtown, though 53.3 percent responded that it was easy to locate a parking space in the downtown.

Parking Recommendations

The recommendations presented here are intended to enhance the existing supply of parking through operational, management, configuration, parking pricing and allocation changes. While aimed primarily at increasing the efficiency of the existing parking system, the recommendations are comprehensive enough to provide a holistic approach to improving parking in the downtown today and plan for future growth.

The recommendations in this section are a set of tools that Biddeford can use to manage the parking system. Biddeford will be given the demand matrix chart (**Table F**) to maintain and manage the parking surplus and deficit in the downtown. This chart can be updated with new development, re-occupancy of vacant space and changes to the parking inventory. The chart allows Biddeford to understand the impacts of potential development and allocate parking and durations to meet the parking needs in the downtown.

A parking system is not just about parking vehicles, it also involves the walkability of a downtown, signage, parking enforcement, lighting as well as marketing parking to owners, employees and customers. The utilization of lots can depend on any or all of these factors, as well as the overall condition of a lot. Fundamentally, these issues can impact a parking system and therefore downtown economics in general.

To create a more effective parking system, a number the recommendations contained in this section need to be implemented such as pedestrian improvements, signage, marketing and lighting. All recommendations contained within this section will aid Biddeford in creating an efficient parking system whether recommendations are used individually or as a package of system wide improvements. With a system approach Biddeford will be best prepared to address most parking related issues and handle current and future development. Some of these recommendations can be implemented with little or no cost to the City, while others will take significant budgeting and time to complete.

Rich and Associates conducted a conditions audit of the public lots and some of the private lots in the downtown. Table G on the following page details the findings of the audit. The following recommendations will address the issues found in the lots.

TABLE G

Parking Lot Overview

City: Biddeford, ME

Date 10/25/2012

Lot Name or #	Lighting	Striping	Surface Type and Conditions	Signage	Pedestrian Pathways	Comments
Block 14 City Lot	Could use some additional lighting	OK	Some cracking	Parking and shop sign only, does not list hours and lot is not named	Ok, no clear walkways	N/A
Cit Hall Lot	Could use additional lighting	OK	OK	Confusing signage	No	CCT Camera
Washington Street Lot	Could use additional lighting	Needs to be restriped	No guardrails	Confusing signage	Good pedestrian access	N/A
Post Office Lot	Needs lighting	Needs to be restriped	Needs work	OK	OK	Move fence
Court Lot	OK	OK	Needs some repair to asphalt	No lot name and signage is confusing	Sidewalk is not flat and difficult to maneuver.	N/A
Police Lot	Not enough lighting	OK	Repair work is needed	Lot is not named, no signs at the entrance	No	CCT Camera
Block 17 2 hour parking	No lighting	OK	OK	Needs directional signs	No	N/A
Lot behind Palace Diner	Could use additional lighting	OK	Repair work is needed	Confusing signage	OK	N/A
Oceans Community Savings and Federal	OK	OK	OK	OK	OK	High wall around lot and connections surrounding streets are not good
Switching lot	No lighting	Needs to be restriped	Needs some repair to asphalt	Would need additional signs if worked out agreement for public parking	No	close to main street

1. Pedestrian Enhancements

Pedestrian movement is an important aspect of parking. It is extremely difficult to get people to park beyond the front door of their destination if there are any concerns regarding safety or the walking experience is not pleasant. Lighting and landscaping can greatly change a perception of safety in lots and along sidewalks.

- A. Create clear pedestrian paths in the current municipal parking lots and make sure that the pedestrian paths to the downtown are well lighted and the sidewalks are in good repair and barrier free.
- B. Add pedestrian wayfinding to the downtown. **See Recommendation 4.**

Responsibility: Biddeford

Cost: To be determined.

2. Lighting:

Lighting is an issue in some of the public parking lots, see **Table G**. There are public parking lots that do not have any lighting. Pedestrian movement is an important aspect of parking. Lighting can greatly change a perception of safety in lots and along sidewalks. With the increased night activity it is extremely important to add lighting to many of the City owned lots.

- A. Table H lists the lighting conditions in the lots. Install lighting in the lots that currently do not have enough lighting.
- B. Hire a lighting consultant to conduct a lighting study in the public lots and the core downtown area to bring the lighting up to acceptable levels. The parking lots and the pedestrian walkways need to be well lighted to encourage the use of off-street parking.

Responsibility: Biddeford

Cost: Lighting Analysis \$5,000 - \$12,000

Table H

Lot Name or #	Lighting
Block 14 City Lot	Could use additional lighting
Cit Hall Lot	Could use additional lighting
Washington Street Lot	Could use additional lighting
Post Office Lot	Needs lighting
Court Lot	OK
Police Lot	Needs lighting
Block 17 2 hour parking	No lighting
Lot behind Palace Diner	Needs lighting
Oceans Community Savings and Federal	OK
Switching lot	No lighting

3. Add Bicycle Racks to the Downtown and Encourage Bicycle Ridership:

Having a safe and secure place to store a bicycle is paramount to successfully promoting the use of bicycles for downtown employees and customers/visitors who would otherwise commute using a motor vehicle. Lockers and shelters will also benefit employees of the downtown providing a secure place to store a bicycle out of inclement weather.

If the City currently does not have a bicycle committee (pedestrian/bicycle), consider creating one to further the pedestrian friendliness of the downtown. A Complete Streets ordinance can help obtain a more pedestrian friendly downtown and focuses on all forms of transportation that making roadways assessable to all users.

- A. To encourage bicycle ridership add additional bicycle racks throughout the downtown and follow the guidelines below for selecting any new bicycle racks.

Guidelines on Bicycle Racks (*Bicycle Parking Guidelines, first edition 2002*):

- Racks should allow bike frame to make contact at two points.
- Should allow for more than one bike per rack.
- Needs to allow for popular “U” shape lock.
- Racks should be placed where they will not impede upon pedestrian traffic, though need to be readily identifiable.
- Should be clearly signed with a bicycle parking sign.



Example of a recommended bicycle rack



Example of bicycle lockers



Example of a bicycle shelter from the City of New York

- B. Create a marketing program to promote bicycle use as an alternative to driving.
1. Develop a brochure that markets bicycle ridership in the Biddeford area. Include a bicycle rack locations map with a picture of the current bike racks. Include a map

- detailing any bicycle routes that connect to the downtown. If there are not any current bicycle routes connecting to the downtown create a task force to develop a route.
2. Host a special event to promote bicycle ridership in a City wide effort to use alternative modes of transportation. As the program grows and bicycle ridership increases this will in turn cut down on the number of parking spaces needed downtown.

Marketing Bicycle Ridership

- Federal law provides tax incentives to bike to work which are explained by The League of American Cyclists,
<http://www.kingcounty.gov/transportation/CommuteSolutions/EmployerTaxBenefits/IRSCommuteBenefits.aspx>
 - There are several communities throughout the U.S. that participate in National “Ride Your Bike to Work Day/Month” in May. Information can be found through the League of American Bicyclists www.bikeleague.org.
 - Source of possible grant funding through Bikes Belong Coalition,
<http://bikesbelong.org>
 - Pedestrian and Bicycling Information center is a helpful link that offers advice on funding and marketing bicycling in downtowns. <http://www.bicyclinginfo.org>
“Communities that are bicycle-friendly are seen as places with a high quality of life. This often translates into increased property values, business growth and increased tourism. Bicycle-friendly communities are places where people feel safe and comfortable riding their bikes for fun, fitness, and transportation. With more people bicycling, communities experience reduced traffic demands, improved air quality and greater physical fitness”
www.bicyclefriendlycommunity.org
- C. Create a Pedestrian/Bicycling committee to create a more pedestrian friendly downtown. Consider adapting a Complete Streets Ordinance to make the downtown assessable to all users. *Complete Streets: Best Policy and Ordinance Practices:*
<http://www.completestreets.org>
- Responsibility: Biddeford
- Cost: Bicycle racks \$150-300 per rack, lockers \$2,500-5,000 per locker and \$3,000-10,000 per shelter. Marketing is covered under Recommendation 5.

4. Signage:

Signage recommendations cover not only parking signs but also wayfinding signs once a driver and passengers make the switch from a driving to a pedestrian mode. In general, there are issues with signage in Biddeford.

The City parking lots are not named and are difficult to identify as public parking areas. This lack of identification creates issues with marketing and wayfinding. The introduction signs should also indicate what lots are paid parking and how to pay (permit or hourly parking).

- All on-street parking in the core downtown should be signed two hour, 15/30 min or loading zone.
- Two Pedestrian kiosks in the downtown would help customers and visitors find their way to and from the public parking areas.



There are too many signs on this post.



This directional sign should be replaced with an introduction signs letting parkers know the hours of operation and who can park in the lot.



Directional signs should be consistent in color and design.



There are several colors and styles in the parking signs. These signs should be consistent in design, color and text size.

Best Practice Sign Types Include

Rich and Associates has established a best practice for vehicle and pedestrian wayfinding signage. These best practices have been developed looking at successful signage in other communities and with signage programs that we have developed.

As a best practice the following four types of parking signs that increases drivers' wayfinding experience are strongly recommended. Communities often miss the important role that signs play in making visitors comfortable with their surroundings and the effect that signs can have on vehicle travel and parking use efficiency. Additionally, there needs to be pedestrian wayfinding signs to deal with the driver/passenger transition from vehicle to pedestrian modes. It should be noted that sign color, size design and placement may be impacted by local, county or State highway department's regulations.

Directional/ Location:

Directional-parking signage is distinct in color, size and logo and directs drivers to off-street parking areas. Parking location signage complements the directional parking signage. The signs have arrows pointing to the off-street lots. The signs are mounted on poles at standard heights, on the streets.



Identification:

Identification signage is placed at the entry of each parking lot. The name of the parking area is identified and the type of parking available as well as hours of enforcement and the hours of lot operation is listed on the signage. The identification signage is distinctive in color and size, and it is located on a pole at a lower height.



Vehicular Wayfinding:

Vehicular wayfinding signs are placed at the points in the downtown to lead to places of interest and parking locations. The sign also points out the various landmarks or attractions that can be found. These types of signs are placed at locations easily found by a



driver and are intended to help that driver orient themselves to the downtown area.

Pedestrian Wayfinding:



Pedestrian wayfinding signs or kiosks are placed at the points of pedestrian entry/exit to parking lots and structures. Typically a map illustrating the downtown area that points out the various shops or attractions. These types of signs are placed at locations easily found by a pedestrian and are intended to help that person orient themselves to the downtown area to locate their destination and then be able to return to where they parked.



Quality signs for parking and wayfinding have the following elements incorporated into their design:

- Use of common logos and colors.
- Use of reflective, durable material.
- All four types used in conjunction to guide motorist and pedestrian activity.

Fundamentals for sign placement:

- Placement at or near eye level.
- All entrances to the downtown need to have wayfinding signage.
- All parking areas need to have identification signage.
- All routes through the downtown need to have directional and location signage oriented on the same side a vehicle is traveling.
- All pedestrian routes to and from major customer/visitor parking areas need to have wayfinding signs.
 - The identification signs located at parking areas need to convey parking rates, hours of operation, and maximum durations.

Recommendations for Signage

- A family of signs needs to be developed for the direction/location, identification and vehicle wayfinding. The color, logo (if used) font type etc need to be consistent and follow best practice as presented in the section.

- B. There should be more directional/location signs in the downtown, especially signs that lead drivers from the main streets to the public parking lots. These signs should identify customer/visitor parking.
- C. Name all of the parking lots and use identification signs that let a customer/visitor of the downtown know what lots are public, the allowed parking durations and hours of operation. Naming the lots based on street location is preferable.
- D. Install pedestrian wayfinding in the downtown. Pedestrian wayfinding is critical once a person has parked and transitions to walking. Directing pedestrians to key destinations and then back to where they parked are important elements in tourist/customer/visitor oriented downtowns. Pedestrian wayfinding will work hand in hand with the marketing discussed in these recommendations.
- E. Install at least two kiosks to the downtown with a map, business listings and parking locations. Kiosks are helpful in directing visitors/customers throughout downtown.
- F. All signs should be at a height where the sign cannot be blocked by a parked vehicle in both on-street and off-street parking areas.
- G. The two hour on-street parking signs should be spaced at approximately every 100ft – 120ft.

The information that is provided in this recommendation is to show how each of the sign types work together providing a comprehensive wayfinding system. It is recommended that the City use a firm that specializes in sign design to prepare the signs. Once this is completed, assistance may be required in sign placement.

Responsibility: Biddeford

Cost: \$40,000-\$220,000 includes on-street, pedestrian wayfinding and vehicular wayfinding.

5. Marketing:

Marketing is an important and often overlooked component to a successful parking system. Marketing initiatives should be directed towards downtown employers, employees and customers/visitors. Materials can include direct mailings, brochures, maps, kiosks, on-line web pages or articles in magazines, newspapers, etc.

Information contained in the marketing material should include parking locations, up-coming changes, regulations, fine payment options and any other information relating to the parking system. An individual's perception of Biddeford is greatly enhanced if they know ahead of time where parking is located and what the durations are.

The City currently does not have a parking map located on the web site, though the Heart of Biddeford does. The City should work together with Heart of Biddeford to create a unified strategy of marketing efforts for both web pages.

Recommendations

- A. The City should modify the web site to have a tab on the main page for Parking.
- B. Once on the parking web site, information should be included that lists the hours and days of enforcement, parking regulations and where to pay a ticket if one is received. There should also be language about promoting the "park once" concept where if someone is coming downtown for more than one purpose, they should look to off-street parking areas so all errands can be done without moving a vehicle. This information should be the same on both the City and Believe in Biddeford web pages. The City of Biddeford should be included in the marketing efforts as well.
- C. Businesses should be encouraged to have a link to the City's web site and parking page. This allows customers and visitors to click the link and go directly to the parking page and find where they can park.
- D. Create a downtown marketing flyer that lists the downtown businesses included with a map of parking in the downtown. This can be used as a tool to market both the downtown businesses and the parking system.
 - 1. It is helpful to promote the free parking in the downtown as well as the locations of long term lots for customers and visitors who plan to spend an entire day downtown.
 - 2. This flyer could be placed on information kiosks, handed out by downtown businesses, parking enforcement staff and be available on the City website along with any downtown organization websites.

- E. Specific marketing initiatives can be aimed at local employers and employees that inform them of the importance of keeping on-street parking available for customers and visitors. An incentive program could also be used such as a drawing once a month for those employees that are participating in the program and park in the appropriate parking areas.

Responsibility: Biddeford

Cost: \$2,500 for flyers and up to \$4,500 for web site design with \$1,000 annually for ongoing maintenance.

6. Special Events Parking Plan

The need for adequate and quality event parking will enhance visitors' overall downtown experience. The City can also promote the parking areas as car-pooling resources.

- A. Rich and Associates recommend that a plan be developed for parking during special events. For the smaller events an event management plan should include a remote lot location (public school, church, City or county owned lot) and if necessary an agreement with the lot owner, as well as some form of shuttle service possibly arranged with the local transit service, or schools.

The group sponsoring the event need to meet discussing parking for the event, street closures and have a list of remote parking that may be available. There are many private parking areas within and near the downtown that can and are used for events and this should be formalized. This would allow event organizers to have in advance potential private parking areas that may be available.

1. Temporary signs should be designed to direct traffic to the location of the lot and signs should also be developed to direct pedestrians to the event and back to the parking areas. These signs can be generic based on private parking areas that have agreed to be a part of the system.
2. A marketing plan should be developed to spread the word to the community before the special event. These measures will help alleviate traffic directly around the special event.
3. A special events parking map should be created to be used in any of the promotional information for the events.

Responsibility: Biddeford

Cost: To be determined.

7. Discourage the Development of Any New Private Parking Lots in the Downtown:

A parking system works best when the parking is shared and the Municipality is in control of 50 percent or more of the available parking in the downtown. This is important because it allows shared use parking. The City can then manage, regulate and enforce the parking more efficiently, keeping these costs down and benefiting the downtown economically.

Biddeford falls short of this recommendation owning only 45 percent of the parking. This number includes reserved parking that is owned by the City which is not available for shared use, thus dropping the percentage of available shared use parking even further. When parking spaces are not shared they often go unused for the majority of the day.

- A. In general, Rich and Associates recommends minimizing surface lots and large breaks between buildings to promote walking in the downtown. Surface lots should be located behind buildings or on blocks where the Municipality is not trying to create density. People tend to walk further without complaints if the walk is pleasant, enjoyable and engaging. Landscaping, murals, art and decorated store windows tend to create an experience worth walking. Parking areas are important, though large parking lots without landscaping can be viewed as unsightly, unsafe and discourage pedestrian activity.
- B. The City should work with private parking owners to allow for public shared use of private parking where possible. The lots should be well signed with who can park in the lots and the hours available. This is detailed in **Recommendation 8**.
- C. Biddeford should entertain any proposals for a privately developed parking structure especially if there is the possibility for a joint venture with the private entity to provide additional publicly available parking.

Responsibility: Biddeford

Cost: To be determined

8. Parking Duration/Allocation

Parking efficiency is maximized through simplicity. Long-term parking takes place in lots and short-term parking is located on the streets near the business where it is needed the most for customers and visitors. There are several different durations for on-street parking.

Customer/Visitor parking should remain close and convenient, while employee parking should remain toward the back of lots. It is expected that employees will walk farther; typically 600-800 feet while a customer/visitor to the downtown will typically only walk 300-500 feet to run an errand when the intent is not to shop around. This is why it is important

to educate employees to park in the appropriate spaces, leaving on-street parking as well as parking that is near businesses for customers.

On-Street Parking:

- A. Two hour parking should be the dominant duration for on-street parking as it suits the needs of the majority of customers and visitors. Individuals requiring more than two hours for parking should be directed to off-street parking areas as identified in our recommendations.
- B. Fifteen minute to thirty minute parking should be located on-street for use as customer loading and unloading spaces or very short-term parking. These parking spaces should be situated as either the first or last space on a block face where needed. When there are long blocks it is sometimes necessary to place the fifteen to thirty minute parking spaces in the middle of a block face. The short term spaces should be decided upon, either fifteen minute or thirty minute parking, currently there are two durations for short term parking in the downtown.
- C. Duration Changes:
 - i. Block 19 on Bacon Street should be two hour parking, currently unmarked.
 - ii. Blocks 12, 13, and 14 on Adams Street should all be two hour parking, currently unmarked.
 - iii. Block 22 on Emery Street, the first three spaces should be two hour parking, currently unmarked.
- D. In areas where there is little or no demand for customer-visitor parking, long term on-street parking can be used to add to the overall long-term parking supply. Long term on-street parking is appropriate in areas that are farther away from the core shopping district. An example of this is the on-street spaces on Washington Street (Block 19) which are currently unsigned. Adding and maintaining all on-street stall striping will indicate that spaces are useable for public parking.

Off-Street Parking:

- A. There are opportunities where the City could work with the private sector to create shared use parking areas. The City could offer to maintain and enforce the lots in order to use the parking areas.
 - 1. The City could work with the bank on the corner of Main Street and Jefferson to bring this lot into the public parking fold. This lot is underutilized and currently allows public parking at a price. The lot is not well signed so it is difficult to tell that anyone can park in this lot.

2. The City lot on Block 19 at the corner of Washington Street and Jefferson is underutilized and should be marketed for Court parking (both juror and employee). This is only 1 ½ blocks from the court and many court employees are parking on street around Block 12. The City could also work with the Post Office to obtain part of the employee parking that is underutilized at the Post Office.
3. The lot at the corner of Center Street and Kossuth Street belonging to the switching station remains unused. The City could work to try and create a public/private partnership to allow this lot to be used for public parking. The lot would need to be resurfaced, lighted and signed. This would be a good downtown employee parking lot.
4. The lot for the Court House could become public parking after 4:00 P.M. This would allow additional public parking in the downtown core for restaurant and evening use. Signs would need to be installed clearly defining when the lot is available for public parking.

Responsibility: Biddeford

Cost: Minimal

9. Stripe all On-Street Parking Spaces:

Striping the on-street parking spaces will help customers from being blocked in due to vehicles parking too close and parking more vehicles than should be allowed on a block face. Also, striping and maintaining the striping will give the parker an indication that on-street parking is allowed. This is important where there is unrestricted and unsigned on-street parking.

- A. It is recommended that Biddeford stripe all of the on-street parking spaces to make enforcement more efficient as well as making it easier for customer/visitors to park without taking more than one space.

Responsibility: Biddeford

Cost: Approximately \$15 - \$30 per space with approximately \$9,000 every 2-3 years in maintenance.

10. Create a Sinking Fund for Maintenance and Upgrades to Parking Lots:

- A. Create a sinking fund for maintenance and upgrades to City lots and begin to put aside \$25.00 per parking space per year. Based on 643 City owned parking spaces the set aside would be \$16,075 annually. This fund will be used for updates and repairs needed in the public lots.

Responsibility: Biddeford

Cost: \$16,075 annually.

11. Parking Enforcement:

Parking enforcement is an important component of a parking system that is designating on-street parking for customers and visitors. By differentiating the time limits of parking between off and on-street parking, we are helping to ensure that customers and visitors always have adequate and convenient parking. However, it is necessary to enforce the parking time limits in order for the allocation to work.

- A. Currently Biddeford has one Parking Enforcement Officer and this is working well. As Biddeford grows and additional parking is added in the downtown it is important that the staffing level remain adequate to cover the recommended 600-800 parking spaces per day. Without consistency it will be difficult to change the parker's behaviors and keep employees from parking on-street.

Guidelines on efficient and effective parking enforcement include:

- Routing of officers so that a complete circuit is followed every two hours in the downtown area.
- Officers should use handheld parking ticket writers that track license plate numbers.
- Every parking space, whether occupied or not, is then entered into the handheld.
- Staffing should be at a level adequate to assign one officer to monitor up to 600 - 800 parking spaces per shift.
- Parking enforcement officers should be dedicated to parking duties, only being re-assigned during emergencies or special circumstances that may arise.
- Street signs should indicate that parking is enforced from 9:00 A.M. - 6:00 P.M.

Responsibility: Biddeford/Police

Cost: When additional POE is necessary, approximately \$35,000 annually.

12. Handheld Technology for Enforcement:

Biddeford is currently using handheld ticket writers to enforce parking. The handheld units increase efficiency by storing the license plate numbers of vehicles, thus negating the need to physically chalk tires. This allows enforcement to occur during inclement weather, whereas marking tires with chalk cannot be done in the rain or snow because the chalk gets washed away and does not mark well on a wet tire.

Handhelds would allow the use of a courtesy ticket and the use of graduated fines. The software can identify multiple infractions within a given time period and issue a ticket accordingly. The handheld software can assist in tracking fine payment.

Handheld units can also store a “hot list” with information such as stolen vehicles, warrants, previous offenders, and unpaid tickets. When a license plate gets put into the handheld, the plate is run through a database. If it is an offender the handheld responds with the appropriate information. If a vehicle needs to be booted or towed because of multiple unpaid tickets, the information will come up on the screen of the handheld. This helps make the entire parking system more efficient and enforcement more effective.

The use of handheld units is a best practice recommended by Rich and Associates.

Responsibility: Biddeford/Police

Cost: N/A

13. Parking Tickets/Courtesy Tickets:

Parking tickets or fines need to aid in collection, provide the community with a customer friendly atmosphere and discourage improper parking. Among the best practices ticket strategies are the use of graded fines and courtesy tickets.

Graded fines are fines for improper parking practices where the amount of the fine can be adjusted to penalize repeat offenders with a larger fine than an occasional offender. The goals of the graduated fine system are to discourage parking infractions and to aid in ticket collection before the tickets ends up going into the court system.

The courtesy ticket concept applies to first time parking offenders. The ticket is essentially a written warning or notice that the individual has parked beyond the posted time limit. Courtesy tickets only apply to overtime parking, infractions such as illegally parking at fire hydrants and in handicap stalls remain a standard fine.

The courtesy ticket is usually written to thank the individual for visiting downtown Biddeford, indicate to them that they have parked improperly and then offers potential

parking locations that would better suit their needs. Then the courtesy ticket would go on to alert the parker to the fact that they were in violation and provide a map with alternatives for long term parking locations. Courtesy tickets are intended to allow leniency for customers and visitors to Biddeford. The tickets also work well with changes to the parking system that may temporarily confuse parkers.

- A. Consider implementing graduated parking fine. This would require the City to establish a fine structure and implement ordinances to allow for graded fines.

A graded fine example for overtime parking:

- 1st ticket – Courtesy ticket, no financial penalty.
- 2nd ticket - \$35.00, reduced to \$15.00 if paid the same day.
- All subsequent increase to \$40.00, reduced to \$20.00 if paid the same day. The fine stays the same for individuals that pay their fines.
- Accumulation of 5 or more unpaid fines. Six or more tickets are set at \$60.00 each with no reductions.
- Illegal parking infractions (such as at a fire hydrant or in a handicap parking stall) remain the same.

- B. Consider implementing a courtesy ticket for first time offenders.



An example of a map and explanation of graduated fines, attached to parking tickets (including courtesy tickets) in Fort Collins.

Responsibility: Biddeford/Police

Cost: Minimal for the graduated fine schedule. Cost of the courtesy ticket will be the loss of revenue for first ticket.

14. Charging for Parking:

Generally, cities that have parking systems that are self sufficient and build a parking structure rely upon revenue from several sources. This includes revenue from the existing parking structures and surface lots in the downtown, and revenue from on-street meters.

It is difficult if not impossible to build a parking structure in a downtown and have it self amortize without significant equity contributions such as grants, or reserve funds. This is why pooling other parking revenue sources such as other decks, lots and on-street parking is so important. Without parking meters, it is critical that on-street enforcement is consistent so that people who are staying longer are parking in off-street locations and that employees are not parking on-street.

Based on parking Best Practices it is generally agreed that on-street parking should be reserved for customers and visitors. In areas that have little commercial activity, the on-street spaces can have longer durations of stay allowed. There is a body of information that has been prepared by Donald Shoop from UCLA in "*The High Cost of Free Parking*" that suggests that all on-street parking should be metered. The rationale simply put is that on-street parking is the most sought after parking and therefore the most valuable parking. Therefore there should be a charge for parking that places a premium on this type of parking.

Further, it is suggested by Shoop that revenue from parking meters should be used to cover parking operating expenses and any net revenue go back into the downtown assessment area for things such as sidewalk cleaning, signs, lighting, banners etc. Parking revenue is then helping to pay for the upkeep of the downtown.

Best practice is to charge for on and off-street parking and that the parking be set up as an enterprise fund. Parking rates are generally set to generate sufficient revenue to fund operations and to set aside funds for capital improvements and capital repairs. Many communities also put parking fine revenue in the parking fund.

Hourly (or incremental) rates for the on-street parking are usually set higher than the off-street parking. This acknowledges that the on-street parking is the generally the most desirable parking, especially for visitors and customers. Existing technologies allow for the use of alternates to the single space meter head. This is discussed in

Recommendation 15 on the next page.

The city may be at a competitive disadvantage to charge for on-street and off-street parking at this time due to the City of Saco not charging for parking. The case can be

made however, to institute paid parking on-street as a way to finance parking improvements in the downtown.

- A. Based on the current conditions in Biddeford, Rich and Associates does recommend introducing on-street and off-street paid parking at this time.

15. On-Street Parking Meters

If the City were to go to parking meters on-street, there are several options to consider. Permits or meters could be used of off-street parking areas as well.

Single Head Meters per Space

The individual head parking meters do not allow the City to provide variable time and incremental parking rates based on time of day, day of week or season. This has several results;

- The City will not be able to allow variable stay parking on nights, weekends and events. The meters have a maximum time of two hours and to get more time someone needs to go back to the meter and feed it.
- The City will not be able to take advantage of varying the parking charges based on time of day, day of week or season. During peak times the City could charge more for parking to take advantage of peak demand and limited parking supply or conversely, price parking lower when demand is lower such as the summer.
- A parker is not able to use a credit card or value card to pay for parking. This makes carrying change necessary. Newer meters do allow credit cards, but these need to be solar or have expensive batteries.

In addition to these issues, the single head parking meters create issues for pedestrians on the sidewalks, especially where they are narrower. All of these issues have resulted in the recommendation to replace the individual meters with either a multi space meter or a pay and display machine.

Multi-Space or Pay and Display Meters

Multi-space and Pay and Display Meters allow for easier parking enforcement. The machines can work with handheld ticket writers. They can send reports to the handheld unit alerting the enforcement officer of who has and has not paid. This data can be sent wirelessly to the handheld unit.

- The city could use variable parking rates for special events or peak times.

- The meters allow for multiple forms of payment including credit card.
- Easy to collect funds.
- Available with solar units to charge batteries.

Responsibility: Biddeford

Cost: N/A

16. Funding Options for Operational Improvements and Additional Parking:

Unfortunately, there are no magic answers for the financing of a parking structure or any parking improvements. Where there is a parking system and a charge for on and off-street parking, revenues are generally used to specifically pay for parking operations and improvements. In general this requires the pooling of revenues from all parking areas and fines if possible.

- A. Biddeford should look for opportunities such as projects where a developer is going to build parking as part of their development (more than likely a parking structure) and then fund the construction of additional public parking as part of the development. This will spread some of the fixed costs over more spaces thus making the additional parking more economical.
 - 1. Cities have also used a combination of general fund, fee-in-lieu payments, TIF and special assessment districts to pay the debt service and operating expenses. In some communities the operating expenses are paid for by an assessment and the debt service from general fund and other sources. Today in general, there are few Federal or State grants for parking structures unless they are associated with a transit project.
- B. The City could attempt to privatize the development of a parking structure. In order to be competitive in terms of funding, the project would need to be done tax exempt and leased back to the City. It is not possible at this time to amortize and pay for the operating costs of a parking structure with revenues alone.

Responsibility: Biddeford

Cost: N/A

Appendix

Biddeford Business Operator Parking Survey

1. Business Operator Survey

1. Business Name

2. Business Address

*3. Type of business

☐

Office Professional

☐

Retail

☐

Restaurant

☐

Medical Office

☐

Service

☐

Public Use/Government

Other (please specify)

4. Business Hours

5. Primary sales or office space in square feet?

6. Storage space in square feet?

*7. Total space in square feet?

8. Number of owned parking spaces?

Biddeford Business Operator Parking Survey

9. Number of leased parking spaces (if applicable)?

10. Where do your employees typically park?

- ☐ Our own lot
- ☐ Public lot
- ☐ Private lot
- ☐ On-street

11. Do you have a policy that encourages/requires employees to reserve the most desirable parking for customers?

- ☐ Yes
- ☐ No

If so, please tell us about it. Do your employees adhere to the policy?

12. How do you generally come downtown?

- ☐ Drive and park
- ☐ Ride with friend or relative
- ☐ Bus
- ☐ Bicycle
- ☐ Dropped off
- ☐ Walk

13. Where do you typically park?

- | | |
|--------------------------------------|--------------------------------------|
| ☐ Our own lot | ☐ Private lot |
| ☐ Public lot | ☐ On-street |

*14. How many employees do you have?

Number of full time employees?

Number of part time employees?

Biddeford Business Operator Parking Survey

15. How many customers do you typically have in a day?

Summer (May-September)

Winter (October-April)

16. In your estimation, what percentage of your customers or visitors are people already downtown for another purpose?

- ☐ 0%
- ☐ 1-10%
- ☐ 11-25%
- ☐ 26-50%
- ☐ 51-75%
- ☐ 76-100%

17. How many businesses do you typically frequent when downtown?

- ☐ 0
- ☐ 1
- ☐ 2
- ☐ 3
- ☐ 4
- ☐ 5
- ☐ 6 or more

18. There are an adequate number of parking spaces for downtown employees.

strongly disagree

disagree

neither agree or
disagree

agree

strongly agree

Choose one

☐☐☐☐☐

19. There are an adequate number of parking spaces for downtown customers/visitors.

strongly disagree

disagree

neither agree or
disagree

agree

strongly agree

Choose one

☐☐☐☐☐

20. The parking downtown is reasonably close to my place of business for customers.

strongly disagree

disagree

neither agree or
disagree

agree

strongly agree

Choose one

☐☐☐☐☐

Biddeford Business Operator Parking Survey

21. Please feel free to make additional comments regarding parking:



Biddeford Business Operator Parking Survey**1. Business Name**

**Response
Count**

12

answered question

12

skipped question

1

2. Business Address

**Response
Count**

13

answered question

13

skipped question

0

3. Type of business

		Response Percent	Response Count
Office Professional		61.5%	8
Restaurant		0.0%	0
Service		0.0%	0
Retail		23.1%	3
Medical Office		7.7%	1
Public Use/Government		7.7%	1
Other (please specify)			3
answered question			13
skipped question			0

4. Business Hours

	Response Count
	13
answered question	13
skipped question	0

5. Primary sales or office space in square feet?

	Response Count
	13
answered question	13
skipped question	0

127

6. Storage space in square feet?**Response
Count**

10

answered question**10****skipped question****3****7. Total space in square feet?****Response
Count**

13

answered question**13****skipped question****0****8. Number of owned parking spaces?****Response
Count**

13

answered question**13****skipped question****0****9. Number of leased parking spaces (if applicable)?****Response
Count**

13

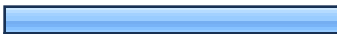
answered question**13****skipped question****0**

128

10. Where do your employees typically park?

		Response Percent	Response Count
Our own lot		46.2%	6
Public lot		15.4%	2
Private lot		15.4%	2
On-street		23.1%	3
answered question			13
skipped question			0

11. Do you have a policy that encourages/requires employees to reserve the most desirable parking for customers?

		Response Percent	Response Count
Yes		50.0%	6
No		50.0%	6

If so, please tell us about it. Do your employees adhere to the policy?

9

answered question			12
skipped question			1

12. How do you generally come downtown?

		Response Percent	Response Count
Drive and park		92.3%	12
Ride with friend or relative		0.0%	0
Bus		0.0%	0
Bicycle		0.0%	0
Dropped off		0.0%	0
Walk		7.7%	1
answered question			13
skipped question			0

13. Where do you typically park?

		Response Percent	Response Count
Our own lot		53.8%	7
Public lot		7.7%	1
Private lot		15.4%	2
On-street		23.1%	3
answered question			13
skipped question			0

14. How many employees do you have?

		Response Percent	Response Count
Number of full time employees?		100.0%	13
Number of part time employees?		100.0%	13
answered question			13
skipped question			0

15. How many customers do you typically have in a day?

		Response Percent	Response Count
Summer (May-September)		100.0%	12
Winter (October-April)		100.0%	12
answered question			12
skipped question			1

16. In your estimation, what percentage of your customers or visitors are people already downtown for another purpose?

		Response Percent	Response Count
0%		0.0%	0
1-10%		41.7%	5
11-25%		41.7%	5
26-50%		16.7%	2
51-75%		0.0%	0
76-100%		0.0%	0
answered question			12
skipped question			1

17. How many businesses do you typically frequent when downtown?

		Response Percent	Response Count
0		0.0%	0
1		7.7%	1
2		23.1%	3
3		46.2%	6
4		7.7%	1
5		15.4%	2
6 or more		0.0%	0
answered question			13
skipped question			0

18. There are an adequate number of parking spaces for downtown employees.

	strongly disagree	disagree	neither agree or disagree	agree	strongly agree	Rating Average	Response Count
Choose one	38.5% (5)	30.8% (4)	7.7% (1)	15.4% (2)	7.7% (1)	2.23	13
answered question							13
skipped question							0

19. There are an adequate number of parking spaces for downtown customers/visitors.

	strongly disagree	disagree	neither agree or disagree	agree	strongly agree	Rating Average	Response Count
Choose one	30.8% (4)	46.2% (6)	7.7% (1)	15.4% (2)	0.0% (0)	2.08	13
answered question							13
skipped question							0

20. The parking downtown is reasonably close to my place of business for customers.

	strongly disagree	disagree	neither agree or disagree	agree	strongly agree	Rating Average	Response Count
Choose one	15.4% (2)	7.7% (1)	23.1% (3)	38.5% (5)	15.4% (2)	3.31	13
answered question							13
skipped question							0

21. Please feel free to make additional comments regarding parking:

		Response Count
		7
answered question		7
skipped question		6

Q4. Business Hours

1	9-5pm	Dec 11, 2011 4:33 PM
2	8:00am to 4:30pm	Dec 8, 2011 6:00 PM
3	To be determined.	Dec 2, 2011 6:41 AM
4	8:30 - 4:30 M-F, 9 - 12 Sat	Nov 28, 2011 2:19 PM
5	10am - 6pm Mon thru Sat 10am - 8pm Thur	Nov 23, 2011 12:14 PM
6	by appointment	Nov 22, 2011 2:05 PM
7	Tues thru Fri 10 - 4 Sat 10 -2	Nov 22, 2011 1:08 PM
8	8 to 4:30	Nov 21, 2011 3:04 PM
9	Tue-Fri 10-5:30/Sat 10-5 Closed Sun/Mon	Nov 14, 2011 11:15 AM
10	MON, TUES, THURS, FRI 8-5	Nov 14, 2011 8:41 AM
11	Mon - Thurs 9:30 am - 8 pm	Nov 7, 2011 3:05 PM
12	8am to 5:00pm Mon. - Fri	Nov 1, 2011 7:46 AM
13	8-12	Oct 31, 2011 6:57 PM

Q5. Primary sales or office space in square feet?

1	1500	Dec 11, 2011 4:33 PM
2	6000	Dec 8, 2011 6:00 PM
3	A total of 14,500 square feet.	Dec 2, 2011 6:41 AM
4	20,000	Nov 28, 2011 2:19 PM
5	1100	Nov 23, 2011 12:14 PM
6	1000	Nov 22, 2011 2:05 PM
7	1100 approx	Nov 22, 2011 1:08 PM
8	5,000	Nov 21, 2011 3:04 PM
9	1,700 sq. ft.	Nov 14, 2011 11:15 AM
10	1200	Nov 14, 2011 8:41 AM
11	15,000	Nov 7, 2011 3:05 PM
12	2,200sf	Nov 1, 2011 7:46 AM
13	800sf	Oct 31, 2011 6:57 PM

Q6. Storage space in square feet?

1	200	Dec 11, 2011 4:33 PM
2	0	Dec 8, 2011 6:00 PM
3	There's a basement of approximately 4,000 storage space in addition to that.	Dec 2, 2011 6:41 AM
4	400	Nov 23, 2011 12:14 PM
5	na	Nov 22, 2011 2:05 PM
6	50 approx	Nov 22, 2011 1:08 PM
7	10'X10'	Nov 14, 2011 11:15 AM
8	NONE	Nov 14, 2011 8:41 AM
9	1,000	Nov 7, 2011 3:05 PM
10	200	Nov 1, 2011 7:46 AM

Q7. Total space in square feet?

1	1700	Dec 11, 2011 4:33 PM
2	6000	Dec 8, 2011 6:00 PM
3	14,500 square feet	Dec 2, 2011 6:41 AM
4	20,000	Nov 28, 2011 2:19 PM
5	1500	Nov 23, 2011 12:14 PM
6	1000	Nov 22, 2011 2:05 PM
7	1150 approx	Nov 22, 2011 1:08 PM
8	5,000	Nov 21, 2011 3:04 PM
9	1,800	Nov 14, 2011 11:15 AM
10	1200	Nov 14, 2011 8:41 AM
11	16,000	Nov 7, 2011 3:05 PM
12	2,400	Nov 1, 2011 7:46 AM
13	800sf	Oct 31, 2011 6:57 PM

Q8. Number of owned parking spaces?

1	0	Dec 11, 2011 4:33 PM
2	0	Dec 8, 2011 6:00 PM
3	None for now.	Dec 2, 2011 6:41 AM
4	65	Nov 28, 2011 2:19 PM
5	1	Nov 23, 2011 12:14 PM
6	0	Nov 22, 2011 2:05 PM
7	1	Nov 22, 2011 1:08 PM
8	0	Nov 21, 2011 3:04 PM
9	None	Nov 14, 2011 11:15 AM
10	NONE	Nov 14, 2011 8:41 AM
11	15	Nov 7, 2011 3:05 PM
12	7	Nov 1, 2011 7:46 AM
13	0	Oct 31, 2011 6:57 PM

Q9. Number of leased parking spaces (if applicable)?

1	2	Dec 11, 2011 4:33 PM
2	21	Dec 8, 2011 6:00 PM
3	None for now.	Dec 2, 2011 6:41 AM
4	0	Nov 28, 2011 2:19 PM
5	None	Nov 23, 2011 12:14 PM
6	1	Nov 22, 2011 2:05 PM
7	NA	Nov 22, 2011 1:08 PM
8	20	Nov 21, 2011 3:04 PM
9	None	Nov 14, 2011 11:15 AM
10	NONE	Nov 14, 2011 8:41 AM
11	0	Nov 7, 2011 3:05 PM
12	0	Nov 1, 2011 7:46 AM
13	0	Oct 31, 2011 6:57 PM

Q11. Do you have a policy that encourages/requires employees to reserve the most desirable parking for customers?

1	our clients have only the street to use	Dec 11, 2011 4:33 PM
2	Custimers use Biddeford Savings Parking lot and we stamp their ticket	Dec 8, 2011 6:00 PM
3	Not applicable yet.	Dec 2, 2011 6:41 AM
4	Yes	Nov 28, 2011 2:19 PM
5	not applicable	Nov 22, 2011 2:05 PM
6	I have my own spot off the street and do not take up a city spot.	Nov 22, 2011 1:08 PM
7	We ask our residential tenants to find other parking during business hours so as to free up the spots in front of the shop. They will generally park further down the street in one of the lots.	Nov 14, 2011 11:15 AM
8	WE PARK ON CENTER STREET, PATIENTS DO NOT	Nov 14, 2011 8:41 AM
9	We leave closest spaces for clients	Nov 1, 2011 7:46 AM

Q14. How many employees do you have?

Number of full time employees?		
1	3	Dec 11, 2011 4:33 PM
2	32	Dec 8, 2011 6:00 PM
3	None yet.	Dec 2, 2011 6:41 AM
4	42	Nov 28, 2011 2:19 PM
5	1	Nov 23, 2011 12:14 PM
6	1	Nov 22, 2011 2:05 PM
7	1	Nov 22, 2011 1:08 PM
8	27	Nov 21, 2011 3:04 PM
9	We are owner-staffed	Nov 14, 2011 11:15 AM
10	6	Nov 14, 2011 8:41 AM
11	11	Nov 7, 2011 3:05 PM
12	4	Nov 1, 2011 7:46 AM
13	0	Oct 31, 2011 6:57 PM
Number of part time employees?		
1	3	Dec 11, 2011 4:33 PM
2	2	Dec 8, 2011 6:00 PM
3	None yet.	Dec 2, 2011 6:41 AM
4	2	Nov 28, 2011 2:19 PM
5	1	Nov 23, 2011 12:14 PM
6	0	Nov 22, 2011 2:05 PM
7	0	Nov 22, 2011 1:08 PM
8	1	Nov 21, 2011 3:04 PM
9	none	Nov 14, 2011 11:15 AM
10	0	Nov 14, 2011 8:41 AM
11	8	Nov 7, 2011 3:05 PM
12	1	Nov 1, 2011 7:46 AM

Q14. How many employees do you have?

13 1

Oct 31, 2011 6:57 PM

Q15. How many customers do you typically have in a day?

Summer (May-September)		
1	1	Dec 11, 2011 4:33 PM
2	15-20	Dec 8, 2011 6:00 PM
3	Not applicable yet.	Dec 2, 2011 6:41 AM
4	100+	Nov 28, 2011 2:19 PM
5	75	Nov 23, 2011 12:14 PM
6	few	Nov 22, 2011 2:05 PM
7	10 - 20	Nov 22, 2011 1:08 PM
8	30	Nov 21, 2011 3:04 PM
9	30	Nov 14, 2011 11:15 AM
10	50	Nov 14, 2011 8:41 AM
11	350	Nov 7, 2011 3:05 PM
12	12	Nov 1, 2011 7:46 AM
Winter (October-April)		
1	1	Dec 11, 2011 4:33 PM
2	15-20	Dec 8, 2011 6:00 PM
3	Not applicable yet.	Dec 2, 2011 6:41 AM
4	100+	Nov 28, 2011 2:19 PM
5	45	Nov 23, 2011 12:14 PM
6	few	Nov 22, 2011 2:05 PM
7	10 - 20	Nov 22, 2011 1:08 PM
8	30	Nov 21, 2011 3:04 PM
9	varies greatly depending upon holiday	Nov 14, 2011 11:15 AM
10	50	Nov 14, 2011 8:41 AM
11	300	Nov 7, 2011 3:05 PM
12	12	Nov 1, 2011 7:46 AM

Q21. Please feel free to make additional comments regarding parking:

1	It would be nice to have a parking garage..	Dec 11, 2011 4:33 PM
2	If we are happy with the current state of the downtown, then there enough parking spaces. If we want all of the buildings filled, then we have nowhere near enough spaces. We need more parking to encourage better development of the downtown.	Dec 2, 2011 6:41 AM
3	Current space is available, however, for growth or to fill vacant fronts - we do not have adequate parking.	Nov 23, 2011 12:14 PM
4	If the tenants above the businesses would consistently park in their deginated spots off the street, there would be adequate parking for customers/visitors to downtown.	Nov 22, 2011 1:08 PM
5	Employee Parking is a real challenge. We also know it keeps business from relocating downtown	Nov 21, 2011 3:04 PM
6	The mill area is in desperate need of a parking garage if it is to be the driving force for redevelopment of downtown. The housing and business mix occuring in the mills and planned for the future requires parking. If the parking garage were there today, much more redevelopment would have occured already.	Nov 1, 2011 7:46 AM
7	I live/work downtown so this survey isn't terribly relevant. I own a car which I park in a City lot 24/7.	Oct 31, 2011 6:57 PM

Biddeford Employee Parking Survey

1. Employee Parking Survey

*1. Employment Status

- ☐ Full-time (more than 30 hours per week)
- ☐ Part-time (less than 30 hours per week)

*2. Employment Classification

- ☐ Professional
- ☐ Service (including restaurant)
- ☐ Clerical
- ☐ Retail Sales
- ☐ Medical

Other (please specify)

*3. How do you generally come to work downtown?

- ☐ Drive and park
- ☐ Ride with friend or relative
- ☐ Bus
- ☐ Ride bicycle
- ☐ Dropped off
- ☐ Walk

Other (please specify)

*4. If you drive when you come downtown to work where do you usually park?

- ☐ Public lot
- ☐ Privately owned lot
- ☐ On-Street

Biddeford Employee Parking Survey

*5. How far do you generally walk from your parking location to your workplace?

- ☐ 50 feet or less
- ☐ more than 50 feet, less than one block
- ☐ 1 - 2 blocks
- ☐ more than 2 blocks

6. How many businesses do you typically frequent when in the downtown?

- ☐ 0
- ☐ 1
- ☐ 2
- ☐ 3
- ☐ 4
- ☐ 5
- ☐ 6 or more

7. There are an adequate number of parking spaces for downtown employees.

	strongly disagree	disagree	neither agree or disagree	agree	strongly agree
Choose one	☐	☐	☐	☐	☐

8. There are an adequate number of parking spaces for downtown customers/visitors.

	strongly disagree	disagree	neither agree or disagree	agree	strongly agree
Choose one	☐	☐	☐	☐	☐

9. The parking downtown is resonably close to my place of work.

	strongly disagree	disagree	neither agree or disagree	agree	strongly agree
Choose one	☐	☐	☐	☐	☐

10. Please feel free to make additional comments regarding parking:

Biddeford Employee Parking Survey



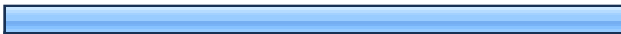
1. Employment Status

		Response Percent	Response Count
Full-time (more than 30 hours per week)		95.8%	69
Part-time (less than 30 hours per week)		4.2%	3
answered question			72
skipped question			0

2. Employment Classification

		Response Percent	Response Count
Professional		75.0%	54
Service (including restaurant)		6.9%	5
Clerical		16.7%	12
Retail Sales		0.0%	0
Medical		1.4%	1
Other (please specify)			5
answered question			72
skipped question			0

3. How do you generally come to work downtown?

		Response Percent	Response Count
Drive and park		93.1%	67
Ride with friend or relative		0.0%	0
Bus		1.4%	1
Ride bicycle		1.4%	1
Dropped off		1.4%	1
Walk		2.8%	2
Other (please specify)			2
answered question			72
skipped question			0

4. If you drive when you come downtown to work where do you usually park?

		Response Percent	Response Count
Public lot		58.3%	42
Privately owned lot		22.2%	16
On-Street		19.4%	14
answered question			72
skipped question			0

5. How far do you generally walk from your parking location to your workplace?

		Response Percent	Response Count
50 feet or less		52.8%	38
more than 50 feet, less than one block		34.7%	25
1 - 2 blocks		9.7%	7
more than 2 blocks		2.8%	2
answered question			72
skipped question			0

6. How many businesses do you typically frequent when in the downtown?

		Response Percent	Response Count
0		9.7%	7
1		20.8%	15
2		30.6%	22
3		16.7%	12
4		6.9%	5
5		4.2%	3
6 or more		11.1%	8
answered question			72
skipped question			0

7. There are an adequate number of parking spaces for downtown employees.

	strongly disagree	disagree	neither agree or disagree	agree	strongly agree	Rating Average	Response Count
Choose one	43.1% (31)	27.8% (20)	18.1% (13)	12.5% (9)	4.2% (3)	2.24	72
answered question							72
skipped question							0

8. There are an adequate number of parking spaces for downtown customers/visitors.

	strongly disagree	disagree	neither agree or disagree	agree	strongly agree	Rating Average	Response Count
Choose one	34.7% (25)	38.9% (28)	16.7% (12)	12.5% (9)	2.8% (2)	2.26	72
answered question							72
skipped question							0

9. The parking downtown is resonably close to my place of work.

	strongly disagree	disagree	neither agree or disagree	agree	strongly agree	Rating Average	Response Count
Choose one	5.6% (4)	8.3% (6)	15.3% (11)	56.9% (41)	19.4% (14)	3.93	72
answered question							72
skipped question							0

10. Please feel free to make additional comments regarding parking:

Response Count	
17	
answered question	17
skipped question	55

Q2. Employment Classification

1	Technical	Dec 12, 2011 3:19 PM
2	Local Government	Dec 9, 2011 3:38 PM
3	building maintenance	Dec 6, 2011 8:09 AM
4	Wastewater Treatment Plant Operator	Dec 5, 2011 1:01 PM
5	KSDt2	Nov 14, 2011 5:12 AM

Q3. How do you generally come to work downtown?

1	Drive, walk, bike	Dec 12, 2011 3:19 PM
2	yuJCP	Nov 14, 2011 5:12 AM

Q10. Please feel free to make additional comments regarding parking:

1	I believe the courthouse is a major contributor to traffic/parking within the downtown area. A designated area should be considered to accomodate the courthouse.	Dec 12, 2011 3:19 PM
2	The court house and probation offices create the greatest parking problems.	Dec 10, 2011 2:19 PM
3	#9 above City Lot is often full and then need to walk from more remote parking locations	Dec 9, 2011 3:38 PM
4	Parking is the worst when District Court is in session.	Dec 9, 2011 9:13 AM
5	I don't think there is enough parking for employees. I have to come back to lunch early every day just to ensure I have a parking spot. Otherwise I have to do on street parking and remember to move my car otherwise I'll get a ticket. It's very frustrating.	Dec 7, 2011 1:17 PM
6	The Court house should have some type of notice for their customers that there is parking at the back of their building. Also if city employees are forced to park on the street, parking tag visible, they should not be ticketed, It means that someone who isn't to park in the lot has taken a space	Dec 7, 2011 10:03 AM
7	handicapped parking is very limited.	Dec 7, 2011 8:20 AM
8	I THINK THE PARKING GARAGE SHOULD GO AT THE NORTH DAM MILL WHERE PARKING IS INADEQUATE TO THE NUMBER OF RESIDENTS, BUSINESS OWNERS AND THEIR EMPLOYEES WHY OCCUPY THE COMPLEX	Dec 5, 2011 3:09 PM
9	As a City Hall employee I use my car to visit different locations during the day, whe I return I gernelly do not have a place to park in city Hall parking lot as the overflow from the Court House uses this lot.	Dec 5, 2011 2:08 PM
10	I get to work an hour before I have to so I know I'll Have a Place to park. I've been doing this for years.	Dec 5, 2011 1:48 PM
11	On street parking is terrible. Private lot parking does not have enough spots for the employees. People park in private lot without permit, even more of a reason there are no spots. Horrible downtown parking.	Dec 5, 2011 1:23 PM
12	A parking garage would be very beneficial to the city. Many times after I leave work and I want to go downtown I can't find a parking space so I leave. Many places I have not gone to just because the parking is not practical.	Dec 5, 2011 1:10 PM
13	parking lot is close enough but always full. The need to on street park is necessary each day.	Dec 5, 2011 1:06 PM
14	The now blinking yellow light at the end of Water St is EXTREMELY dangerous.	Dec 5, 2011 1:01 PM
15	I work for the city of Biddeford and park in the city hall parking lot .I need to use my vehicle to go to different buildings and schools with in the city. If I leave the lot at city hall I loose my space to some one who is at the court house or someone else. this happerns three or four days a week.	Nov 16, 2011 12:18 PM
16	Parking is fairly adequate now, but if downtown Biddeford begins to grow and	Nov 14, 2011 9:01 AM

Q10. Please feel free to make additional comments regarding parking:

fills many of the empty storefronts, there will NOT be enough parking either for customers or downtown employees.

17	WKPVvd jzuttofjbdjs, [url=http://jrvjplusaica.com/]jrvjplusaica[/url], [link=http://xcednekurpfz.com/]xcednekurpfz[/link], http://gdbtoazwhqlz.com/	Nov 14, 2011 5:12 AM
----	--	----------------------

Biddeford General User Parking Survey

1. Parking Survey

1. I am a (check all that apply):

☐

Resident

☐

Out-of-Town Visitor

☐

Business Owner

☐

Other

☐

Employee of the downtown

2. Name of the city/town where you reside if not in Biddeford?

3. How do you generally come downtown?

☐

Drive and park

☐

Ride with a friend

☐

Bus

☐

Ride bicycle

☐

Dropped off

☐

Walk

☐

Other (please specify)

4. How many times do you visit downtown in a typical week?

☐

0

☐

1

☐

2

☐

3

☐

4

☐

5

☐

6 or more

Biddeford General User Parking Survey

5. How many businesses do you typically frequent while in the downtown (per trip).

- ☐ 0
- ☐ 1
- ☐ 2
- ☐ 3
- ☐ 4
- ☐ 5
- ☐ 6 or more

6. How long do you generally stay in the downtown?

- ☐ Less than 1 hour
- ☐ 1 - 2 hours
- ☐ 2 -3 hours
- ☐ 4 or more hours

7. Have you ever used Biddeford's web site to find information regarding parking?

- ☐ Yes
- ☐ No

8. If you answered "yes" do you feel the appropriate information was provided?

- ☐ Yes
- ☐ No

9. If you answered "no" what would you suggest adding?

10. It is easy to locate a parking space downtown.

	strongly disagree	disagree	neither agree or disagree	agree	strongly agree
Choose one	☐	☐	☐	☐	☐

11. Parking signage (directional, lenght of stay, etc.)is easy to follow and understand.

	strongly disagree	disagree	neither agree or disagree	agree	strongly agree
Choose one	☐	☐	☐	☐	☐

Biddeford General User Parking Survey

12. The on-street parking time restrictions generally give me enough time to complete my trip.

strongly disagree

disagree

neither agree or disagree

agree

strongly agree

Choose one

13. Parking enforcement is consistent and fair?

strongly disagree

disagree

neither agree or disagree

agree

strongly agree

Choose one

14. Please feel free to make any additional comments regarding parking below.

Biddeford General User Parking Survey



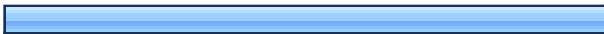
1. I am a (check all that apply):

		Response Percent	Response Count
Resident		79.5%	58
Business Owner		6.8%	5
Employee of the downtown		9.6%	7
Out-of-Town Visitor		6.8%	5
Other		8.2%	6
answered question			73
skipped question			1

2. Name of the city/town where you reside if not in Biddeford?

	Response Count
	16
answered question	16
skipped question	58

3. How do you generally come downtown?

		Response Percent	Response Count
Drive and park		90.4%	66
Ride with a friend		1.4%	1
Bus		1.4%	1
Ride bicycle		1.4%	1
Dropped off		0.0%	0
Walk		5.5%	4
Other (please specify)		0.0%	0
answered question			73
skipped question			1

4. How many times do you visit downtown in a typical week?

		Response Percent	Response Count
0		4.1%	3
1		23.3%	17
2		26.0%	19
3		9.6%	7
4		9.6%	7
5		4.1%	3
6 or more		23.3%	17
answered question			73
skipped question			1

5. How many businesses do you typically frequent while in the downtown (per trip).

		Response Percent	Response Count
0		2.7%	2
1		21.9%	16
2		50.7%	37
3		16.4%	12
4		2.7%	2
5		2.7%	2
6 or more		2.7%	2
answered question			73
skipped question			1

6. How long do you generally stay in the downtown?

		Response Percent	Response Count
Less than 1 hour		28.4%	21
1 - 2 hours		44.6%	33
2 -3 hours		12.2%	9
4 or more hours		14.9%	11
answered question			74
skipped question			0

7. Have you ever used Biddeford's web site to find information regarding parking?

		Response Percent	Response Count
Yes		12.3%	9
No		87.7%	64
answered question			73
skipped question			1

8. If you answered "yes" do you feel the appropriate information was provided?

		Response Percent	Response Count
Yes		58.3%	7
No		41.7%	5
answered question			12
skipped question			62

9. If you answered "no" what would you suggest adding?

	Response Count
	16
answered question	16
skipped question	58

10. It is easy to locate a parking space downtown.

	strongly disagree	disagree	neither agree or disagree	agree	strongly agree	Rating Average	Response Count
Choose one	14.9% (11)	20.3% (15)	18.9% (14)	31.1% (23)	14.9% (11)	3.11	74
answered question							74
skipped question							0

11. Parking signage (directional, length of stay, etc.) is easy to follow and understand.

	strongly disagree	disagree	neither agree or disagree	agree	strongly agree	Rating Average	Response Count
Choose one	8.1% (6)	23.0% (17)	16.2% (12)	41.9% (31)	10.8% (8)	3.24	74
answered question							74
skipped question							0

12. The on-street parking time restrictions generally give me enough time to complete my trip.

	strongly disagree	disagree	neither agree or disagree	agree	strongly agree	Rating Average	Response Count
Choose one	9.6% (7)	21.9% (16)	11.0% (8)	45.2% (33)	12.3% (9)	3.29	73
answered question							73
skipped question							1

13. Parking enforcement is consistent and fair?

	strongly disagree	disagree	neither agree or disagree	agree	strongly agree	Rating Average	Response Count
Choose one	11.1% (8)	16.7% (12)	34.7% (25)	26.4% (19)	11.1% (8)	3.10	72
answered question							72
skipped question							2

14. Please feel free to make any additional comments regarding parking below.

	Response Count
	26
answered question	26
skipped question	48

Q2. Name of the city/town where you reside if not in Biddeford?

1	Saco	Jan 2, 2012 8:24 AM
2	OOB	Dec 6, 2011 11:34 AM
3	hollis	Dec 6, 2011 6:44 AM
4	Portland	Dec 5, 2011 9:35 PM
5	saco	Dec 5, 2011 1:49 PM
6	Portsmouth, NH	Nov 21, 2011 8:33 PM
7	Biddeford	Nov 21, 2011 2:02 PM
8	South Portland, Maine	Nov 21, 2011 9:43 AM
9	Saco	Nov 15, 2011 10:53 AM
10	Portland	Nov 14, 2011 10:13 PM
11	Saco	Nov 14, 2011 11:39 AM
12	LYMAN	Nov 14, 2011 8:43 AM
13	yarmouth	Nov 7, 2011 7:15 PM
14	Waterboro	Nov 7, 2011 8:21 AM
15	Scarborough	Nov 1, 2011 9:23 AM
16	Waterboro	Oct 31, 2011 4:47 PM

Q9. If you answered "no"; what would you suggest adding?

1	Didn't know about it	Dec 15, 2011 2:20 PM
2	Parking downtown is never a problem. The weather-related parking bans are usually well advertised on TV and radio.	Dec 6, 2011 10:13 AM
3	radio report	Dec 6, 2011 6:44 AM
4	Location of public parking places during snow bans for each neighborhood.	Dec 5, 2011 9:35 PM
5	hard to find/ navigate	Dec 5, 2011 1:49 PM
6	Did not ever think to look there for parking information. Maybe that would be a good link with the Chamber website	Nov 15, 2011 10:53 AM
7	Not sure	Nov 15, 2011 10:38 AM
8	N/A	Nov 14, 2011 8:43 AM
9	Make it easier to find, the city web-site is not at all user friendly	Nov 8, 2011 11:45 AM
10	not sure	Nov 7, 2011 7:15 PM
11	n/a	Nov 7, 2011 2:19 PM
12	Never found parking downtown to be a problem	Nov 7, 2011 10:49 AM
13	Parking Garage next to the Police Station Making it at least three levels, so one level could be used to shelter all the Police vehicles.	Nov 7, 2011 8:52 AM
14	Making it more prominent on the website, perhaps a tab across the top?	Nov 7, 2011 8:31 AM
15	Color coding for public lot (free), public lot (pay-per-use), private lot (pay), and on street parking (metered and unmetered)	Nov 7, 2011 8:21 AM
16	there is currently no parking problem. There are so few business down there, when I do go I do nto have problem. As business come in parking will develop.	Oct 31, 2011 4:58 PM

Q14. Please feel free to make any additional comments regarding parking below.

1	I can't parallel park for squat, so I find it's easier for me to just walk downtown then take any chances.	Jan 11, 2012 10:35 AM
2	parking availability is largely a function of the time of day	Jan 6, 2012 1:50 PM
3	There is more then enough parking for the business downtown. There are a better things to spend money on for Biddeford such as curbside recycling	Jan 5, 2012 6:40 AM
4	I'm working to make more of an effort to walk or bike, when frequenting downtown.	Dec 15, 2011 2:20 PM
5	I tend to use the parking lot across from Reilly's, otherwise I'd probably end up with tickets and/or no parking spot! Drop in at a participating merchant to get ticket stamped.	Dec 10, 2011 4:22 PM
6	I find there is always plenty of parking downtown. In the WORST case, I may need to walk a block which is always closer than walking across a parking lot at a mall.	Dec 6, 2011 10:13 AM
7	the city needs a parking garage or two	Dec 6, 2011 6:44 AM
8	I would like to suggest that the public parking lot on Franklin Street be made available for use during snow bans. I don't understand why it's not available now.	Dec 5, 2011 9:35 PM
9	Don't have a solution to the parking problem in the downtown region but I old building's are torn down to make way for new and modern building's raise the building height restrictions and put parking under each building that way it won't affect land usage on either side or front to back of the buildings. Think about it. Rick Dussault. 4 Atlantic Avenue Biddeford Maine.	Dec 5, 2011 3:59 PM
10	moderately easy for a native, not so easy for a novice.....unusual street layout and traffic flow	Dec 2, 2011 4:16 AM
11	I feel parking is a major problem for the downtown area. The decent parking is in the Biddeford Savings but that is a hike for older people. The streets are full of cars but I don't see much shopping going on.	Nov 30, 2011 9:20 PM
12	I feel that increased bus routes around town would be a better alternative to a parking garage	Nov 30, 2011 10:14 AM
13	I dive my partner to work at times, at CSI in Saco, and I'll spend some time on Main Street in Biddeford, which I very much enjoy!	Nov 21, 2011 9:43 AM
14	the city should offer a free parking garage closer to New Morning and the center of Main St. Also, I wonder if it is possible to make parking on a diagonal...parallel parking is difficult for some and discourages people I know from shopping downtown.	Nov 21, 2011 9:06 AM
15	I have never had a problem personally but have heard complaints about Biddeford Police being overly aggressive	Nov 15, 2011 10:53 AM
16	to many business owners play musical cars all day...they just move their cars around at different parking spots but use up client space all day	Nov 14, 2011 11:48 AM

Q14. Please feel free to make any additional comments regarding parking below.

17	I've never had a problem finding a parking space in town.	Nov 14, 2011 11:39 AM
18	I don't have trouble finding places to park but I am also very aware of the options and don't rely on signage to tell me where parking lots are. I think much more could be done to let people know where there are parking lots available.	Nov 8, 2011 11:45 AM
19	With so many empty stroes fronts, there are always empty parking spaces. I have never felt parking was the problem with downtown. The lack of reasons to go downtown is more the problem.	Nov 7, 2011 10:49 AM
20	Something needs to be done for more space especially when adding more stores. People don't need to worry about how much time they have remaining in a store or attraction of a special event.	Nov 7, 2011 8:52 AM
21	Biddeford has a unique opportunity to create a "carless" environment. Exploring increased public and alternative transportation makes sense in a State with the largest percentage of older adults who should stop driving! It's a looming safety issue. not to mention the environmental impact.	Nov 7, 2011 7:53 AM
22	Parking has been a problem in downtown for 30+ years. Hopefully this study will result in resolving the issue once and for all. I am naot in favor of spending millions of dollars for a parking garage. Just have enough parking available to take care of those people who still come to downtown. the lack of parking over the years has caused many to go elsewhere. I'm not sure that "if you build it, they will come...back!	Nov 1, 2011 9:23 AM
23	Finding a parking space depends on the time of the day we are looking to park a car and events that might be occuring at the same time.	Oct 31, 2011 6:37 PM
24	I would like to see some bike racks in downtown Biddeford to secure my bike to a rack. The only one I currently know of and use is at MacArthur Library.	Oct 31, 2011 6:06 PM
25	Parking in thriving cities is huge business for individuals land owners. There is at this time less business to frequent. UNTIL crime is addressed you will not find people going downtown. Biddefords dirty little secret is the crime which is not talked about. When and if parking is developed it should be private enterprise developing it and it should not be on the edge of the river.	Oct 31, 2011 4:58 PM
26	On road parking is a massive pain in the lower main street area. Not so much during the morning hours, but during the afternoon and evening.	Oct 31, 2011 4:47 PM

City of Biddeford, Maine Mill District Parking Feasibility Study

WINTON SCOTT ARCHITECTS
RICH & ASSOCIATES

CONSULTANTS

GORRILL PALMER - TRAFFIC

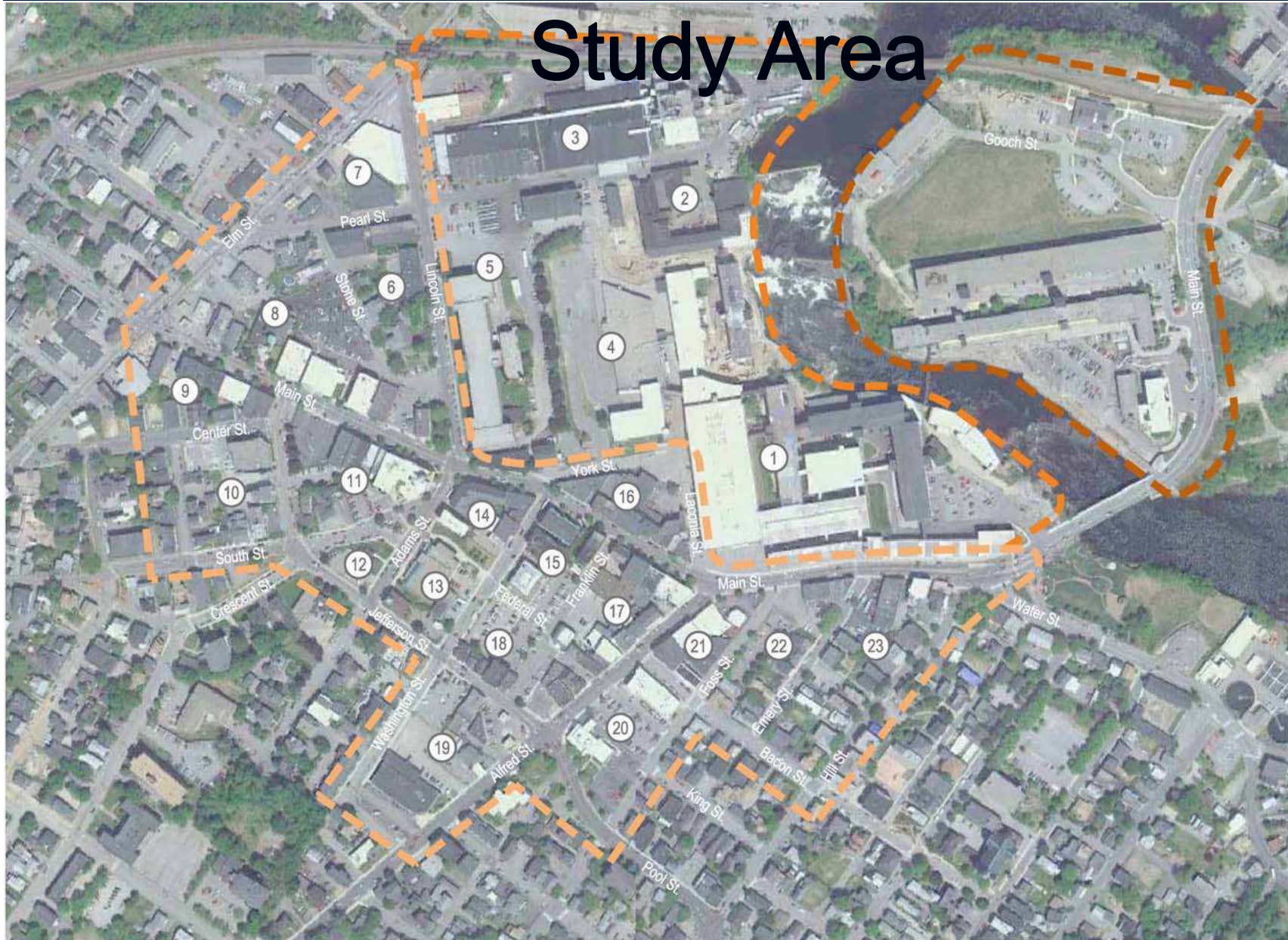
CARROLL ASSOCIATES - LANDSCAPE

BLAISE CIVIL ENGINEERING

WRIGHT-RYAN CONSTRUCTION COST



Study Area



PARKING STUDY FOR THE CITY OF BIDDEFORD

BIDDEFORD, MAINE

RICH
CONSULTANTS
ARCHITECTS ENGINEERS
PLANNERS
2007 Main Street, Biddeford, ME 04005
Tel: (207) 283-1234
Fax: (207) 283-1235
www.richconsultants.com

LEGEND:

- # BLOCK NUMBER
- CBD STUDY AREA
- MILL 1 STUDY AREA
- MILL 2 STUDY AREA

BLOCK FACE KEY PLAN:



Sheet Title:

STUDY AREA

File No: 1210
Scale: NTS
Date: 02-03-2012
Checked By: AN



MAP Number:
MAP 1

Parking Supply

On-Street Parking Totals	367 (26%)
Public Off-Street Parking Totals	<u>276</u> (19%)
Public Parking Totals	643 (45%)
Private Parking Totals	<u>784</u> (55%)
Total Parking in Study Area	1,427

*Based on Rich and Associates' experience and best practices, we have found that to successfully manage municipal parking in small downtowns it is especially desirable for the municipality to have **control of at least 50 percent** of the parking supply. Biddeford currently falls short of this benchmark **at 45 percent**.*

Turnover and Occupancy Observations

- Most on-street parking was less than 84% occupied
- Municipal lots were generally less than 74% occupied throughout the day
- **18%** of vehicles parked at 2 hour parking spaces exceeded the posted time limit
 - 36 vehicles remained in a 2 hour parking space between 4 and 10 hours.
 - **Best Practice: violation rates should not exceed 5%-7%**
- Valuable 2 hour parking spaces are not turning over
 - **Employees and business owners are most likely taking these spaces.**

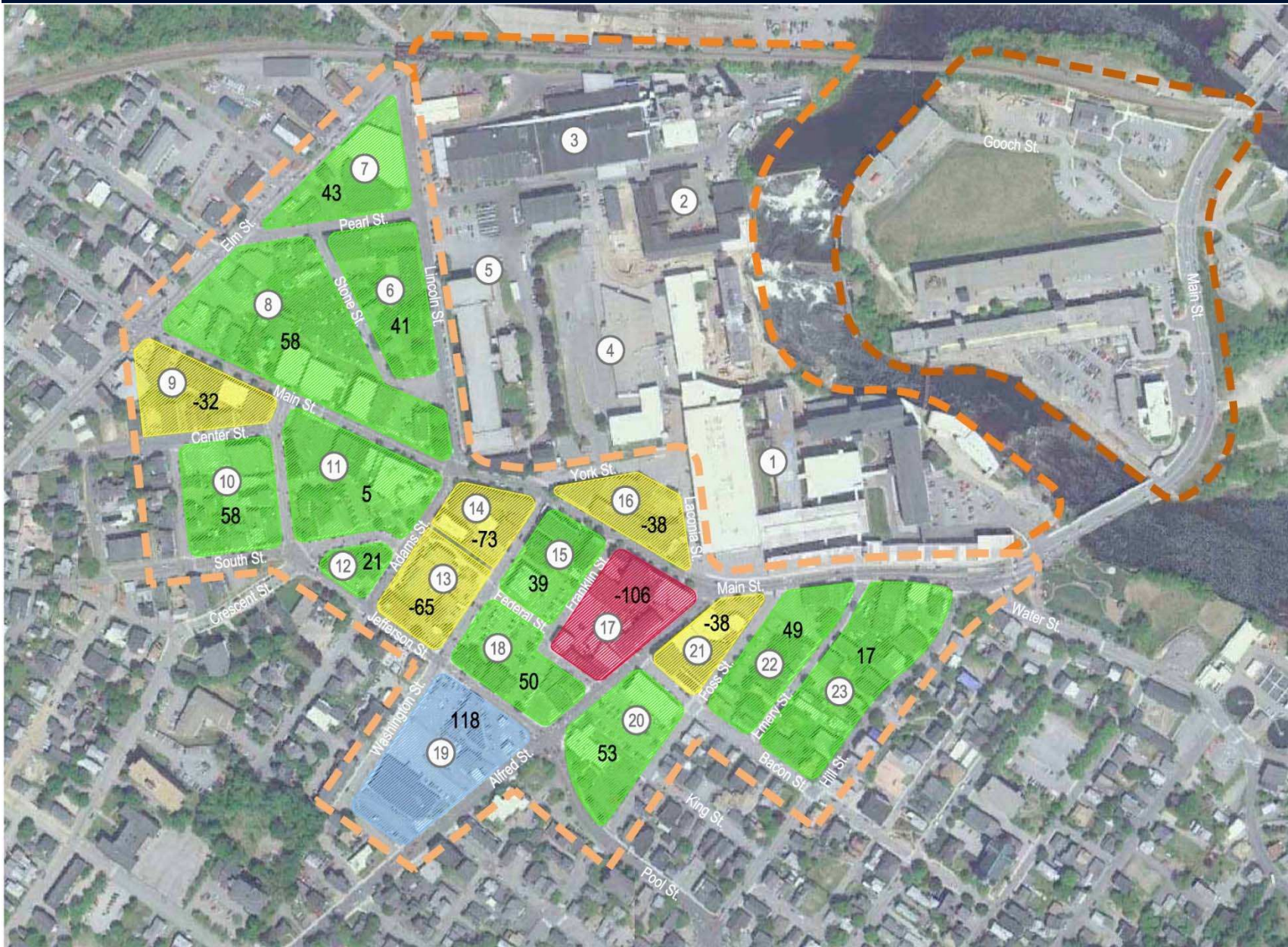
Current Parking Surplus Deficit

■ Parking Demand For Core Downtown

- Demand does not include Mill District
- Calculation based on existing land use
 - Provided by the HOB and City of Biddeford

Parking Demand	1,227 spaces
Number of Parking Stalls	<u>1,427</u> spaces
Total Parking Surplus	200 spaces

- Includes public and private parking



PARKING STUDY FOR THE CITY OF BIDDEFORD

BIDDEFORD, MAINE

RICH
ASSOCIATES
Parking Consultants
Architects Engineers
Planners
1000 Main Street, Suite 200
Biddeford, Maine 04005
Tel: 207.353.5000
Fax: 207.353.5033
Email: info@richassoc.com
www.richassoc.com

LEGEND:

- # BLOCK NUMBER
- CBD STUDY AREA
- MILL 1 STUDY AREA
- MILL 2 STUDY AREA

SURPLUS OF PARKING

- +100
- 0 through 99

DEFICIT OF PARKING

- 99 through -1
- 100 +

BLOCK FACE KEY PLAN:



Sheet Title:

**SURPLUS/
DEFICIT
(CURRENT)**

File No:	1210	
Scale:	NTS	
Date:	02-03-2012	
Checked By:	AN	
MAP Number:		

MAP 4

Future 5 YR Parking Surplus Deficit

■ Future Parking Demand For Core Downtown

- Based on a 40% re-occupancy of vacant space (52,609 sf) in the study area (not including the Mill District)

Parking Demand	1,286 spaces
Number of Parking Stalls	<u>1,427</u> spaces
Total Parking Surplus	141 spaces

- Includes public and private parking



PARKING STUDY FOR THE CITY OF BIDDEFORD

BIDDEFORD, MAINE

RICH
Parking Consultants
Architects Engineers
Planners
200 S. Main St., Suite 200
Biddeford, Maine 04005
Tel: 207.283.7000
Fax: 207.283.7000
Cell: 207.283.7000
www.richassociates.com

LEGEND:

- # BLOCK NUMBER
- CBD STUDY AREA
- MILL 1 STUDY AREA
- MILL 2 STUDY AREA

SURPLUS OF PARKING

- +100
- 0 through 99

DEFICIT OF PARKING

- 99 through -1
- 100 +

BLOCK FACE KEY PLAN:



Sheet Title:

**SURPLUS/
DEFICIT
(5 YEARS)**

File No.	1210	
Scale	NTS	
Date	02-03-2012	
Checked By	AN	
MAP Number:		

MAP 4.1

Core Downtown Summary

- On-street 2 hour parking spaces are not turning over
- Results of the occupancy study correlates with R&A's calculations of the parking demand
- Municipal (public) parking areas are not well utilized
- Core Area (blocks 13, 14, 16 and 17) in the future have parking deficits that need to be addressed
- **Areas of improvement**
 - to increase availability of the current parking supply and parking perceptions
 - Signage and Wayfinding
 - Enforcement
 - Marketing of Parking
 - Public and Private joint ventures in parking lots

Mill District

- Total of 1,513,200 SF of space identified for development including 497 dwelling units.
- Projected parking needs based on phased development
 - Projected parking need in five years for 1,555 spaces.
 - Currently, there are approximately 681 spaces and based on observations these spaces are reaching maximum occupancy.
 - Total build-out projected need for 2,448 spaces.

Parking Needs

■ Parking Needs for 5 Year Mill District

■ Project Parking Needs	1,555 spaces
■ Project Parking Supply (On Site w/loss for PS Site)*	1,042 spaces
Deficit	-513 spaces

* Assumes approximately 505 spaces in a parking structure.

Parking Needs

■ Parking Needs for Mill District Build Out

■ Project Parking Needs	2,448 spaces
■ Project Parking Supply (On Site w/loss for PS Site)* Deficit	2,273 spaces
	-175 spaces

*Assumes approximately 1,913 spaces in a parking structure at build out.

Mill District Parking

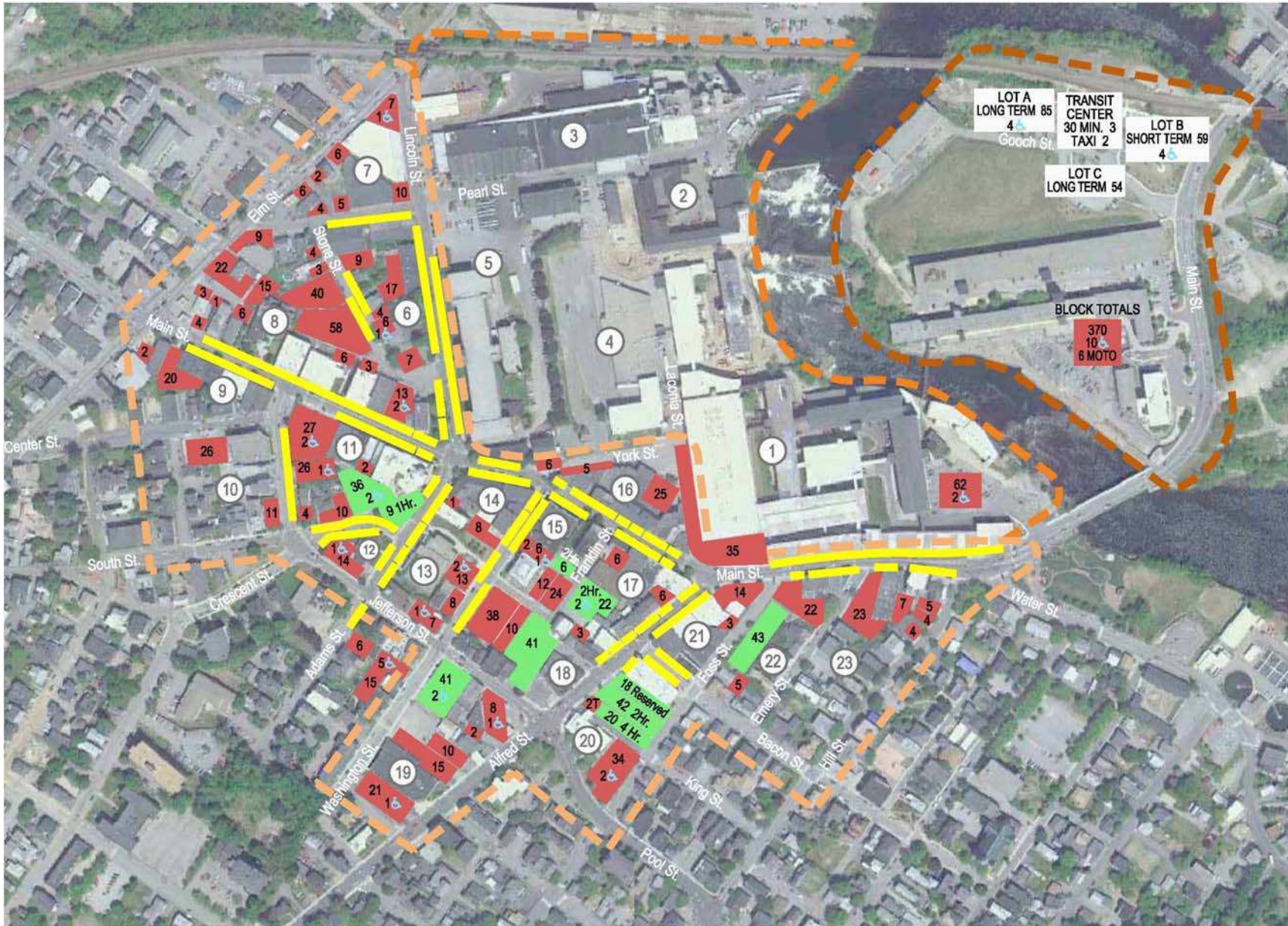
Preliminary Parking Plan

- Phase 1 Parking Structure 505 spaces
- Phase 2 and 3 Parking Structure adds +/- 1,408 spaces
- Parking in downtown needs to be improved
 - Signage
 - Enforcement
 - Marketing
 - Parking Allocation
 - Paid Parking
- Create a Parking System

Pay and Display Meters

- Now being used in Portland
- Accepts coins, credit cards and debit cards
- Can be programmed to provide variable time
- Can use pay by phone





PARKING STUDY FOR THE CITY OF BIDDEFORD

BIDDEFORD, MAINE



LEGEND:

BLOCK NUMBER

— CBD STUDY AREA

— MILL 1 STUDY AREA

— MILL 2 STUDY AREA

ON STREET PARKING

— PROPOSED
METERED
PARKING

OFF STREET PARKING

— PUBLIC

— PRIVATE

— BARRIER FREE

T TAXI

BLOCK FACE KEY PLAN:



PROPOSED METERED ON-STREET PARKING

File No	1210-2
Scale	NTS
Date	12-13-2012
Checked By	AN
MAP Number:	Page Number:



Project and Finance Costs

Proposed Parking Structure With Equity From T.F. Bond 8111 District Boulevard, Noline Phase 1 Parking Structure 505 Spaces

1 Construction Cost	505 x \$20,000	\$10,100,000 ¹
2 Professional Fees (Architectural/Engineering & Reimbursed)		\$505,000
3 Insurance		\$55,000
4 Legal and Accounting		\$40,000
5 Geotech and Survey		\$35,000
6 Contingency		\$1,500,000
7 Equity T.F. Bond		(\$6,600,000)
8 On Street Pay and Display		\$400,000
9 Project Cost to be Financed		\$6,035,000
10 Financing Term		20 Years
11 Interest Rate		3.5 %
12 Term of Construction		12 Months
<i>Financing Costs</i>		
13 Interest During Construction		\$224,000
14 Interest Income	40% @ 4%	(\$26,000)
15 Legal & Accounting Fees	@ 0.5%	\$16,000
16 Debt Service Reserve		None
17 Financing Fees (Points)	@ 3.00%	\$128,000
18 Cost of Issuance	@ 0.5%	\$22,000
19 Total Financing Costs		\$364,000
20 + Project Cost to Be Financed		\$6,435,000
21 Total Amount of Bonds		\$6,399,000
22 Debt Service		\$450,000

¹ Costs do not include waterproofing or landscaping on podium level, though these occur in Phase 2

		YR 1	YR 2	YR 3	YR 4	YR 5	YR 6	YR 7	YR 8	YR 9	YR 10
<u>Parking Rates</u>											
Hourly Rate		\$0.50	\$0.50	\$0.50	\$0.75	\$0.75	\$0.75	\$1.00	\$1.00	\$1.00	\$1.25
Permit Rate Residents		\$50.00	\$50.00	\$50.00	\$60.00	\$60.00	\$60.00	\$70.00	\$70.00	\$70.00	\$80.00
Permit Rate Regular		\$35.00	\$35.00	\$35.00	\$45.00	\$45.00	\$45.00	\$55.00	\$55.00	\$55.00	\$65.00
-	Revenue From Operations										
1	Hourly Parking	\$48,125	\$48,125	\$48,125	\$72,188	\$72,188	\$72,188	\$96,250	\$96,250	\$96,250	\$120,313
2	Permits Residents	\$231,660	\$231,660	\$231,660	\$277,992	\$277,992	\$277,992	\$324,324	\$324,324	\$324,324	\$370,656
3	Permits Regular	\$83,538	\$83,538	\$83,538	\$107,406	\$107,406	\$107,406	\$131,274	\$131,274	\$131,274	\$155,142
4	Meter Revenue	\$226,875	\$226,875	\$226,875	\$340,313	\$340,313	\$340,313	\$453,750	\$453,750	\$453,750	\$567,188
6	Total Revenue	\$590,198	\$590,198	\$590,198	\$797,898	\$797,898	\$797,898	\$1,005,598	\$1,005,598	\$1,005,598	\$1,213,298
Expenses											
7	Operating Expenses Parking Deck	\$138,875	\$144,430	\$150,207	\$156,215	\$162,464	\$168,963	\$175,721	\$182,750	\$190,060	\$197,662
8	Operating Expenses On Street	\$50,000	\$52,000	\$54,080	\$56,243	\$58,493	\$60,833	\$63,266	\$65,797	\$68,428	\$71,166
9	Repair and Replacement Sinking Fund	\$25,250	\$25,250	\$25,250	\$25,250	\$25,250	\$25,250	\$25,250	\$25,250	\$25,250	\$25,250
8	Total Net Revenue From Operations	\$376,073	\$368,518	\$360,661	\$560,189	\$551,691	\$542,853	\$741,361	\$731,801	\$721,860	\$919,220
10	Debt Service	\$450,000	\$450,000	\$450,000	\$450,000	\$450,000	\$450,000	\$450,000	\$450,000	\$450,000	\$450,000
11	Surplus or Deficit	(\$73,927)	(\$81,482)	(\$89,339)	\$110,189	\$101,691	\$92,853	\$291,361	\$281,801	\$271,860	\$469,220
12	Accumulated Surplus or Deficit	(\$73,927)	(\$155,409)	(\$244,748)	(\$134,559)	(\$32,868)	\$59,985	\$351,346	\$633,147	\$905,007	\$1,374,227

		YR 11	YR 12	YR 13	YR 14	YR 15	YR 16	YR 17	YR 18	YR 19	YR 20
	<u>Parking Rates</u>										
	Hourly Rate	\$1.25	\$1.25	\$1.50	\$1.50	\$1.50	\$1.75	\$1.75	\$1.75	\$2.00	\$2.00
	Permit Rate Residents	\$80.00	\$80.00	\$90.00	\$90.00	\$90.00	\$100.00	\$100.00	\$100.00	\$110.00	\$110.00
	Permit Rate Regular	\$65.00	\$65.00	\$75.00	\$75.00	\$75.00	\$85.00	\$85.00	\$85.00	\$95.00	\$95.00
-	Revenue From Operations										
1	Hourly Parking	\$120,313	\$120,313	\$144,375	\$144,375	\$144,375	\$168,438	\$168,438	\$168,438	\$192,500	\$192,500
2	Permits Residents	\$370,656	\$370,656	\$416,988	\$416,988	\$416,988	\$463,320	\$463,320	\$463,320	\$509,652	\$509,652
3	Permits Regular	\$155,142	\$155,142	\$179,010	\$179,010	\$179,010	\$202,878	\$202,878	\$202,878	\$226,746	\$226,746
4	Meter Revenue	\$567,188	\$567,188	\$680,625	\$680,625	\$680,625	\$794,063	\$794,063	\$794,063	\$907,500	\$907,500
6	Total Revenue	\$1,213,298	\$1,213,298	\$1,420,998	\$1,420,998	\$1,420,998	\$1,628,698	\$1,628,698	\$1,628,698	\$1,836,398	\$1,836,398
	Expenses										
7	Operating Expenses Parking Deck	\$205,569	\$213,792	\$222,343	\$231,237	\$240,487	\$250,106	\$260,110	\$270,515	\$281,335	\$292,589
8	Operating Expenses On Street	\$74,012	\$76,973	\$80,052	\$83,254	\$86,584	\$90,047	\$93,649	\$97,395	\$101,291	\$105,342
9	Repair and Replacement Sinking Fund	\$25,250	\$25,250	\$25,250	\$25,250	\$25,250	\$25,250	\$25,250	\$25,250	\$25,250	\$25,250
8	Total Net Revenue From Operations	\$908,467	\$897,284	\$1,093,353	\$1,081,257	\$1,068,678	\$1,263,295	\$1,249,689	\$1,235,538	\$1,428,522	\$1,413,217
10	Debt Service	\$450,000	\$450,000	\$450,000	\$450,000	\$450,000	\$450,000	\$450,000	\$450,000	\$450,000	\$450,000
11	Surplus or Deficit	\$458,467	\$447,284	\$643,353	\$631,257	\$618,678	\$813,295	\$799,689	\$785,538	\$978,522	\$963,217
12	Accumulated Surplus or Deficit	\$1,832,693	\$2,279,977	\$2,923,330	\$3,554,587	\$4,173,265	\$4,986,560	\$5,786,248	\$6,571,787	\$7,550,309	\$8,513,525

Keys to Success

- Parking must be improved in downtown
- Parking needs to be consistent between Mill District and downtown with respect to policies and charging for parking
- Parking must be enforced

Discussion



City of Biddeford, Maine Mill District Parking Feasibility Study

WINTON SCOTT ARCHITECTS
RICH & ASSOCIATES

CONSULTANTS

GORRILL PALMER - TRAFFIC

CARROLL ASSOCIATES - LANDSCAPE

BLAISE CIVIL ENGINEERING

WRIGHT-RYAN CONSTRUCTION COST



Scope of Planning and Design Services

On June 1, 2011, the City of Biddeford published a Request for Proposals for Design and Urban Planning Services. One of the first goals of the RFP was to carefully inventory existing parking supplies and project future needs in the Downtown and the Mill District. Rich & Associates have shown that future needs of the Mill District cannot be met with existing surface parking lots and, this lack of parking amounts to a roadblock for future development.

Clearly, more than 2,000 new parking spaces will be required in order to fully realize the growth potential for the Mill District. This presentation focuses on our recommendations for a phased and comprehensive solution needed to address the dramatically increasing needs for parking in the Mill District. The Plan proposed also addresses other goals outlined in the City RFP:

**Reunite Pedestrian Connections between
Downtown and the Mill District**

Create Civic and Open Spaces

Develop Phasing Plan for Garage Construction

The Plan before you gives form to a new network of **bustling pedestrian streets** reconnecting Main Street and Lincoln Street with the Mill District and Riverwalk.

This Plan also creates a new 2.5 acre **City Park** in the heart of Biddeford offering much needed open space for gatherings and activities for the hundreds of new office workers, artists, new apartment dwellers and other center city workers, vendors and dwellers.

This Plan offers a new **Public Square** at the juncture between York and Main Streets, creating a vibrant, new connection for vehicular and pedestrian movement to and from the new Garage and a new “Front Door” to the Mill District.

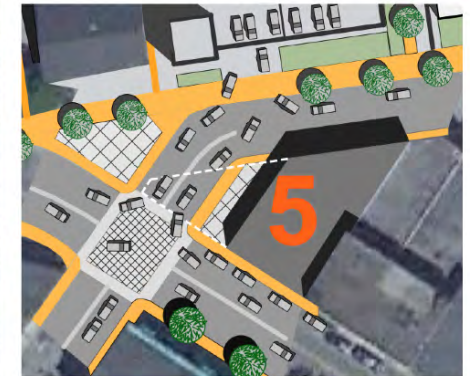
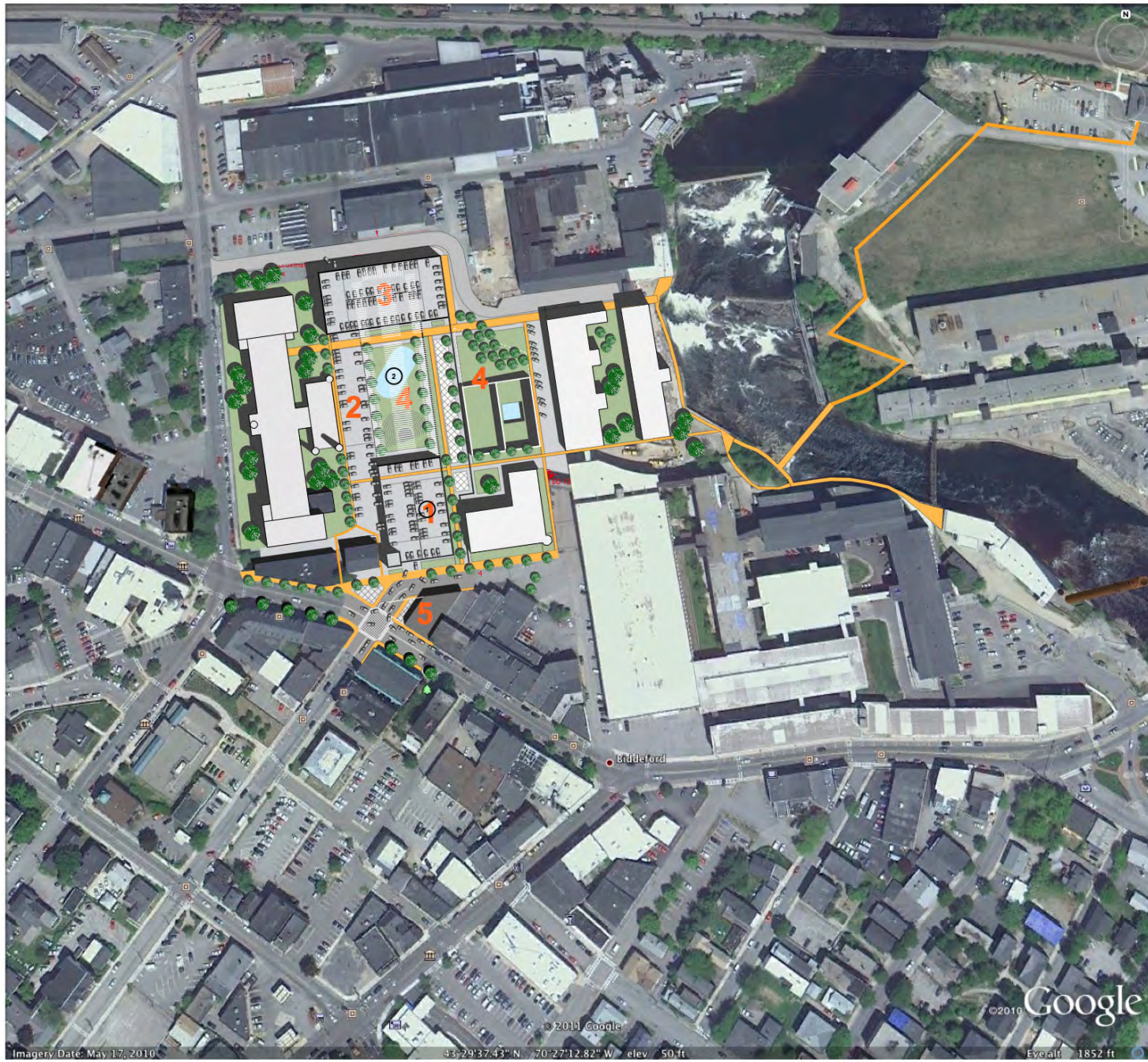
And yes, this Plan can be the long awaited **economic development catalyst** needed to push aside the roadblocks for adaptive reuse of up to 1,000,000 sf of vacant space in the Mill District - dramatically increasing City property tax revenues while enhancing the overall urban environment.





2009 Mill District Master Plan

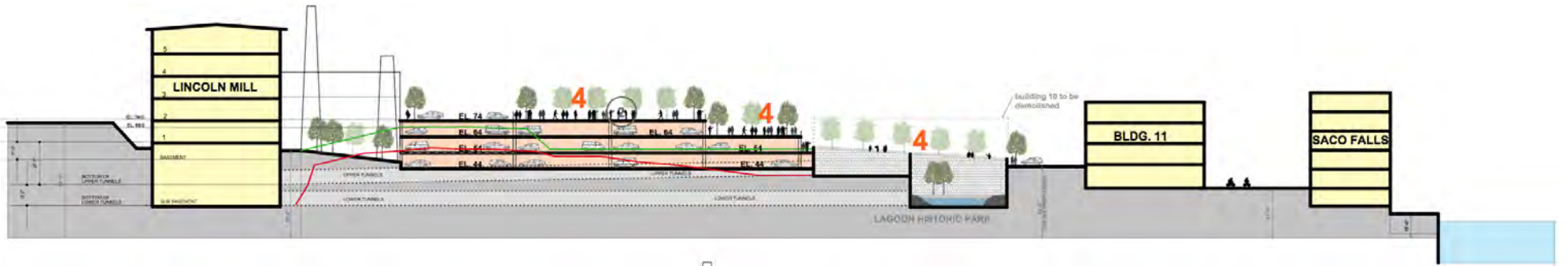




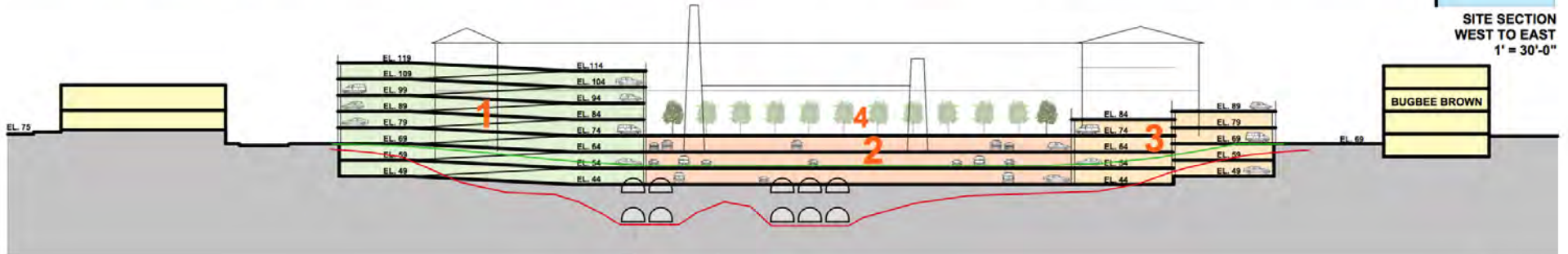
- 1** PHASE 1 PARKING STRUCTURE
505 PARKING SPACES
- 2** PHASE 2 PARKING STRUCTURE
742 PARKING SPACES
- 3** PHASE 3 PARKING STRUCTURE
474 - 666 PARKING SPACES
- 4** PROPOSED PUBLIC PARK / CIVIC SPACE
 - LANDSCAPED GARDENS
 - EXCAVATIONS HISTORIC CANALS
 - WINTER ICE SKATING
 - PUBLIC GATHERINGS / CONCERTS
- 5** CITY SQUARE OPTION - TO IMPROVE
VISIBILITY AND CIRCULATION

concept plan 9a

Biddeford Parking Studies
winton scott architects
2.02.12



SITE SECTION
WEST TO EAST
1" = 30'-0"



SITE SECTION
SOUTH TO NORTH
1" = 30'-0"



GARAGE LAYOUT PLAN
1" = 30'-0"

- 1 PHASE 1 PARKING STRUCTURE
554 PARKING SPACES
- 2 PHASE 2 PARKING STRUCTURE
742 PARKING SPACES
- 3 PHASE 3 PARKING STRUCTURE
474 - 666 PARKING SPACES
- 4 PROPOSED PUBLIC PARK / CIVIC SPACE
 - LANDSCAPED GARDENS
 - EXCAVATIONS HISTORIC CANALS
 - WINTER ICE SKATING
 - PUBLIC GATHERINGS / CONCERTS

concept plan 9

Biddeford Parking Studies
winton scott architects
2.02.12

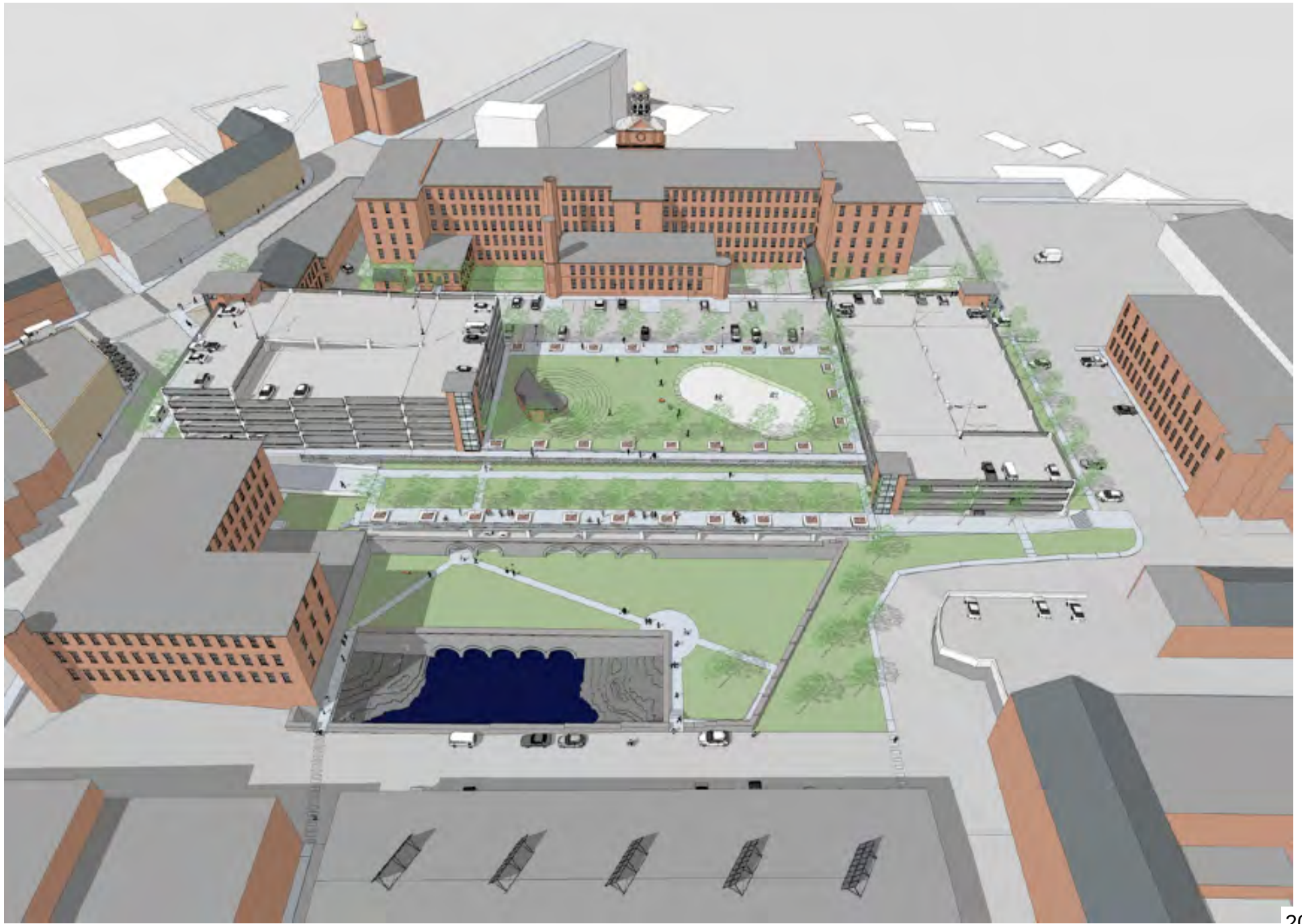






















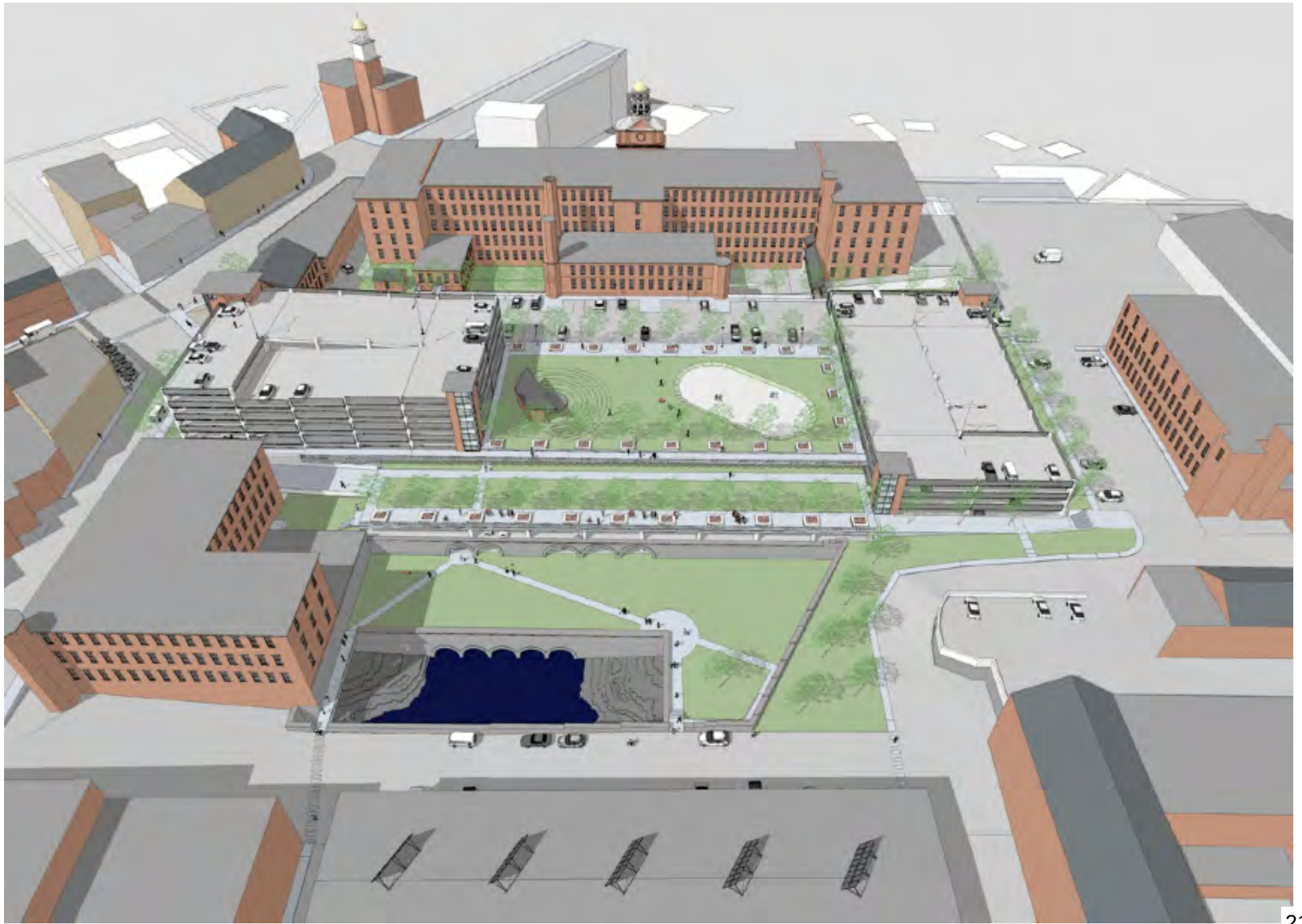




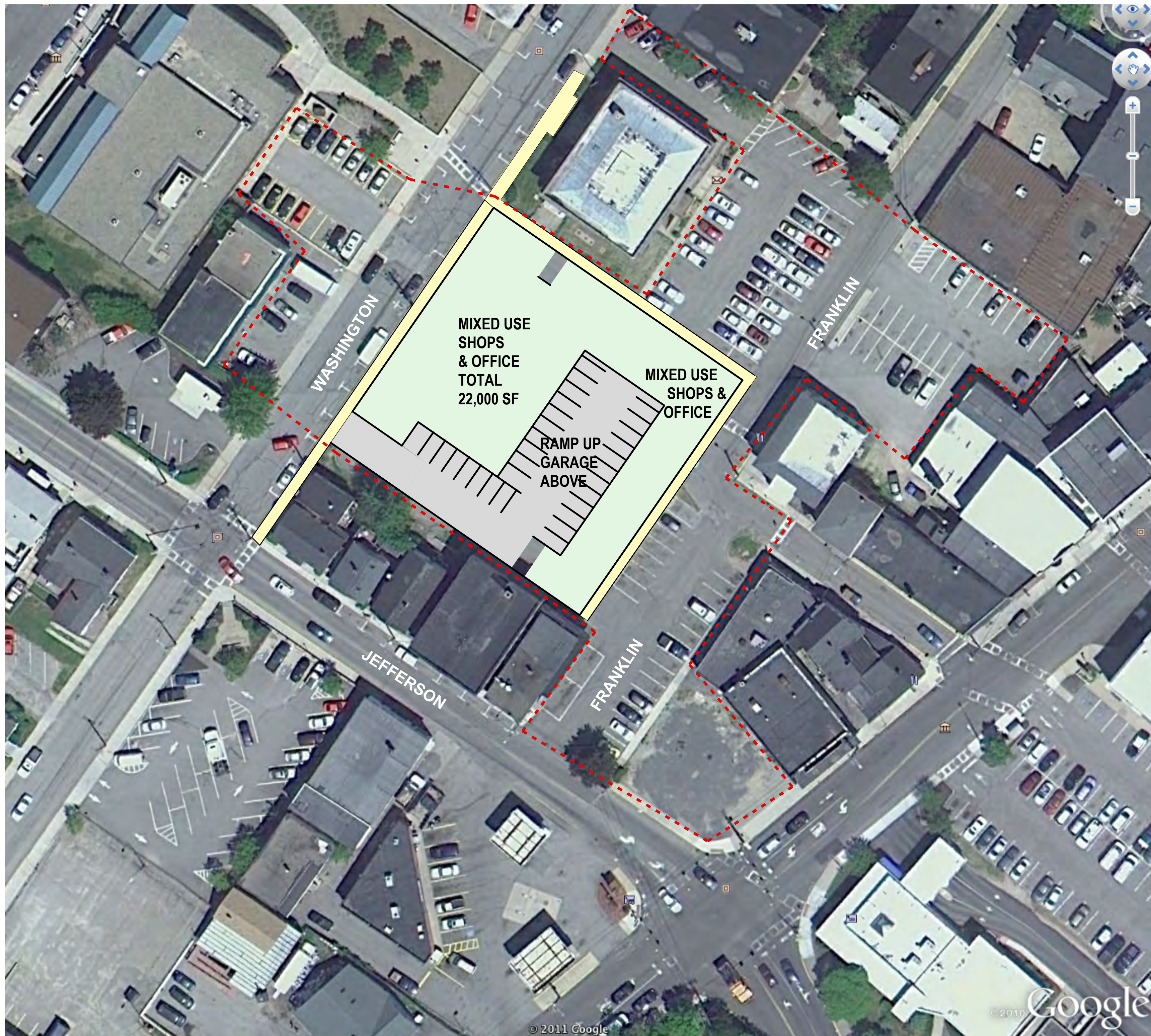












**AREA OF CONTIGUOUS
PARKING LOTS IN CORE
DOWNTOWN = 105,000 SF**

MIXED USE DEVELOPMENT NOTES

1. GARAGE
5 LEVEL / 4 STORY = 272
LESS 65 CARS AT GRADE = 207 NET
2. RESIDENTIAL
3 FLOORS - 21 UNITS - 18,500 SF
3. OFFICE
3 FLOORS - 21,900 SF
4. GROUND FLOOR SHOPS /
COMMERCIAL - 22,000 SF

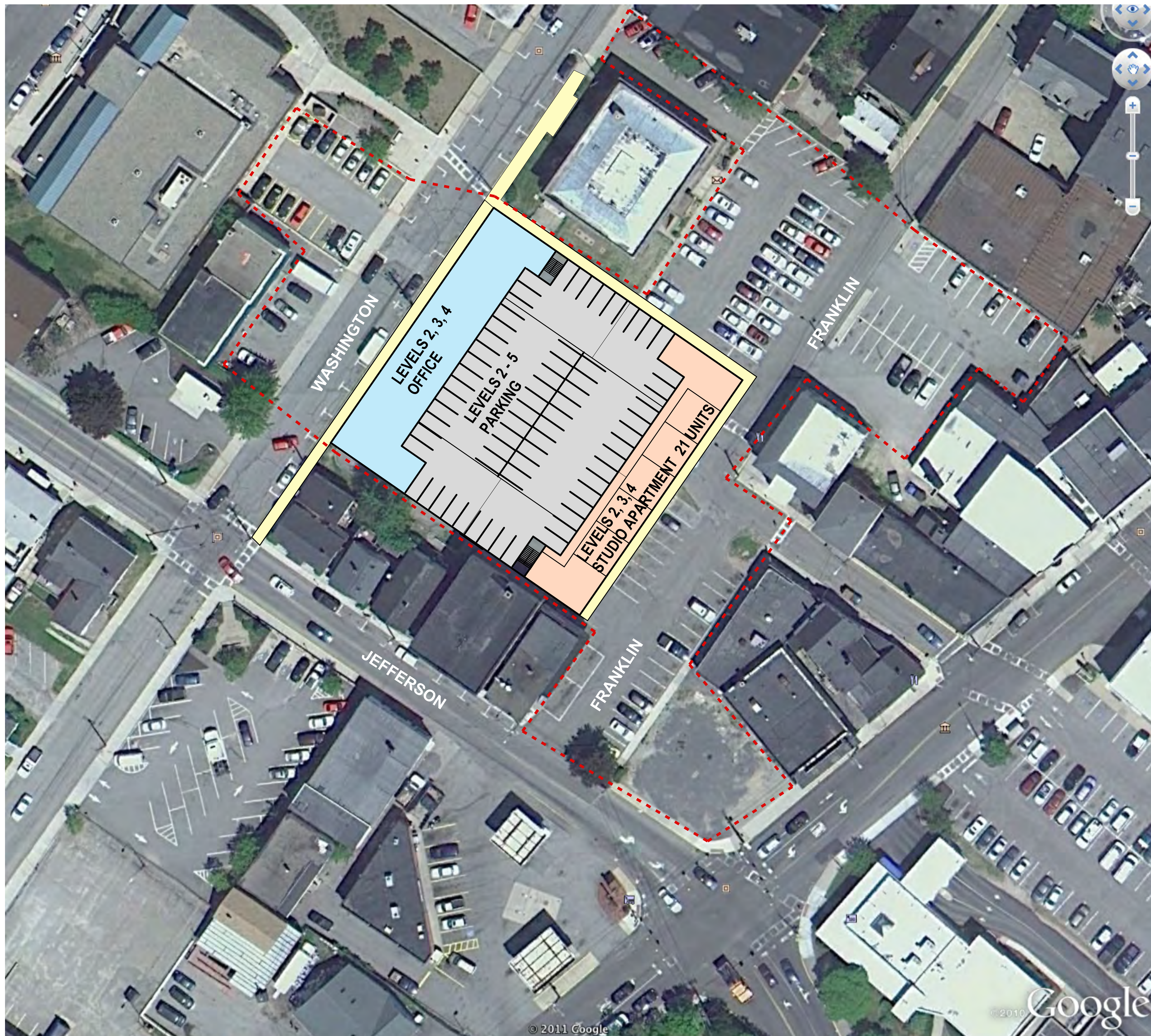
GROUND FLOOR PLAN

CONCEPT 7

SITE 2

WINTON SCOTT ARCHITECTS

3.20.12



AREA OF CONTIGUOUS
PARKING LOTS IN CORE
DOWNTOWN = 105,000 SF

MIXED USE DEVELOPMENT NOTES

1. GARAGE
5 LEVEL / 4 STORY = 272
LESS 65 CARS AT GRADE = 207 NET
2. RESIDENTIAL
3 FLOORS - 21 UNITS - 18,500 SF
3. OFFICE
3 FLOORS - 21,900 SF
4. GROUND FLOOR SHOPS /
COMMERCIAL - 22,000 SF

UPPER FLOOR PLANS

CONCEPT **7**

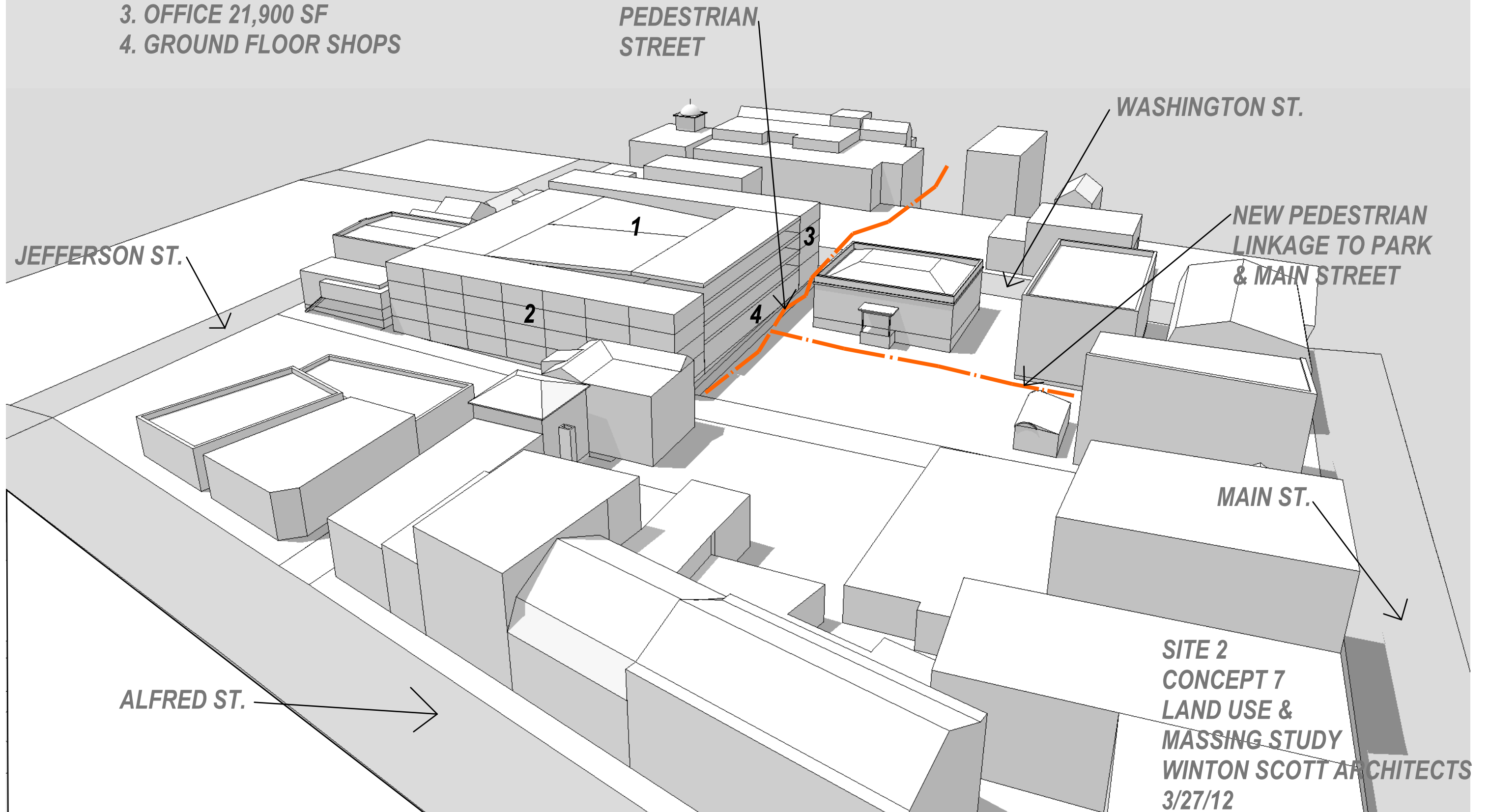
SITE 2

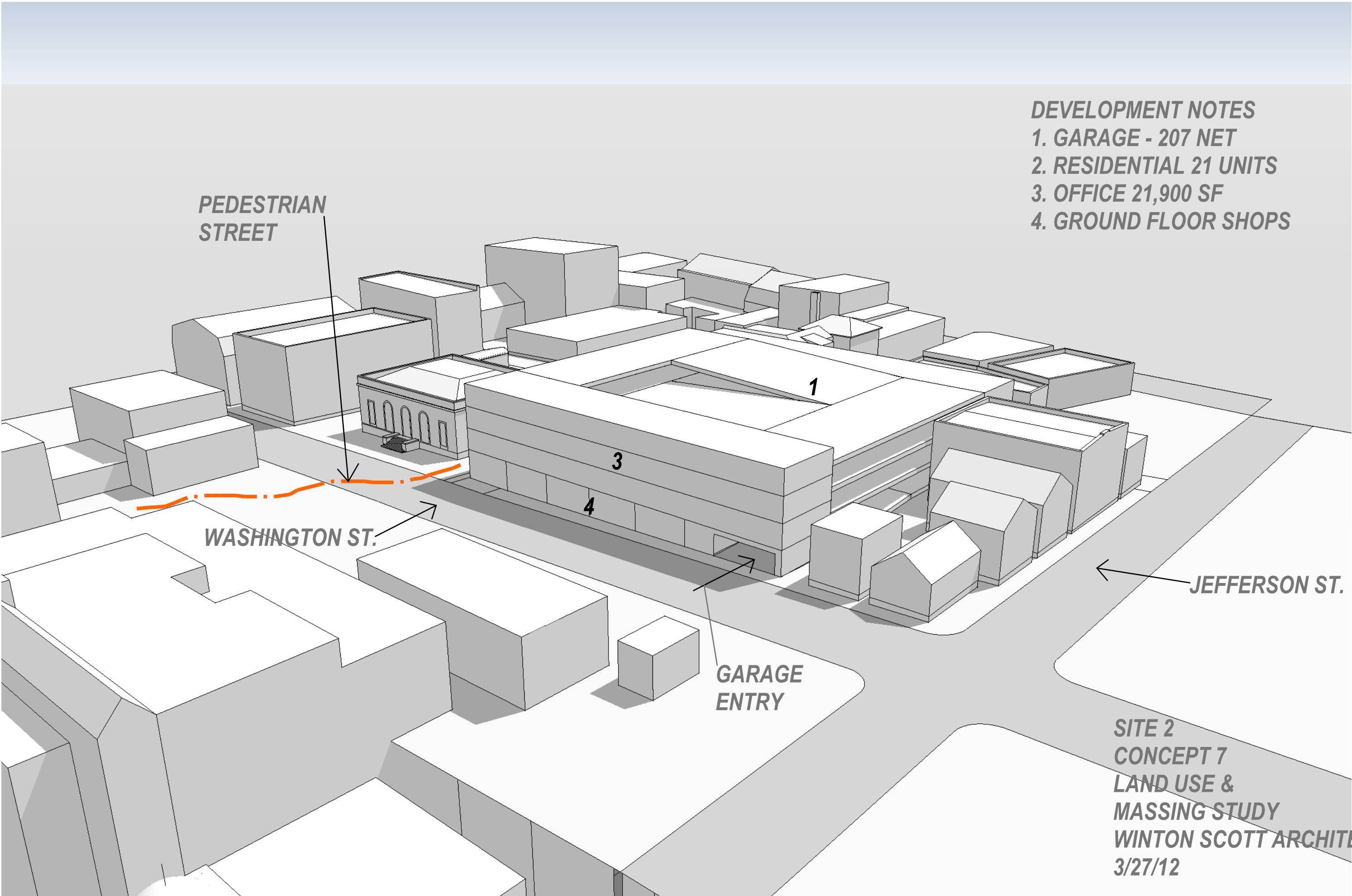
WINTON SCOTT ARCHITECTS

3.20.12

DEVELOPMENT NOTES

- 1. GARAGE - 207 NET
- 2. RESIDENTIAL 21 UNITS
- 3. OFFICE 21,900 SF
- 4. GROUND FLOOR SHOPS





- DEVELOPMENT NOTES**
- 1. GARAGE - 207 NET
 - 2. RESIDENTIAL 21 UNITS
 - 3. OFFICE 21,900 SF
 - 4. GROUND FLOOR SHOPS

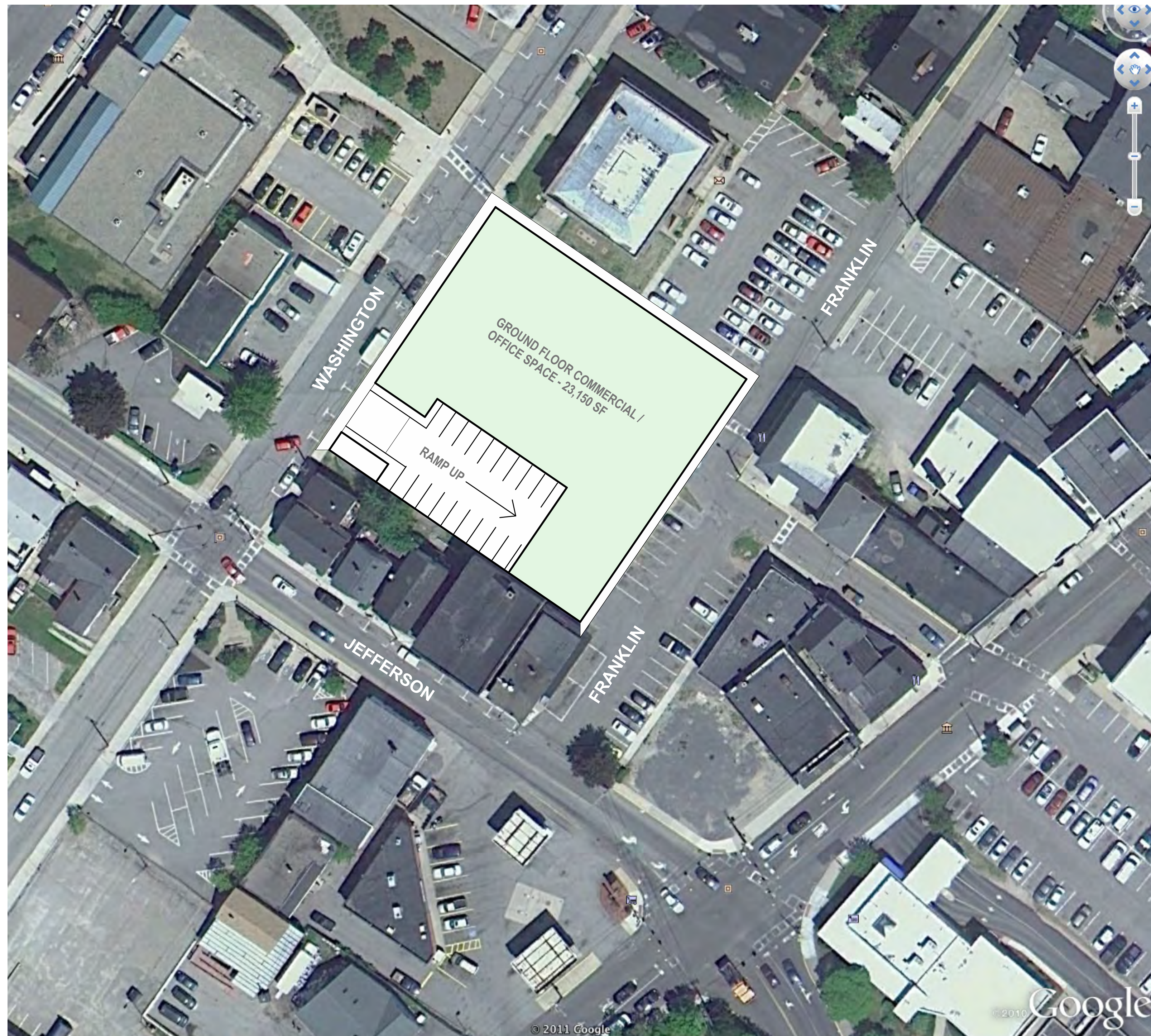
PEDESTRIAN STREET

WASHINGTON ST.

JEFFERSON ST.

GARAGE ENTRY

SITE 2
CONCEPT 7
LAND USE &
MASSING STUDY
WINTON SCOTT ARCHITECTS
3/27/12



MIXED USE DEVELOPMENT NOTES

1. GARAGE
5 LEVEL / 4 STORY = 330
LESS 65 CARS AT GRADE = 265 NET
NEW PARKING SPACES
2. GROUND FLOOR COMMERCIAL /
OFFICE SPACE 23,150 SF
3. UPPER FLOORS 2, 3, 4
OFFICE SPACE 28,800 SF

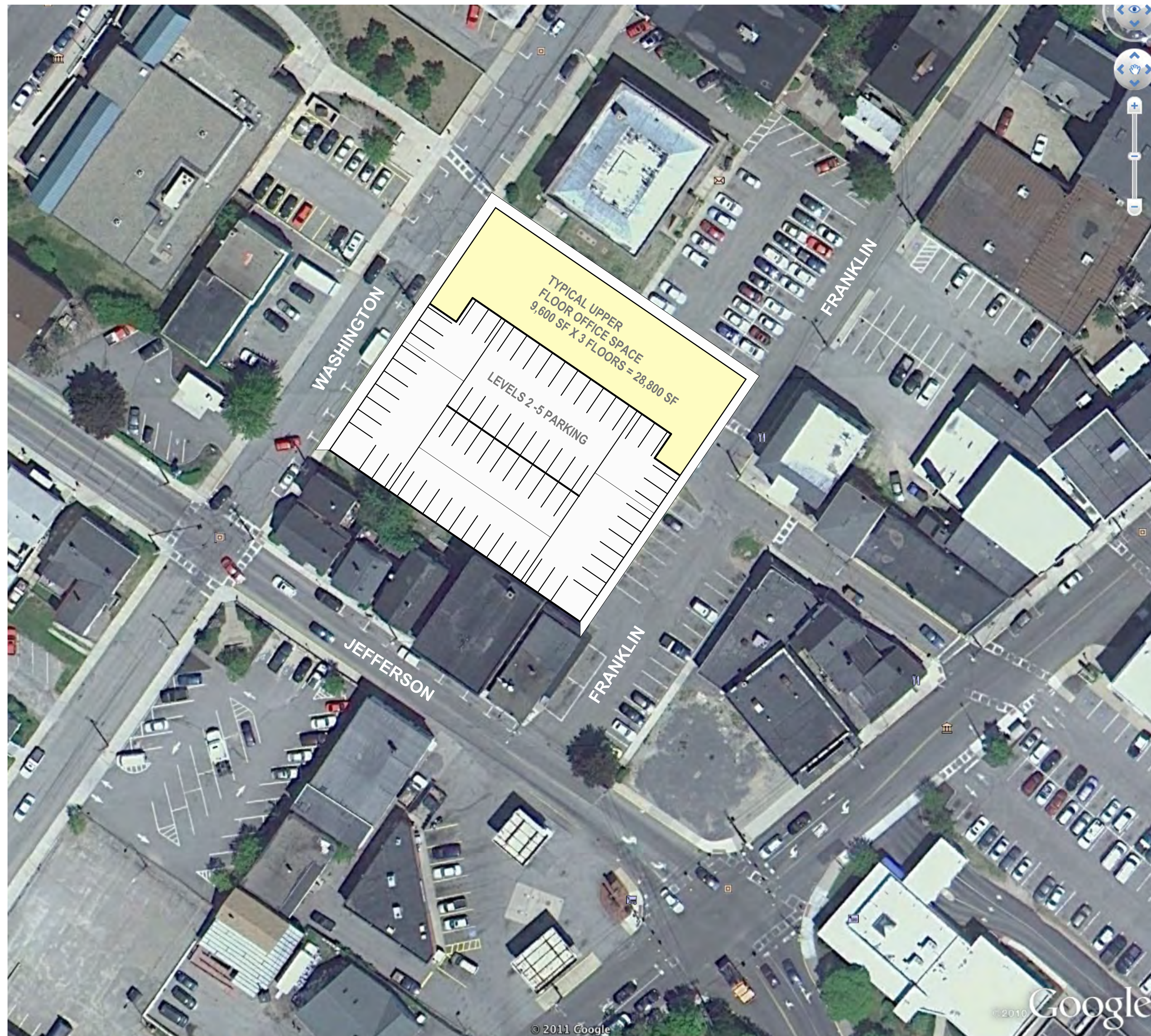
GROUND FLOOR PLAN

CONCEPT **8**

SITE 2

WINTON SCOTT ARCHITECTS

4.04.12



MIXED USE DEVELOPMENT NOTES

1. GARAGE
5 LEVEL / 4 STORY = 330
LESS 65 CARS AT GRADE = 265 NET
NEW PARKING SPACES
2. GROUND FLOOR COMMERCIAL /
OFFICE SPACE 23,150 SF
3. UPPER FLOORS 2, 3, 4
OFFICE SPACE 28,800 SF

UPPER FLOOR PLAN 2, 3, 4

CONCEPT **8**

SITE 2

WINTON SCOTT ARCHITECTS

4.04.12

conference center
68,000 sf

winter gardens

river gardens
pedestrian bridge

hotel / apartment
towers

river gardens

surface parking

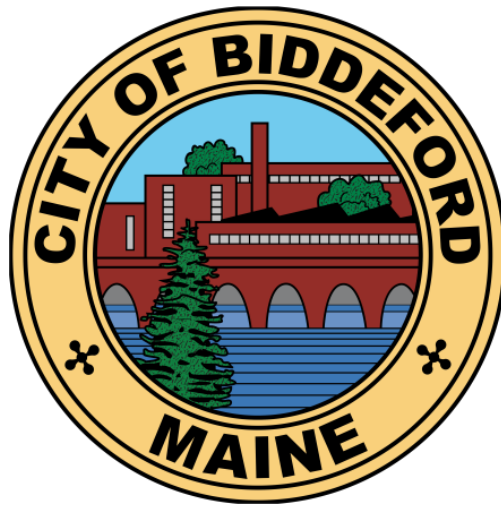
MERC SITE USE STUDY 1
CITY OF BIDDEFORD
WINTON SCOTT ARCHITECTS
NOVEMBER 24, 2012

Biddeford Public Parking:

An Analysis of the Real Costs of Free Parking

and

Implications on Downtown Design



May 20, 2016

Prepared by:
Biddeford City Staff

Executive Summary

Downtown revitalization is complex. There is an effective role for municipal government in the process. When successfully done, the policy decisions made by municipal leaders will help guide and shape the private sector investments. Those policy decisions will shape the economics of downtown especially who pays and who benefits from the policies.

Parking policy is one of the main influences on downtowns. Contrary to popular belief, 'free parking' is anything but free. Free parking is free to the consumer of the space. It is not free at all to the ones that pay the bills in the community. In the case of Biddeford, it is the property taxpayers. Every penny of the estimated cost is paid for by property taxpayers, whether or not, the taxpayer ever parks their vehicles in downtown or not. At the same time, the out of town employees that parking in the downtown are indeed getting the parking space free of charge.

Parking policy goes beyond dollars and sense. Many do not understand the complex relationship between parking, pedestrians, and traffic within a downtown. All of these either help to create energy, excitement and a unique experience for the visitor or they take away from those items. No matter how hard the community or private sector tries, surface parking lots will never be a contributor to the downtown experience. It is the experience that will make Biddeford's historical downtown the envy of so many others or just another mill community's downtown. Policy decisions will significantly determine the future.

The City has invested significantly in previous reports to determine the *demand* of parking in the future. The two principle reports are found on the City's web site in their entirety. For the purpose of understanding the long term costs associated with meeting the projected demand, those numbers were assumed to accurate. The costs, both in terms of economics and design implications, whether done by the private sector or the public sector, are essentially the same. The ability to reduce and guide the impacts appropriately when combined with the economic return to the City from property tax revenues, makes the municipality the more efficient and appropriate provider of the majority of the parking demand.

Summary of Previous Reports

Since 2006, the City has commissioned two different studies regarding parking challenges within the community. In November of 2006, Gorrill-Palmer Consulting Engineers issued their final report '*Downtown Parking & Traffic Study.*' In October 2012, Rich & Associates, Parking Consultants issued their final report '*Downtown Parking Study.*' These studies are available on the City's website.

The later study broke the report into two main study areas. The first was the so-called 'mill district'. The second consisted of the balance of the downtown area.

The methodology of the 2012 (Rich) report was to analyze parking from both an occupancy as well as turnover basis. It also determined the future demand, based on the changes that were ongoing in the two respective areas. A customized demand list was developed based on square foot usage and by types of usage. That customized demand list resulted in less parking requirements than City Code. A copy of the comparison between the two can be found in Appendix A. Restated, by using this approach, the projected demand was decreased when compared to the current City Codes.

The report further broke down the demand for parking in the identified downtown area by city blocks. Based on the analysis, there were blocks that had more available parking than demand. There were other blocks that had excessive demand for the available spaces. Combined, the report projected a surplus (in the downtown area only, excluding the mill development) of 200 vehicles. Based on growth rate of **xxx**, it predicted in 5 years the surplus would be reduced to 141 spaces in five years and 81 in ten years. The exact location (based on the block by block analysis) can be visually represented in Appendix B.

The mill district analysis is quite the opposite. Based on the forecasted growth, in five years (2017) 1,203 spaces would be needed. The report identified 456 spaces that were available, leaving a shortfall of 753 new parking. For total build out, a total of 2,572 spaces would be needed.

To calculate the spaces needed, the study used a basis of 2.08 spaces per 1,000 square feet of new/redevelopment in the downtown area. For the mill district, the factor was 1.65 spaces per 1,000 sq. ft. As a reference, at the time of the report, it was estimated that 52,609 vacant square feet existed in the downtown area. The estimate for the mill district was 660,000 sq. ft.

Update of Vacant Space

Since the publication of the Rich report, a number of properties that were previously vacant are no longer. As of the time of this report, City staff is estimating that the current vacant square footage is **xx** for the downtown and **xx** for the mill district.

Downtown Development: Why Parking Matters

Biddeford residents have a chance to do something that so few communities ever have the opportunity to do: **redefine the image of the community based on their downtown**. A critical contributor to the new image will be parking policy.

There is no need to revisit the core foundation of the most recent image of Biddeford's downtown (and hence, a significant component of the overall City's reputation). The giant smoke stack from the former Maine Energy facility reminds the community of the impact that operation had on the City for the nearly three decades it existed.

Prior to the Maine Energy plant, the dominance of the century and half of the brick mills along the Saco River provided the foundation of Biddeford's framework; a very close community of hard-working, family-oriented and community based village. It is well accepted that a strong mill presence equated to a sense of familiarity among the community. For all of the challenges that the millwork might have brought, a sense of place existed.

The decline of the mills and continued presence of the trash incinerator changed the lens used by the outside world to view the strong men and women of Biddeford and the place they were proud to call home. Gone were the economic advantages.

The vast majority of people that worked in the mills during the peak walked to work. Our downtown grew up based on the ability to move people on foot, not in automobiles. Our more seasoned residents will talk about the 'good ole days' of downtown when 'the sidewalks were filled with people'. Most would agree that this is not a statement based on utopia view of yesteryear but a factual observation.

Experts have been arguing for years that downtowns that focus on automobiles and not the people will be far less successful. In her writing for the April 1958 Fortune Magazine, Jane Jacobs wrote *"The user of downtowns is mostly on foot, and to enjoy himself he needs to see plenty of contrast on the streets."* Her essay 'Downtown is for People' is still being used for the insight it provided into the planning and design for successful downtowns. *'The removal of the cars is important only because of the great opportunities it opens to make the streets work harder and keep downtown activities compact and concentrated,'* she commented.

While this report is not designed to capture all of the important aspects of downtown design and successful revitalization, parking policy and more to the point, *how that parking policy dictates land use and vehicle movement*, may be the most important contributor to a downtown's success. When considering *'...what makes a city center magnetic, what can inject the gaiety, the wonder, the cheerful hurly-burly that make people want to come into the city and linger there...'* parking policy can, and will make or break the downtown. As such, it will influence the future of Biddeford's new refined image.

Successful downtowns have understood the importance of:

- using streets and alleys as part of the visible activity of downtowns; closing secondary narrow roads to become pedestrian havens (such as Franklin and sections of Federal Streets);
- the creation of downtown squares with distinct identity and 'local color';
- recognizing the importance of 'two shift' downtowns (and related foot traffic) that encourages night life economic activity as well as the day time office crowd; such integration increases vibrancy and safety;
- impacts the neighborhoods significantly around them;

- secure a residential base in the downtown, often argued to be in the 5% of the total community population;
- encourages multi-functional downtowns, where the mixer of economic activity and the people involved keeps the downtown economical viable and safe (more eyes on the street);
- encourages a strong arts presence;
- leverages the heritage resources of the downtown; finds ways to reinvest into the underutilized buildings that are unique that provides a certain energy and feel that newer construction cannot replace;
- captures the natural beauty and exposes those that live, work, play and visit the downtown to those resources, much like the planned river walk;
- become unique statements of the place and the community that people love being part of, even if it is only for the limited time that they visit;
- creates a sense of energy in all that chose to enter its boundaries; and
- creates a dynamic and organic sense of continuous activities and change while holding true to the unique features that make duplication impossible.

Biddeford's downtown is blessed with so many gifts. It contains:

- historically significant structures that go beyond the significance of the mill district;
- city blocks of different shapes and sizes;
- a growing residential presence that includes a social-economic mix that is necessary to achieve downtown resilience and economic vitality;
- a riverfront, including the majestic falls, which are being reintroduced to the community through the river walk plans;
- a growing 'arts' presence;
- an economic upturn that is encouraging investment and making difficult restoration projects viable; and
- significant property owned by the city that will become a signature and catalytic project; the 'tipping point' for accelerated private investment within the downtown and the adjacent neighborhoods.

Parking Policy: Does It Encourage or Discourage Pedestrians?

Most accepted that the core mission of a parking policy for a downtown is to encourage those that elect to travel to the downtown by personal vehicle the opportunity to do so. Some would argue that it is the sole purpose. The empirical argument has been made that a key to downtown is pedestrians. One could conclude that the secondary and more strategic goal should be to examine how that policy impacts pedestrians.

Biddeford's parking policy is one that can be best described as *laissez faire* or no direct local government involvement. That policy worked for many years. Other than the demand by

owners of converted mill housing, there was little pressure to be involved. The multi-unit apartment buildings with no available parking were only attractive to tenants that did not own a vehicle. In the last couple of decades, a limited number of surface parking lots have been created to help address that market. However, with rare exception, the creation of the lots probably was driven by the appalling condition of the existing structures on the property than any other factor. Those lots were created as free parking and remain so today.

Parking remains free in the community, at least free to the consumer of the space. Some parking is limited by time. Compliance with time restrictions is done through enforcement. The current and growing shortfall is forcing businesses to remove structures to create parking. The negative perception of parking challenges is growing. That perception (and reality) is providing a damper to the growth in the mill district and downtown area.

'The High Cost of Free Parking'

It is often said that there is no such thing as a free lunch. Public parking is clearly an example of that. Ironically, Donald Shoup's (UCLA Professor) 2005 book *'The High Cost of Free Parking'* was so popular that it got released in paperback. The 750 page highly critical analysis of how municipal governments generally and Planners specifically, approached the challenge of dealing with parking issues is considered the bible in dealing with urban parking issues.

Shoup's book is based on research that he conducted. There are several points that are relevant to the Biddeford policy discussion. Shoup's research demonstrated that:

- in 2002, the 'cost' of free parking was estimated between \$127 billion and \$374 billion; as a comparison, the 2002 federal Medicare expenditure was \$231 billion
- 945,000 miles were driven by vehicles circulating around looking for free curbside parking places in one 15 block section of Los Angeles *over a 1 year period* (the equivalent distance of driving around the world 38 times)
- Converting the costs to a per mile driven basis, the estimate is that it costs the average driver between \$0.05 and \$0.14 for every mile driven to subsidizes free parking.
- land use regulations (as it relates to parking) is often based on limited or no actual analysis to determine the real need. This reality will lead to:
 - increased cost of development;
 - removal of structures to create parking lots;
 - diminishes economic viability of a downtown;
 - decreases the available housing in a downtown area;

Shoup's work is based mostly on much larger and more urban communities on the west coast. The vast difference between our community and those studied certainly will allow critics to argue the relevance. A great sound bite will be *'can you believe the City is trying to say that San Francisco and New York City parking issues should be the basis to make parking decisions for Biddeford?'* Hence, staff had to justify the local cost factors.

Biddeford's Costs for Free Parking

Staff has analyzed the costs associated with parking in the community. Given that all parking is free in the community (except for parking along the community's ocean beaches in the summer), the costs represent the impact on the City's property taxpayers. It should be noted that the costs are strictly developed for the downtown area of the community.

There are broadly two categories of costs. The first is the cost of maintaining existing spaces. The second is the actual construction of new spaces.

The cost to maintain spaces includes signs, painting, mowing, sweeping, winter maintenance, and repairs. The annual estimated budget for these items is \$32,125. Of significance in these numbers is the fact that sweeping and snow removal for the on street spaces *is not included*. The total estimated area for all city parking is 154,675 sq. ft. The total annual cost for maintenance is therefore \$0.21 per square foot for public parking. Translating these costs into new surface lots would result in the following annual costs:

# Spaces	Dimensions (ft)	Maint. Cost/Yr
20	128 x 100	\$ 2,688
55	164 x 140	\$ 4,822
226	418 x 216	\$ 18,960
296	418 x 276	\$ 24,227
1,904	1,284 x 532	\$143,448
1,926	1,176 x 592	\$146,200

One can argue that the downtown area would receive those services regardless if on street parking existed or not. Others can argue that it is only because of the on street parking that such service is rendered. We will let the readers decide. The average annual cost for snow removal over the last five years has been \$228,997. The on street parking inventory was estimated to be 267 in the 2012 Rich study. Even using half of the snow removal budget would increase the total, it would add annually \$428.66 of city costs to each on street parking space.

Construction of new surface parking lots has several variables to consider. Those include:

- the actual construction of the lot
- cost of land
- cost of any structure on the land
- cost of the demolition of the structure, including any hazardous materials
- lost property tax revenues (if private)

The actual construction of the lot will depend on the underlying land beneath the lot. For the purpose of calculating estimated costs, the engineering assumptions are:

- a flat site

- no bedrock removal
- no irrigation for any landscaping with very limited landscaping
- 10 foot setback for property line
- standard storm water drainage (nothing complex that could significantly increase the cost)

Based on these parameters, the following chart captures the estimated construction costs for various size parking lots:

# Spaces	Dimensions (ft)	Cost/Space	Total
20	128 x 100	\$6,250	\$125,000
55	164 x 140	\$6,250	\$343,750
226	418 x 216	\$6,540	\$1,478,040
296	418 x 276	\$6,540	\$1,935,840
1,904	1,284 x 532	\$5,945	\$11,319,280
1,926	1,176 x 592	\$5,945	\$11,450,070

The following chart is the estimate for the cost of the land to acquire the properties based on the current use of the land:

Spaces	Commercial (\$40.76/sqft)	Industrial (\$25.92/sqft)	Multi-family (\$33.89/sqft)	Residential (\$24.91/sqft)
20	\$ 521,728	\$ 331,776	\$ 433,792	\$ 318,848
55	\$ 935,850	\$ 595,123	\$ 778,114	\$ 571,934
226	\$ 3,680,139	\$ 2,340,265	\$ 3,059,860	\$ 2,249,074
296	\$ 4,702,400	\$ 2,990,339	\$ 3,909,822	\$ 2,873,817
1904	\$ 27,842,667	\$ 17,705,641	\$ 23,149,852	\$ 17,015,722
1926	\$ 28,376,786	\$ 18,045,297	\$ 23,593,947	\$ 17,342,143

The following chart provides the estimates for the demotion of the structures on the property, by current use. The demolition cost is estimated by dividing the estimated tons of debris by 180 tons (estimated 6 loads/day at 30 tons/load) plus one day for mobilization and demobilization, rounded to the nearest full day. As noted below, these estimates do not include any additional charges for such items as lead paint, asbestos or other typical costs found in older structures.

Spaces	Commercial (\$40.76/sqft)	Industrial (\$25.92/sqft)	Multi-family (\$33.89/sqft)	Residential (\$24.91/sqft)
20	\$ 521,728	\$ 331,776	\$ 433,792	\$ 318,848
55	\$ 935,850	\$ 595,123	\$ 778,114	\$ 571,934
226	\$ 3,680,139	\$ 2,340,265	\$ 3,059,860	\$ 2,249,074
296	\$ 4,702,400	\$ 2,990,339	\$ 3,909,822	\$ 2,873,817
1904	\$ 27,842,667	\$ 17,705,641	\$ 23,149,852	\$ 17,015,722
1926	\$ 28,376,786	\$ 18,045,297	\$ 23,593,947	\$ 17,342,143

Tearing down the structure is just one part of the story. The demolition materials need to be disposed of. The following chart provides the estimated cost for demolition disposal. The key assumptions for these estimates are:

- every 50 sq ft of space will yield 1 ton of disposal
- tractor trailer disposal is \$110 per ton
- dumpster disposal is \$160 per ton
- disposal costs are estimated by dividing the total building area by the total land area for each property use to obtain a building to land ratio. The building to land ratio is then multiplied by the surface parking area to obtain a sq ft value for demolition. The demolition value is then divided by 50 sq ft/ton to obtain disposal tons. The tons are multiplied by the lower rate of \$110 to obtain disposal costs.

Spaces	Commercial	Industrial	Multi-family	Residential
20	\$ 37,555	\$ 36,724	\$ 39,749	\$ 27,558
55	\$ 63,911	\$ 62,421	\$ 67,846	\$ 43,480
226	\$ 242,002	\$ 236,142	\$ 259,975	\$ 163,987
296	\$ 308,391	\$ 300,904	\$ 330,663	\$ 208,289
1904	\$ 1,811,432	\$ 1,759,599	\$ 1,940,999	\$ 1,210,440
1926	\$ 1,844,701	\$ 1,794,518	\$ 1,979,014	\$ 1,233,475

Converting taxable property to public parking surface lots results in a loss of property taxes. Property tax loss is calculated by dividing the total current taxes (assessed value multiplied by \$19.47/thousand) for each property use by the total sqft of each property use to obtain a per sq ft tax rate. The per sq ft tax rate is then multiplied by the various surface parking areas. The tax rates are as follows:

Commercial Cost/Sq Ft	Industrial Cost/Sq Ft	Multi-family Cost/Sq Ft	Residential Cost/Sq Ft
0.7937	0.5047	0.6599	0.4850

The lost taxes by property use and parking lot size are as follows:

Estimated Lost Taxes				
Spaces	Commercial (Tax/sqft - 0.7937)	Industrial (Tax/sqft - 0.5047)	Multi-family (Tax/sqft - 0.6599)	Residential (Tax/sqft - 0.485)
20	\$ 10,159	\$ 6,460	\$ 8,447	\$ 6,208
55	\$ 18,223	\$ 11,588	\$ 15,151	\$ 11,136
226	\$ 71,662	\$ 45,568	\$ 59,581	\$ 43,790
296	\$ 91,568	\$ 58,226	\$ 76,131	\$ 55,953
1904	\$ 542,167	\$ 344,755	\$ 450,770	\$ 331,298
1926	\$ 552,568	\$ 351,368	\$ 459,417	\$ 337,653

The total estimated construction cost for surface parking lots is summarized below. As noted throughout the individual calculations that contributed to the final costs summary, it is

more likely than not, that the costs are understated. To support this statement, most of the downtown properties would have some special waste (lead paint, asbestos, etc) involved in the demolition costs because of the era in which the buildings were built. In addition, bedrock issues and storm water issues are more common than not. Notwithstanding those additional costs, the total construction estimates are as follows:

Total Cost - by Parking Area

Spaces	Commercial	Industrial	Multi-Family	Residential
20	\$ 694,443	\$ 499,961	\$ 606,988	\$ 477,614
55	\$ 1,361,734	\$ 1,012,882	\$ 1,204,862	\$ 970,299
226	\$ 5,471,842	\$ 4,100,015	\$ 4,857,457	\$ 3,934,890
296	\$ 7,038,198	\$ 5,285,308	\$ 6,252,456	\$ 5,073,899
1904	\$41,515,545	\$31,129,275	\$36,860,901	\$29,876,740
1926	\$42,224,124	\$31,641,252	\$37,482,448	\$30,363,340

Total Cost - by Parking Space

Spaces	Commercial	Industrial	Multi-Family	Residential
20	\$ 34,722.13	\$ 24,998.03	\$ 30,349.38	\$ 23,880.72
55	\$ 24,758.81	\$ 18,416.04	\$ 21,906.58	\$ 17,641.80
226	\$ 24,211.69	\$ 18,141.66	\$ 21,493.17	\$ 17,411.02
296	\$ 23,777.70	\$ 17,855.77	\$ 21,123.16	\$ 17,141.55
1904	\$ 21,804.38	\$ 16,349.41	\$ 19,359.72	\$ 15,691.56
1926	\$ 21,923.22	\$ 16,428.48	\$ 19,461.29	\$ 15,764.97

These costs do not assume the ongoing maintenance costs or the lost revenue from the removal of current taxpaying properties. Ironically, as the downtown continues its economic transformation, the value of the properties will increase. Even with a flat tax rate, those properties will continue to provide more tax revenues to the City than the current tax bill. As such, the downtown will provide a greater burden of the community's bills, including education. While being true, the loss of tax revenues is held as a constant and not an increasing.

Annual Maintenance Costs & Lost Taxes

Spaces	Commercial	Industrial	Multi-Family	Residential
20	\$ 12,847	\$ 9,148	\$ 11,135	\$ 8,896
55	\$ 23,045	\$ 16,410	\$ 19,973	\$ 15,957
226	\$ 90,622	\$ 64,529	\$ 78,542	\$ 62,750
296	\$ 115,795	\$ 82,454	\$ 100,359	\$ 80,181
1904	\$ 685,615	\$ 488,203	\$ 594,218	\$ 474,746
1926	\$ 698,768	\$ 497,568	\$ 605,617	\$ 483,853

Public Investment in Surface Lots

According to the 2012 Rich report, the City currently has 276 parking spaces in current surface parking lots. Generally, the lots were created by removing multi-family apartment buildings. By using the calculations of the costs, nearly \$70,000 in annual property tax revenues have been removed in order to provide the spaces or *\$253.62 per space per year*.

In terms of today's costs, the total investment in those spaces would be in excess of \$4,000,000. Repaying that cost on a twenty year note would require an investment of approximately \$1,000 per space per year for 20 years.

Further Example of Impact on Property Taxes

Recently, the Mills at Pepperell tore down one of the historical mills on the complex, primarily for parking purposes. That building was assessed at \$1,719,800 and generated \$33,484.50 in taxes. If that building had been restored to the same level as the other mills on the campus, it is estimated that the new value would have become \$4,768,900. Using the 2015-2016 tax rate, it would have generated \$92,850.48 in annual taxes.

Beyond the property taxes that were lost and the historical structure that was also lost, there are other implications. The property generated jobs, income and economic activity. It further contributed to the downtown energy and environment. Simply put, a parking lot does not contribute to the downtown experience.

Shoup Supporter's Recommendations

Those that believe in the Shoup argument will support the following recommendations that he makes. Those include:

- encourage on street parking for the guests, visitor and shoppers
- encourage employees, service workers and others to use more remote (still within reasonable walking distance) all day parking locations
- establish a premium on street parking to discourage all day parking
- encourage downtown investments to be able to contribute to a parking fund as an alternative to creating private sector parking; will discourage the demolition of buildings and encourage more investment within the community
- shift to the user paying for the parking (or some of the parking costs) instead of the property taxpayers
- consider using some of the parking revenue (if free parking no longer exists) to be returned to the part of the community that generated the costs; for example, if a downtown municipal corporation (downtown district) existed, some of the funds would be earmarked for that group to use for continuous improvement within the district

Conclusion

A thriving and growing downtown is a wonderful thing. Not only is Biddeford's downtown an example but it is also in a transition of significance. It is gained recognition as the

place to invest, to visit and to become part of it. All of this comes with its challenges. The most notable is the community's need to address the parking policy. Ironically, a lack of a parking policy is still a policy. Most will argue that it is worse kind of policy and has terrible implications for the future of the downtown. Some of those implications, such as tearing down buildings by the private sector, are nearly impossible to reverse.

Free parking is anything but free. Whether one looks at the national experts on the issue or simply looks at internally driven numbers for the City of Biddeford contained in the report, the property taxpayers in the community are paying for the privileges of people in the downtown to park free. If you are a property taxpayer and you use one of the free spots on a fairly regular basis, you probably see the current policy as one that works for you. On the other hand, if you seldom park in the downtown and pay taxes in the community, the non-residents that get to park free appreciate your financial contribution to their bottom line.

Parking in the downtown, more specifically, parking policy is more complex than who is paying for the parking. It will dictate whether the private sector will remove structures to create parking. It will determine whether there will be convenient parking for shoppers. It will help to determine the 'flow, feel and fabric' of the downtown. Successful downtowns have figured out that parking needs to be an integral part of downtown design.

Surface parking lots are 'anti-downtown.' People go to downtowns for the energy and excitement. No matter how hard one tries, you cannot create surface parking lot that provides energy and excitement. If they do, it is probably negative energy and excitement. They take away buildings, green space and parks that do contribute positively to the *'experience'*.

A stated parking policy, whatever it might be, should be established. While complex in its implications, a better understanding of the complexities is necessary. Public engagement and better understanding by all stake holders is necessary to develop a policy that will not only serve those in the downtown area but also those that are currently paying for the free parking.

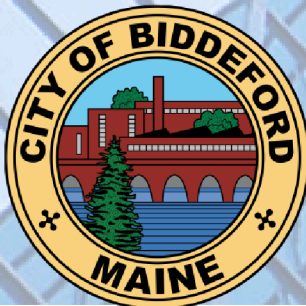
Appendix A
Parking requirements of city code vs 2012 Rich report

Appendix B 2012 Surplus/Deficit of Downtown Parking by Block



Parking Structure

Strategy to Keep Residents From Paying Costs



November 1, 2016

Presentation Goals

- Understand the estimated costs associated with parking structure
- Understand how it can be paid for without current taxpayers paying

Presentation Does Not Do

- Does not argue the merits of the need for a structure
 - May 20, 2016 report covered (along with the current costs to taxpayers)
- Does not discuss location(s)

Parking Structure 101

- Efficient design is based on limiting wasted space (minimizing non-parking stall spaces)
- Efficient design is 100 spaces per floor
- Costs escalate if underground
- Costs significantly increase if over 7 levels

Costs

- Construction costs
 - Engineering
 - Structure
 - Site related costs
- Operational costs
 - Debt and interest
 - Fee collection system
 - Maintenance
 - Capital reserve

Construction Costs*

- Structure
 - \$18,000 to \$22,000 per space
 - 15% to 15% engineering
 - Site costs:
 - \$250,000 to \$1,500,000

Construction Costs

(Table C)

<u>Budget</u>	<u>Low Estimate</u>	<u>High Estimate</u>
Construction	\$7,200,000	\$11,000,000
Engineering	\$360,000	\$1,650,000
<u>Site Costs</u>	<u>\$250,000</u>	<u>\$1,500,000</u>
Total	<u>\$7,810,000</u>	<u>\$14,150,000</u>

Revenue Bonds vs General Obligation (GO) Bonds

- Revenue bonds pledge on specific revenues to debt; estimated at 5%
- General obligation bond pledge all of the city's assets; estimated at 3.5%

Table E

Annual Payment Savings Revenue Bond vs GO Bond (Year 1)

	Revenue Bond	GO Bond	Savings
Low	\$711,686	\$593,072	\$118,614
Likely	\$945,000	\$787,500	\$157,500
High	\$1,289,419	\$1,074,516	\$214,903

Debt Payment (Year 1)

(Table D)

			Year 1	
			Rev Bond	GO Bond
	Bond Amount	Principle		
Low	\$7,907,625	\$316,305	\$395,381	\$276,767
Likely	\$10,500,000	\$420,000	\$525,000	\$367,500
High	\$14,326,875	\$573,075	\$716,344	\$501,441

Revenues

(Tables F and G)

Monthly Permits	Low	Likely	High
Garage	\$156,000	\$247,500	\$357,000
Surface Lots	\$73,500	\$120,000	\$175,500
Garage Hourly	<u>\$264,600</u>	<u>\$378,000</u>	<u>\$491,400</u>
	<u>\$494,100</u>	<u>\$745,500</u>	<u>\$1,023,900</u>

Garage			
Monthly Cost	\$40	\$55	\$70
Monthly Number	325	375	425
Hourly Rev (Mth)	\$22,050	\$31,500	\$40,950
Surface Cost	\$35	\$50	\$65
Surface Number	175	200	225

Annual Budget

(Table F)

	Low	Likely	High
Principle	\$316,305	\$420,000	\$573,075
Interest (Rev Bond)	\$395,381	\$525,000	\$716,344
Operating Costs	\$85,000	\$110,000	\$135,000
Sinking Fund	\$50,000	\$75,000	\$100,000
Total	<u>\$846,686</u>	<u>\$1,130,000</u>	<u>\$1,524,419</u>
Revenues			
Monthly Permits			
Garage	\$156,000	\$247,500	\$357,000
Surface Lots	\$73,500	\$120,000	\$175,500
Garage Hourly	<u>\$264,600</u>	<u>\$378,000</u>	<u>\$491,400</u>
	<u>\$494,100</u>	<u>\$745,500</u>	<u>\$1,023,900</u>

Funds Needed

(Table H)

Total Budget (Year 1)*			
	Expenses		
	Low	Likely	High
w/ Low Revenues	(\$352,586)	(\$635,900)	NA
w/ Likely Revenues	(\$101,186)	(\$384,500)	(\$778,919)
w/ High Revenues	NA	(\$106,100)	(\$500,519)
*Shortfall paid by TIF			

Available TIF Funds

		<u>FY18</u>	<u>FY19</u>	<u>FY20</u>	<u>FY21</u>	<u>FY22</u>
Expected Revenue		\$1,431,432	\$1,218,673	\$1,243,046	\$1,267,907	\$1,293,265
Required		\$150,000	\$200,000	\$200,000	\$200,000	\$200,000
Committed (tentative)		\$16,289	\$270,376	\$17,959	\$18,857	\$61,598
Available (less required)		\$1,281,432	\$1,018,673	\$1,043,046	\$1,067,907	\$1,093,265
Revised Available (included tent)		\$1,265,143	\$748,297	\$1,025,087	\$1,049,050	\$1,031,667
*carryforward included in FY 18		\$377,349				

Parking Structure Summary

- Can be built without any property tax support
- Will require support from TIF funds coming from downtown
- Can be built and comply with restrictions on parking meters

Year 1 Operating Costs

Table F

	Low	Likely	High
Principle	\$316,305	\$420,000	\$573,075
Interest (Rev Bond)	\$395,381	\$525,000	\$716,344
Operating Costs	\$85,000	\$110,000	\$135,000
Sinking Fund	\$50,000	\$75,000	\$100,000
Total	<u>\$846,686</u>	<u>\$1,130,000</u>	<u>\$1,524,419</u>
Revenues			
Monthly Permits			
Garage	\$156,000	\$247,500	\$357,000
Surface Lots	\$73,500	\$120,000	\$175,500
Garage Hourly	<u>\$264,600</u>	<u>\$378,000</u>	<u>\$491,400</u>
	<u>\$494,100</u>	<u>\$745,500</u>	<u>\$1,023,900</u>

Table G

Assumptions:

Garage			
Monthly Cost	\$40	\$55	\$70
Monthly Number	325	375	425
Hourly Rev (Mth)	\$22,050	\$31,500	\$40,950
Surface Cost	\$35	\$50	\$65
Surface Number	175	200	225

Table H

Total Budget (Year 1)*

	Expenses		
	Low	Likely	High
w/ Low Revenues	(\$352,586)	(\$635,900)	NA
w/ Likely Revenues	(\$101,186)	(\$384,500)	(\$778,919)
w/ High Revenues	NA	(\$106,100)	(\$500,519)

*Shortfall paid by TIF

Table I

	FY18	FY19	FY20	FY21	FY22
Expected Revenue	\$1,431,432	\$1,218,673	\$1,243,046	\$1,267,907	\$1,293,265
Required	\$150,000	\$200,000	\$200,000	\$200,000	\$200,000
Committed (tentative)	\$16,289	\$270,376	\$17,959	\$18,857	\$61,598
Available (less required)	\$1,281,432	\$1,018,673	\$1,043,046	\$1,067,907	\$1,093,265
Revised Available (included tent)	\$1,265,143	\$748,297	\$1,025,087	\$1,049,050	\$1,031,667

*carryforward included in FY 18 \$377,349

Structured Parking in Downtown Biddeford: A Consideration of Potential Sites

Downtown Task Force Subcommittee:

Bruce Benway
Steve Beaudette
Pete Lamontagne
Delilah Poupore
Mark Robinson
Julian Schlaver
Bill Southwick

January, 2017

Executive Summary

Downtowns are important in many ways. They are the heart of a community, and serve as centers for services, employment, and civic interaction. They symbolize a community to its residents, and to people throughout the region.

Community pride is not isolated to the impact of a downtown, but a downtown is clearly a cornerstone of that pride. Long-time Biddeford residents are acutely sensitive to this reality, and still lament an article that appeared on the front page of the Maine Sunday Telegram on February 27, 2000. Written by reporter Kelley Bouchard, the article was entitled “MERC: A Point of Reckoning for ‘Trash Town USA.’” Unfortunately, the article led a number of media stories in the subsequent decade that perpetuated that unfortunate label.

Then, however, the tide turned dramatically. Tangible, significant, and historic changes have occurred in Biddeford since the community made the strategic decision in 2012 to remove a trash-to-energy facility from its downtown. That positive momentum should continue.

The Downtown Task Force Subcommittee is charged with making recommendations to the Mayor and the City Council to help improve the downtown, and thus help improve what symbolizes Biddeford, a City that is diligently revitalizing itself with energy and imagination. As its mission applies to downtown parking, the Subcommittee has recognized that highly qualified experts have studied that issue in particular detail. Those experts have concluded that continuing the positive trends in downtown Biddeford depends on addressing a documented shortage of parking in the City’s downtown district.

The Subcommittee concurs. It reviewed the parking challenges intensely, as outlined in this report, and it used a detailed process to arrive at its recommendations. Throughout the Subcommittee’s process, it viewed the Mill District as an integral part of Biddeford’s downtown, not as a distinct and separate area. Together, the downtown and Mill District make up a single vibrant neighborhood, the future of which increasingly depends on its supply of parking.

The Subcommittee recommends:

1. Build a structured parking facility downtown.
2. Finance the facility in such a manner that will not burden taxpayers.
3. Locate the facility in one of two possible locations:
 - On city-owned property at 3 Lincoln Street;
 - Behind Lincoln Mill and adjacent to Pepperell Building 10, with access available from York Street and Saco Falls Way, identified here as Lot D/E.

Introduction

The City Council appointed the Downtown Task Force Subcommittee in May, 2016. The Subcommittee functions as an advisory body to the Mayor and the City Council. The Subcommittee's purpose is to examine issues of particular importance to the downtown area of the city, and then to provide comment or make recommendations to Council. To date, this group has submitted two recommendations to the City Council.

First, the Subcommittee stated its full support of the future phases of the RiverWalk, as an integral part of the redevelopment of the downtown and Mill District. This recommendation is in recognition of clear national trends in downtown revitalization, which place the very highest premium on attracting pedestrian traffic, on creating walk-able downtown configurations, and on enhancing natural community gathering spaces.

Second, in September of 2016, the Subcommittee issued a recommendation that the City initiate a far more robust communications strategy to inform the community of the many positive changes in downtown Biddeford. In recent years, policy decisions by the City Council, and economic development strategies pursued by city staff, have produced tangible and very positive results that can be measured with hard, quantifiable data. That progress is not as widely known as it might be and typically does not factor into community discussions as city leaders and citizens jointly discuss planning initiatives for the coming years. Biddeford residents should be made more aware of these positive changes. In summary, the City Council can be challenge when it makes policy decisions, because its constituents have not fully absorbed the direct connection between visionary policy decisions that must be made, and the actual and quantifiable economic progress that such decisions have been shown to yield. Briefly, below are some examples of quantifiable forward progress that recent policy decisions have produced. This progress supports the need for more parking downtown:

- The latest U.S. Census data shows that Biddeford is now the fastest-growing community in Maine for people under 30. The median age in Biddeford is 34, significantly lower than the median ages of 42.7 for Portland and 43.5 for the state as a whole. In a state well known for its rapidly aging population and a well-documented, decades-long exodus of young people, this is an outstanding and much-envied indicator that Biddeford is successfully transforming itself into "the place to be."
- Downtown commercial buildings are selling, on average, nearly 59 percent above assessed value, generating \$38.3 million in new value and \$716,000 in additional property tax.
- Residential properties are selling for 12 percent above assessed value, adding \$14.5 million in additional value and \$287,000 in taxes.
- On a routine basis, Biddeford now garners a large share of regional press exposure on the topic of downtown revitalization in Maine. As an example, an article in the Boston Globe, one of the nation's most respected newspapers, doesn't even mention the City of Saco. All the attention is on Biddeford.

This is extraordinary progress in just a few short years.

And so, after issuing recommendations on RiverWalk completion and City communications about progress in economic development, the Downtown Task Force Subcommittee has focused on parking in the downtown and the Mill District. The Subcommittee now offers its observations and recommendations regarding options for structured parking in downtown Biddeford.

For several years no topic, except perhaps the purchase and closure of the solid waste incinerator, has been more debated among Biddeford citizens and public policy officials. And yet, since 2006, many professional parking studies commissioned by the City have reinforced the need to build a parking structure in Biddeford. In the “Biddeford Mill District Master Plan” published in October, 2009, it was estimated that there will be a need for as many as 3,000 parking spaces when the Mill District is fully built-out. This projected need for parking spaces is in part based on the expectation that the former waste incinerator site at 3 Lincoln Street would be redeveloped into commercial, residential, and office spaces. This Subcommittee has determined that in order to successfully build out the existing vacant space in the Mill District, accommodate new development, and maximize its taxable value, additional structured parking is essential.

Independent of elected officials, the Subcommittee has studied the issue of parking in depth, and now offers its insight to the Mayor, the City Council and to city staff. Although differences of opinion among members of the Subcommittee do exist on minor issues, the Subcommittee is largely unified on major policy issues in regard to structured parking. The Subcommittee is hopeful that its conclusions will provide a useful reference for further investigation into this important matter.

Assumptions

The Subcommittee began studying the issue of structured parking with the understanding that certain conditions surround the issue of parking here in Biddeford. These conditions are:

1. Revitalization of the city’s downtown area is very important. A city’s downtown is a large part of its identity. The state and condition of downtown defines the perception of its citizens regarding the overall health and vitality of the city. New development, stimulated by additional parking, helps ensure a thriving downtown.
2. According to the “Downtown Parking Study” conducted by Rich & Associates in 2012, municipalities should control at least 50% of the available parking supply in accordance with the industry’s “best practices” standards. This allows the municipality to better manage the city’s supply of parking and to react to changing demands. As of the date of that report, Biddeford controlled just 45%.
3. Additional parking is needed in the downtown/Mill District area in order to sustain the existing growth rate and to stimulate new development. The present supply of parking is critically insufficient. The present shortage of adequate and reliable parking in downtown Biddeford is not only hampering development, it is also an obstacle to attracting major new job creators.

4. The Subcommittee offers its recommendations here based on the assumption that financing structured parking can be accomplished through revenue generated by an overall downtown parking management plan and with some funding available through an existing tax increment financing (TIF) district. The Subcommittee believes that property taxes in Biddeford can remain unaffected by the construction of a parking structure.

Methodology

Having begun this investigation with basic assumptions, the Subcommittee entered into this study with no preconceived notion of an optimal site for structured parking. It was only through field work and inquiry that the group reached some consensus of what sites would be proper to consider. Then through analysis, study, and discussion, the Subcommittee evaluated these sites and reached a strong consensus. The Subcommittee applied both quantitative and qualitative metrics in its evaluation.

The group began the investigation with a walking tour of downtown and the Mill District. By covering the area on foot, the Subcommittee gained a useful and practical perception of pedestrian distances, as well as the important role that pedestrian connections and state-of-the-art “way-finding techniques” will play in the proper siting of any garage. This field investigation was conducted during inclement weather, highlighting the importance of proper distances and good connections. Also, in a general way, the Subcommittee identified the properties that are available for redevelopment. It also reviewed the RiverWalk and how it, and its future expansion, factor into any decision to build a structured parking facility.

Next, the Subcommittee adopted an evaluation scoring sheet, a detailed process in which 44 criteria --- organized in five distinct categories --- established the important factors for the proper siting of a garage. In contemplating these criteria, the group began to formulate overall objectives that structured parking must achieve. Optimal sites must:

- Support Mill District redevelopment & optimization
- Serve and support existing businesses downtown
- Encourage convenient access to the RiverWalk, and promote the Saco River as a defining feature of downtown Biddeford
- Meet present needs, but perhaps more important, anticipate future growth in the next 2-5 years.

The Subcommittee believes very strongly that downtown growth will continue along Lower Main Street, then proceed to the northeast, toward the Saco River.

The Subcommittee assigned a weighted value to each criterion; naturally, some of the criteria carried greater importance and influence than did others. Throughout this process, the Subcommittee recognized its strong conviction that structured parking is absolutely necessary, given the undeniable advances that the City of Biddeford has been making in its downtown district. Furthermore, the Subcommittee is firm in its conclusion that although the City should build structured parking in the near future, the City must remain aware, during the planning

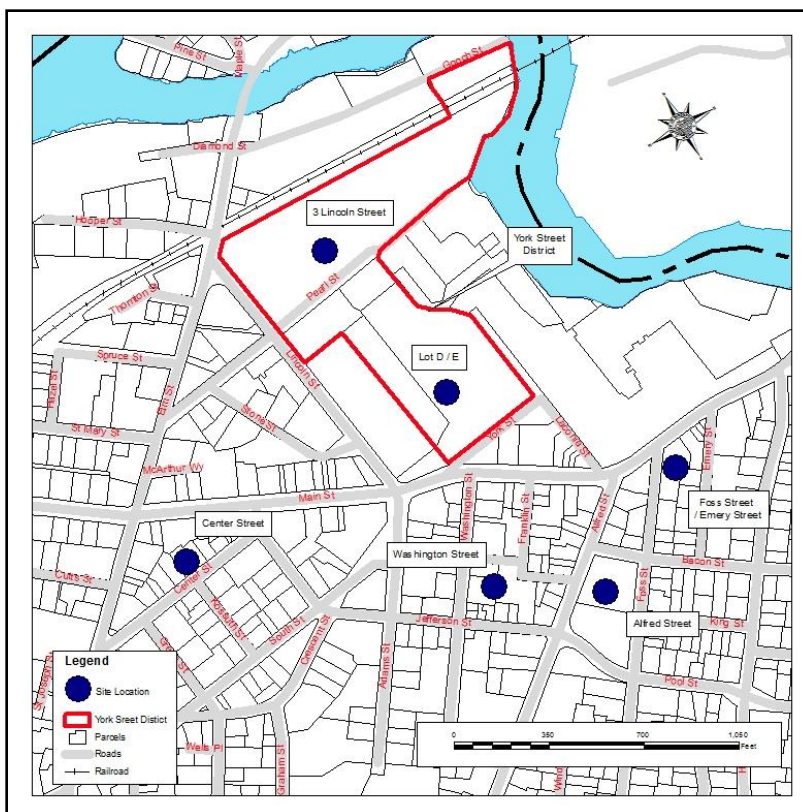
process, not only on what is perceived to be happening in 2017, but also on the growth that is anticipated.

The five categories of criteria used in the evaluation sheets were: Site Considerations, Revenue Streams, Impacts on Property Values, Proximity Considerations, Downtown Enhancement, and Other Considerations. (See the Appendix for Evaluation Sheet.)

With the site walk and evaluation sheet completed, and with an understanding of the over-arching goals that structured parking must achieve, potential sites began to reveal themselves. In all, the Subcommittee evaluated six sites. They are, in no particular order:

- **3 Lincoln Street**

(former incinerator site) – a portion of this site was considered, allowing other development to take place on the site as appropriate. Presently this area is used temporarily for surface parking that is leased to tenants of the Lofts at Saco Falls. If selected as the site for a garage, more than 80 of new structured parking spaces would be “pre-leased” at market rate (same rate as others) to these residents and would provide an immediate revenue stream. This site is city-owned.



- **Lot D/E** (York Street adjacent to Pepperell Building 10, Lincoln Mill, and the Bugbee Brown Building) – This site has very good proximity to both the Mill District and downtown. The size and configuration of the parcel allows great flexibility in siting and orienting a garage, either fronting York Street, or nearer 3 Lincoln Street.
- **Washington Street** – This area at Washington Street and Federal Street offers excellent proximity to existing downtown businesses. As part of an overall parking management plan, it may provide revenue to the City and help to mitigate costs. Bangor Savings Bank presently uses almost 20% of the available surface spaces, and may provide a reliable market for paid parking.
- **Alfred Street** (adjacent to police station) – This site, near the Washington Street site, may create a good gateway to downtown from outer Alfred Street and help eliminate blight in nearby residential neighborhoods.

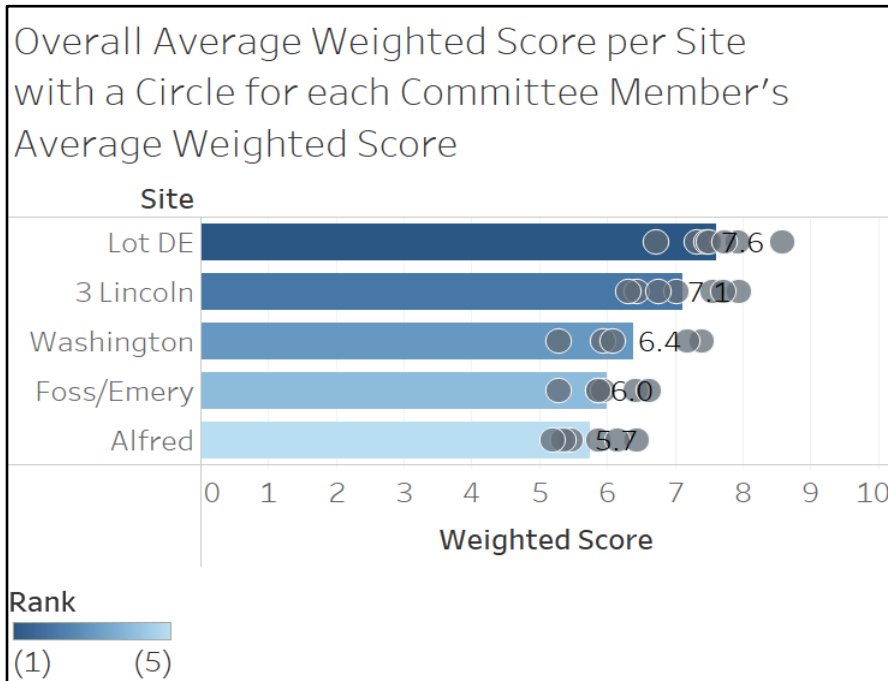
- **Foss and Emery Streets block** – Like the previous two options, this block presently is the site of surface parking. With excellent proximity to both Pepperell Center and Buildings 19 and 20, the potential to spur new development there is high. It offers good proximity to North Dam Mill. However, this option is also the site of multiple existing residential structures.
- **Center Street** – Considered in the past for surface parking, a garage here may eliminate significant blight along Center Street. This site offers excellent proximity to upper Main Street, but is poorly situated to stimulate new development in the Mill District of further east on Main Street.

Impacts on Property Values

Positive impacts on the property values in close proximity to the location is desired. With the possible sites in hand to study, an analysis of projected property values was conducted. This analysis provided data for the category of ‘Impacts on Property Values’ in the evaluation sheets. With the help of the GIS Mapping Division all properties within three concentric distances from the proposed sites were identified and sorted according to property type (i.e commercial, single family residential, etc.). According to parking industry standards, 350 feet from structured parking is a comfortable pedestrian distance drivers will walk to his or her final destination. Therefore property within this distance would be most greatly affected by a new parking structure. Seven hundred feet is the maximum reasonable pedestrian distance from structured parking, and will have noticeable impact on values, and 1,000 feet is generally thought to be the farthest acceptable distance, but property values are nevertheless likely to be at least somewhat affected by structured parking. The Assessing Department provided multipliers based on the three concentric distances as well as by property type (e.g. commercial, residential, raw land, unfinished mill space). These multipliers were applied to the present value of each property surrounding the sites to arrive at an estimate of how values would change given new structured parking nearby. The multipliers included both positive and negative impacts, depending on the types of properties. A list of the multipliers used is included in the appendix along with the results.

Finally, a simple matrix of pros and cons was devised to illustrate the numerous points that came up during the course of discussion. This matrix provided a qualitative analysis of the potential sites under review. (See the Appendix for Parking Sites Pros and Cons.)

Findings



Each member scored the sites according to the criteria in the evaluation sheet. The mean scores for each site were then calculated. Reviewing these scores, the Subcommittee eliminated the Center Street site from further consideration due to its low final average. Scores for the Lot D/E site were highest, with an averaged 7.6 on a 10-point scale. All other things being equal, this site offers the right blend of proximity to downtown and the

Mill District that can promote new development in both areas. New pedestrian connections are straightforward with a small amount of additional way-finding needed. Its location also can easily serve the RiverWalk, both existing and future phases.

Next, 3 Lincoln Street scored closely behind Lot D/E with an average score of 7.1. This site is presently city owned, requires minimal initial site work, has a partial revenue stream already in place (Lofts at Saco Falls), and would likely induce important new development on site (along with new jobs). It also provides excellent proximity to the RiverWalk, and is a good choice as a location for a multi-mode transportation hub (where cars, buses, trains, bikes, and pedestrians converge), which is a consideration of growing importance for attracting future development. Proper way-finding would be necessary, especially toward the downtown area.

The Washington Street site, while it supports existing businesses downtown very well, may not stimulate new development in the Mill District. The site is constricted somewhat by existing buildings which limits its potential for future expansion. As such, it rated an average of 6.4. Both the Foss/Emery Block and the Alfred Street site offer some advantages, but each poses significant challenges which held down their scores. The Foss/Emery site is well positioned for new development along lower Main Street, but the number of structures now there make it costly to acquire. The Alfred Street site is not near enough to the heart of the Mill District to reliably serve build-out there.

Conclusion

Lot D/E and 3 Lincoln Street scored high in this analysis, and have been put forth as viable sites for structured parking by others. They both provide good proximity to the areas of the downtown and Mill District areas of Biddeford in most need of a greater supply of parking. These two sites would require minimal initial site work, and both would provide good access to the RiverWalk. While each one has some drawbacks (mainly acquisition in the case of Lot D/E, and proximity to downtown in the case of 3 Lincoln Street) they both meet the principal goals of spurring development, meeting the existing needs of businesses, supporting the present and future expanded RiverWalk, and being flexible enough to meet uncertain future needs in the City. Of all the sites considered by the Subcommittee, these two sites consistently and reliably rated highly. The high scores of 3 Lincoln Street and Lot D/E indicate that either would be an excellent choice for structured parking. Because of this, and because of the proximity of the two sites to each other, it would be appropriate to consider each option both individually and together as a single “district”, where a parking structure may be sited and oriented within this district for maximum benefit. This “district” might also include portions of the parcel at 17 Lincoln Street, allowing even greater flexibility. This site may then be accessible from York St., Lincoln St., Pearl St., and Saco Falls Way.

Washington Street, Foss/Emery Block, and Alfred Street each offer some positive attributes, but because these benefits are not great enough to counter each one’s shortcomings, the Subcommittee feels that they be considered as “second tier” potential sites for parking.

Average Weighted Scores & Rankings per Category and Site with Overall - Sorted by Per Site Weighted Score											
Site	Category										Grand Total
	Site Issues	Revenue Stream	Impacts on Property Valuation	Proximity Considerations	Downtown Enhancement	Other Considerations					
Lot DE	7.8 (2)	7.1 (1)	8.0 (2)	7.5 (1)	7.8 (1)	7.6 (2)					7.6
3 Lincoln	8.4 (1)	6.2 (2)	8.3 (1)	6.7 (3)	6.1 (5)	7.8 (1)					7.1
Washington	6.6 (3)	6.1 (3)	5.6 (4)	5.8 (4)	6.8 (2)	7.1 (3)					6.4
Foss/ Emery	4.5 (5)	5.8 (4)	5.9 (3)	7.0 (2)	6.5 (3)	6.1 (5)					6.0
Alfred	5.2 (4)	5.4 (5)	5.2 (5)	5.6 (5)	6.4 (4)	6.6 (4)					5.7
Grand Total	6.6	6.2	6.8	6.6	6.7	7.1					6.6

(1) (5)

After a thorough investigation, the Downtown Task Force Subcommittee, therefore recommends that Lot D/E and 3 Lincoln Street sites most strongly merit further investigation as possible locations for structured parking in Biddeford.

per Criteria Comparison of Lot DE and 3 Lincoln
(darker color indicates larger difference)

Category	Criteria	Site	
		Lot DE	3 Lincoln
Site Issues	Site preparation costs	6.7	7.9
	Ease of garage expansion	8.9	8.9
	Impact on ideal efficient design (minimizes wasted space and cost)	8.4	8.3
	Impacts on construction costs of structure (unique to site)	7.7	8.0
	Acquisition costs	7.8	9.4
	Demolition costs to prepare site	8.3	9.1
	Impacts caused during construction (parking, other)	7.7	7.9
	Legal and/or other impediments to site	7.4	8.3
	Impacts on exiting use of site	6.7	7.7
	Category Score	7.8	8.4
Revenue Stream	Hourly parking revenues: short term	5.7	2.9
	Hourly parking revenues: long term	6.9	5.1
	Monthly pass revenues: short term	7.7	6.9
	Monthly pass revenues: long term	8.6	8.1
	Impact on other parking revenue potentials	5.7	6.0
	Potential for other non-property tax revenues (rent, other)	7.9	8.0
	Volatility (predictability) of revenues	7.5	6.5
	Category Score	7.1	6.2
Impacts on Property Valuation	Influence on increase of valuation of existing properties	9.4	9.2
	Influence on new construction	7.6	8.3
	Any reduction in existing property tax valuation	6.7	7.3
	Quality of valuation growth	8.4	8.6
	Category Score	8.0	8.3
Proximity Considerations	Mill District (occupied space)	9.1	7.4
	Mill District (unoccupied space)	9.7	9.1
	Water Street	3.6	2.4
	Western Main St corridor (Elm to Adams)	6.6	5.2
	Central Main St corridor (Adams to Alfred)	8.9	6.6
	Eastern Main St corridor (Alfred to Bridge)	5.4	3.7
	Access to Riverwalk & Saco River	8.8	9.1
	Ease of vehicle entrance/exit to major transportation routes	7.4	9.1
	Access to other transportation systems (rail, bus, pedestrian connection..)	7.7	7.7
	Category Score	7.5	6.7
Downtown Enhancement	Impact of vehicle traffic on Main St	5.0	7.0
	Impact of pedestrian friendliness perception	8.5	4.6
	Likelihood to increase downtown population day (employees)	8.5	6.9
	Likelihood to increase downtown population night and/or weekends	9.2	6.3
	Supports creation of downtown housing units	8.3	7.3
	Supports redevelopment of existing housing in immediate neighborhood..	5.7	5.1
	Strength of retail growth creation	8.9	5.8
	Strength of high end job creation	7.0	6.4
	Support of existing downtown businesses	9.1	5.4
	Quality of jobs created	7.4	6.3
	Category Score	7.8	6.1
Other Considerations	Visual impact	7.7	7.5
	Potential for multi-transportation hub	7.4	9.8
	Impact on perception of safety and security	8.4	7.8
	Additional investments needed to fully integrate site into downtown area	8.1	6.1
	Other (specify) – Future Adaptability	6.4	8.0
	Category Score	7.6	7.8



0.0 3.8

Appendix

I. Site Evaluation

Criteria	
Site Issues	Weight
Site preparation costs	0.95
Ease of garage expansion	1.05
Impact on ideal efficient design (minimizes wasted space and cost)	1
Impacts on construction costs of structure (unique to site)	1
Acquisition costs	1.05
Demolition costs to prepare site	1
Impacts caused during construction (parking, other)	1
Legal and/or other impediments to site	1
Impacts on exiting use of site	0.9

Criteria	
Revenue Streams	Weight
Hourly parking revenues: short term	1
Hourly parking revenues: long term	1
Monthly pass revenues: short term	1
Monthly pass revenues: long term	1
Impact on other parking revenue potentials	1
Potential for other non-property tax revenues (rent, other)	1
Volatility (predictability) of revenues	1.05

Criteria	
Impacts on Property Valuation	Weight
Influence on increase of valuation of existing properties	1.05
Influence on new construction	1
Any reduction in existing property tax valuation	0.95
Quality of valuation growth	1

Criteria	
Proximity Considerations	Weight
Mill District (occupied space)	1
Mill District (unoccupied space)	1.05
Water Street	0.95
Western Main St corridor (Elm to Adams)	0.95
Central Main St corridor (Adams to Alfred)	1.05
Eastern Main St corridor (Alfred to Bridge)	1
Access to Riverwalk & Saco River	1.05
Ease of vehicle entrance/exit to major transportation routes	1.05
Access to other transportation systems (rail, bus, pedestrian connections)	1.05

Criteria	
Downtown Enhancement	Weight
Impact of vehicle traffic on Main St	0.95
Impact of pedestrian friendliness perception	1.05
Likelihood to increase downtown population day (employees)	1.05
Likelihood to increase downtown population night and/or weekends	1.1
Supports creation of downtown housing units	1
Supports redevelopment of existing housing in immediate neighborhoods to downtown	1
Strength of retail growth creation	1.05
Strength of high end job creation	0.95
Support of existing downtown businesses	1.05
Quality of jobs created	1

Criteria	
Site Issues	Weight
Visual impact	1.05
Potential for multi-transportation hub	1.05
Impact on perception of safety and security	1.1
Additional investments needed to fully integrate site into downtown area	1.1
Other (specify) – Future Adaptability	1

II. Pros and Cons

<u>3 Lincoln Street</u>	
Pro	Con
Site is presently city-owned - no acquisition cost required	Low proximity to Main Street
Minimal initial site work is required	Minimal impact on redevelopment of North Dam Mill Campus i.e. Building 15
Will induce quicker re-development of site	Poses potential traffic movement problem for <u>Elm Street</u>
Excellent proximity to RiverWalk and future green space	Careful way-finding and pedestrian connections needed
High potential to induce absorption of vacant Mill District space: PMC 10 & 11, RiverDam, Saco Lowell, Lincoln Mill	Low short-term hourly revenue potential
Highest projected property valuation increase: <u>83%</u>	
High potential as a multi-modal transport hub	
High short-term monthly revenue potential (LaSF)	
High long-term monthly revenue potential	
High potential to induce quality incremental employment	
High potential for future expansion	
Creates downtown 'gateway' potential for 3 Lincoln St.	

<u>Lot D/E</u>	
Pro	Con
High proximity to PMC and downtown	Not city-owned.
Fair proximity to 3 Lincoln St	Some legal impediments may exist
Minimal initial site work needed	York Street is not a city thoroughfare
High potential for future expansion	Poses potential traffic movement problem for <u>Main Street and Elm Street</u>
High potential to induce quality incremental employment (PMC Buildings 10 and 13)	
Proximity to Lincoln Mill increases viability of boutique hotel	
May induce quicker redevelopment of Buildings 10, 11	
High long-term monthly revenue potential	
High long-term hourly revenue potential	
High projected property valuation increase: <u>70%</u>	

<u>Foss/Emery Street</u>	
Pro	Con
May reduce blight in surrounding residential neighborhood	Low proximity to upper Main Street
May Induce redevelopment of PMC Buildings 13, 19, 20	Low proximity to re-develop-able areas of Mill District, e.g. 3 Lincoln, River Dam, Saco Lowell
High long-term monthly revenue potential	Poses potential traffic movement problem for <u>Main Street</u>
Medium projected property valuation increase: <u>60%</u>	Impacts re-design of Main/Hill/Water Street intersection
	Low potential for job creation
	Involves costly acquisition of multiple private properties
	Requires costly demolition of existing structures
	Requires costly re-location of existing residents
	Low potential for future expansion
	Low potential for wide-spread future re-development
	Design must consider context of site and repurpose-ability - see note

<u>Washington Street</u>	
Pro	Con
Presently city-owned - no acquisition cost required	Low proximity to re-develop-able areas of Mill District, e.g. 3 Lincoln, River Dam, Saco Lowell
Requires minimal initial site work	Low potential for future expansion
May induce quicker redevelopment of 25 Adams - present District Courthouse	Low impact on employment and jobs
High long-term monthly revenue potentention: Bangor Savings Bank	Low potential to induce significant re-development
	May pose traffic movement problem on <u>Washington</u> , <u>Franklin</u> , and <u>Main Streets</u>
	Low proximity to RiverWalk
	Careful way-finding and required
	Lower projected property valuation increase: <u>44%</u>
	Design must consider context of site and repurpose-ability - see note

<u>Alfred Street</u>	
Pro	Con
May reduce blight in surrounding neighborhoods	Low proximity to upper Main Street
Can become a gateway to downtown	Low proximity to Mill District
May increase available retail space	Low proximity to RiverWalk
	Careful way-finding required
	May pose traffic movement problem at Alfred and Main Streets
	Low potential for job creation
	Requires acquisition of existing commercial property.
	Low potential for widespread re-development
	Lower projected property valuation increase: <u>47%</u>
	Low long-term monthly revenue potential
	Low short-term monthly revenue potential
	Design must consider context of site and repurpose-ability - see note

III. Structured Parking Site Property Valuation Analysis

Multipliers used to estimate future property values were:

	350'	700'	1000'
Commercial	1.3	1.2	1.1
Rental Residential	1.1	1.05	1.0
Single Family Residential	.9	.95	1.0
Undeveloped land	4.0	3.0	2.0
Finished Mill Space	1.3	1.2	1.1
Unfinished Mill Space	*	*	*

*Unfinished Mill Space was reviewed by the Assessor on a case-by case basis using multipliers ranging from 1.69 to 7.5.

Results of the analysis:

1 3 Lincoln Street

		<u>Present Value</u>		<u>Projected Value</u>	<u>Change</u>
1000' radius	\$	35,439,400	\$	42,927,858	
700' radius	\$	13,453,200	\$	21,553,521	
350' radius	\$	11,619,200	\$	46,099,926	
	\$	60,511,800	\$	110,581,305	83%

2 Lot D/E

		<u>Present Value</u>		<u>Projected Value</u>	<u>Change</u>
1000' radius	\$	22,785,200	\$	26,120,330	
700' radius	\$	36,188,300	\$	55,369,917	
350' radius	\$	16,858,300	\$	47,272,836	
	\$	75,831,800	\$	128,763,083	70%

3 Foss St.

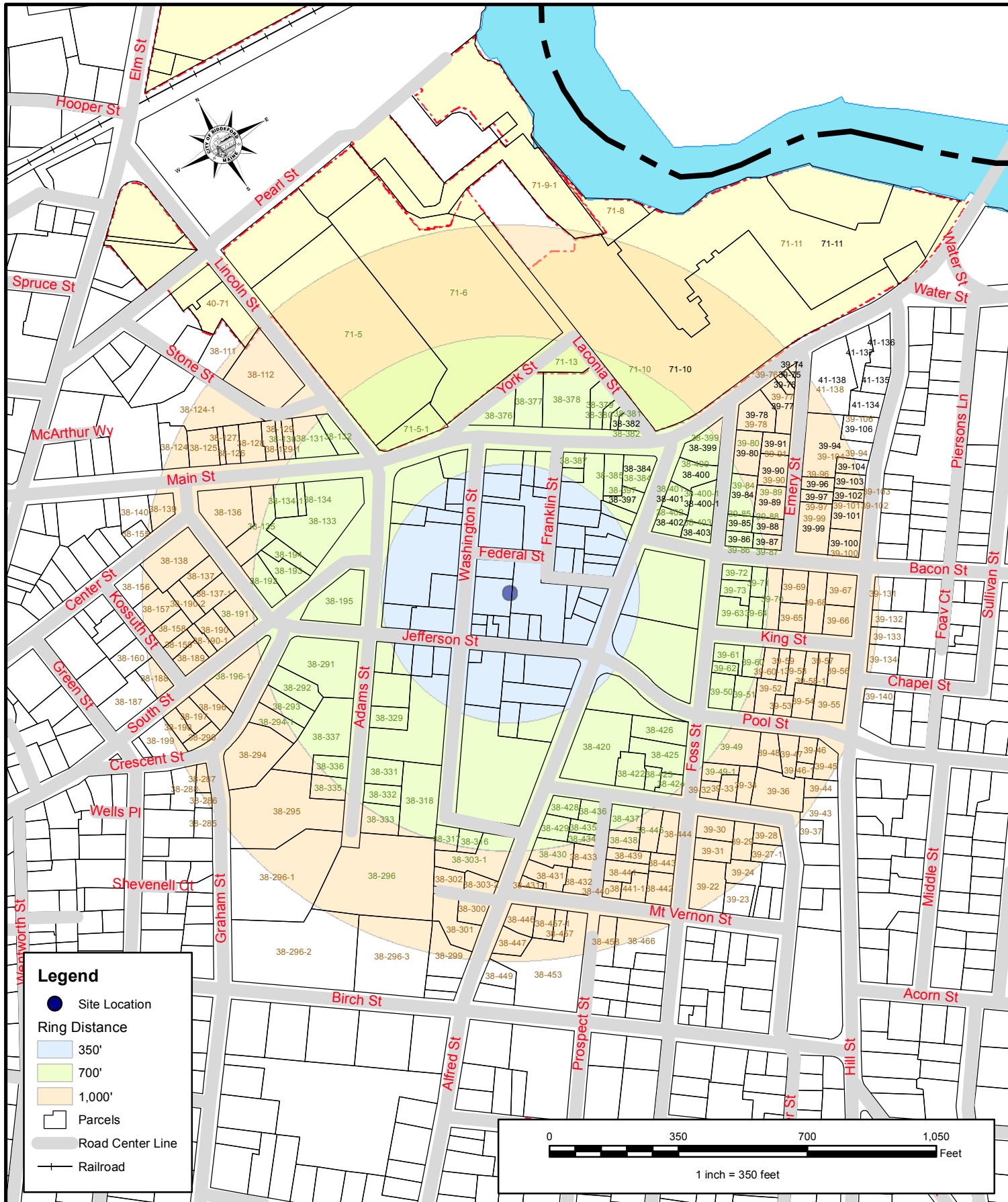
		<u>Present Value</u>		<u>Projected Value</u>	<u>Change</u>
1000' radius	\$	31,049,000	\$	61,706,118	
700' radius	\$	31,058,200	\$	38,134,669	
350' radius	\$	24,985,600	\$	39,149,814	
	\$	87,092,800	\$	138,990,601	60%

4 Wash St.

		<u>Present Value</u>		<u>Projected Value</u>	<u>Change</u>
1000' radius	\$	55,541,900	\$	62,926,848	
700' radius	\$	32,357,900	\$	64,161,779	
350' radius	\$	20,304,100	\$	28,583,770	
	\$	108,203,900	\$	155,672,397	44%

5 Alfred St.

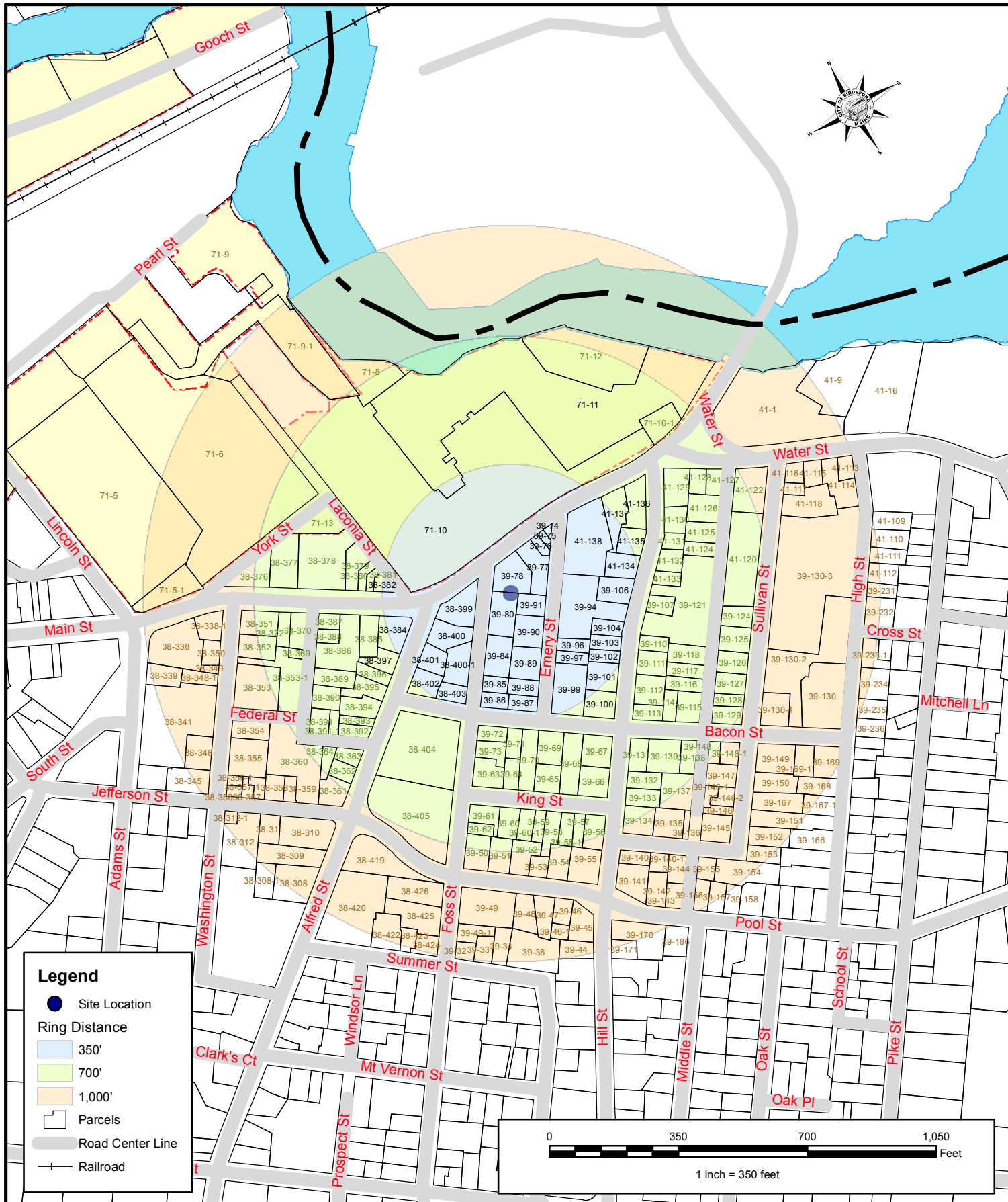
		<u>Present Value</u>		<u>Projected Value</u>	<u>Change</u>
1000' radius	\$	43,977,300	\$	74,528,160	
700' radius	\$	37,458,700	\$	47,054,865	
350' radius	\$	14,901,200	\$	20,066,410	
	\$	96,337,200	\$	141,649,435	47%



The City of Biddeford, Maine
 Engineering Department - GIS Mapping
 205 Main Street · P.O. Box 586 · Biddeford, Maine 04005-0586
 Tel. 207 284-9118 · Fax 207 286-9388

Possible Garage Locations Federal St Lot Site

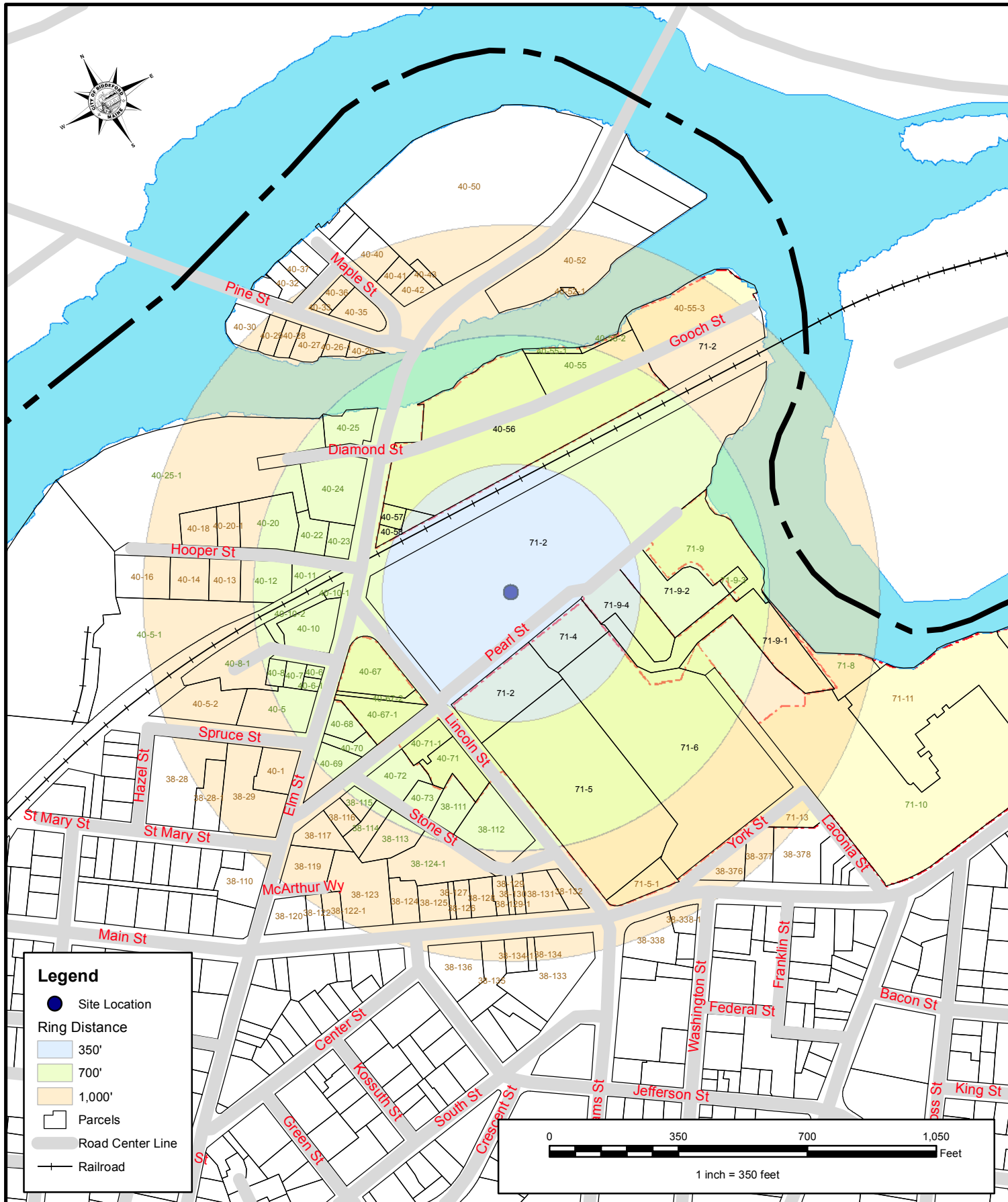




The City of Biddeford, Maine
 Engineering Department - GIS Mapping
 205 Main Street · P.O. Box 586 · Biddeford, Maine 04005-0586
 Tel. 207 284-9118 · Fax 207 286-9388

Possible Garage Locations Foss Street Site

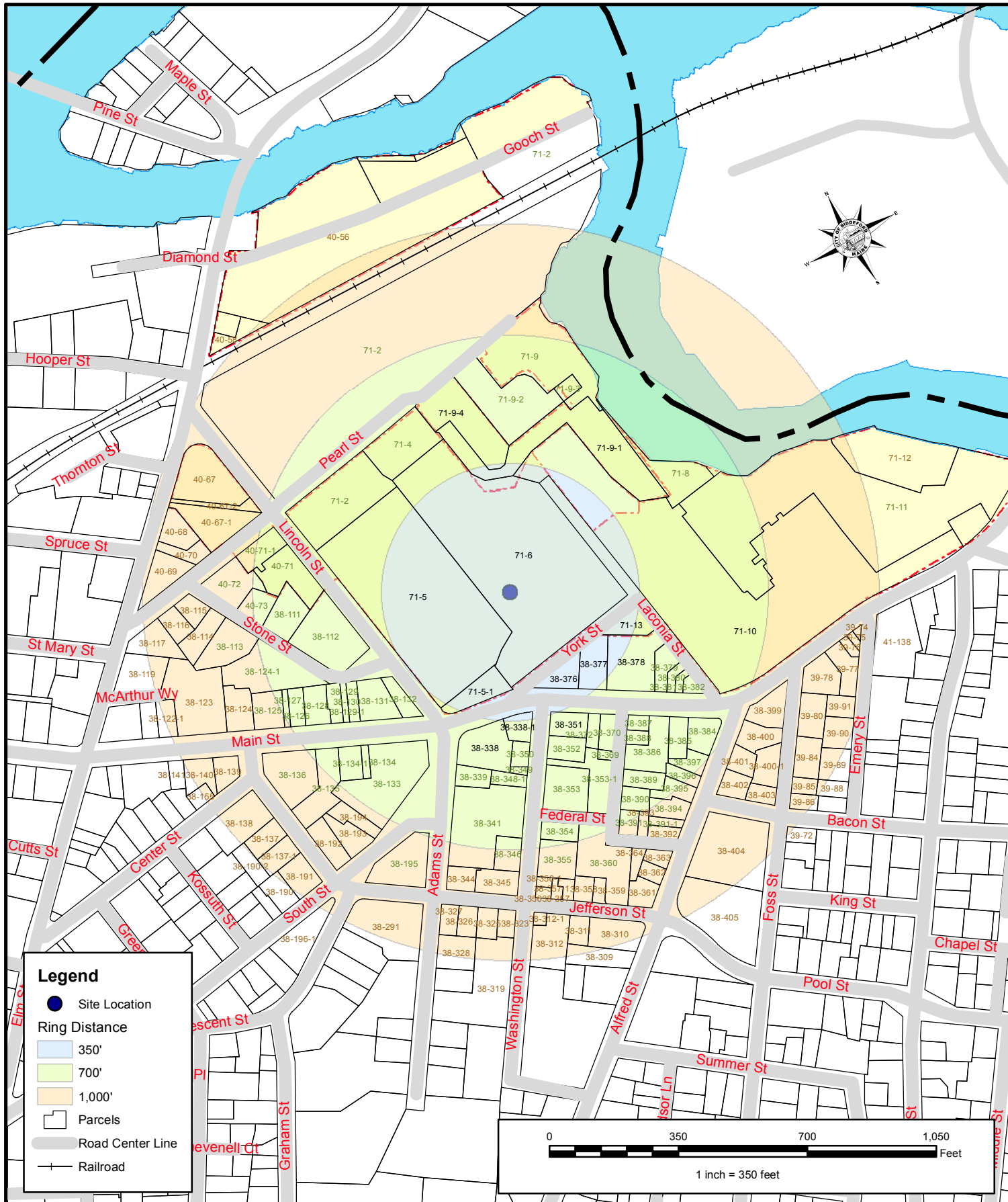




The City of Biddeford, Maine
 Engineering Department - GIS Mapping
 205 Main Street · P.O. Box 586 · Biddeford, Maine 04005-0586
 Tel. 207 284-9118 · Fax 207 286-9388

**Possible Garage Locations
 Maine Energy Site**

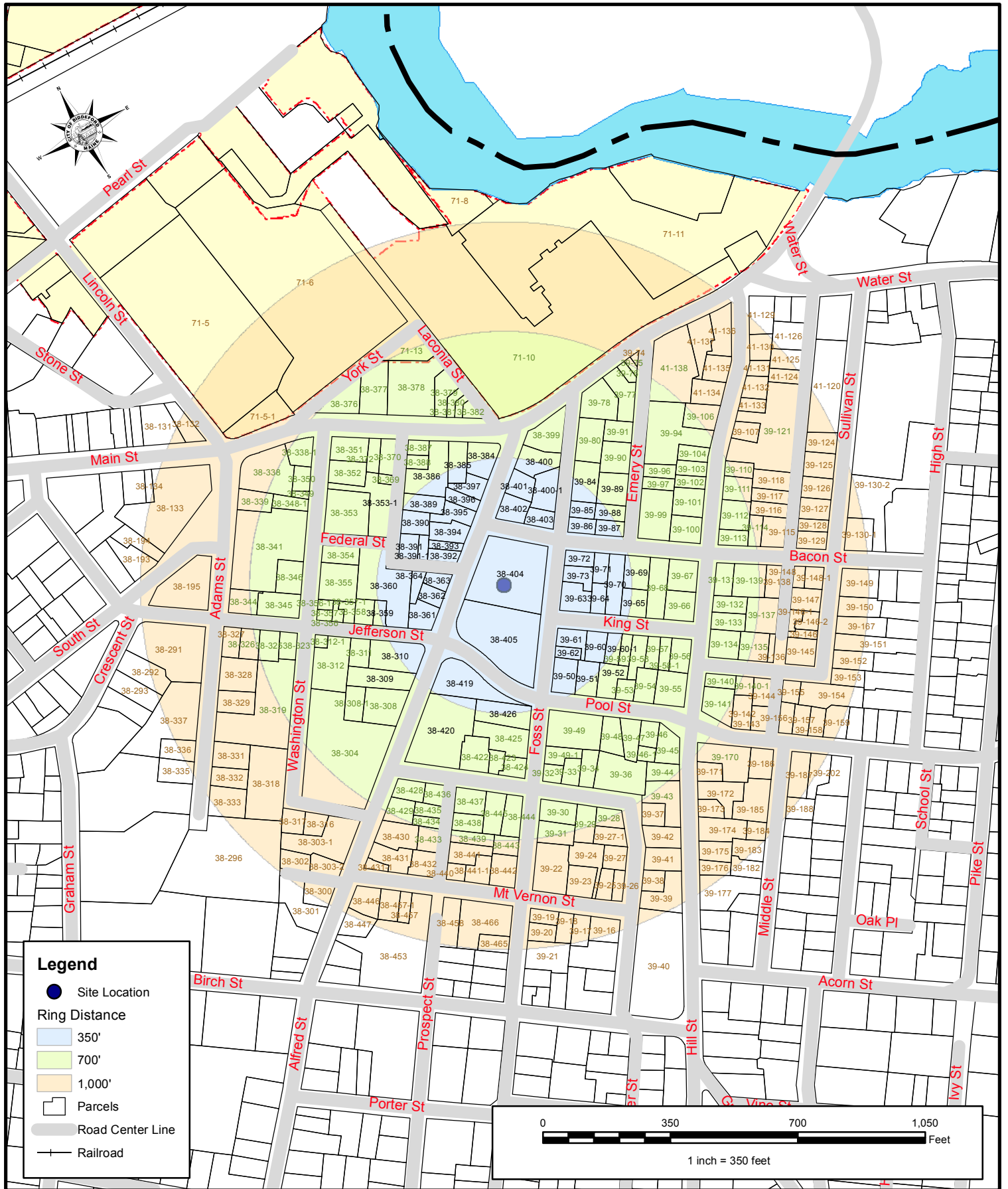




The City of Biddeford, Maine
 Engineering Department - GIS Mapping
 205 Main Street · P.O. Box 586 · Biddeford, Maine 04005-0586
 Tel. 207 284-9118 · Fax 207 286-9388

Possible Garage Locations Mill Lot Site





The City of Biddeford, Maine
 Engineering Department - GIS Mapping
 205 Main Street · P.O. Box 586 · Biddeford, Maine 04005-0586
 Tel. 207 284-9118 · Fax 207 286-9388

**Possible Garage Locations
 Police Department Lot Site**

