

John M. Burke, PE, CAPP
Independent Consulting
Parking, Transit & Downtown Development

October 9, 2012

Mr. James Shanley, Chairman
Newburyport Redevelopment Authority
60 Pleasant Street
Newburyport, MA 01950

SUBJECT: Parking Impact Study
Proposed New Mixed-Use Development
NRA Waterfront Lots
Newburyport, MA

Dear Mr. Shanley:

This report summarizes the results of a shared parking analysis and impact study of a potential new mixed-use development project located on the NRA waterfront parking lots in Downtown Newburyport. The primary purpose of the study was to:

- determine the likely parking demand of the proposed new development considering shared parking characteristics of the development and Downtown Newburyport;
- verify that the proposed development plan includes adequate parking for its needs;
- analyze current parking supply and demand conditions downtown; and
- assess how the downtown parking system as a whole would be impacted by the project.

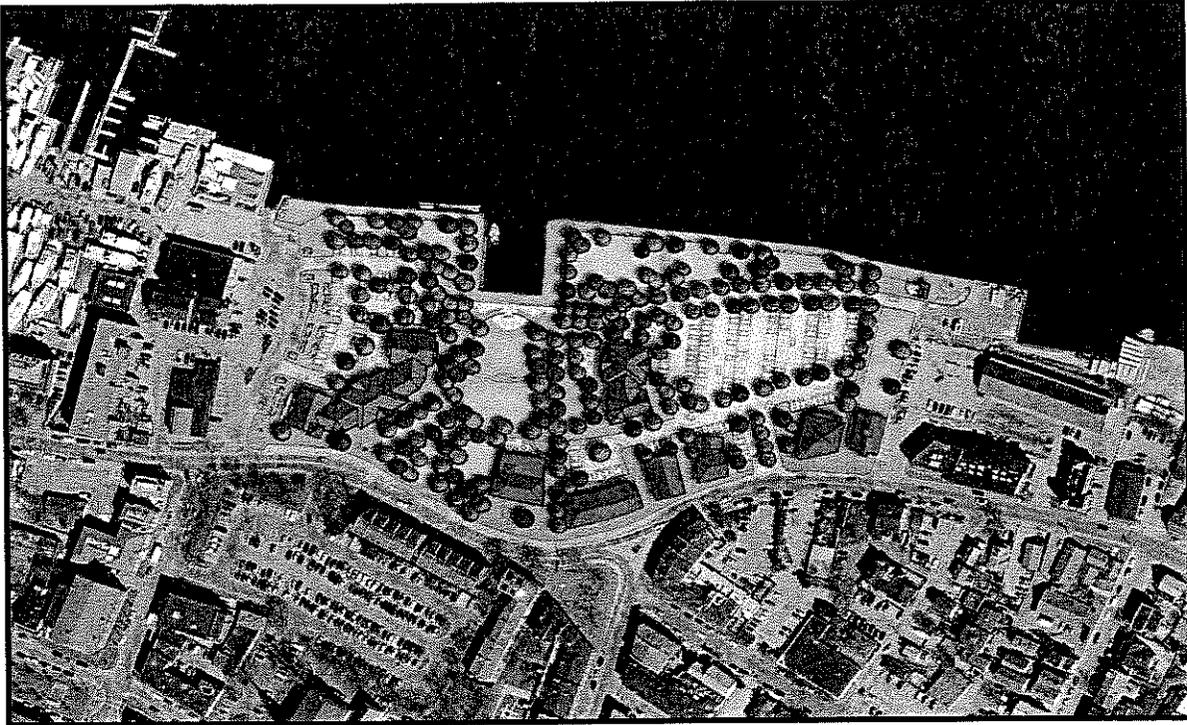
Alternative strategies were also identified to improve the parking performance of the proposed new development and address identified deficiencies of the existing downtown parking system.

Development Concept Plan

The NRA has engaged the services of a real estate advisory firm and an architectural/engineering firm to advance concept designs for a potential new development on 4.2 acres of waterfront property currently used for surface parking. The development team has held an open forum in Newburyport to obtain community input into the concept design, which once finalized, will be used in a solicitation for a qualified private partner to implement the project under a development agreement.

The proposed development program includes 69,850 square feet of commercial/residential development with expansion of the public park along the waterfront. The development program is broadly defined with 21,850 square feet of ground-floor commercial space - comprised of 50% retail and 50% restaurant use - and 48,000 square feet of upper level residential condominium units. It is anticipated that the residential units will have their own dedicated under-building parking spaces - 2 per unit for a total of 66 spaces. One of the development buildings will be situated on the existing NRA west lot and the other on the NRA east lot. Two separate landscaped, paved public parking lots will be provided with 191 total spaces to serve the general public and proposed commercial development - 49 spaces in the west lot and 142 spaces in the east lot. The proposed development plan is depicted in Figure 1.

Figure 1: Proposed Development Concept Plan



Development Parking Demand/Shared Parking Analysis

In order to determine the projected parking demands for the project, a shared parking analysis was conducted using the established methodology formulated by the Urban Land Institute (ULI). The ULI methodology for shared parking analysis was developed in the early 1980's. The methodology is premised on the fact that parking needs of individual land uses vary by time of year, day of week and hour of day. Since parking needs may peak at different times, fewer parking spaces are required to serve a mixed-use project than if each land use had its own dedicated parking. A common example of this is that restaurant parking needs usually peak during evening hours, while retail usually peaks in the daytime, thus the same parking spaces devoted to the retail space occupants can later be used by restaurant patrons.

The ULI Shared Use Parking methodology relies on the following key inputs:

- *Project land use categories & unit measures,*
- *Base parking demands for each land use,*
- *Time-of-day & monthly adjustment factors* accounting for time-of-day and monthly variation in parking demand associated with the various project land uses.
- *Modal split & vehicle occupancy characteristics* of the population generated by land uses, and
- *Mixed use synergy & captive on-site parkers* which is the percentage of persons who would already be parking in association with other uses.

Project Land Use Categories & Unit Measures

The land uses included in the development will be the primary determinant of the project's parking need. While knowledge of the particular parking needs or the distinctive characteristics of confirmed or targeted tenants for the development would certainly help to refine the results of the shared use parking analysis,

such information has yet to be determined. Therefore, the land use categories incorporated into the shared use calculations are at this point quite general. There is no question that the parking demand generated by say, a retail gift shop will be dramatically different than that of a bookstore. Similarly, a national full service chain family restaurant will generate significantly more vehicles than a locally operated sub shop. Consequently, it is important to revisit the results of this shared use parking analysis once the probable mix of likely building tenants can be identified.

That said, for this analysis it is assumed that half of the proposed total commercial space general retail (10,925 s.f.) and half restaurant use (10,925 s.f.), where the restaurant use is anticipated to be upscale in quality - classified as "fine dining" under the ULI land use categories. The residential condominium use was not considered directly in the calculations because its parking spaces will be dedicated for its own use and not shared within the development.

Development of Base Parking Demands

The unadjusted weekday and weekend base parking demand was calculated using the City of Newburyport Zoning requirements for each of the proposed land uses to be located within the project. This approach to establishing a base parking ratio results in a conservative (high) analysis scenario, as the base zoning parking ratio is typically higher than the actual parking demand for a specific use.

The City's zoning code requirements are as follows:

Restaurant Use: 1 space per 4 seats

This rate is calculated to be equivalent to approximately 1 space per 100 square feet or 10 spaces per 1,000 square feet. The requirement for an outside café is 1 space per table, which for this analysis is assumed to equal the indoor restaurant parking requirement. For this analysis, it is also assumed that the outside café space is included in the overall 10,925 s.f. of restaurant space in this development scenario.

Retail Use: 3 spaces per 1,000 square feet

The zoning code requirement for each use was broken down into customer/visitor parking and employee parking using combined weekday and weekend ratios contained in the ULI Shared Parking Manual¹. Based on this, the total calculated unadjusted base parking demand for the project as shown in Table 1 is 142 spaces.

Table 1: Base Parking Demand – Commercial Space

Land Use Type	Size (s.f.)	Zoning Req. Parking Visitor/Cust. (Sp./ksf)	Visitor/ Customer Spaces	Zoning Req. Parking Employee (Sp./ksf)	Employee Spaces	Total Base Parking Demand
Retail	10,925	2.4	26.22	0.6	6.55	32.77
Restaurant	10,925	8.5	92.86	1.5	16.39	109.25
Totals	21,850		119.08		22.95	142.02

The next step in the analysis is to adjust the base parking demand to account for the shared parking factors listed earlier. Adjustments for each factor are provided as follows.

¹ *Shared Parking, Second Edition*; Urban Land Institute; Washington, D.C.; 2005.

Modal Split & Vehicle Occupancy Characteristics

Mode split adjustment factors are used to account for the reduction in parking demand associated with the use of non-single-occupant travel to the development including public transportation, walking, biking and carpooling. Based on the close proximity of the development to downtown residential uses, fringe Newburyport neighborhoods and other retail and commercial establishments, it is estimated that approximately 5% to 15% of the trips generated by the retail and restaurant use will be made by persons walking, bicycling, ridesharing or otherwise being dropped off at the development site. The actual adjustment factor varies by land use type, by employee vs. visitor/customer demand and by weekday vs. weekend conditions.

Mixed Use Synergy & Captive On-Site Parkers

Synergy is used to define the fact that some people who make vehicle trips to a development or to a “park once” downtown, like Newburyport, primarily intend to patronize one retail establishment or restaurant at the development, but may also visit other retail or restaurant establishments. When this trip synergy occurs, the secondary patronage of other land uses does not produce a greater need for parking. Similarly, the term “captive parkers” describes the on-site population group who will have already parked at the development site as project tenants and thus will not generate any additional parking demand when they patronize the retail shops and restaurants at the site. Based on shared parking studies conducted in other New England communities and in consultation with the City of Newburyport Planning Department, customer/visitor adjustments from 15% to 25% were used.

Time of Day & Monthly Adjustment Factors

As shown in Tables 2 and 3 from the ULI Shared Parking Manual, both customer and employee parking demand for retail and restaurant uses peak during the holiday season in December. No adjustment is therefore made for monthly variation.

Peak activity periods associated with the development will differ by time of day. For example, retail peak periods typically occur mid-day or in early afternoon while restaurant peaks typically occur in the evening. The base parking demand must be reduced by time of day factors to capture the overall development peak period. Based on time-of-day adjustments in the ULI Shared Parking Manual shown for the weekday and weekend condition in Table 4 below, the peak period for the 50/50 retail/restaurant development scenario will occur at 7 p.m. on a weekday in December. At this time, restaurant use peaks and general retail customer demand is at 75% of peak. The weekend peak period occurs slightly later at 8 p.m.

Table 2: Recommended Monthly Adjustment Factors for Customer/Visitor Parking

	Jan	Feb	Mar	Apr	May	June	July	Aug	Sept	Oct	Nov	Dec*
General Retail	56%	57%	64%	63%	66%	67%	64%	69%	64%	66%	72%	100%
Rest.	85%	86%	95%	92%	96%	95%	98%	99%	91%	96%	93%	100%

*Early to Mid-December



Table 3: Recommended Monthly Adjustment Factors for Employee Parking

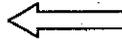
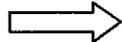
	Jan	Feb	Mar	Apr	May	June	July	Aug	Sept	Oct	Nov	Dec*
General Retail	80%	80%	80%	80%	80%	80%	80%	80%	80%	80%	90%	100%
Rest.	95%	95%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%

*Early to Mid-December



Table 4: Recommended Time of Day Adjustment Factors*

Hour of Day	Weekdays				Weekends			
	Retail Cust.	Retail Empl.	Rest.** Cust.	Rest.** Empl.	Retail Cust.	Retail Empl.	Rest.** Cust.	Rest.** Empl.
6:00 a.m.	1%	10%	0	0	1%	10%	0	0
7:00 a.m.	5%	15%	0	20%	5%	15%	0	20%
8:00 a.m.	15%	40%	0	50%	10%	40%	0	30%
9:00 a.m.	30%	75%	0	75%	35%	75%	0	60%
10:00 a.m.	55%	85%	15%	90%	60%	85%	0	75%
11:00 a.m.	75%	95%	40%	90%	70%	95%	15%	75%
12 Noon	90%	100%	75%	90%	85%	100%	50%	75%
1:00 p.m.	100%	100%	75%	90%	95%	100%	55%	75%
2:00 p.m.	100%	100%	65%	90%	100%	100%	45%	75%
3:00 p.m.	100%	100%	40%	75%	100%	100%	45%	75%
4:00 p.m.	95%	100%	50%	75%	95%	100%	45%	75%
5:00 p.m.	85%	95%	75%	100%	90%	95%	60%	100%
6:00 p.m.	80%	95%	95%	100%	80%	85%	90%	100%
7:00 p.m.	75%	95%	100%	100%	75%	80%	95%	100%
8:00 p.m.	65%	90%	100%	100%	65%	75%	100%	100%
9:00 p.m.	50%	75%	100%	100%	50%	65%	90%	100%
10:00 p.m.	30%	40%	95%	100%	35%	45%	90%	100%
11:00 p.m.	10%	15%	75%	85%	15%	15%	90%	85%
Midnight	0	0	25%	35%	0	0	50%	50%



* Peak December

**Fine Dining classification

Results of Analysis

Pursuant to the ULI shared parking methodology, the adjusted “shared” parking demand is calculated by taking the base parking demand and reducing it by the adjustment factors identified above. The calculations are shown in Tables 5 and 6 for the weekday and weekend condition, respectively.

An overall adjusted peak parking demand of approximately 101 spaces is projected to occur at 7 p.m. on a weekday in December. Approximately 81 of these spaces are demanded by visitors/customers and 20 by employees. The overall shared parking adjustment represents a 28.9% reduction in base parking demand. The average adjusted overall peak-period parking demand ratio for the commercial space is therefore $101/21.85 = 4.62$ spaces per thousand square feet.

Table 5: Shared Parking Demand – Weekday Peak Period

Land Use/ User Type	Base # of Spaces Required*	Mode Split Adj. Factor	Mixed-Use/ Synergy Adj. Factor	Time of Day** Adj. Factor	Total Base Parking Demand
Retail Visitor/Cust.	26.22	0.95	0.80	0.75	14.94
Retail Employee	6.55	0.85	1.00	0.95	5.29
Restaurant Visitor/Cust.	92.86	0.95	0.75	1.00	66.16
Restaurant Employee	16.39	0.85	1.00	1.00	13.93
Totals	142.02				100.32

*From Table 1.

**From Table 4.

The weekend adjusted peak parking demand is projected to be 98 spaces and like the weekday peak will occur in December but a little later in the evening at 8 p.m. Approximately 80 of these spaces are demanded by visitors/customers and 18 by employees.

Table 6: Shared Parking Demand – Weekend Peak Period

Land Use/ User Type	Base # of Spaces Required*	Mode Split Adj. Factor	Mixed-Use/ Synergy Adj. Factor	Time of Day** Adj. Factor	Total Base Parking Demand
Retail Visitor/Cust.	26.22	0.90	0.85	0.65	13.04
Retail Employee	6.55	0.85	1.00	0.75	4.17
Restaurant Visitor/Cust.	92.86	0.90	0.80	1.00	66.86
Restaurant Employee	16.39	0.85	1.00	1.00	13.93
Totals	142.02				98.00

*From Table 1.

**From Table 4.

The proposed development plan meets the parking requirement of the City of Newburyport Zoning Regulations by providing paved public parking lots onsite with 191 total spaces, which far exceeds the development's projected peak parking demand of 101 spaces. The next step in the study process is to analyze current parking conditions downtown before analyzing post-development conditions.

Current Downtown Parking Conditions

Parking Inventory and Utilization Survey

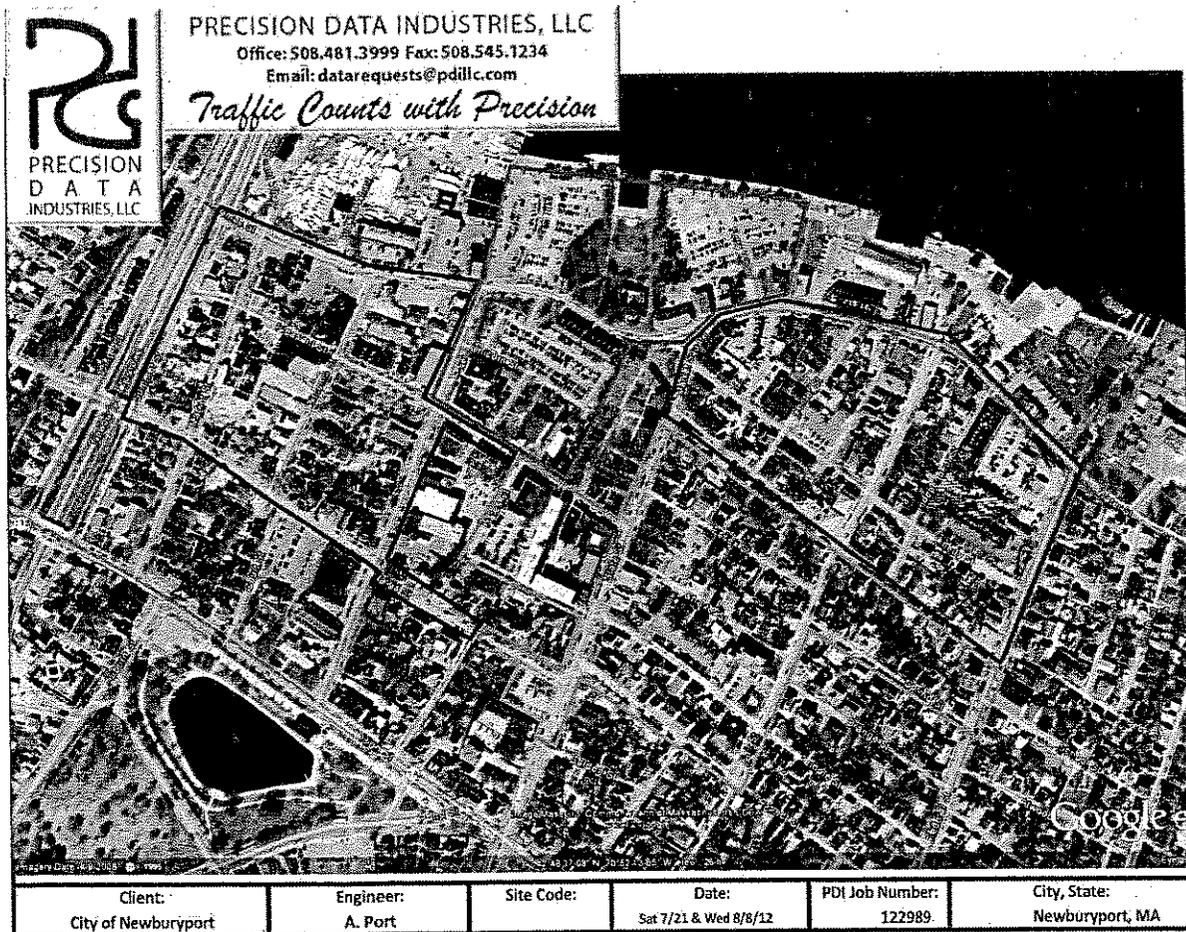
Parking utilization counts of the downtown public parking supply were provided by the City through contract with a data collection firm, Precision Data Industries, Inc. The counts were conducted for a typical summer weekday (Wednesday, August 8, 2012) and weekend day (Saturday, July 21, 2012) when no major special events were underway downtown. Both days were sunny and dry. Counts were

conducted between the hours of 12 noon and 10 p.m. All public parking spaces were inventoried and posted parking restrictions noted. The use of private parking lots was not included in the survey but was visually observed for the weekend day condition.

Survey Area

The survey area for the utilization counts was set at a distance of roughly 1,200 to 1,250 feet +/- from the entrances to the NRA parking lots, which is about a 5-minute walk. Under typical conditions, this distance can be considered a maximum walking distance to and from surface parking that provides customers an “average” level-of-service². Distances beyond this point up to approximately 1,400 or 1,500 feet, or just over ¼ of a mile, would be considered “below average” in terms of level-of-service, but still minimally acceptable. Using this general rule, the survey area was defined and generally bounded by the waterfront to the north, Summer Street to the west, Harris Street to the south and Federal Street to the east. The survey area map is depicted below in Figure 2. The four quadrants shown in different colors were used to identify individual count areas for survey personnel.

Figure 2: Utilization Survey Area Map



² “How Far Should Parkers Have to Walk?”, Mary S. Smith and Thomas A. Butcher, *Parking*, 1994

The survey area includes a total of 1,616 public parking spaces with 923 on-street and 693 off-street in the following lots with the number of spaces and time limits noted:

- State Street Lot (31 spaces/3-hour)
- Prince Place Lot (44 spaces/all day)
- Green Street Lot (229 spaces/3-hour)
- Waterfront Trust Lot (53 spaces/all day)
- NRA West Lot (115 spaces/all day)/NRA East Lot (221 spaces/all day)

Of the 923 on-street parking spaces in the survey area, approximately 399 (43%) are posted 2-hour parking. 2-hour postings are prevalent in the downtown retail district to promote turnover of parking spaces for customer use. Certain residential streets in close proximity to the retail district are also posted 2-hours allowing eligible residents of these time-restricted areas to purchase parking permits exempting them from the 2-hour time limits. There are currently 345 of these permits issued, which are free to eligible residents. There is also an Employee Parking Permit and a Resident Paid Parking Lot Permit.

The Employee Parking Lot permit allows employees that are out-of-town residents to park in 174 off-street spaces on a first-come-first-served basis as follows: Prince Place Lot (44), NRA West Lot (30) and NRA East Lot (100). In 2011, there were 310 Employee Parking Lot permits issued at \$100/year or \$30/3 months. The City Clerk's Office reports that the reserved spaces in the Prince Place Lot and NRA West Lot are very well used. The reserved spaces in the NRA East Lot are generally only well used on weekends. The NRA lot reserved spaces (130) represent 75% of the total off-street spaces available to employee permit holders.

The Resident Paid Parking Lot Permit allows Newburyport residents who acquire a permit to park in 434 off-street parking spaces on a first-come-first served basis. This includes all of the off-street public lots (NRA lot designated spaces only) excluding the Waterfront Trust Lot. In 2011, there were 7,800 resident paid parking lot permits issued at \$5/year for non-senior residents and free for senior residents. That's 18 permit parkers for every one off-street public parking space. Some of these residents are employees but it is not known how many. The NRA lot reserved permit spaces (130) represent 30% of the total off-street spaces available to the resident paid parking lot permit holders.

Survey Results and Analysis

The utilization survey data is provided in Exhibit A of the Appendix and summarized below. Tables 7 and 8 summarize the public off-street parking utilization for the summer weekday and Saturday, respectively. Table 9 shows the total on-street parking utilization for both the summer weekday and Saturday condition.

Table 7: Off-Street Public Parking Utilization -- Wednesday, August 8, 2012

	State St. Lot	Prince Place Lot	Green St. Lot	Waterfront Trust Lot	NRA West Lot	NRA East Lot	Totals
<i>Total Spaces</i>	31	44	229	53	115	221	693
Noon	27	38	177	33	84	122	481/69.4%
2 p.m.	15	41	203	41	96	129	525/75.8%
4 p.m.	16	41	147	30	76	90	400/57.7%
6 p.m.	5	29	161	44	66	82	387/55.8%
8 p.m.	28	42	222	45	115	145	597/86.1%
	58.7%	86.8%	79.5%	72.8%	76.0%	51.4%	

Table 8: Off-Street Public Parking Utilization – Saturday, July 21, 2012

	State St. Lot	Prince Place Lot	Green St. Lot	Waterfront Trust Lot	NRA West Lot	NRA East Lot	Totals
<i>Total Spaces</i>	31	44	229	53	115	221	693
Noon	21	33	206	32	77	112	481/69.4%
2 p.m.	27	38	223	58	116	203	665/96.0%
4 p.m.	16	35	228	54	120	192	645/93.1%
6 p.m.	22	37	227	58	120	192	656/94.7%
8 p.m.	23	43	229	59	122	206	682/98.4%
	70.3%	84.7%	97.2%	98.5%	96.5%	81.9%	

Table 9: Total On-Street Parking Utilization – Wednesday, August 8, 2012 and Saturday, July 21, 2012

	Saturday (7/21/12)	Wednesday (8/8/12)
<i>Total Spaces</i>	923	923
Noon	661/71.6%	658/71.3%
2 p.m.	687/74.4%	634/68.7%
4 p.m.	706/76.5%	608/65.9%
6 p.m.	725/78.5%	581/63.0%
8 p.m.	764/82.8%	663/71.8%
AVG. USE	76.8%	68.1%

As a general rule, a total parking supply is considered to be at effective capacity when it is approximately 90% utilized. This is because not all parking spaces are occupied at the same time since a driver must find a vacant space before it can be occupied. A generally accepted parking principle is that the effective capacity of the on-street system is 85% and off-street even higher, up to 95%. The on-street rate is lower because search patterns to available spaces are more complex.

In consideration of this principle, the overall on-street and off-street public parking system operates under effective capacity for the entire weekday period³. The same can be said for the overall on-street parking system for the Saturday period. While the on- and off-street public parking supply for the weekday and Saturday period never reached a combined 90% use for any of the time periods counted, Saturday's off-street public parking supply did approach or exceed effective capacity from 2 p.m. through 8 p.m. as did the Green Street, Waterfront Trust and NRA West lots for the day.

It is important to note that while the public parking supply approached or exceeded effective capacity for the summer Saturday condition, private downtown lots were observed and estimated to be less than half used⁴. In fact, in the evening when the overall public parking supply was approaching capacity, some larger off-street lots at schools, banks and other businesses were almost completely empty. In two of these cases, residents of the area indicated that they are allowed to park in the lots on an informal basis but they only do so during snow emergencies and when street parking is unavailable. It is not unusual for the private supply of off-street parking to be lower utilized than the public supply in downtown areas, but the observed disparity here is significant.

It is also important to qualify the difference between the summer weekday and Saturday period. The summer weekday period counted is considered to be fairly representative of a typical peak weekday condition that recurs frequently enough throughout the year to justify the community providing parking spaces in close proximity for that level of activity. As such, it was used as the design day for the impact analysis. In contrast, the summer weekend peak period occurs only on good-weather Friday nights and

³ Certain individual streets or blocks operate at or over effective capacity.

⁴ This condition was also noted in the "City of Newburyport Downtown Parking Study", David J. Friend, September, 1998, when 48% of the private parking supply was utilized during the peak period observed.

Saturdays when summer tourist and visitor parking peaks downtown. These infrequent summer peaks are estimated to occur on less than 5% of the days of the year and are characteristic of special event parking conditions. During these times, customer expectations regarding the convenience and location of available parking are, generally speaking, lower than they are under normal conditions and therefore, they can typically be expected to walk 30 to 40% further or more to park⁵.

As a check on these assumptions, the Saturday, July 21, 2012 and Wednesday, August 8, 2012 afternoon counts for the NRA lots were compared with afternoon counts conducted by the City in March and April of 2012. All of the spring counts were collected on good-weather days. When comparing weekday afternoon parking utilization, the March NRA lot count was 169 and the average weekday occupancy in April was 165, which compares fairly closely to an average afternoon lot occupancy for Wednesday, August 8th of 186⁶. For Saturdays afternoons, the total NRA lot occupancy on March 24th was 108 and on April 21st 145, which is not close to the average afternoon lot occupancy for Saturday, July 21st of 283⁷. Clearly, the weekday summer counts are higher but comparable to weekday counts taken in March and April, but the Saturday summer counts are more than double Saturday counts taken in March and April.

Post-Development Impact – Downtown Parking Supply and Demand

The proposed development program, including the expansion of the public park along the waterfront, will reduce the total public off-street parking provided in the NRA lots by 145 spaces - from 336 spaces currently to 191 spaces post-development. The total off-street public parking supply downtown will therefore be reduced from 693 to 548. With an assumed effective parking capacity of 95%, the effective parking capacity of the entire public off-street parking system will be reduced to 521 spaces (548 x 0.95).

Table 10 shows the proposed development parking demand projected onto the post-development off-street parking supply for the design day (weekday period). This methodology assumes that once the public off-street parking system reaches effective capacity (95% occupied) any excess demand is displaced to the on-street parking system within the 5-minute walk area⁸. The last column in Table 10

Table 10: Projected Post-Development Parking Demand on the Public Off-Street System For the Design Weekday

	Observed Parking Demand*	Added Development Demand**	Post Development Demand	Effective Off-Street Parking Supply	Displaced Excess Demand	Displaced to On-Street Parking 2 hr./Longer Term
Noon	481	79	560	521	39	30/9
2 p.m.	525	73	598	521	77	50/27
4 p.m.	400	60	460	521	0	0
6 p.m.	387	93	480	521	0	0
8 p.m.	597	94	691	521	170	65/105***

*From Table 7. Public Off-Street utilization counts conducted on 8/8/12.

** Peak development parking demand for a weekday in August calculated as 97 spaces at 7 p.m.

***Parking enforcement ends at 6 pm so some longer-term displaced parkers would use the unenforced 2-hour posted spaces.

shows the projected split of parkers displaced to the on-street system that are either short-term parkers (under 2 hour stays) or longer-term parkers (over 2 hour stays). These projections were based on duration-

⁵ "Parking Management Best Practices", Todd Litman, 2006.

⁶ Taken as the average of counts from 2 p.m. to 6 p.m.

⁷ Taken as the average of counts from 2 p.m. to 6 p.m.

⁸ To be conservative, this assumes that none of the public off-street demand would be displaced to private off-street parking or streets beyond 1,200 to 1,250 feet from the entrances to the NRA lots.

of-stay surveys conducted on the NRA lots in previous studies⁹. Longer-term parkers would be displaced to neighborhood streets with no time restrictions.

Table 11 shows the post-development on-street average utilization rates for the various time periods of the design day. This is calculated by adding the displaced excess off-street parking demand from Table 10 to the observed (existing) on-street parking demand.

Table 11: Impact of Projected Excess Off-Street Parking Demand to On-Street Parking System for the Design Weekday

	Observed Parking Demand*	Excess Demand from Table 1	Post Development Demand	On-Street Parking Supply	Post Development On-Street Avg. Utilization Rate
Noon	658	39	697	923	75.5%
2 p.m.	634	77	711	923	77.0%
4 p.m.	608	0	608	923	65.9%
6 p.m.	581	0	581	923	63.0%
8 p.m.	663	170	833	923	90.2%

*On-Street utilization counts conducted on Wed. 8/8/12.

Analysis Results

The analysis suggests that in the post-development condition, ample on-street parking is available until 8 p.m. of the design day within the 5-minute walk area to accommodate parking demand from the proposed new development. This assumes the parking lots operate at 95% utilization through the day. However, even at a 90% off-street utilization rate, the on-street system would still operate under the 85% effective capacity level until the 8 p.m. hour.

After 8 p.m. on weekdays when off-street paid parking and enforcement has ended, and downtown resident parking peaks, the amount of on-street system would exceed the 85% effective capacity level in the survey area, but only by a projected 48 spaces. It is expected that this modest level of excess capacity in the evening would be absorbed into the parking system with some demand shifting out to available parking beyond the 1,200 to 1,250-foot survey area.

It is important to note, that during the peak weekday period, a good portion of the existing public parking system's surplus capacity is projected to be consumed leaving very little overall "reserve" capacity for future growth. Also, the shifting of excess longer-term parking demand from the lots to the streets, albeit small, indicates a shortage of long-term off-street public parking.

As for the summer Friday night and Saturday periods, when the off-street public parking system under existing conditions is already at capacity in the afternoon and evenings, the same shift in parking demand described above would likely occur post-development, but at a much higher level.

⁹ Most notably, the "City of Newburyport Downtown Parking Study", David J. Friend, September, 1998.

Summary Findings

The summary findings provided below are organized in three sections: assessment of existing conditions; determination of development's parking requirements; and assessment of post-development conditions.

Assessment of Current Downtown Parking Supply and Demand

- Overall, the total on-street and off-street public parking system operates under effective capacity except for the infrequent, summer peak weekend condition and during special events.
- During summer weekend peak periods when the public supply is at effective capacity, the private off-street parking supply was observed to be less than 50% utilized, and some private lots (school, bank and commercial lots) were nearly empty.

Parking Requirements of the Proposed Development

- The proposed development is projected to generate a peak parking demand of 101 parking spaces on a weekday evening in December. An estimated 81 spaces are demanded by visitors/customers and 20 demanded by employees.
- The proposed development plan meets the parking requirement of the City of Newburyport Zoning Regulations by providing paved public parking lots onsite with a total of 191 spaces, which far exceeds the development's projected peak parking demand of 101 spaces.

Assessment of Post-Development Downtown Parking Supply and Demand

- Overall, the public parking system is projected to operate under effective capacity during the typical peak weekday by utilizing available surpluses in the existing on- and off-street parking supply. With the reduction of off-street public parking spaces, a modest shift in parking demand from the off-street public lots to on-street spaces would occur during lunchtime hours.
- It is only after 8 p.m. on peak weekdays, when paid parking and enforcement has ended and downtown resident parking is peaking, that the on- and off-street parking system within the 5-minute walk area is projected to exceed effective capacity. In the absence of any improvements, a modest level of excess parking will likely shift to streets beyond the 5-minute walk area.
- For the post-development peak weekday period, a significant portion of the public parking system's surplus capacity is projected to be consumed leaving very little overall "reserve" capacity for future growth and development.
- The identified shifting of excess long-term parking demand from the lots to the streets, albeit small, indicates a shortage of long-term (over 3-hour posted limits) off-street public parking, which will be reduced from 433 to just 288 in the post-development condition.
- For good-weather, summer Friday nights and Saturdays, and in the absence of any improvements, both the off-street public parking supply (currently at effective capacity) and on-street public parking supply (not currently at effective capacity) are expected to exceed effective capacity within the 5-minute walk area. A significant amount of parking can therefore be expected to shift to streets beyond the 5-minute walk area on these infrequent days of the year.

Recommendations

Like the summary findings, recommended actions and strategies are organized in three sections. The first section addresses existing conditions deficiencies. It is recommended that the City advance these measures with or without the proposed development project. Recommendations in the second section are for the proposed development itself. Recommendations in the third section address post-development downtown parking conditions and deficiencies.

Existing Conditions

The following recommended actions and strategies focus on the need for the City to achieve more balanced use of the entire parking supply (public and private) – especially during summer Friday nights and Saturdays when the public parking supply is at or approaching capacity and the private supply is significantly underutilized.

- **Shared-Lot Parking and Lease Agreements** – The City should actively pursue public use of private and institutionally-owned parking lots through direct lease and/or shared-lot agreements. This will increase the effective supply of downtown parking when the City needs it - nights, weekends and during special events – times when the public system is heavily used and some private lots are underutilized or empty. For example, two downtown private parking lots – one at a school and one at a bank – with over 100 spaces combined, were virtually empty during the weekend afternoon/evening period when the bank and school were closed and the public supply was approaching capacity. Under a shared-lot agreement, these spaces could be opened to the general public or to permit parkers expanding the City's long-term public parking supply when it is most needed. These public-private agreements are common in communities with significant summer visitation/tourism spikes and their cost generally comes at a fraction of the cost of developing new off-street parking facilities.
- **Parking Pricing** – The City should review its overall pricing strategy and structure to achieve more balanced use of its public and private parking supply while ensuring there are sufficient revenues to maintain, improve and potentially expand the long-term parking supply. Pricing is one of the most effective ways of achieving balanced use of parking assets by influencing consumer choice between parking locations. For example, in retail districts, on-street parking is typically priced higher than off-street parking to encourage use of off-street areas (both public and private) for long-term parking while preserving more valuable on-street spaces for customers and visitors. Parking located closer to demand centers (core downtown/ waterfront) are typically priced higher than more peripheral or remote parking areas. Off-street public permits are generally priced considering not only the cost to administer the program but also the extent of the available supply given demand. In Newburyport, on-street parking is free and off-street resident permit parking is basically free. Therefore, there is no pricing incentive for parkers to use off-street private lots. Most successful municipal parking programs regularly monitor parking utilization (demand) and program costs, and adjust pricing accordingly.
- **Special Events Parking & Traffic Management Plan** – The City should develop a parking and traffic management plan for major downtown special events and peak summer weekend conditions. These types of plans consider a range of operational strategies to handle infrequent spikes in demand associated with major special events. Strategies can include the use of portable, dynamic electronic message boards for enhanced wayfinding, remote parking and shuttles, traffic flow/circulation modifications, short-term agreements for use of private lots, flat rate off-street pricing, enhanced transit/taxi service and other demand management measures. The City of

Newport, RI and the Town of Plymouth, MA are developing such plans funded and developed through their regional planning commissions.

Proposed Development Parking

As stated in the study findings, the proposed development plan meets the parking requirement of the City of Newburyport Zoning Regulations. Beyond providing for the zoning-required parking needs of the development, the NRA has indicated that it will continue allowing for open public use of its lots. The following recommendations then address lot regulations and management.

- **Permit Parking** – It is recommended that the lots remain 10-hour metered parking with approximately 110 spaces in the east lot designated for use by permit parkers. These spaces would be located furthest from the proposed development buildings and retail core of the downtown.
- **Valet Parking** – It is recommended that consideration be given to providing valet parking services to future customers of the development's fine-dining establishments. Customer's cars could be parked in private lots secured under the shared-lot agreements previously recommended. This strategy would improve customer service, reduce parking needs of the development, and expand the effective supply of the overall parking system.

Post-Development Condition

The recommendations below address the identified post-development shortage of long-term, off-street public parking for employees, visitors and residents, and "reserve" capacity for future growth.

- **Public Parking Garage Development Planning** – The City is working in coordination with state, regional and federal agencies to secure funding for land acquisition, design and construction of a new downtown parking facility on Titcomb Street. This project will provide a substantial number of long-term public parking spaces to address current and projected future parking needs of the downtown. The new garage will address the identified shortage of reserve capacity and long-term off-street parking. However, since the project is not yet funded, the garage is at least three or more years away.
- **Phased Surface Lot Development** – Given that the proposed NRA development would likely advance prior to garage construction, it is recommended that a new 60 to 80-space surface parking lot be leased/purchased and/or constructed to increase the supply of long-term, off-street public parking. Ideally, this lot would lie within a 5-minute walk of the core retail district to provide additional capacity for employee and resident (night) parking while freeing-up prime off-street spaces in the core retail district for visitors and customers. The new lot would also increase the supply of off-street spaces to support the City's growing permit parking program.

One potential location for the new lot is the parking garage site on Titcomb Street. Since this site has been approved by the City Council, the lot could potentially be constructed there in advance of total project funding, design and construction of the garage. In 2002, a conceptual design of a new surface lot at this location was prepared for the City. It was determined that an 80-space lot could be realized there given the site geometry and access to Titcomb and Merrimack Streets. One possible funding mechanism would be to dedicate a portion of the revenues from the paid public parking at the NRA lot for this purpose.

APPENDIX

Exhibit A: Parking Utilization Data

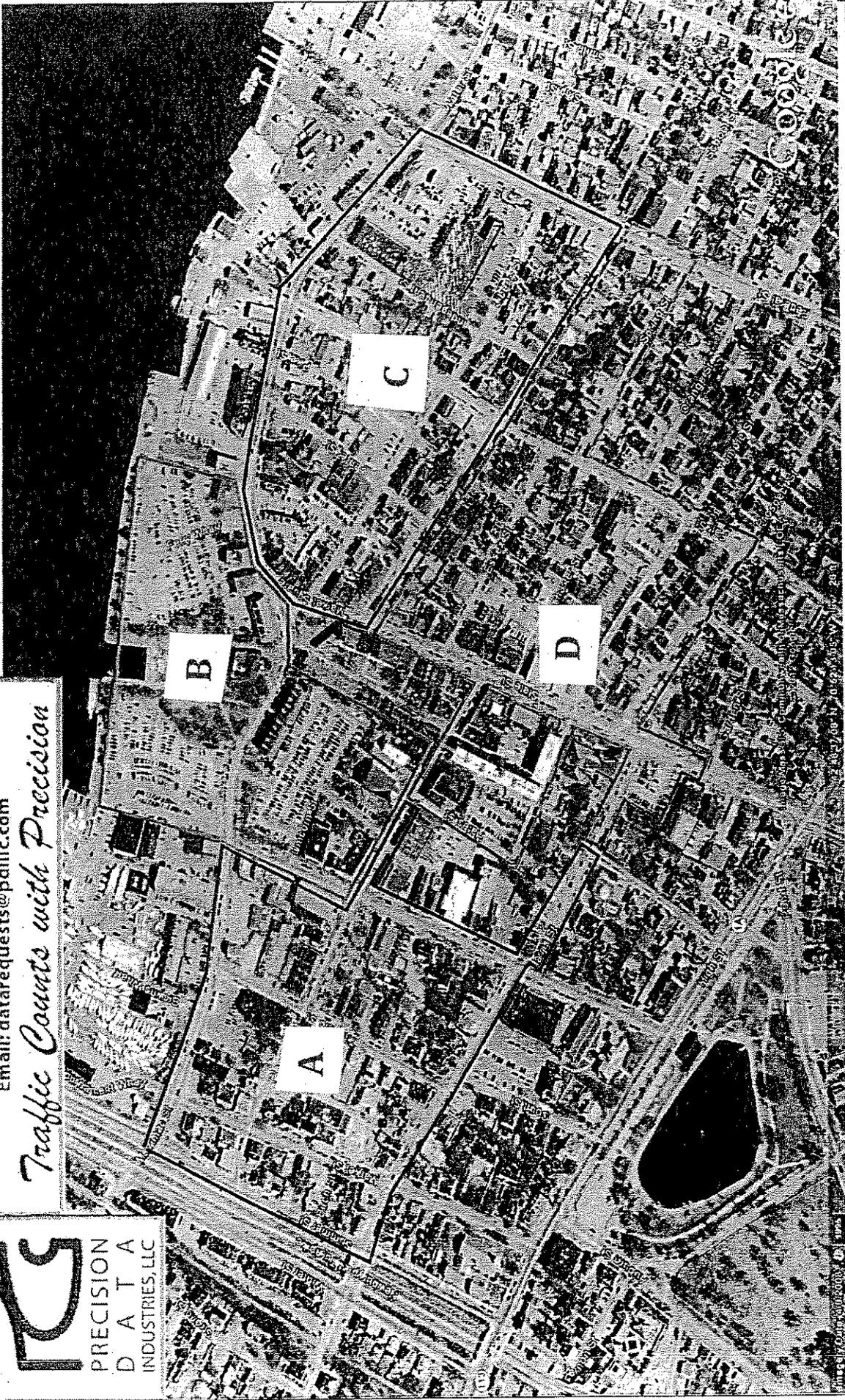


PRECISION DATA INDUSTRIES, LLC

Office: 508.481.3999 Fax: 508.545.1234

Email: datarequests@pdillc.com

Traffic Counts with Precision



Client: City of Newburyport	Engineer: A. Port	Site Code:	Date: Sat 7/21 & Wed 8/8/12	PDI Job Number: 122989	City, State: Newburyport, MA
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D A T A
INDUSTRIES, LLC

P.O. Box 391 Berlin, MA 01503
Office: 508.481.3999 Fax 508.545.1234
Email: datarequests@pdillc.com

PDI File # 122989 A

Map Key

- 1 Merrimac Street between Summer and Market Streets
- 2 Merrimac Street between Market and Titcomb Streets
- 3 Merrimac Street between Titcomb and Green Streets
- 4 Summer Street between Merrimac and Pleasant Streets
- 5 Market Street between Merrimac and Pleasant Streets
- 6 Titcomb Street between Merrimac and Pleasant Streets
- 7 Pleasant Street between Summer and Market Streets
- 8 Pleasant Street between Market and Titcomb Streets
- 9 Brown Square (North) between Titcomb and Green Streets
- 10 Brown Square (South) between Titcomb and Green Streets
- 11 Pleasant Street between Green and Unicorn Street
- 12 Pleasant Street between Unicorn Street and Hales Court
- 13 Summer Street between Pleasant and Birch Street
- 14 Market Street between Pleasant and Birch Streets
- 15 Titcomb Street between Pleasant and Washington Streets
- 16 Green Street between Pleasant and Washington Streets
- 17 Birch Street between Summer and Market Streets
- 18 Summer Street between Birch and Washington Streets
- 19 Market Street between Birch and Washington Streets
- 20 Washington Street between Summer and Market Streets
- 21 Washington Street between Market and Titcomb Streets
- 22 Washington Street between Titcomb and Green Streets
- 23 Harris Street between Green and Park Streets



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D A T A
INDUSTRIES, LLC

P.O. Box 301 Berlin, MA 01503
Office: 508.481.3999 Fax: 508.545.1234
Email: datarequests@pdllc.com

PDI File # 122989 B

Map Key

- 1 Merrimac Street between Green Street and Market Square (State Street)
- 2 Green Street between Merrimac and Unicorn Streets
- 3 Unicorn Street (East-West)
- 4 Green Street between Unicorn and Pleasant Streets
- 5 Unicorn Street (North-South)
- C Green Street Parking Lot
- D Waterfront Trust Lot (numbered spaces only)
- E NRA West Lot (unpaved)
- F NRA East Lot west of Ferry Wharf
- G NRA East Lot east of Ferry Wharf



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D A T A
INDUSTRIES, LLC

P.O. Box 301 Berlin, MA 01503
Office: 508.481.3999 Fax: 508.543.1234
Email: datarequests@pdillc.com

PDI File # 122989 C

Map Key

- 1 Water Street between Market Square and Center Street
- 2 Water Street between Center and Pike Streets
- 3 Water Street between Pike and Fair Streets
- 4 Water Street between Fair and Independent Streets
- 5 Water Street between Independent and Federal Streets
- 6 Center Street between Water and Liberty Streets
- 7 Pike Street between Water and Liberty Streets
- 8 Fair Street between Water and Liberty Streets
- 9 Independent Street between Water and Liberty Streets
- 10 Federal Street between Water and Liberty Streets
- 11 Liberty Street between State and Center Streets
- 12 Liberty Street between Center and Pike Streets
- 13 Liberty Street between Pike and Fair Streets
- 14 Liberty Street between Fair and Independent Streets
- 15 Liberty Street between Independent and Federal Streets
- 16 State Street between Liberty and Middle Streets
- 17 Center Street between Liberty and Middle Streets
- 18 Fair Street between Liberty and Middle Streets
- 19 Independent Street between Liberty and Middle Streets
- 20 Federal Street between Liberty and Middle Streets
- 21 Middle Street between State and Center Streets
- 22 Middle Street between Center and Fair Streets
- 23 Middle Street between Fair and Independent Streets
- 24 Middle Street between Independent and Federal Streets



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D A T A
INDUSTRIES, LLC

P.O. Box 301 Berlin, MA 01503
Office: 508.481.3999 Fax: 508.543.1234
Email: datarequests@pdilic.com

PDI File # 122989 D

Map Key

- A State Street Parking Lot
- B Prince Place Parking Lot
- 1 State Street between Middle and Essex Street
- 2 Fair Street between Middle and Essex Streets
- 3 Federal Street between Middle and Spring Streets
- 4 Essex Street between State and Fair Streets
- 5 Spring Street between Fair and Federal Streets
- 6 State Street between Essex and Charter Street
- 7 Fair Street between Essex and Charter Street
- 8 Charter Street between State and Fair Streets
- 9 State Street between Charter and Temple Streets
- 10 Fair Street between Charter and Temple Streets
- 11 Temple Street between State and Fair Streets
- 12 State Street between Temple and Prospect Streets
- 13 Fair Street between Temple and Prospect Streets
- 14 Prospect Street between State and Otis Place
- 15 Prospect Street between Otis Place and Fair Street
- 16 State Street between Prospect and Garden Streets
- 17 Harris Street between Park and State Streets
- 18 Prince Place between Hales Court and State Street
- 19 Pleasant Street between Hales Court and State Street
- 20 Hales Court between Pleasant Street and Prince Place



PRECISION
D A T A
INDUSTRIES, LLC

PO Box 201, Berlin, MA 01803
Office: 508-481-3999 Fax: 508-545-1234
Email: datarequests@pdilic.com

PDI File # 122989 A

Date: Saturday 7/21/12

		Location #											
		1	2	3	4	5	6	7	8	9	10	11	12
Total Spaces	0	18	16	16	9	14	16	9	21	20R/1HP	11	8R/1HP	10
Time													
12:00 PM	0	11	17	17	5	14	13	3	19	17/0	9	6/0	9
2:00 PM	0	15	17	17	4	14	12	2	17	20/0	9	7/1	8
4:00 PM	0	14	21	21	5	13	13	4	18	17/0	12	5/1	5
6:00 PM	0	7	11	11	4	7	14	3	18	19/0	12	8/0	10
8:00 PM	0	12	19	19	4	12	16	6	21	18/1	13	7/1	11

		Location #											
		13	14	15	16	17	18	19	20	21	22	23	24
Total Spaces	6	20	22R/1HP	25	6	6	4	8	6	17	11	21	24
Time													
12:00 PM	4	13	15/0	22	2	2	4	6	3	10	5	10	
2:00 PM	5	14	18/0	24	3	3	2	5	2	10	5	12	
4:00 PM	5	13	25/0	27	4	4	1	6	3	12	13	14	
6:00 PM	6	16	24/0	28	3	3	3	5	2	12	9	16	
8:00 PM	5	17	26/1	27	3	3	1	5	2	16	11	11	

*15. Cars parked illegally in front of Church

*16. Cars parked illegally in loading zone



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D A T A
INDUSTRIES, LLC

P.O. Box 301, Berlin, MA 01503
Office: 508.681.2999 Fax: 508.545.1734
Email: dat@precisionpublic.com

PDI File # 122989 A

Date: Wednesday 8/8/12

		Location #											
		1	2	3	4	5	6	7	8	9	10	11	12
Total Spaces	0	18	16	16	9	14	16	9	21	20R/1HP	11	8R/1HP	10
Time													
12:00 PM	0	16	18	18	1	15	14	3	14	13/0	7	4/0	8
2:00 PM	0	15	22	22	2	14	13	1	12	18/1	9	5/0	8
4:00 PM	0	17	16	16	4	12	13	1	12	13/0	7	6/0	9
6:00 PM	0	15	13	13	4	9	9	2	11	19/0	10	7/0	11
8:00 PM	0	15	17	17	4	11	11	2	13	18/0	11	8/0	10

		Location #											
		13	14	15	16	17	18	19	20	21	22	23	24
Total Spaces	6	20	20	22R/1HP	25/2*	6	4	8	6	17	11	21	
Time													
12:00 PM	2	11	11	16/0	21	4	4	2	2	7	8	17	
2:00 PM	2	8	8	17/0	19	3	2	5	3	7	6	19	
4:00 PM	1	12	12	13/0	21	2	2	3	3	8	6	18	
6:00 PM	3	10	10	20/0	24/2	1	2	6	2	7	3	5	
8:00 PM	3	17	17	19/0	22/1	0	1	2	1	6	6	8	

* location 16 - /2 spaces are a loading zone- cars parked illegally



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D A T A
INDUSTRIES, LLC

P.O. Box 301, Berlin, MA 01503
Office: 508/481-3999 Fax: 508/545-1234
Email: datarequest@pdillc.com

PDI File # 122989 B

Date: Saturday 7/21/12

		Location #									
		1	2	3	4	5	C	D	E	F	G
Total Spaces		8	9R/1HP	0	9R/1HP	0	221R/8HP	51R/2HP	112R/3HP	124R/4HP	93
Time											
12:00 PM		6	7/1	0	8/0	0	204/2	31/1	75/2	41/1	70
2:00 PM		7	7/0	0	9/0	0	221/2	57/1	110/6	107/5	91
4:00 PM		7	9/0	0	9/1	0	221/7	52/2	114/6	99/4	89
6:00 PM		7	9/1	0	9/0	0	221/6	56/2	119/1	108/2	82
8:00 PM		7	9/1	0	9/1	0	221/8	57/2	118/4	121/1	84



PRECISION
D A T A
INDUSTRIES, LLC

P.O. Box 301, Berlin, MA 01503
Office: 508.481.3999 Fax: 508.545.1234
Email: datarequests@pdiilc.com

PDI File # 122989 B

Date: Wednesday 8/8/12

		Location #									
		1	2	3	4	5	C	D	E	F	G
Total Spaces	8	9R/1HP	0	9R/1HP	0	221R/8HP	51R/2HP	112R/3HP	124R/4HP	93	
Time											
12:00 PM	6	5/0	0	5/1	0	172/5	32/1	81/3	63/2	57	
2:00 PM	7	6/0	0	9/1	0	198/5	39/2	94/2	72/1	56	
4:00 PM	7	8+1/0	0	7/0	0	142/5	30/0	72/4	51/1	38	
6:00 PM	8	5+1/0	0	7/0	0	156/5	43/1	66/0	53/0	29	
8:00 PM	8	8/0	0	9/0	0	219/3	44/1	115/0	94/0	51	

Parked cars noted as +1 in the 4 & 6pm times in location 2 are cars parked in front of police garage



PRECISION
D.A.T.A.
INDUSTRIES, LLC

P.O. Box 301 Berlin, MA 01503
Office: 508.481.3999 Fax: 508.545.1254
Email: doula@precisionpd.com

PDI File # 122989 C

Date: Saturday 7/21/12

	Location #											
	1	2	3	4	5	6	7	8	9	10	11	12
Total Spaces	18	5	9	17	15	9	10	34	15	31	23	9
Time												
12:00 PM	16	3	1	2	5	6	3	25	7	11	20	9
2:00 PM	15	2	5	10	6	6	2	32	5	10	21	8
4:00 PM	12	5	6	11	3	3	2	28	7	12	20	7
6:00 PM	9	4	6	10	5	5	3	30	9	11	19	8
8:00 PM	14	4	7	9	6	6	3	23	7	13	23	9

	Location #											
	13	14	15	16	17	18	19	20	21	22	23	24
Total Spaces	8	6	27	8	4	13	5	17	8	9	5	11
Time												
12:00 PM	6	5	23	8	4	9	1	13	8	7	5	9
2:00 PM	7	4	24	8	4	11	2	10	8	8	5	8
4:00 PM	6	3	17	7	5	11	3	12	7	9	4	10
6:00 PM	6	2	22	7	4	12	2	11	7	9	5	11
8:00 PM	5	3	24	6	5	12	4	12	7	8	7	11



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D A T A
INDUSTRIES, LLC

P.O. Box 301 Berlin, MA 01503
Office: 508-481-3999 Fax: 508-545-1234
Email: datarequests@pdia.com

PDI File # 122989 C

Date: Wednesday 8/8/12

	Location #											
	1	2	3	4	5	6	7	8	9	10	11	12
Total Spaces	18	5	9	17	15	9	10	34	15	31	23	9
Time												
12:00 PM	12	4	7	10	7	6	8	26	8	14	21	9
2:00 PM	12	4	2	11	9	6	8	21	8	17	19	8
4:00 PM	13	2	2	7	7	4	7	23	7	12	20	7
6:00 PM	12	1	1	13	5	6	3	20	7	6	17	8
8:00 PM	13	5	1	11	7	4	4	25	6	5	18	7

	Location #											
	13	14	15	16	17	18	19	20	21	22	23	24
Total Spaces	8	6	27	8	4	13	5	17	8	9	5	11
Time												
12:00 PM	6	2	26	6	5	8	1	10	7	7	4	7
2:00 PM	5	3	21	7	5	8	1	10	6	6	3	4
4:00 PM	6	4	20	7	4	10	3	10	7	8	2	7
6:00 PM	3	1	11	7	4	11	2	8	6	9	3	6
8:00 PM	7	1	15	7	5	11	2	14	8	9	5	7

Location 7 - 2 cars parked illegally at 12 & 2pm, 1 car parked illegally 4,6,8pm

Location 9- 2 cars parked illegally 12 & 2pm, 1 at 4pm

Location 11- 1 car at 2pm illegal

Location 12 - 1 car illegal at 12 & 6

Location 21 - 1 car illegal at 12 & 2



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D A T A
INDUSTRIES, LLC

P.O. Box 301, Berlin, MA 01903
Office: 508.481.3999 Fax: 508.545.1234
Email: datarequests@pdic.com

PDI File # 122989 D

Date: Wednesday 8/8/12

		Location #											
		1	2	3	4	5	6	7	8	9	10	11	12
Total Spaces	16	2	2	15	39	38	9	8	20	16	7	20	12
Time													
12:00 PM	15	2	2	15	31	12	9	3	20	14	5	13	11
2:00 PM	13	2	2	12	27	9	7	3	18	14	2	12	11
4:00 PM	15	1	1	10	30	12	7	2	18	9	5	14	7
6:00 PM	17	1	1	9	30	16	10	3	14	13	5	10	9
8:00 PM	18	2	2	10	29	16	10	4	18	13	3	17	11

		Location #											
		13	14	15	16	17	18	19	20	A	B		
Total Spaces	7	12	12	6	11	18	0	22	0	31	44		
Time													
12:00 PM	4	8	8	3	12	17	0	19	0	27	38		
2:00 PM	4	10	2	2	13	18	0	19	0	15	41		
4:00 PM	4	5	3	3	10	13	0	22	0	16	41		
6:00 PM	6	6	3	3	6	12	0	25	0	5	29		
8:00 PM	6	9	5	5	12	14	0	25	0	28	42		