



WOODSTOCK
VERMONT

Parking: Creating a win-win for Woodstock

Our objective in undertaking this work

EDC identified improving parking as a possible means toward enhancing the lives of Woodstock residents and employees, improving the experience of visitors and impressions of the Town, and growing commerce

What we did

- Reviewed previous Woodstock parking studies (9+ over 30 years)
- Surveyed perceived parking needs and problems
- Interviewed and researched experts, system vendors, and police departments on current parking control best practices
- Investigated alternate parking enforcement systems including electronic systems:
 - Smart meters
 - Smart kiosks
 - Electronic chalking
 - Automated ticketing and collection systems (Hanover visit)
- Explored potential off street parking options

Identified 4 main issues we need to balance

Maximizing limited parking

Limited convenient options for employee parking and limited overall availability during peak usage – ideally encourage turnover

Maintaining revenue generation

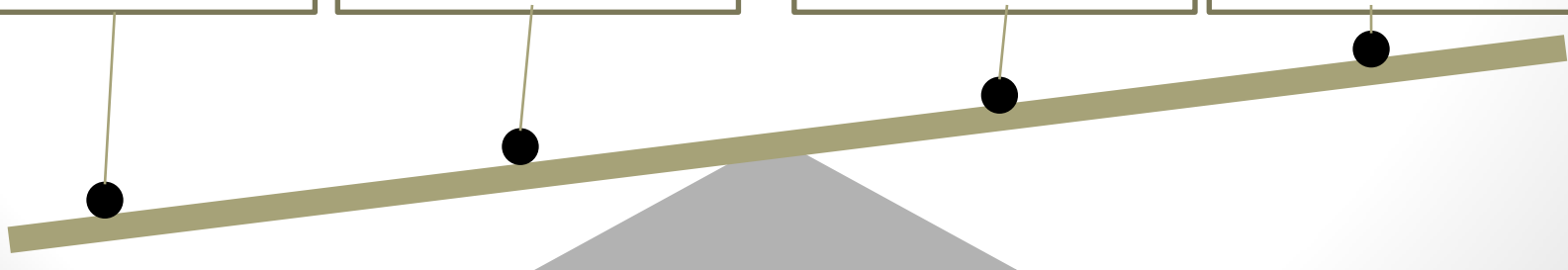
Combination of meters and ticketing a net win for the town, contributing significantly to budget (~\$70k + / year)

Ticketing creating poor experience

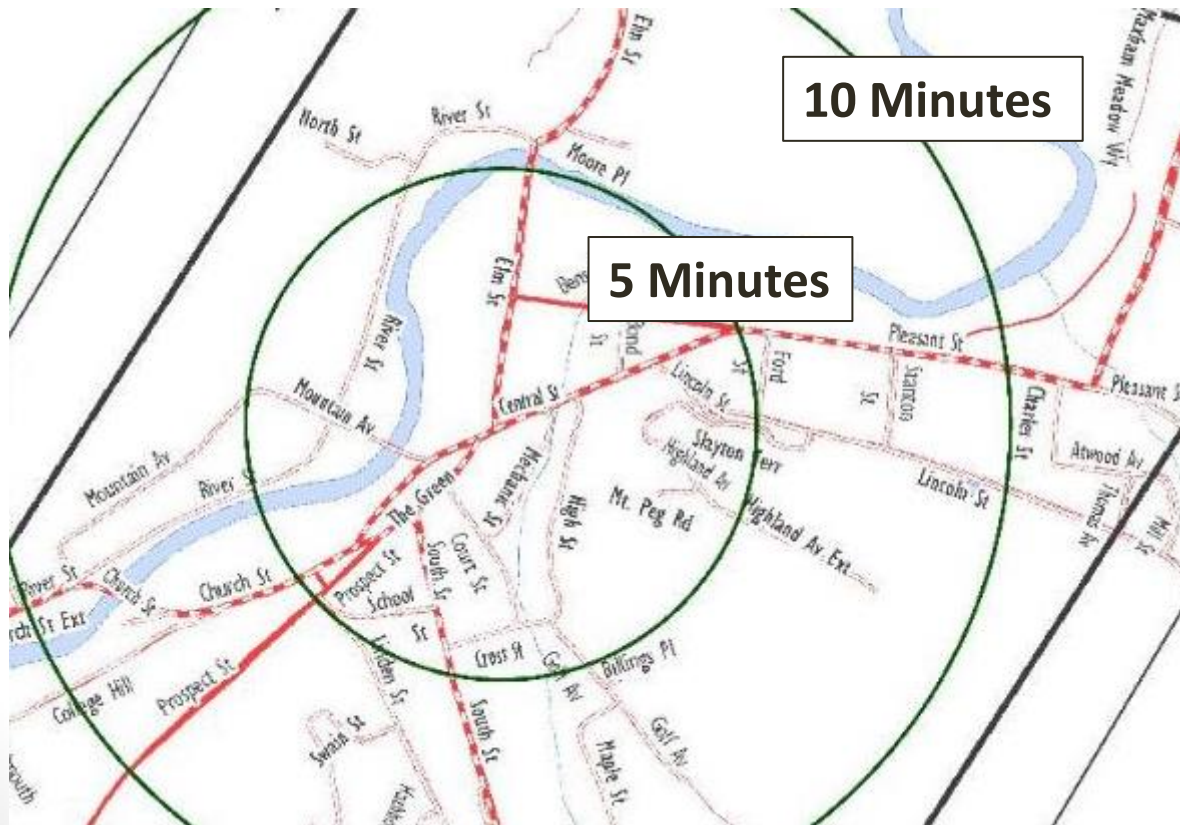
5,000+ tickets issued per year – leading to highly dissatisfied visitors and residents

Meter usability / perception

Inconvenient and often malfunctioning metering system (need change, confusing bi-directional meters, at end of usable life)



Limited peak / close parking (I): relatively small inventory of highly convenient spots



490 spaces within
5 minute walk

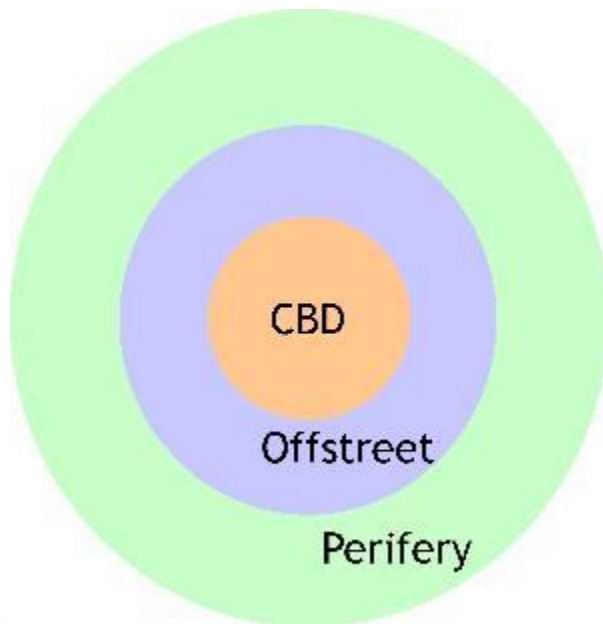
<200 metered
spaces

Limited peak / close parking (II): best practice to encourage turnover in central business district

Concentric zones with parking controls that provide encourage optimal use with a range of restricted and unrestricted parking options.

Optimal use may be considered about 85% occupancy during busy times.

Cost and convenience decrease outward from central point.




Turnover controlled by time or price levers

Time Controlled CBD Parking	Price Controlled CBD Parking
Time limited in CBD	Most expensive in CBD
Long-term pay parking surrounding CBD	Less expensive surrounding CBD
Unrestricted Parking	Unrestricted Parking

Maintaining revenue generation: parking revenue contributes significantly to Village

	2011	2012	2013	2014	2015
Revenue					
Ticket fines	37,179	24,684	28,996	29,857	26,082
Meter revenue	66,180	60,144	81,562	89,965	85,275
Total revenue	<i>103,359</i>	<i>84,828</i>	<i>110,558</i>	<i>119,822</i>	<i>111,357</i>
Expenses					
Buying, Maintenance	33,163	33,188	29,764	33,286	33,817
Lot rentals	5,100	6,000	12,055	10,000	10,000
Total expenses	<i>38,263</i>	<i>39,188</i>	<i>41,819</i>	<i>43,286</i>	<i>43,817</i>
Operating income	<i>65,096</i>	<i>45,640</i>	<i>68,739</i>	<i>76,536</i>	<i>67,540</i>

Ticketing creating poor visitor experience: high dissatisfaction with enforcement



"I found an overtime parking ticket on our car, even though the meter had over an hour and a half left on it... Visitors should be forewarned. This certainly will discourage me from visiting the village."

**Fred Goldstein, Boston
Published in Valley News**

5,000+ tickets given out each year

- Each ticket creates negative association with Woodstock

Ticket enforcement aggressiveness top complaint in survey

Meter usability / perception: many dissatisfactions emerge from interviews

Major issues

- Inflexibility
- Inconvenient (coins only)
- Difficulty of use
- Malfunction
- Negatively impacts streetscape
- Engender visitor complaints
- Impacts snow clearing

“I was extremely careful because of Woodstock’s reputation. I made sure I put extra coins in the meter. I got 18 minutes out of two hours’ worth of quarters. ”

**Sonja Hakala, of West Hartford
Published in Valley News**

Our recommendations: We believe we have an opportunity to create a win-win

- 1 Replace meters with modern systems**
 - Replace meters with modern credit card meter heads. Selected use of pay stations in lots
- 2 Increase revenue per meter**
 - Raise rates per hour to benchmark levels, use space monitoring technology to capture turnover
- 3 Dramatically reduce ticketing**
 - Limit ticket writing and create more "customer friendly" ticketing practices
- 4 Sell parking discount cards**
 - Limit resident and employee disruption of raising rates by selling discount cards for meters
- 5 Investigate options to increase capacity**
 - Investigate investment in long term parking capacity generation in historical society lot

Opportunity to increase satisfaction, create parking turnover when needed, and increase revenue

1 Modernize metering: new metering systems creates potential for much improved experience

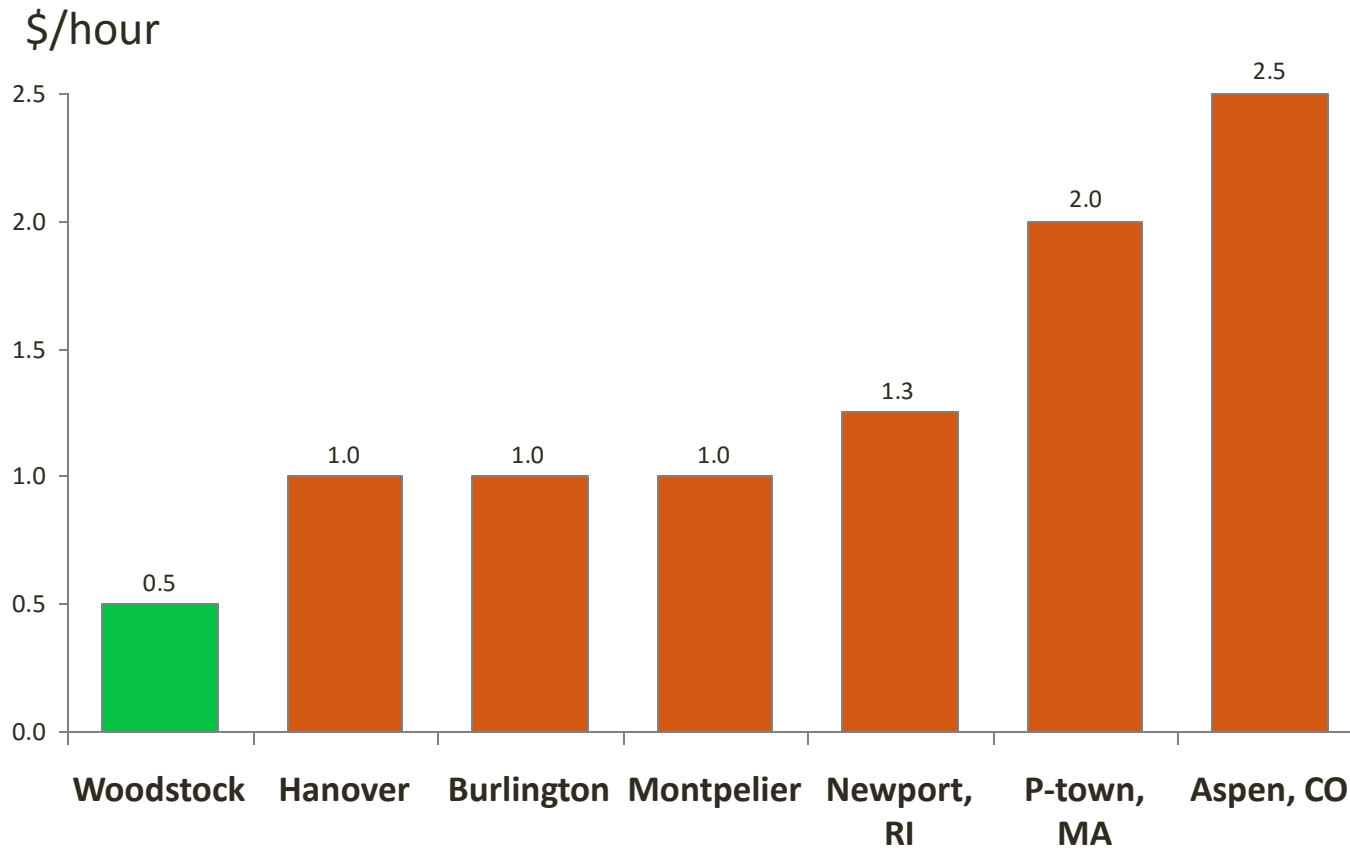
IPS Smart Meter



- Takes coins or credit card
- Monitors space and resets when vacated
- Super fast replacement of heads using double headed system on existing posts
- Allows dynamic pricing by time
- Kiosk based alternatives for lots
- Additional integrated technology to speed ticketing, chalking available

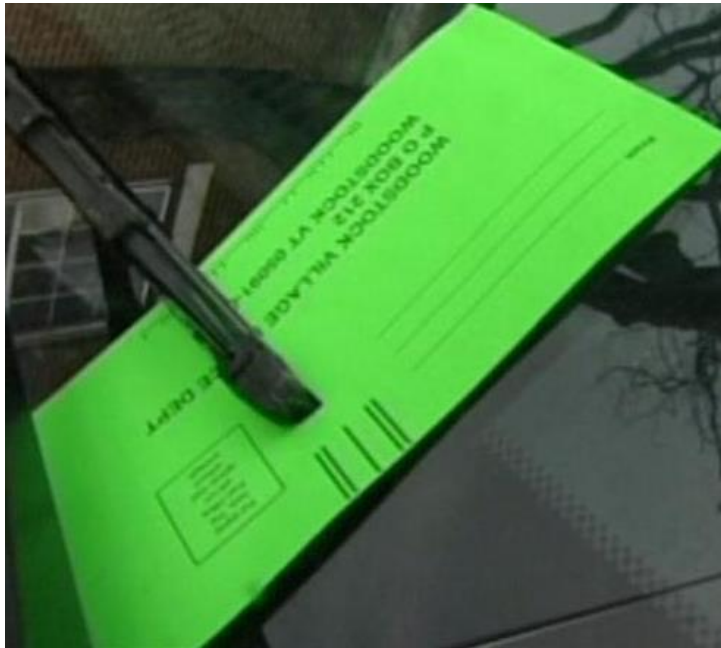
Typical increase of 30-60% of revenue even without price increases because of larger credit card purchases and turnover capture

2 Price increase highly feasible: opportunity to double revenue from meter fees



3 Transform ticketing: imagine shifting from harsh enforcement to benevolent "nudge"

From...



...to

Thank you for visiting Woodstock

We try to make room for everybody to visit our downtown

So if you've overstayed your meter, please consider a \$10 donation to our town fund

(And if this is your third time getting this, we'll be sending you an official ticket!)

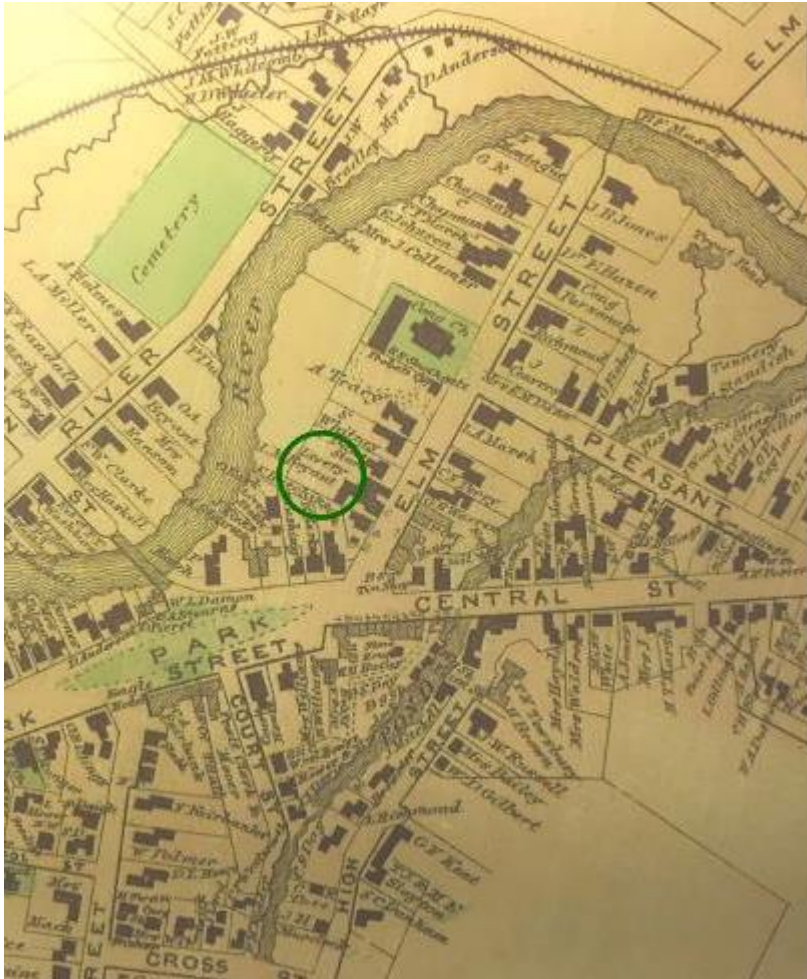
Additional meter revenue allows us to decrease ticketing dramatically while still increasing revenue

4 **Pre-paid discounts:** residents can maintain legacy pricing through stored value cards



- Option to create heavily discounted parking cards
- Could help ameliorate impact pricing changes for frequent parkers

5 Options to increase capacity: example of Historical Society Lot



Donated to Historical Society by Laurence Rockefeller to be used as a source of income.

Currently hold approximately 20 annual leases at \$1,200/year.

Significant annual maintenance costs and is in need of paving.

In 2006, WHS studied possible lot modifications in light of the then pending loss of Frost Mills lot.

Historical Society may consider lease or purchase offers that honor the intent of the donation and respect current and potential future leasees from the WHS.

Opportunity to create a win-win

Limited peak / close parking

Preserves ability to create turnover in closest / most convenient spots

Maintaining revenue generation

Opportunity to create significantly more revenue, without increasing ticketing

Ticketing creating poor visitor experience

Dramatically reduces number of tickets issued to our visitors

Meter usability / perception

Gives us new meters which use credit cards, pre-paid cards, or coins.

Next steps

- Let us conduct a specific pilot to test meters (revenue and costs) to ensure high ROI
 - Will return with specific budget and plan
- Assess lease or purchase of Historical Society lot
 - Define potential business case and recommendation
- Assign subcommittee to investigate best use of existing parking revenue, inventory and long term capacity increase options
 - -Overall budgeting and allocation of parking revenue
 - -Broader set of potential options for key stakeholders (especially employee parking)

Appendix

Problem Summary

- Limited convenient options for employee parking and limited overall availability during peak usage
- Excessive number of tickets that result in excess of 5,000 dissatisfied visitors and residents.
- Inconvenient and malfunctioning metering system that does not solve the original function of promoting turnover.

Opportunity Summary

- Design parking system to optimize parking resources to promote desired CBD turnover when needed
- Enhance the Village experience
by limiting number of issued tickets
- Provide a modern, convenient, adaptable, reliable,
parking control system
- Optimize revenue
- Assure opportunity to address future parking needs

Village parking

Parking controls first installed in 1943 to promote space turnover in the central business district (CBD).

Parking control elements: Regulation and Enforcement

490 public spaces within six minute walk of village center

182 private or for-rent spaces

672 total reduced to

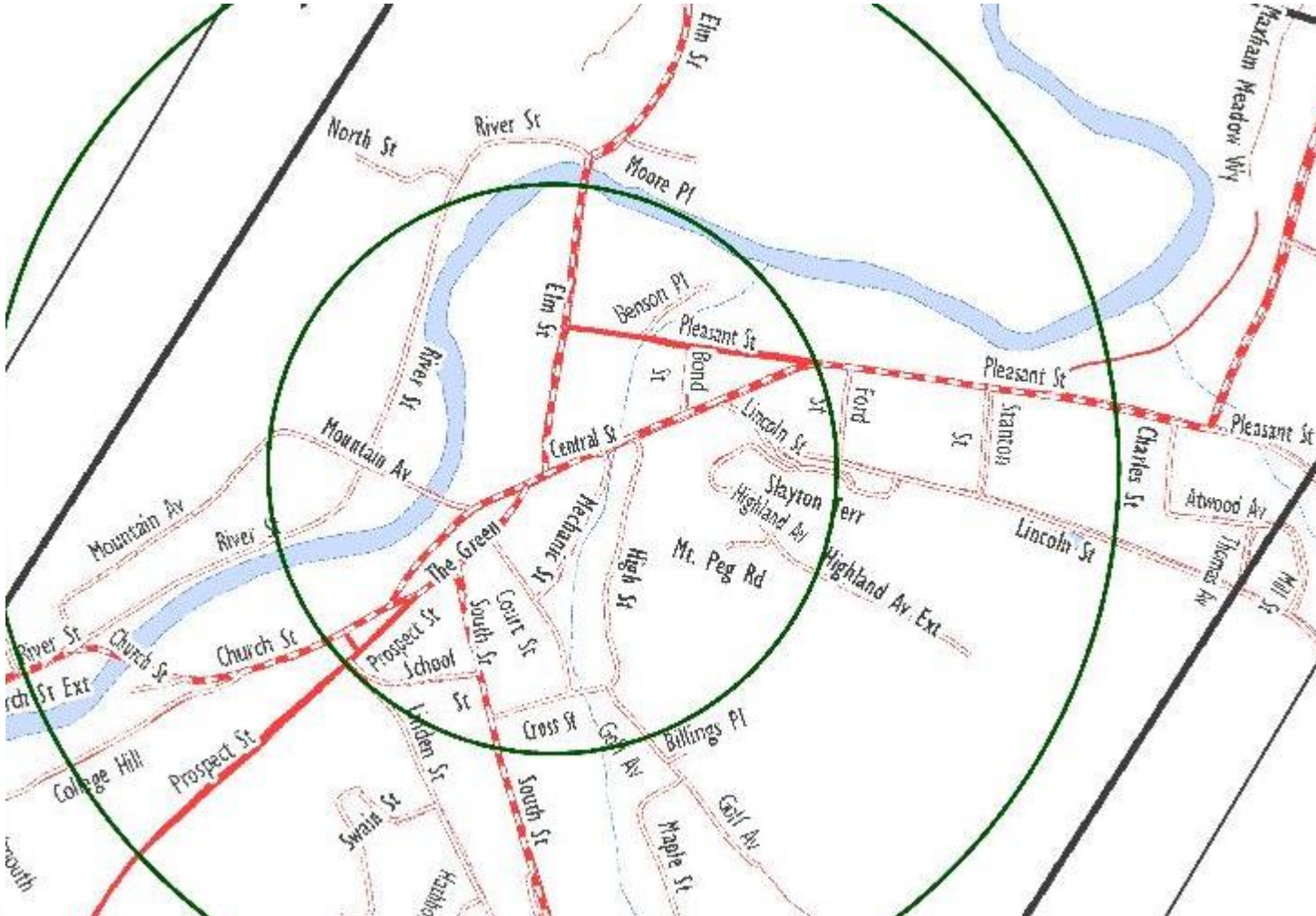
603 total spaces after loss of Frost Mills and repaving

2007 Town/Village Parking Committee Report

623 total spaces with lease of NWPL

Periodically and seasonally stressed

Walking Time



PEDSHED data provided by Two Rivers Ottaquechee Regional Commission

Previous parking considerations

1974 Village Plan indicated additional Village parking commensurate with needs.

Since 1973 study through 2007 Town/Village study, at least nine formal parking studies by paid consultants, planning commissions, Town and Village parking committees, and the Chamber in addition to less formal studies by other groups and individuals.

MIT Student group in 1974 concluded:

- *Parking viewed as Village problem by Town, Town problem by Village, and someone else's problem by building owners.*
- *So the parking problem, while much complained about, is not acted upon by any important degree.*

Typical recommendations include:

Increased off street municipal parking

(A&B Motors, Post Office, Mechanic Street, Village garage, . . .)

Optimizing on street parking inventory

Increased identification and higher fines

to “piggy-back” parkers and repeat offenders

Time limited parking in village center

Perceived parking problems

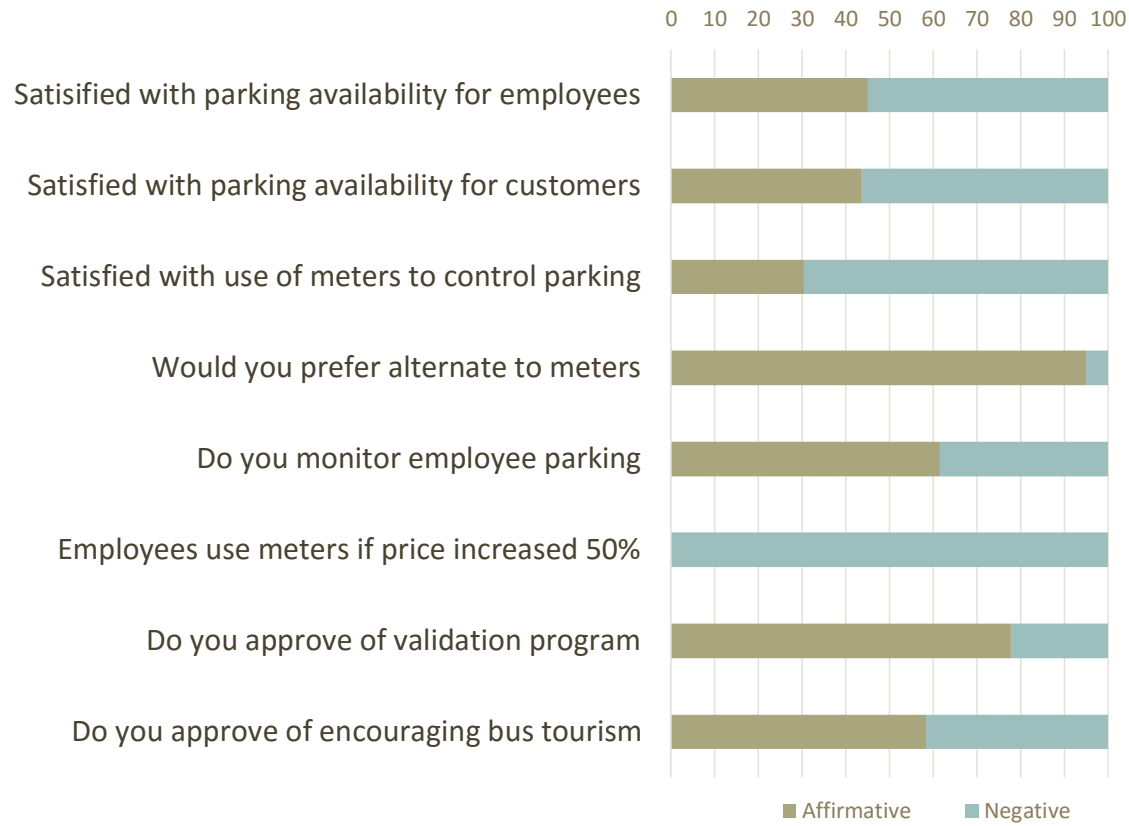
- 26 CBD offices and businesses
- Represent 84 to 104 employee vehicles
- Live interview survey with limited e-mailed results
 - Usage
 - Satisfaction
 - Recommendations
 - Supporting comments

Representative parking usage

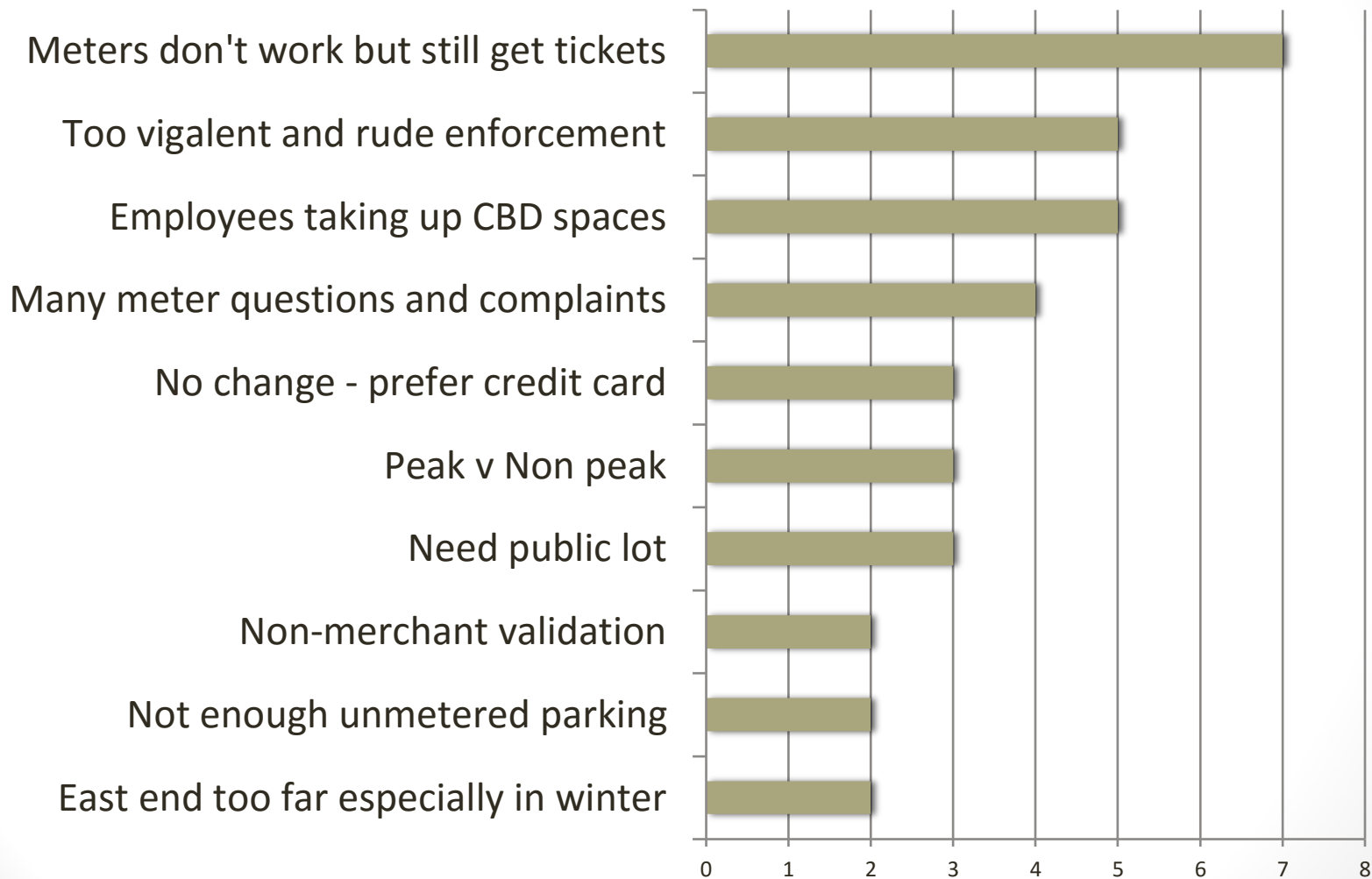
Sample Size = 111 (partial)

- Unmetered parking 61 55%
- Private parking 28 25%
- Metered 22 20%

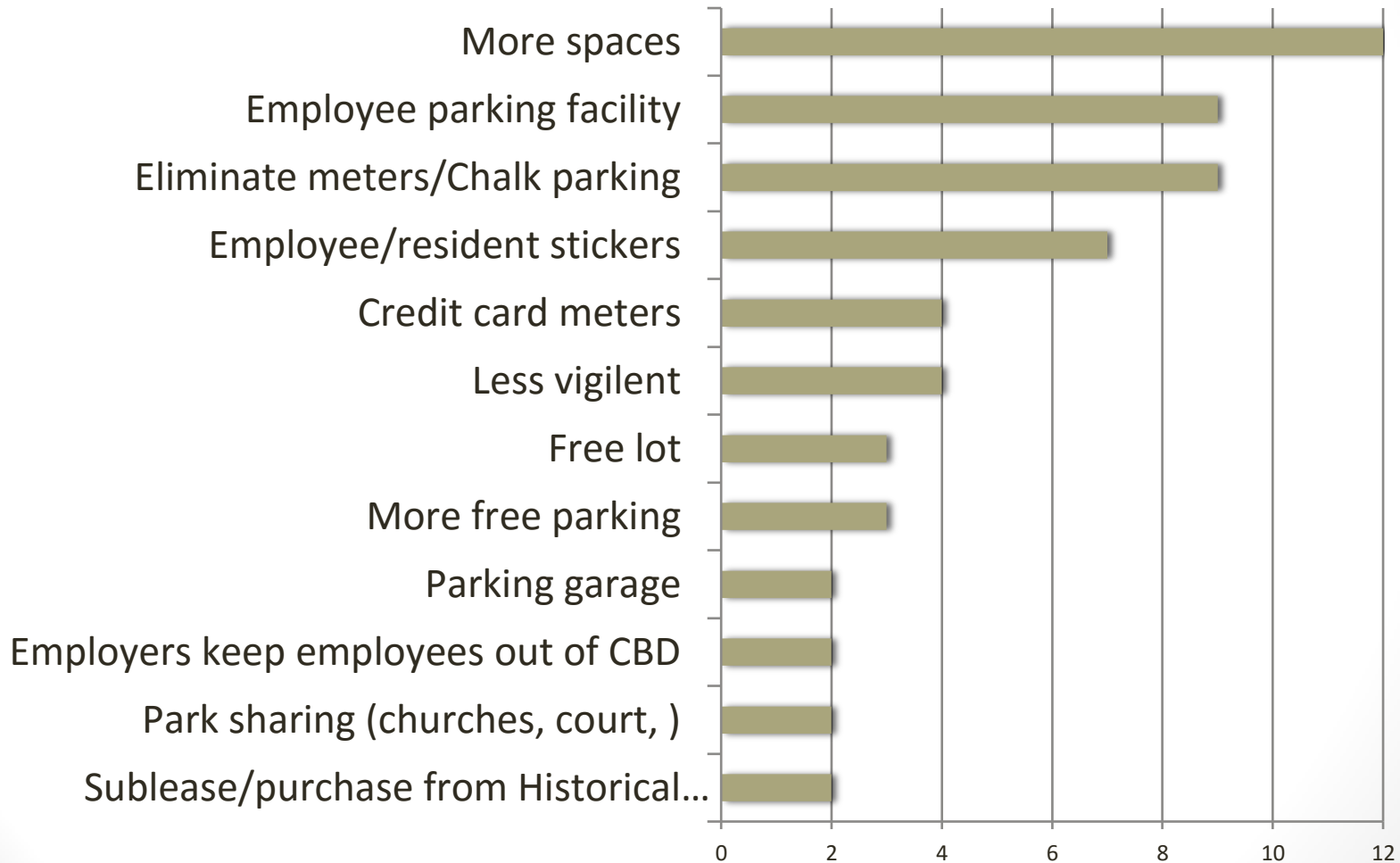
Employer/Employee Opinions



Summarized Comments



Summarized Recommendations



Visitor Experience and Woodstock Reputation

- Strong anecdotal evidence and repeated media representation that bad parking experiences are one of the few blemishes on visitors' experiences.
- Many employees leaving work every two hours to feed meters or move vehicles. Currently limited options.
- Antiquated metering system has proven inconvenient and difficult for many users and is prone to malfunction.
- Meters mar the Woodstock streetscape and inconvenience snow removal.

Comprehensive Parking Plan

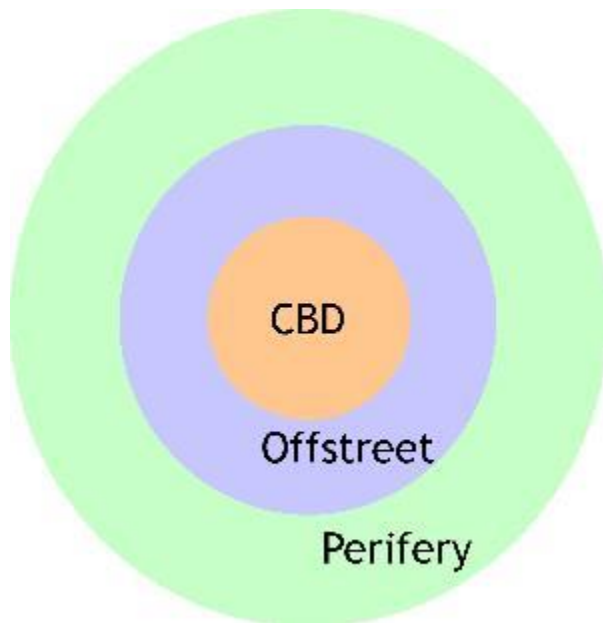
- Consider long-term solution anticipating improved economy with increased population and commerce.
- Optimize use of available parking resources for residents, employees, and visitors.
- Generate sufficient income to support parking program (and other desired income).
 - Facilities
 - Maintenance
 - Enforcement

Central Business District Parking Control

- Promote turn over in CBD to assure sufficient spaces for healthy commerce. ie. 15% vacancy.
- Time limits, pricing controls, or hybrid.
- Provide convenient and affordable alternatives outside of CBD.

Parking Zones

Concentric zones with parking controls that encourage optimal use.
Optimal use may be considered about 85% occupancy during busy times.
Cost and convenience decrease outward from central point.



Time Controlled CBD Parking

Time limited in CBD

Long-term pay parking
surrounding CBD

Unrestricted Parking

Price Controlled CBD Parking

Most expensive in CBD

Less expensive
surrounding CBD

Unrestricted Parking

Current Meters

- Major issue regarding current meters:
 - Inflexibility
 - Inconvenient (coins only)
 - Difficulty of use
 - Malfunction
 - Negatively impacts streetscape
 - Engender visitor complaints
 - Impacts snow clearing

Smart Payment Systems

- More convenient payment methods including cell phone warnings and online extension options.
- Variable pricing programming
- Estimated 30% revenue increase
- Eliminates piggy-back parking
- Eliminates cruising for remaining time on meters
 - (Captures overpayment revenues)
- Data collection
- Warn and adapt to malfunction
- Kiosks reduce quantity of meters in confined/defined areas
- Optional integration with wireless enforcement systems

DPT Kiosk



STREET PARKING

\$13,000

??? Optional Solar

\$2,500/yr service

~\$0.20/credit card transaction

CC, coin, smart card, token
optional RFID and pay-by-phone

Estimate 30% revenue increase
(Probably less in Woodstock)

DPT Kiosk Costs



Hardware

18 Kiosks *	\$234,000
installation	\$?????
optional solar	\$?????
<i>Total Hardware</i>	<i>\$234,000+</i>

Annual Service Charges

<i>18 Kiosks</i>	<i>\$45,000</i>
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Credit Card Transaction Charges ???

Meter Transaction Charge	\$0.13ea
CC Charges	~\$0.07ea
<i>Total CC transaction chgs.</i>	<i>~\$0.20ea</i>

IPS Smart Meter



STREET PARKING

Retrofit existing meter housings

\$575 Delivered and installed

\$305 Optional sensor

\$5.75/meter/month service

~0.20/credit card transaction

CC, coin, smart card, token
optional RFID and pay-by-phone

Estimate 30% revenue increase

One meter per space with yoke mount

Integrated solar panels

IPS Smart Meter Costs



Hardware

142 Meters	\$81,650
optional sensors	\$43,310
18 Kiosk Spaces	\$6,500
<i>Total Hardware</i>	<i>\$88,150 - \$131,460</i>

Annual Service Charges

142 Meters	\$11,040
1 Kiosk	\$300
<i>Total Annual Service Chgs.</i>	<i>\$11,340</i>

Credit Card Transaction Charges

Meter Transaction Charge	\$0.13ea
CC Charges	~\$0.07ea
<i>Total CC transaction chgs.</i>	<i>~\$0.20ea</i>

IPS KIOSK



OFF STREET PARKING (Possibly The Green)

\$6,500 Delivered and installed

\$1,500 bank note mechanism (not recommended)

\$25/month service charge

~0.20/credit card transaction

Display, Space ID, Plate

Estimate 30% revenue increase
(Probably lower for Woodstock)

Integrated solar or hardwire

Recommends against dollar bill and changer.

IPS Kiosk Costs



Hardware

142 Meters	\$81,650
optional sensors	\$43,310
18 Kiosk Spaces	\$6,500
<i>Total Hardware</i>	<i>\$88,150 - \$131,460</i>

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Electronic Chalking and Management



- Eliminate meters
- Electronic chalking with handheld or phone app
- Image capture and upload
- Ticket generation and upload to management system

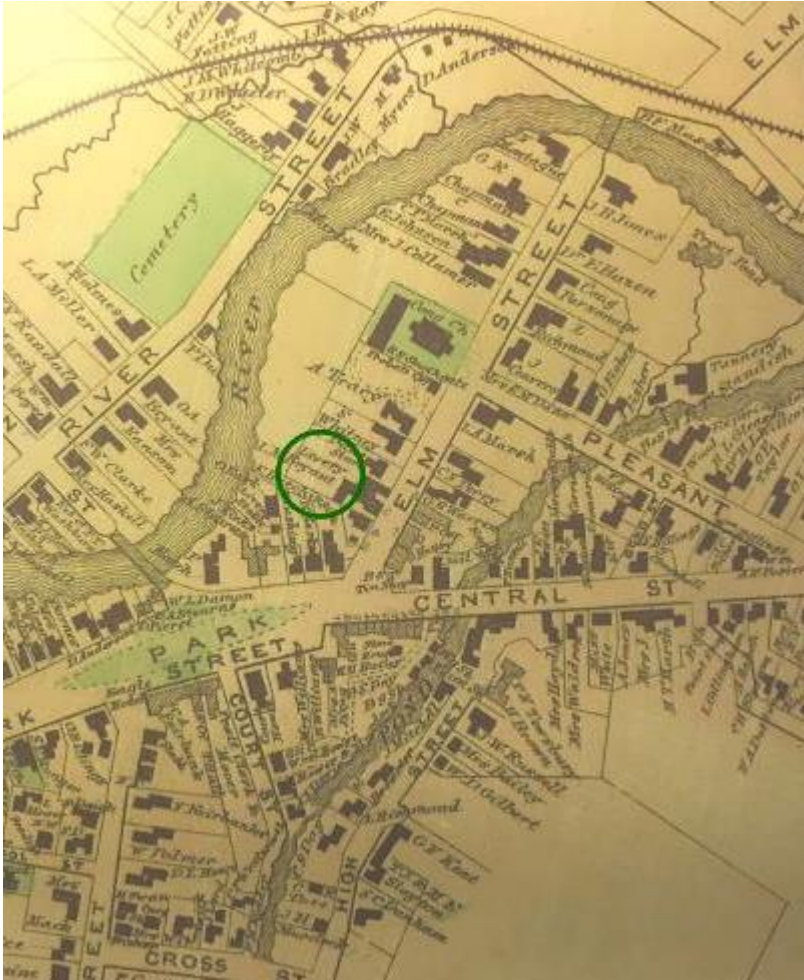
- Automated owner lookup and billing
- Payment posting
- Repeat offender tracking
- Permit management
- Reporting on issuance, violations, locations, and ticket revenue

~\$50,000 first year then \$10,000 to \$25,000 annually

Offstreet Parking

- Most previous studies recommend additional offsite parking.
 - Frost Mills
 - NWPL
 - Post Office
 - Mechanic Street
 - Historic Society Lot
 - AB Motors
- Currently limited desirable alternatives for employees.
- Frost Mills loss and repaving lost 74 – 114 spaces.
- Should anticipate increased population as empty housing inventory fills.
- Should anticipate reinvigorated commerce and tourism.

Historical Society Lot



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Currently hold approximately 20 annual leases at \$1,200/year.

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In 2006, WHS studied possible lot modifications in light of the then pending loss of Frost Mills lot.

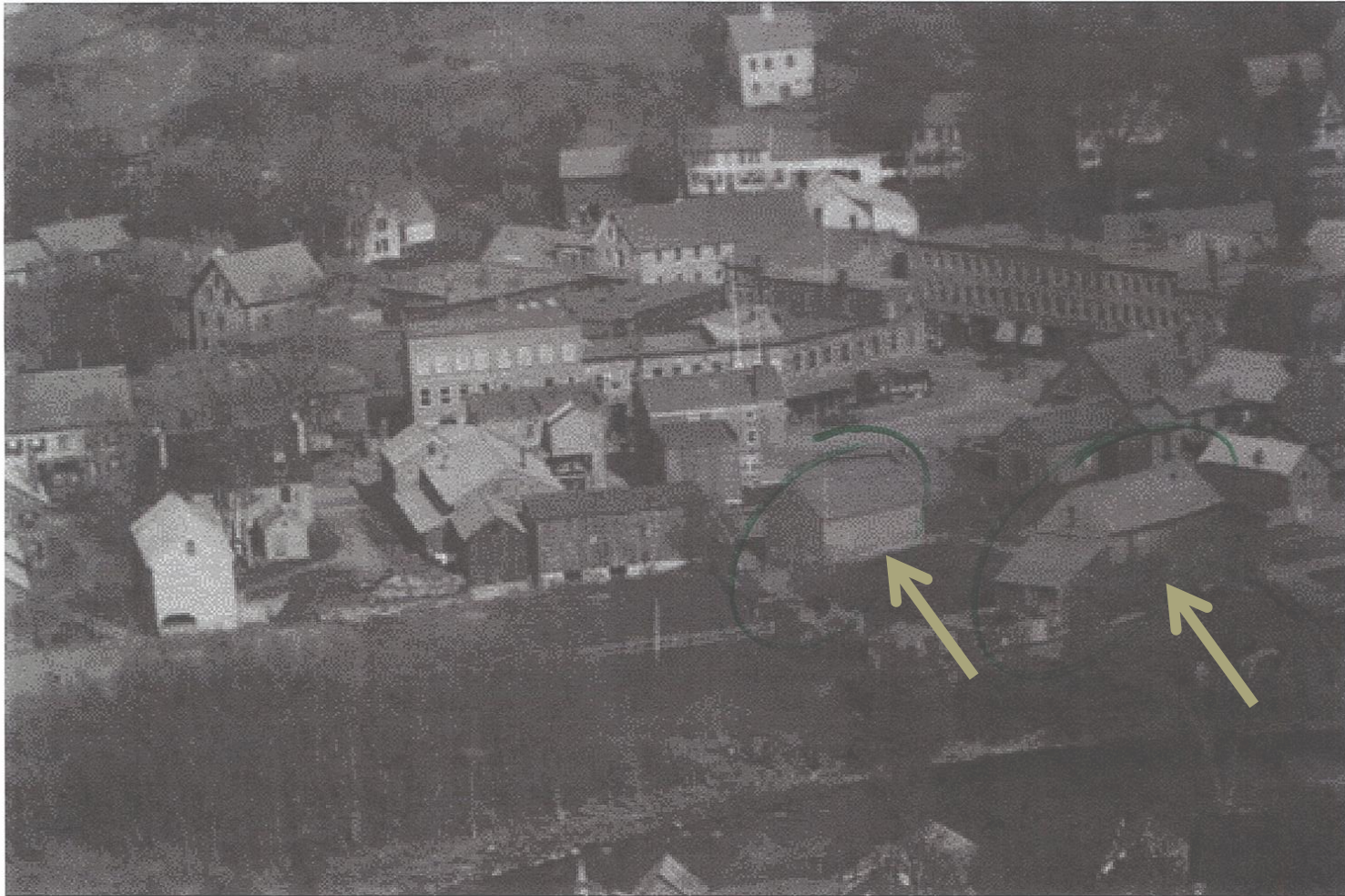
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Historical Society Lot

1869



Former Livery Structures



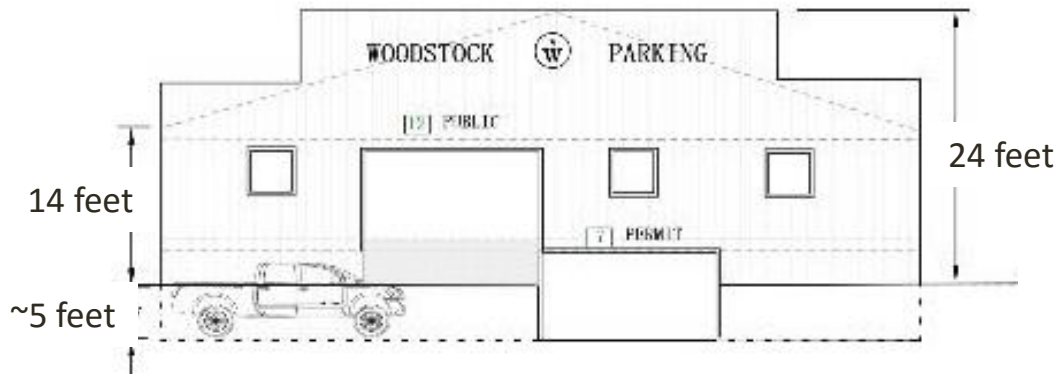
Flood Hazard

App. 20' above 100 yr. flood

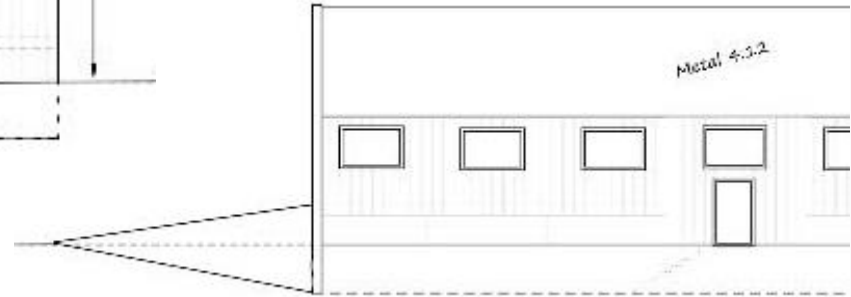
App. 15' above 500 yr. flood



Potential for Future Parking Structure



60 to > 90 spaces
Plus 5 WHS spaces
Currently 20 legacy spaces



\$25K/space	\$1.50M – 2.25M
5 Hist. Soc. Spaces	\$10,000
Kiosk hardwired	\$7,500 - \$15,000
Remodel Ramp	\$30,000
<i>Ballpark Facility Cost</i>	<i>\$1.6M - \$2.4M</i>

Potential Annual Revenue \$60K - \$100,000 + ? less expenses

Suggestions

1. Pursue use of Historical Society Lot

Historic Society Lot

- Unique opportunity to address current and future parking needs
- One of few remaining possible locations that could be lost with no possibility of replacement.
- Scalable element of long-term parking program that can add about 20 to 90 centrally located spaces to Village parking inventory with commensurate income opportunity.
- Properly structured lease or sales agreement can help support the long-term mission of WHS and honor the intent of the Rockefeller gift.
- Recognizes the history of the site as a village livery.

Suggestions

1. Pursue use of Historical Society Lot
2. Encourage friendlier enforcement practices and limit enforcement to achieving desired results.
 - Reduce number of fines
 - Consider use of sensors to allow discretionary enforcement limited to achieving desired parking vacancy.

Suggestions

1. Pursue use of Historical Society Lot
2. Encourage friendlier enforcement practices and limit enforcement to achieving desired results.
3. Develop fully considered parking program

Comprehensive Parking Program

- Develop coherent set of regulations to achieve desired parking conditions and determine preferred enforcement methods
- Optimize use of parking inventory to the benefit of residents, businesses, and visitors
- Generate the desired revenue at the lowest possible parking price while limiting the number of violations
- Consider elimination of CBD meters or raising parking price in CBD
- Encourage employee monitoring of CBD parking
- Switch to on-street smart meters and off street-kiosks
- Consider parking permit program
- Consider electronic enforcement and collection system
- Communicate parking program (signage, map, app, etc)

Suggestions

1. Pursue use of Historical Society Lot
2. Encourage friendlier enforcement practices and limit enforcement to achieving desired results.
3. Develop fully considered parking program
4. Modernize parking control and collection system
(Favor payments over violations)

Suggestions

1. Pursue use of Historical Society Lot
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3. Develop fully considered parking program
4. Modernize parking control and collection system
(Favor payments over violations)
5. Dedicate parking revenue to parking related expenses

Dedicated parking revenues

Dedicated parking revenues with advertised benefits can make payment of parking fees less objectionable.

- Equipment purchase, maintenance, and service charges
- Enforcement and collections staffing
- Road maintenance and snow clearing in parking-controlled areas
- Improved lighting and snow clearing to remote parking areas such as Pleasant Street
- Beautification
 - Trash and recycling receptacles
 - Flowers
 - Private streetscape improvement matching grants
- Pedestrian and Biking paths
- Lease fees (NWPL) and potential land purchase debt service
- Potential parking structure
- Others

Suggestions

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2. Encourage friendlier enforcement practices and limit enforcement to achieving desired results.
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4. Modernize parking control and collection system
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Suggestions

1. Pursue use of Historical Society Lot
2. Encourage friendlier enforcement practices and limit enforcement to achieving desired results.
3. Develop comprehensive parking program
4. Modernize parking control and collection system
5. Dedicate parking revenue to Village improvements
6. Assign parking management to an existing or new Village board for initial development and for annual review and improvement