The Repercussions of Minimum Parking Requirements On The Economic Viability and Character of Traditional Downtowns

A Thesis

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By

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Abstract

In order to remain competitive, older suburban downtown centers must maintain the valuable neighborhood character of the ‘Main Street’ and address the challenges associated with vehicular parking. The object of this thesis is to use the Village of Tarrytown, New York as a case study to examine the repercussions of minimum parking requirements on the traditional character and economic viability of older downtown centers. Through an analysis of the spatial application of Tarrytown’s zoning code, this study found that the mixed-use and traditional features that make up the character of the downtown are out of compliance with the village’s own minimum parking regulations. Through an evaluation of twenty years of Village-sponsored parking interventions, this study also found that these ‘solutions’ have not alleviated the public’s perception of a ‘parking problem’. While parking may certainly be a spatial challenge in traditional downtowns, this study suggests that minimum parking requirements, in this context, are unrealistic regulations that are an impediment to continued economic viability. These regulations exacerbate the tensions between maintaining a downtown’s traditional character and fostering economic development. Punitive fines should be eliminated for unrealistic parking regulations in traditional downtown districts and regulations should instead include a multifaceted, forward thinking approach that incorporates design guidelines, input from the small business community and contributes to and enhances the built environment. This thesis illustrates how parking has presented challenges for Tarrytown and suggests recommendations to better address the regulation of parking. By understanding how parking regulation reforms fit into the framework of Tarrytown, planners and regulators may apply these lessons to the parking policies of similar traditional suburban centers in effort to preserve downtown character and maintain economic viability.
Introduction

This thesis explores a central challenge to planners and urbanists: how parking requirements affect the redevelopment potential and economic viability of traditional downtowns. Residents and regulators of suburban ‘Main Street’ Districts view parking as a challenge because they may have experienced difficulty with finding it. While the search for parking is an issue that demands attention, a challenge that has economic repercussions on traditional downtowns, and which is the focus of this thesis, is the regulation of minimum parking requirements so that the desirability and character of the downtown are maintained. The regulation and requirement of minimum parking spaces both have the potential to affect the character of traditional downtowns and the viability of local small businesses.

A traditional downtown character is initially established because of a unique quality that attracts visitors and businesses. However, there is an inherent conflict between preserving character and providing sufficient parking with a land use pattern that does not specifically accommodate parking. Planning for continued economic development in traditional downtown settings presents a challenge: how can traditional downtowns be economically successful, attract businesses and provide parking for those businesses while maintaining the character and attractiveness that made such businesses successful in the first place. Parking is a challenge for many communities but is particularly so in traditional downtowns who do not have the perceived luxury of ‘razing and paving’ which is a feature of many urban and suburban American environments. This thesis considers that parking challenge in a traditional downtown context, discusses the distributional effects of the cost on the businesses that minimum parking requirements
impose, discusses parking regulation policy that is applicable to this physical context, and uses the river town of Tarrytown, New York as a model of a village challenged by these parking problems. The research includes a review of legislative, administrative and historical data about parking in Tarrytown, and produced an idea of how much parking the village of Tarrytown mandates in the Main Street District, and the discrepancy between reality and the code. A qualitative and spatial analysis of parking policy in this small downtown district illustrates how, even in areas that seem to necessitate parking, the mandate for minimum parking requirements provides an economic hurdle for continued viability, which jeopardizes ‘traditional’ character.
Literature Review

The subject of this thesis is how parking regulations affect traditional historic downtown character and viability. Throughout the peer reviewed and other literature concerning parking, Donald Shoup, a professor of Urban Planning at the University of California in Los Angeles surfaces frequently. Over a decade ago, Shoup’s seminal work, *The High Cost of Free Parking* explored the history of parking management in the United States. Shoup called the establishment of minimum parking requirements “the great planning disaster” and suggested that the price of existing parking spots should be increased to manage demand, and raise revenue for a public purpose. This pricing model closely follows the model of supply and demand. When the price of parking is higher in an area, the demand will respond by decreasing. Shoup recommends what he has called “price therapy” for parking, where prices for parking should increase until space occupancy responds to become 15% vacant on each block face. (Shoup Interview, 2016). Shoup recognized that the exact price to achieve this vacancy varies by geography, but contended that underpriced and free parking is a missed opportunity for planners to manage their parking space vacancy and generate revenue. Shoup’s theories of dynamic pricing and raising the cost of parking are an essential component to the overall general discourse of parking management and have been discussed many times by academics and practitioners over the last decade. Dynamic pricing is well documented in the literature and will not be discussed in this thesis. Others, however, have extrapolated on Shoup’s work, and addressed variables beyond pricing strategies such as the parking requirements themselves.
Richard Willson of Cal Poly Pomona analyzed the responsiveness of parking demand to price and made the case that planners should reform minimum parking requirements and provide methods to revise or eliminate minimum parking requirements. (Willson, 2013) He also explored how planners, local officials, business groups and parking operators can develop state-of-the-art parking management strategies to alleviate the control parking has on suburban development patterns (Willson, 2015). However, the solutions he explored for small and medium-sized downtowns were applicable in towns with populations exceeding those of Tarrytown and other comparable ‘Main Street Districts.’ Willson does note, however, that progress is fastest in areas where growth, high land costs, and difficulties in physically accommodating parking spaces demand better management of scarce parking resources. While Tarrytown may not compare in population or resources to San Francisco, or Santa Monica California, the common principal of “decoupling land uses from off-street parking requirements and sharing the parking” is a promising solution for a small Main Street business districts. (Willson, 2013 p. 166)

Much of the discourse surrounding parking regulation in comparable downtowns emphasizes the balance and tensions between maintaining the qualities of a traditional built environment and providing access to these local economies that demand on the automobile in the present day to remain economically viable. What are referred to as ‘traditional downtowns’ (colloquially referred to Main Street Districts in the literature to emphasize their small-town quality), are areas that have maintained and preserved a large portion of their original scale, land use and architecture so that its historic building pattern remains intact. Crankshaw chose a selection of traditional downtowns to study
based on a selection of towns between 10,000 and 30,000 in population without financial resources that were not distinguished by historic monuments, but had an assemblage of older buildings “that constituted a traditional downtown form of common wall buildings without street setbacks” to manage parking. (Crankshaw, 2011 p. 79) A signature characteristic of these traditional downtown commercial districts that were included in this study often had a high density building pattern, which clearly defined street corridors, framing a high quality pedestrian experience.

Another quality of a typical traditional downtown district is a “crucial adjacency of commercial and residential” area. (Jakle, 1982) Traditional character, he argues, is the result of an interaction between the pedestrian and the aesthetic built form and the land uses of the street frontages. The high quality pedestrian experience that these components create is a vital element of the traditional neighborhood character. This interaction is a core element of the new urbanism movement, which seeks to reproduce these desirable conditions that arose naturally from the small business districts that developed before the age of the automobile. William Whyte notes that the most successful downtowns have cores of no more than four-square blocks, where people can access shops, services and entertainment (Whyte, 1988). Shoup indicates that successful districts balance a variety of land uses, where there is a clustering of land uses, functions, social, cultural and economic activities (Shoup, 2005).

In addition to the New Urbanism theory of design, architecture and planning, Main Street districts have been more generally examined for their economic and social potential. Edwards attributes a renewed interest in living, and shopping in central small downtowns to “boredom with the same national chains at the mall, traffic congestion on
suburban roads…and efforts of groups to ‘sell’ the unique character of [Main Street] downtowns.” (Edwards, 2006 p. 30) In 2009, Frank Nola advocated for a shift in the emphasis toward a more holistic approach to revitalizing downtown districts, where not only are the architecturally significant commercial structures considered as part of the fabric, but “also are the more ordinary buildings that contribute to the distinctive pattern of a traditional” business district. (Nola, 2009)

The National Trust for Historic Preservation established the National Main Street Center (NMSC) in 1980, which researches the revitalization of traditional downtowns through economic restructuring, promotion, design and organization. The NMSC and the Institute of Transportation Engineers partnered to create a handbook about downtown parking where they surveyed Main Street organizations of 100 small cities and towns with historic districts throughout the United States for contributions. The study noted a plethora of interventions these towns used to manage their parking problems ranging from re-marking parallel to angled parking to the design of parking facilities with “downtown as a destination rather than a place ‘to go through’ with a traffic system that reflects these elements.” (Edwards, 2006)

The results of the report, *The Parking Handbook for Small Communities (1994)*, indicated a commonality throughout traditional historic districts: parking is viewed by many of these small communities with constrained space as a ‘space problem’: in essence, how many spaces there are, how many spaces are being used, and how many spaces they think they need. Stitt noted in the *Small Town* journal that in many small towns where ‘parkers’ perceive a shortage of parking, parking studies demonstrate that there is a sufficient amount of parking spaces, but that often spaces are underutilized because they
can’t be found. (Stitt, 1996) Crankshaw notes that in Main Street districts, while some people walk there, most access the downtown by “arriving by car and the first activity on arrival is parking. After parking a car, the driver becomes a pedestrian and embarks on a walking trip to a destination. (Crankshaw, 2006 p. 80) While in larger cities, pedestrians may be willing to walk further from a transit station or their origin point to reach their destination, attitudes are different in vehicular dependent geographies. In the 1970s, Lynch noted that those who design shopping centers recognize that shoppers only desire to walk 300 feet or shorter once they leave their car before they enter a store, to a maximum walking distance of 450 feet (Lynch, 1971). In Richard Untermann’s 1984 book on adapting small towns and neighborhoods for walking and biking, it is apparent that these walking preferences for formerly vehicular pedestrians also apply to small downtowns too. (Untermann, 1984)

The Parking Handbook for Small Communities report did not highlight the regulation of minimum parking requirements in these downtowns, or how they could affect the economic viability of these downtown districts, but repeatedly noted that as traditional central business districts repopulate, there will be need for re-engineering traffic and parking facilities, and to add parking supply. Often in planning, as in the cases documented in the Main Street Parking Initiative piece, the solution to complex problems is to build something to make the problem go away.

Another aspect of the literature concerning minimum parking requirements is that there should be a focus on decreasing minimum parking requirements because of the negative detrimental effects the resulting parking lots and structures have on the built environment and pedestrian public realm. Mukhija and Shoup argued in 2006 that
planners should worry less about the quantity of parking that should be provided and more about the quality of the parking that is being provided. (Mukhiya and Shoup, 2006) Eran Ben-Joseph wrote an entire book about the design of parking lots and structures noting that “you can learn a lot from society by their parking lots”, as he pondered if a violent society created horrific parking or horrific parking created a violent society. (Ben-Joseph, 2012) While there is much to be said about the design of parking, for the purposes of this thesis, we will concentrate on the effects that required parking could have on traditional downtowns, their character and continued economic viability.
Methodology

This study set out to evaluate the existing parking regulations in the village of Tarrytown, New York. Tarrytown is an example of a traditional and historic downtown developed before the prevalence of automobiles, which managed to retain its traditional form and land use of its downtown business and residential district throughout the 20\textsuperscript{th} century. According to existing literature, no publically available evaluative study has been performed in a comparable village that gathers information on both the parking management alternatives a village has tried, and the spatial application of the existing zoning code to illustrate the hypothetical spatial consequences on downtown character if all land uses suddenly complied with their parking requirements.

ProQuest database searches were limited to peer reviewed English language journals to survey the current discourse in parking-challenged traditional downtowns. Search results were further refined to identify novel approaches to parking limits set by geographical and year of publication constraints. Administrative and legislative documents about the Village of Tarrytown are also accessible for primary research objectives of this nature. This study utilized a method of primary review of Tarrytown Village parking documents from the years approximately 1990-2016. These documents define prior research studies, traffic metrics, parking surveys, maps and photographic datasets.

Additional legislative, administrative, anecdotal and historical data and surveys were obtained from: Tarrytown Planning Board Meetings (October 2015-March 2016), a station-area design charrette (August 2015), and a village Eminent Domain Hearing on the taking of a private parking lot for the public purpose of added parking. Interviews
were conducted throughout the course of the research with public officials at the Village
Hall and included the mayor of Tarrytown, Drew Fixell, the Village Administrator
Michael Blau (who is also responsible for the logistics of planning implementation,
feedback and design) and Planning Board Member, David Auckland. Interviews with
private individuals included several owners of businesses along Tarrytown's Main Street
who had paid into a “Parking Fund” in lieu of providing parking in the central business
zone, the director of the Village's historic Music Hall and employees of several
establishments in the district.

Various methodologies were considered to assess the current regulation of
parking, its variability, trends and associations that may contribute to overall parking
regulation challenges within Tarrytown. As discussed in the body of this work, this work
was an evaluative study of the parking regulations that govern the traditional downtown
business and residential building stock.

The projection of theoretical space required to comply with parking requirements
will be known in this thesis as Hypothetical Space or “Hypo-Space.” This study was
conducted to compare the hypothetical space required in theory by the parking
requirements to the parking supply that actually exists in Tarrytown. The intent of the
exercise was to determine the extent to which the town would need to be altered to
become compliant with their parking regulations and the consequences such an action
would have on the character of the Main Street business and residential district.

A line surrounding the entire building footprint on every block face in the Central
Business District defines the study area of the Hypo-Space. The study zone ranged from
the western extent of Main Street to the Village Center, and to the northern CBD extent
on Broadway. Building footprint square footage was calculated using the GIS “calculate geometry” tool with a NAD83/ New York East (ft US) Coordinate Reference System. Using the Town of Greenburgh, New York’s online “GIS Map & Tax Information” tool, it was possible to calculate the number of residential units in each building footprint by examining each building’s “Building Card” PDF. The number of residential units became a new “Field” in the Study Area Building Footprint’s “Attribute Table.” A visual inventory of “number of retail businesses per building” and “actual land use” was also conducted, and the information recorded as new fields in the Study Area Building Footprint attribute table.

Additional data for the study focused on the parking needs of commercial and non-residential sites. In the Tarrytown Schedule of Minimum Parking Requirements, the number of tables in a restaurant, number of employees a restaurant has on staff, or actual area of retail space determines the number of parking spaces required for restaurants. The town also calculates parking needs in churches and places of worship by counting the “number of pews” and for a men’s lyceum, built in the 1910s, parking spaces is determined by the “number of bowling lanes.”

In certain situations, which revealed aspects of the debate, only rough estimations regarding usage and parking could be made. Restaurant and store owners, for example, were not particularly willing to share the number of tables, nor number of employees with the author, purportedly out of fear that their minimum parking requirements would be recalculated, that they would owe additional fees, or worse, relinquish space to become compliant. Our study’s theoretical parking demand model of ‘Hypo-Space’ was derived, therefore, on the standard calculation for parking spaces based on a building’s
first floor retail square footage, use and number of units. Through a one-to-many spatial join, a final field contained the existing minimum parking spaces required for each building’s use.

This study operated under the assumption that a parking space’s dimension measures 10’ x 20’, according to the APA Wiley Planning and Urban Design Standards. (Wiley, 2006 p. 253) With these assumptions and data, a rectangular box fitting this dimension was buffered parallel to each building footprint’s block face and street frontage, to populate the area within each building footprint’s parcel boundary. In cases where the number of code-stipulated required parking spaces exceeded the spatial constraints of the parcel, through the editor toolbar, it was possible to manually move these rectangular ‘Hypo-Spaces’ to align in a row of other required spots.
Results of Hypo-Space Exercise

While the ‘Hypo-Spaces’ are certainly a rough estimate, the visual effect of the Theoretical Demand for Parking is striking. What is more, is that the method for projecting the spatial consequences of required parking on the downtown does not project the spatial necessities required for standard parking lots, which require space for access and egress, turning radii, aisles, islands, access for fire rescue and transit vehicles, and efficient circulation routes amongst other aspects. (Wiley, 2006 p. 255) These additional parking lot design components would theoretically require even more additional space for parking, if spaces were constructed to meet compliance. Often, site planners approximate parking area calculations at 350 square feet per parking spot to account for these additional spatial requirements.

The results of the exercise showed that the Village of Tarrytown technically requires 1,700 parking spaces to meet the projected necessary parking in the study area alone. Even if the study area were expanded westward down the Main Street hill, across the Metro-North railroad tracks and to the river, encompassing all of the existing parking supply near the river, the existing parking supply of all this space provides only 1,016 spots total. On Main Street, there are 150-metered spots and 121 municipal lot spaces. In 1998, Adler Consulting identified a total of 1,054 on-street, public lot, and private spaces combined. (Adler, 1998 p. 33)

The supply of parking does not meet the theoretical requirements as established in the Tarrytown Village zoning code. Tarrytown would need to create an enormous amount of new space for the parking it requires. Of a total foot print of 255,878 square feet, 151,373 square feet – or 60 percent of the building footprints in the central downtown
would need to be razed to create parking. The minimum parking requirements set for Tarrytown’s downtown are therefore problematic and the ‘Hypo-Space’ conundrum, the difference between what exists and what must exist based on code, can be visually illustrated. The ‘Hypo-Space’ study merely demonstrates that while it is indeed possible to create space for the assumed amount of necessary parking, the very act of doing so would permanently alter the very quality of a community that made it a drawing location in which to park in the first place. (See Figure 1 and 2 on page 18) Another illustration of a larger study area of Tarrytown shows that nearly 20% of the entire land area is already dedicated to some form of parking. (See Figure 3 on page 19) This presents an opportunity to avoid demolition, which will be discussed later in this thesis.

**Table 1: Summary of Public or Publicly Administered Surface Parking Inventory**

<table>
<thead>
<tr>
<th>Lot Name or Location</th>
<th>Number of spaces</th>
</tr>
</thead>
<tbody>
<tr>
<td>31 South Broadway</td>
<td>24</td>
</tr>
<tr>
<td>McKeel Avenue</td>
<td>65</td>
</tr>
<tr>
<td>South Washington Street</td>
<td>78</td>
</tr>
<tr>
<td>South Washington Street (West)</td>
<td>25</td>
</tr>
<tr>
<td>W. Elizabeth Street</td>
<td>11</td>
</tr>
<tr>
<td>Neperan Road</td>
<td>19</td>
</tr>
<tr>
<td>Windle Park</td>
<td>18</td>
</tr>
<tr>
<td>South Depot</td>
<td>46</td>
</tr>
<tr>
<td>Depot Plaza</td>
<td>156</td>
</tr>
<tr>
<td>Franklin Street</td>
<td>25</td>
</tr>
<tr>
<td>Green Street</td>
<td>465</td>
</tr>
</tbody>
</table>

**Table 2: Parking Requirements by Land Use**

<table>
<thead>
<tr>
<th>Land Use</th>
<th>Parking Requirements</th>
</tr>
</thead>
<tbody>
<tr>
<td>129 Apartments</td>
<td>322 (2.5 spots per unit)</td>
</tr>
<tr>
<td>95 Businesses</td>
<td>1,378 (avg. 14.5 spots per business)</td>
</tr>
</tbody>
</table>
Figure 1. Hypo-Space Demand Scenario Parking Space Projections based on area and land use based on village code.

Top: Highlighted building footprints in Study Area for “Hypo-space”,

2nd: Space projections. Each red square represents one parking space overlaid on top of white existing building footprints,

3rd: Theoretical spaces merged and dissolved to form a general footprint of a Hypothetical Parking-Lot based on theoretical demand
Figure 2. Hypo-Space Demand Scenario: Areas of Existing Building footprints requiring demolition for 100% parking requirement compliance.
Main Street & Broadway: the “center of gravity” for downtown activity. As illustrated by the “hypo-space” exercise, almost all of the buildings are out of compliance with the zoning code, and only a small ‘new few’ must contribute to the “Parking Fund”
A rough rendering (looking west across the Hudson River) showing in red the urban fabric that would be demolished to make way for “perfect compliance” of parking regulations.
Figure 3. GIS Symbolization of pavement type: Parking. Nearly 20% of all land in this study meets this classification.
Results of Evaluative Research: What has Tarrytown tried?

The results of the evaluation of policy, history and parking regulation in Tarrytown demonstrate that the alternatives the village of Tarrytown has tried in the past have failed to address fundamental challenges in parking, both in alleviating space demand, or encouraging further economic development. The techniques this village has used to mediate parking have included conducting a parking study, creating a valet service, implementing a fee in-lieu of providing required parking, and purchasing private parking lots.

Create Minimum Parking Requirements

The Village Zoning code establishes that structures and land uses shall be required to provide a certain amount of off-street parking and loading spaces based on the land use of the premises, so that theoretically buildings will require sufficient parking for their predicted uses. These are different from other municipal regulations because unlike massing, bulk, or setback requirements, parking demand is dynamic, unlike physical building aesthetics, which are static and more permanent. The code says that a certificate of occupancy will not be issued for a building or land use until the required off-street parking has been established and Parking must be provided upon the same lot as the use. In the study area of the Central Business District (a Restricted Retail Zone) if a “use” changes in a building, but does not require an increase of more than 5 parking spaces than were required for the previous “use”, or if the applicant does not have land available onsite for the approved amount of parking spaces, or has land on-site that cannot be accessed from public rights-of-way, the Building Inspector may waive the site approval
requirements. The village code also provides a chart of minimum off-street parking requirements. Some of these requirements, which are most applicable to the study area, are below:

- 1 and 2 family dwellings: 2 spaces for each dwelling unit
- Multifamily dwellings: 2 ½ space for each dwelling unit
- Office for business or professional use: 2 spaces for each separate office, plus 1 space per employee, but not less than 1 space for each 300 square feet of gross floor area.
- Places of worship, theaters and schools: 1 space for each 5 seats or pew spaces, or 1 space for each 100 square feet of floor space
- Restaurants: 1 space for each employee on shift, plus 1 space for each 3 seats or 1 space for each 100 square feet of gross floor area, whichever is greater.
- Bank: 10 spaces, plus 5 additional spaces for each person in excess of 2 acting as tellers
- Retail business: 1 space per employee, plus 1 space for each 300 square feet of gross floor area (Tarrytown Village Code §305-63-E, 2016)
Conduct a Parking Study

It has been almost 20 years since the Village of Tarrytown has commissioned a formal report documenting the conditions of Parking in the village. Adler Consulting, Traffic Engineering and Transportation Planning conducted the most recent report; entitled “Tarrytown CBD, Traffic and Parking Study” dated November 1998. However in 1998, the business and residential stock was different in its intensity, use and character, and the accepted “purpose of this study [was] to find measures to alleviate any identified parking deficiencies.” (Adler, 1998, p. 1)

The consulting firm, with the aid of several employees and the Tarrytown Police Department had the resources to conduct an accurate inventory of all available parking in the CBD, and conducted parking demand surveys for three peak periods: weekday middays; weekend evenings with an event at the Music Hall and weekend evenings without an event at the Music Hall. In order to document the parking demand by residents, they conducted a parking survey at 11:30pm on a Sunday night. Of this, they generated a map of the existing on-
street and off-street parking supply, and a table of existing parking supply based on location. Unfortunately, due to the age of the survey, and given the drastic changes to its commercial business and multi-family residential stock. Tarrytown has seen over the last 20 years, many of the findings related to the supply and demand are likely inaccurate in 2016. Extensive vegetation coverage over Main Street and the Parking Lots render the usage of aerial photos inaccurate for taking an updated inventory of existing parking demand in the area.

The survey does recognize that many of the historic buildings on Main Street and Broadway (mainly, only the Music Hall at the time) generated a large demand for parking, but were constructed during an era of pre-automobile development, which enjoy the same rights of access as do their contemporary buildings. (Adler, 1998, p.2)

The study suggests that in order for the village to maintain its economic viability, it needs to consider widening the roads, constructing a road to accommodate more north-south traffic along the waterfront, and adding parking supply to accommodate an increasing number of cars. However in a departure from a pro-construction intervention, the consulting team also endorsed the concept of establishing a Village agency with the authority to regulate and enforce parking, as well as negotiate on behalf of the village for the rights to use currently underutilized parking. The study also noted “many employees [of local businesses in Tarrytown] park in the short-term spots [of public lots], competing with customers for spaces, and feed the meters throughout the day.” (Adler, 1997, p. 43) They note that if a visitor to a store has to drive around for five minutes to make a two-
minute transaction, the perceived inconvenience is considerably greater than the same delay for an employee who will be staying in the same spot for a period of several hours or more. They study recommends to encourage employees to park somewhere other than in prime commercial parking spaces by adding geographical diversity in the location with twelve-hour meters.

![Figure 4. Areas slated for potential new parking garage placement (Tarrytown Village Hall Parking Documents)](image)

**Add Parking Supply: Purchase Surface Lots & Study Feasibility of Tier Structure**

In 2008, the Sleepy Hollow Chamber of Commerce, which consists of businesses in the village of Tarrytown and Sleepy Hollow to the north, requested that the mayor make a “commitment to [building] a parking structure in our downtown, which needs serious consideration. With increased need for merchants and residents to park downtown, we are running out of options. This problem will only continue to grow and while it is the result of success, it can easily turn downtown into a ghost town if it is not resolved.” (Sleepy Hollow Chamber of Commerce, 2008) The village has evaluated this idea over
the last two decades and has assessed possible sites, construction companies, and financing structures to create parking structures to increase parking supply.

The Village has considered the cost of construction for decked multi-level parking structures on Lots 17 and 22 of Block 23 (hereafter known as “the CVS lot”) and lot 25 and 26 of Block 22 (hereafter known as the “South Washington Lot”) which are highlighted on Figure 4. The CVS Lot comprises two separate parcels with different owners, but for the purposes of this study, it will be treated as only one site with a sum Market Value of $2,668,349. (Blau, 2012) The Village of Tarrytown commissioned local architect Manfred Hansjoachim Reidel to create proposals for multi-tiered parking garages for these two sites in the mid 2000s (there are no dates on the architectural drawings). The Architect proposed a 3 level decked parking garage on the CVS Lot that would create 317 spaces, and a 2 level decked parking garage on the S. Washington Lot that would create 170 spaces. These plans never progressed beyond a conceptual planning phase. (See Architectural Drawings of the proposed structures on next page)
Figure 5. Proposal for Parking Program (Hansjoachim-Reidel Architects)

Figure 6. Proposal for Parking Program (Hansjoachim-Reidel Architects)
Between 2008 and 2011, the village consulted with SyncPark, a company that, according to its website “delivers breakthrough alternatives to property owners, municipalities, developers and parking customers by providing the only ‘high-speed + high volume’ automated parking solution in the market capable of more than doubling parking density at a starting cost of $20,000 per space.” (SyncPark Website, 2016) Typically, construction costs vary by type (below-grade and above-grade) and by location. Rider Levett Bucknall, estimated the average cost of parking spaces for a combined 12 American cities in 2012 to be $34,000 per space for below-grade spaces, and $24,000 for above-grade spaces. (Bucknall, 2012) Therefore the 20,000 per space SyncPark estimate was slightly below market cost projections. Generally, In 2008, SyncPark first identified the South Washington Lot to potentially carry 200 cars on 2 levels. On another lot off of Main Street, SyncPark forecasted an added potential 90 cars on 2 levels. In 2011, SyncPark finally proposed building an automated parking structure with an automated “Linear Synchronous Motor” on the existing parking lot at South Washington Street thereby increasing the total spaces for usage by “215% at a third less cost than a concrete garage.” In their correspondence, they tried to convince the village of the value by writing that “revenues from valet parking could go directly to the town’s coffers by eliminating the middleman, and the Department of Public Works would not have to clean up the entire lot after snowfall, lowering the expenses.” (Tarrytown Village, 2011)

Even years before this proposal, the village was offered a $750,500 grant to finance parking improvements from New York State Transportation Department. Residents penned opposition to the construction of a parking deck over the existing South
Washington Lot because it would “not harmonize with the historic character of the area…the lights on the new deck would shine into [the] windows of nearby homes…[and the structure would be] intrusive to the neighborhood along the Main Street’s examples of 19th and 20th century architecture.” (Journal News, 1999)

It is clear that despite the added capacity these structures may have given for Parking in Tarrytown, something about their added presence didn’t seem right to the residents of Tarrytown. The residents recognized that a generic, poorly planned structure that would simply add supply, would in fact begin to detract from the traditional character that made Tarrytown a desirable place to be in the first place.

While the Village has yet to create any new asphalt, in the words of the Village Administrator, the Village has acquired land and existing parking lots to offer it publically for residents and visitors. The Village purchased a lot on South Broadway in 2002 where the land acquisition cost was $505,000 and construction costs of paving and the installation of meters were $86,694 ($591,694 Total) which added 25 parking spaces. This implies that each space cost the village roughly $24,000 per parking space. (Booth, 2008) The Village also purchased a surface lot on McKeel Avenue adding 75 parking spaces, and a surface lot on South Washington Street in 2010 where the land acquisition cost was $500,000 and the construction costs were $150,000 (Total $650,000) and added 24 parking spaces. Each spot for that surface lot roughly cost the Village $27,000 to offer as public parking.
Demolish Traditional Buildings In the Name of Added Parking

While no structures in the village have been demolished since 1969, (when a commercial district was demolished after a large fire) the village of Tarrytown has estimated the costs and feasibility of razing buildings along Main Street to accommodate more parking. One proposal suggested the demolition of a property on South Washington Street to add 20 parking spaces, at the cost of $453,000 (that is $22,650 per space). Another proposal suggested acquisition, demolition and then utilization of a 25-foot strip of land behind buildings on Main Street to yield 37 spaces at a total price $528,000 (that is $22,603 per space after 20 year financing) according to a 1998 Memorandum. (Tarrytown Internal Memo, 1998) While these prices of acquisition, demolition and construction were high, the cumulative cost to the community with the loss of traditional urban fabric in the name of more parking would have certainly been higher.

Pilot Valet Services

A solution that both addresses a “peaking” problem and makes better use of parking lots that are on the periphery of the Central Business District is having a collective valet service. Old Pasadena, California is an example of an old formerly “skid row” area where parking revenues have been spent on increased public services, and there is collective valet service for peak demand hours. In sharp peak hours, these valet parking companies make money and don’t have to be subsidized by Old Pasadena. No one says “there’s no parking” because there are several valet stations and there is a system where there are drop-off and pick-up locations in more than one place. (Phillips, Shoup, 2016) What’s more is that visitors who are visiting the town can easily find this
valet parking because it is clearly marked on a map of the central business district that shows where to go to drop off and pick up cars.

As with Old Pasadena, there can be a contract between the city and the valet company, where the prices, the operation and the hours of the company are all regulated. These systems do not cost a significant amount of money because the parking lot does not have to be close to the Central Business District, and parking on the periphery is much less expensive. Like at an airport, if one wants to park right in the middle of the airport, you pay a lot of money.

The city of White Plains, New York established a valet parking ordinance to allow businesses, especially along Mamaroneck Avenue’s business corridor to provide valet parking services to their customers. (Casey, 2016) Greenwich, Connecticut also suffered from a perceived shortage of parking as the president of the Greenwich Chamber of Commerce made clear when she said “Parking, parking, parking is the problem!” in a New York Times article. Greenwich implemented a valet system where attendants in black bow ties would “shoehorn vehicles into every available space, increasing capacity by 40%” for the charge of 2 to 3 dollars. (NY Times, 2001)

Indeed, the village of Tarrytown explored, and implemented a valet parking system on peak parking demand nights “as a temporary solution to [the] downtown parking shortage…based on the success of [valet parking] with other close-by communities like Nyack and Greenwich.” In the same memorandum, it was suggested
that Tarrytown enter into a trial agreement with a Valet Parking Company for a two-month trial period and Valet signs would be placed at the top of Main Street and Franklin Street directing people to the South Washington Street Lot where they could drop off their cars. (Tarrytown Internal Memorandum, 2006)

The village moved quickly on this proposal and entered into a contract four months later with “Parking Systems,” a Valet Management company for valet parking on Friday and Saturday nights from 5pm to 11pm. Vehicles would be dropped off at the South Washington Street municipal lot and driven 600 feet south down Washington Street to be parked on a 50,000 square foot lot on the school property of Washington Irving School. Patrons would be charged $5.00 to use the service. (Standard Valet, 2006)

In addition, in agreement for Valet Parking Services, the valet parking company stipulated that if the demand is less than expected, it would charge the Sleepy Hollow Chamber of Commerce (the larger Chamber of Commerce for the Villages of Tarrytown and Sleepy Hollow) a $35.00 per attendant fee, up to two attendants each night. Lastly, in order to allow valet parking operations on school district property, the Tarrytown School District Superintendent requested that the district be compensated in the amount of $42.00 per month. (Sleepy Hollow Chamber of Commerce, 2006) This was calculated by:

- Cost of resident parking permit per year: $175
- Permit cost per day based on annual cost: $.48
- Permit cost per hour based on annual cost: $.12
- Multiplied by 40 car parked average per night: $4.80
- Multiplied by 104 weekend nights per year = $499.20
- Divided by 12 months in a year = $42 (Village of Tarrytown Amendment, 2007)

The Tarrytown YMCA even asked the village for a valet pilot parking program during the month of June 2007 to see what the impact would be if cars were stacked in their parking lot, potentially freeing up parking spaces on the streets for residents and for merchant’s patrons. (Tarrytown Memorandum, 2007)

Almost a decade later, there is no trace remaining of the valet system, nor clues in village documentation as to why it disappeared. Björn Olsson, executive director of the Tarrytown Music Hall guesses that the “reason it didn’t take off…was because the parking lot they used was by Washington Irving School, which was far away from most downtown uses. For us, valet parking makes little sense, because if you have 800 people and park about 100 cars, and everyone comes out of a Music Hall show at once, how many valet parking attendants would there need to be to go and get everyone’s cars, and how long would all these people need to be waiting?” He described the post-show “fetching of the parked cars” as pure chaos as people waited, and the valet attendants sat in traffic returning their cars. “Valet parking is something that makes more sense to restaurants while everyone is in the theater.” (Phillips, Olsson, 2016)

In the valet parking solution’s stead, the Music Hall has approached managing parking in their own way for the 800 - 1,600 people that are drawn into central Tarrytown to attend a concert. Now, they employ one parking attendant and have him stand in front
of the theater for most shows, with a laminated 8x11 sheet of paper reading “PARKING INFORMATION”. Upon asking the attendant what the parking information is, the attendant hands out maps showing the locations of the municipal lots, which are often already full, which is not particularly helpful. The Music Hall has also attempted to create partnerships with local hotels that have parking in a system where Music Hall patrons may use the hotel parking lot and shuttle to the theater and back if they have dinner at the hotel or pay a fee. Unfortunately, the only local hotel with extensive parking supply rejected that proposal. Now, the Music Hall sends out emails to all the ticket holders containing links to a parking map, a guide to local restaurants, and a reminder to “be on time so you can find a place to park.” These attempts to help its customers find parking are essential for the Music Hall because it estimates that only 10% of its audience for each show lives within walking distance of the theater. (Phillips, Olsson, 2016)
Figure 9. Parking Supply as documented in Tarrytown’s only parking study (Adler, 1998)
Survey Business for Employee Permit Parking

The village offered an annual discounted parking permit to the employees working at businesses in Tarrytown to dissuade employees from using on street spots or spots in the municipal lots. A letter from Royal Properties (a local building management company), summarizes the frustrations in a letter to tenants:

“Once again, owner/employees are parking their cars on South Broadway and Main Street. I must remind you that this is a violation under your lease agreement. I trust you advise your employees to park in lots or other areas of the town but not in front of your stores. This is only hurting your business, as your customers cannot find a parking space to shop in your store. Feeding the meters and moving your cars has not gone unnoticed. I urge you to comply, as it is only your business that is suffering.”

- Letter from a property owner to the business tenants

(Royal Properties, 2002)

In an effort to improve Parking in the business district, the Village of Tarrytown conducted a survey of the merchants on Broadway and Main Street concerning parking trends and needs of these businesses. They were asked to fill out a form with the following questions:

1. Business Name

2. Hours of Operation
3. Total Number of Employees

4. How many employees usually park [On Street, In a municipal Lot, or Other]

5. If “other” please specify where your employees park

6. The Village offers annual merchant parking permits for the McKeel Avenue and Main Street (YMCA) lots at a cost of $150. If you do not currently use this permit system, would you? [Yes or No]

7. If no, why not?


Of the half-dozen responses on record at the village, all of the answers for “if the business would take advantage of the annual merchant parking permit” were “no”. One business said no, because they had free parking provided in their landlord’s lot, but suggested that the village “Chalk the tires, and crack down on idiot merchants who park for long periods of time on the street.” And “hooray for you trying to get us more parking. Also, what about building a tiered structure behind the CVS lot?” Another business with 5 employees said no because the Lot in question, which was (1,000 feet or 2 blocks away from their restaurant) was simply “too far.” Another business with 7 employees said no because they park in the CVS lot through an “arrangement” with the owner of the building. Finally, a business with only 1 employee said no because he parked in his friend’s lot in back of the building and that “he already has parking available at no charge.” (Tarrytown Parking Surveys, 2002) Even in 2016, this initiative for employee parking seems to have been lost. On different nights, during peak dinner hours, the author asked restaurant employees of a to-go restaurant what they thought about parking in
Tarrytown. Three employees expressed frustration about a ‘lack of space to park’ and one employee lamented the fact that customers had no place to park. When asked where they parked, two out of the four admitted that their separate cars were both parked in front of the restaurant and that they had been feeding the meter all day and night.

**Evaluate Other Municipal Policies On Parking**

The village reevaluated their code in 2012 to amend fees they were charging for parking and meter pricing by networking with nearby municipalities. Email correspondence shows that Tarrytown’s representative laid the situation out in clear terms.

“Parking is extremely limited in our downtown as I’m sure it is with yours. For example, when a business changes use from an antique store to a restaurant, the Village has a parking provision (the number of spaces required) that is difficult for the new use to provide the parking required. Does anyone have a provision where money can be placed into a special fund for the development of parking based on the space per cost?” (Blau, 2012). A chart was generated for how other villages calculated their minimum parking requirement in-lieu fees. In addition, another chart was generated of the 2009 Parking Rates and Charges. (Internal Memo – Parking Survey, 2012)
### Table 3: Parking: Downtown Commercial Districts

<table>
<thead>
<tr>
<th>Municipality</th>
<th>Provision in Code For In-Lieu-Fee for Min. Parking Requirement</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ardsley</td>
<td>No</td>
</tr>
<tr>
<td>Briarcliff Manor</td>
<td>No</td>
</tr>
<tr>
<td>Bronxville</td>
<td>No</td>
</tr>
<tr>
<td>Elmsford</td>
<td>No</td>
</tr>
<tr>
<td>Hastings</td>
<td>Restaurants under 2,500 sf exempt from parking requirements.¹</td>
</tr>
<tr>
<td>Irvington</td>
<td>For lots 5,000 square feet or smaller, the Planning Board may permit payment into fund in exchange for parking required; minimum amount @ $10,000 per space (added 6/26/2003 by Local Law. #7-2003)</td>
</tr>
<tr>
<td>Mamaroneck Village</td>
<td>Amount per space established by Village Engineer: has been subjective. Village looking to codify set number</td>
</tr>
<tr>
<td>Mount Kisco</td>
<td>1ˢᵗ Floor Use – No Parking Space requirements; 2ⁿᵈ Floor Use: $25,000 per space.</td>
</tr>
<tr>
<td>New Castle</td>
<td>No</td>
</tr>
<tr>
<td>New Rochelle</td>
<td>No requirement for parking for restaurants, but has established a payment-in-lieu of plan for residential parking in downtown not provided on site (1-6 units @ $500/parking space; 7-10 units @ $1,000/parking space; 11-20 units@ $5,000/parking space (331-126 (E) (2)</td>
</tr>
<tr>
<td>Port Chester</td>
<td>In certain districts, developers pay a fee into a fund to be dedicated for a parking structure.</td>
</tr>
<tr>
<td>Rye Brook</td>
<td>No</td>
</tr>
<tr>
<td>Scarsdale</td>
<td>$10,000/parking space; also reduced parking space requirement for restaurants to be same as retail space and the planning board has the authority to waive up to a third of the parking requirements in certain situations (Village Code Section 310-70B)</td>
</tr>
<tr>
<td>Yonkers</td>
<td>$35,000 fee per space</td>
</tr>
<tr>
<td>White Plains</td>
<td>Similar to New Rochelle and Yonkers²</td>
</tr>
</tbody>
</table>

¹ Survey limited to restaurants, as documented by the author
² New Rochelle and Yonkers have contrasting provisions regarding in-lieu fees, but information was gleaned from correspondence between Village Administrator and officials in representative municipalities.
Lease Spaces for Public Use in Private Surface Lots

The village has taken steps to address parking in the downtown commercial district by leasing surface parking lots in a shared-public parking management model. In 1991, the village executed a 25 year lease agreement with the YMCA on Main Street, where the village constructed a parking lot on YMCA’s property and one half of the lot was available to YMCA members for parking and the other half was available to the general public. This lease was not renewed, and it expired in 2015.

Secondly, the village executed a lease agreement with First Union Bank (2 South Broadway) in 1999 to utilize a portion of the bank’s parking lot for 18 parking spaces. The lease agreement continued with future owners of the bank property including Wachovia Bank, Wells Fargo Bank and then Citibank. The lease with Citibank increased the number of parking spaces available for the general public as municipal parking to 21 spaces. (Blau – Eminent Domain Hearing, 2016)

Lastly, the village executed a lease agreement with the Junior League in 2011 to utilize 15 spaces in their existing parking lot on Elizabeth Street. The parking lot is located just outside of the downtown Central Business District.

Change Parallel to Angled Parking

In 2003, the village explored changing the on-street parallel parking to angled parking, with the contention that angled parking can save space, allowing more people to park on street, as the total dimension is reduced for a 45 degree parking spot off of the sidewalk. It was feasible for Tarrytown to consider this option because the southern neighboring village utilizes angled parking on their traditional Main Street. However
after some scrutiny, it was determined that this neighboring village had far less traffic volume, and had a wider Main Street. While angled parking is a more efficient use of space, a memo from 2003 states that angled parking is “extremely difficult to back out of onto a busy street and impossible if the line of sight is obstructed by a minivan, SUV, or delivery truck.” (Village of Tarrytown – Internal Office Memo, 2003) While perpendicular or angled parking to the curb is the “preferable way of parking”, historically, traffic engineers have opposed angled parking and have worked for its removal because of hazards identified all the way back to a Congressional Record Extension of Remarks by Representative Barnsley in 1966 (Tarrytown Clipping, 2003). In a presentation called Streets should not be used as parking lots, Barnsley said that “States have reported that all angled parking should be eliminated if possible because of the hazardous un-parking maneuver and interference with traffic movement.” (Box, 2001)

**Use Eminent Domain**

Parking is of such cultural and economic importance to the village that the village has twice considered the use of the action of Eminent Domain – the acquisition of a property in the name of a public purpose, with just compensation to the current landowner for the property. The first time the village entertained this action was for the acquisition of the lot on South Washington Street that they ultimately purchased for $650,000. The second time the village pursued Eminent Domain was on March 7, 2016, after a Citibank branch abruptly closed and for the first time in the village’s 25-year lease agreement history with the property, terminated the Village’s lease on the 21 parking
spaces at 2 Broadway and subsequently gated and chained the lot. Villagers were so outraged at this action that within a week of a gate being constructed and chained shut, someone had driven their car into it, ramming it down. The next day, several cars were parked in the lot illegally in protest of the new rule.

The village is in the midst of using eminent domain to re-acquire these 21 spaces to address the negative effects that 21 fewer parking spaces in town had on local business owners. At the public Board of Trustees Hearing for the motion to initiate Eminent Domain on March 7th 2016, one business owner noted that “Even though there are only 21 spaces there, the cars parking there add a significant amount of transactions at these local businesses.” If we assume at best with regular turnover each car stays in a space for 30 minutes, there may be about 16 cars per space per work day, or 336 cars in the entire lot per day. If you also assume there are an average of 2 people per car, it would lead to roughly 672 people able to visit Tarrytown via car, and have a space to park each day. Over a week, this represents almost 5,000 people visiting Tarrytown, and almost 5,000 transactions that these people would ultimately conduct in the local businesses. It was clear from this public hearing that members of the public viewed public access to this private lot as an entitlement, as residents and business owners of the town.

Create a Fee Funding a “Jitney” Bus Service from the Train Station to Downtown

According to village code, each business, office and residential unit in Tarrytown is compelled to provide a minimum number of parking spaces, with the number of spaces based on how many people were expected to demand parking from that use when the zoning code was written. These are called ‘Minimum Parking Requirements.’ If a
business, office or residential unit is unable to provide the number of minimum parking spaces that the village requires they technically provide, they must pay a fee on each parking space they are unable to provide. This is called payment in lieu of provided parking, or an ‘in-lieu fee.’ The village of Tarrytown established that all monies collected from any in-lieu fees in the Central Business District would be specifically diverted to a fund called the “Jitney Fund”, which would finance the operation of a ‘Jitney’ bus which would shuttle people from the Tarrytown Train Station and the vast parking lots that surrounded it, up the hill to the Central Business District. When this fund was in place, the in-lieu fee was $1,000 per parking space, to a maximum of 5 spaces.

By 2012, the “Jitney Fund” had only collected $3,500 and the village had not even attempted to begin the operation of a Jitney. If the village were to operate a Jitney at this point, the amount required to do so would have well exceeded the amount in the Fund. In addition, business owners on Main Street complained that the Jitney (or lack thereof) did not address parking for new restaurants being established, and that their fees were being used for nothing. (Tarrytown Jitney Memo, 2013) After a survey to determine whether other communities had established general parking funds and the amount associated with them for parking in their CBDs, the following questions arose to the elected officials in the village: should the Board eliminate the Jitney Fund to create a parking fund in its place? Does the Board want to increase the in-lieu fee? Does the board want to increase the number of parking spaces (set at 5 spaces) for which a business may pay a fee? Does the board want to modify the number of parking spaces required of the businesses in the downtown area?
Create a Fee Funding the Construction of New Parking

The Board of Trustees adopted Local Law #3 in May 2013 thereby eliminating the “Jitney Fund” and replacing it with a “Parking Fund”, which had been in place before, where the financial intent of the in-lieu fee changed, and financial burden of the in-lieu fee increased. Now, the code reads:

“Upon the establishment of a Parking Fund for the Restricted Retail Zone…[when] a parking requirement cannot be fulfilled…the Board may require a monetary contribution in lieu for the provision of parking spaces up to a maximum of 15 parking spaces.

The amount to be placed in the parking fund shall be as follows:

[a] From 1 to 5 parking spaces: $1,000 per parking space
[b] From 6 to 10 parking spaces: $2,000 per parking space
[c] From 11 to 15 parking spaces: $3,000 per parking space

The parking fund, when established, shall be used exclusively for the creation of new parking in the downtown commercial area or maintenance of the existing parking in the downtown commercial area.” (Tarrytown Village Code §305-63-C-(d), 2016)

The code does not specify if these in-lieu fees for the Parking Fund will be collected annually or once and also fails to explain how the fees will be collected or the specific nature of how the Funds will be distributed. Now in its third year in the Village Code, the in-Lieu fee in practice has been only a 1-time payment by each new business, where all fees are diverted by law into a Fund that has collected only a miniscule fraction of what “creating new parking in the downtown commercial area” would actually cost.

To date, the Parking Fund has collected $13,000; all from mandatory in-lieu contributions from just 3 small non-franchise businesses on Main Street.
Results of Interviews

Interviews conducted in the research process painted a picture of people seeing the parking problem as both a space scarcity issue and regulatory issue. The result of the interview with the executive director of the Tarrytown Music Hall, a venue that attracts 80,000 visitors each year and their associated vehicles, yielded an impression that the Music Hall events are responsible for a 0% on-street vacancy rate in the Main Street district on nights when shows occur at the venue. The director of the music hall indicated that the only solution to alleviate the parking scarcity problem is to increase parking supply. (Phillips, Olsson, 2016) The Music Hall opened in 1885 and is the oldest operating theater in Westchester County, and therefore never had to comply with the minimum parking requirements that the village of Tarrytown now regulates (Historical Society, 1997). Therefore, the Music Hall representative noted the venue never paid fees in-lieu of providing parking for their patrons, but was quick to suggest that adding a “big parking garage” to the central downtown business district was a necessary “big infrastructure bullet that needs to be bitten into sooner or later.” (Phillips, Olsson, 2016)

Interviews also yielded an impression amongst storeowners, pedestrians, and even the village administrator that there is a complete unavailability of parking on weekend days and Thursday through Saturday nights. On weeknights at 7pm, (peak commuting hours), cars become the dominant visual element on Tarrytown’s Main Street. The heavy vehicular presence during peak commuting hours and lack of parking detract from the desirability and ability for access to Tarrytown restaurants. The Sleepy Hollow Chamber of Commerce (combination of representatives from the Villages of Tarrytown and Sleepy
Hollow) indicated that as Tarrytown continues to economically revitalize that it would be foolish to think Parking will not negatively impact the downtown businesses and the character of the downtown. (Chamber, 2008) In public meetings, interviews, and in informal discussions, this notion that the parking problem is a lack of ‘more’ parking prevails throughout the discourse of Tarrytown residents, merchants, visitors and elected officials. It is not dissimilar to that in other parking-challenged American towns. Paul Basha, the transportation director of Scottsdale, Arizona said in 2014, “The primary reason downtown (Scottsdale) has a parking problem is because there are so many excellent businesses, be they retail, restaurants, bars or nightclubs, or offices…(and) there are several excellent reasons for people to be here, (but) we need parking spaces to accommodate them. (Gately, 2014) These interviews and anecdotes about comparable downtown districts indicate that when there is a perceived difficulty with finding a close parking space to one’s suburban destination, then the first instinct is to say that the community needs to build more parking.

Only one of these discussions viewed the ‘parking problem’ as a regulatory issue, rather than a ‘space scarcity’ issue. This business owner said that the appeal of Tarrytown for residents and visitors alike is that “it is a perfect location at the nexus of different transportation modes, it is interesting, it is diverse, it is fun, it is beautiful, and it’s a little bit less expensive than the city…it’s a lifestyle choice.” (Phillips, Jarane, 2016) This business owner disclosed that about 35% of her customers come from New York City, and half of those come from the Borough of Brooklyn. However the results of this interview indicated a general sense of frustration amongst small business owners that
regulation of parking has served as an impediment to more growth, and has left them feeling like the policies are financially predatory and ambiguously defined.

This business owner remarked how the cost of opening a food-related business in Tarrytown is expensive. A conservative estimate for construction costs alone are at least $100,000 if a storefront does not have a kitchen or sprinkler infrastructure already installed. Once constructed, however, the lack of parking further can add to costs directly (when customers simply can’t park to access businesses) and indirectly (when the Village charges fees in-lieu of required parking). One business owner was faced with an $87,500 in-Lieu fee for the village-parking fund even after the grand opening in 2012. Reflecting the unedited frustration of some of these smaller establishments, which pay already expensive rent, our interviewed business owner exclaimed that the “(village was) out of their mind…for even thinking to ask for $87,500.” The owner added, had she been aware of these fees before contracts were signed, the rules “would have absolutely stopped us from opening here…It’s an incredible hardship.” (Phillips, Jarane, 2016).

The results of a meeting with the Village Administrator established the methodology that the Village of Tarrytown sets its pricing structure for in-lieu fees for minimum parking requirements and on-street parking. Mr. Blau said that in order to not set prices that were too high, the village had mirrored the fees reflected in other municipalities in close proximity. Through email correspondence, the village administrator surveyed: Ardsley, Briarcliff Manor, Bronxville, Elmsford, Hastings, Irvington, Mamaroneck Village, Mount Kisco, New Castle, New Rochelle, Port Chester, Rye Brook, Scarsdale and Yonkers. Once this survey identified what other comparable communities were pricing, the village was able to establish a reasonable in-lieu fee for
required parking in downtown commercial districts, as well as rates for on-street parking. Blau mentioned, “you don’t want to be the most expensive or least expensive community to park. You want to be the same as everyone else.” (Phillips, Blau, 2016) Also, Blau noted that politically, this methodology is satisfactory to the board of trustees because the survey gives Tarrytown similar economic draws with similar and adjacent communities. When questioned about the village’s policy to acquire new parking to satisfy a political will for added parking, Blau emphasized that to date, the village has not created more asphalt or torn down any buildings to create more parking. The village has simply taken ownership of existing parking lots, and continues to follow this policy through suggested implications of eminent domain to entice property owners to negotiate the property transfer. Most of all, Blau notes a public frustration with debt in a recent Board of Trustees campaign, where a party platform was to fix the parking problem and diminish debt. (Bonvento, 2016) The results of this interview highlighted a disconnect between how the village sees a way to handle the ‘parking shortage’ by purchasing more parking, and incurring debt, and “dealing with the parking problem” in some other way. The primary concern amongst the regulators, as indicated from these interactions, is the financial expense of creating more parking. Regulators view parking as a ‘space’ and financing problem, rather than an economic development problem.

This study gave cause to interview the Mayor of Tarrytown, Drew Fixell, and planning board member and Chair of the Transit Oriented Development Station Area Study Steering Committee, David Aukland, about their assessment of parking regulation, economic development and potential solutions for the economic hurdles minimum parking requirements create for Tarrytown’s continued viability. The Mayor is
exceedingly skeptical that minimum parking requirements are truly a hindrance to downtown development or economic viability for most businesses in Tarrytown, especially when they claim that they would not have chosen to do business in Tarrytown had they known about in-lieu fees. The Mayor disclosed that some restaurants simply failed to do proper due diligence of investigating what the parking requirement implications were for changing a land use on Main Street.

The study revealed that the original purpose behind the establishment of minimum parking requirements in Tarrytown was to limit the parking demand that would be hypothetically created by new uses; namely restaurants with heavy parking demands. These new restaurants would put existing merchants at a disadvantage were there to be no parking consequences of opening a new restaurant. This is something the mayor refers to as “a completely open season scenario where anyone can open up any store without regard to how much parking need it generates” (Phillips, Fixell, Aukland, 2016). Many of the storefront uses for business in the downtown were established long before there was a high demand for parking, according to Mayor Fixell. Therefore, he reasons, locations that have been ‘grandfathered in’ should not have to pay the same fee as a new business that could be generating a higher demand for parking. As a justification for quantifying demand as a punitive financial burden in the form of an in-lieu fee, the regulatory forces have said, “if a business generates a higher parking demand, they’ll need to pay to offset that demand.” (Phillips, Fixell, Aukland, 2016) The Mayor added that in suburban locations, restaurants are indisputably the land use that generates the heaviest parking demand and therefore incur the heaviest fines. The Mayor and equally the governing Board of Trustees view any discontent about the financial burden of minimum parking
requirements on small businesses as unreasonable. They primarily perceive the fee to be relatively low but also view the presence of minimum parking requirements as preventing an overly saturated market with the same land uses.

However, these minimum parking requirements based on use have presented economic development hurdles for Tarrytown. For example, there was interest in converting a commercial property in the downtown to a restaurant use, where the space would have required 50 additional parking spaces, based on number of tables, employees and floor area. Unable to provide the parking, the potential new business owner abandoned the venture on Hamilton Place and Broadway. Another existing restaurant owner, in the downtown district expressed a desire to open another restaurant on Main Street, but the parking regulations were a barrier to that action. Presently, there is a project pending Planning Board Approval, which will place a new Jazz Music and Arts Club in an existing traditional building where the land use will change. While the use may contribute to the neighborhood’s character and desirability, there is no on-site parking that is required by the village zoning code. In this case, the owner created lease agreements with nearby banks to utilize their parking lots during evening hours to accommodate the induced parking demand. The Mayor claims that had it not been for the existence of minimum required parking, and the threat of paying fees in lieu of providing parking, this business owner would not have been stimulated to spend the time or money to create these efficient shared-parking mechanisms.

Lastly, this conversation also yielded financial perspectives from the point of view of the regulators and elected officials. The revenue from the alternatives the village has tried to manage parking has been unsubstantial or non-existent. The Parking Fund, as
previously mentioned, was never intended to raise revenue for the village, but is not substantial enough to pay the interest, principal amounts or maintenance costs of building additional parking in the village. Because of current parking regulations, the marginal revenue from creating parking is virtually zero. The revenue the village raised through meters and fines that goes to the General Fund was approximately $228,000 in 2015, according to the Village Administrator.

This interview resulted in learning that the Mayor does not view the parking problem as a regulatory problem, or that Minimum Parking Requirements present an impediment to Tarrytown’s future economic viability. Presently, officials believe that the parking problem is primarily a ‘space location’ problem, and an ‘ease of payment’ problem. Such problems could be met with smart meter to create dynamic pricing as seen in San Francisco’s pilot project “SF Park.” The mayor, when asked, said that while a town like Tarrytown does not have the economic resources to pay for a pilot program like SF Park, it could feasibly pay for “muni-meter” technology that would dynamically change the price throughout the day, as is well documented in the literature. However the mayor expressed caution because in the comparable suburban village of Nyack, New York, muni-meters were vandalized immediately because of the higher prices they produced. The Mayor said that often it became hard to find a working smart meter in Nyack because people were “putting glue in them and whacking them with baseball bats at night.” (Phillips, Fixell, Aukland, 2016) What is feasible with regards to smart meters is the implementation of a system to make paying for parking easier called Pango. With a mobile parking account, that enables cities to use existing meters and spaces to let users pay for their parking or extend their parking time from their phones, the mayor views that
Tarrytown’s parking “problem” will be significantly improved, and the village will not incur debt because there is no large capital investment associated with the system. Such a system would enable a public body to administer regulation with the help of a private vendor. The nearby City of White Plains, New York employed North Carolina-based Passport Parking to create an app called ParkWhitePlains for customers to see a display of all the available parking in the city, and pay for their parking, and refill their meters with their phones. The app charges a 35 cent convenience fee, but the ease of paying for parking adds convenience and therefore increased compliance. (Liebson, 2015) It could be said that residents and visitors to a small village struggling with a perceived parking problem would accept a small convenience fee for each transaction, similarly to the way White Plains residents did.
Discussion

This discussion does not address parking management comprehensively but focuses on issues relevant to the preservation of the traditional downtown character of Tarrytown, its economic viability, and the lessons that are applicable to older downtown centers in general. The case study of Tarrytown demonstrates how traditional downtowns with spatial constraints may approach parking challenges associated with residential, commercial, employee, daily visitor, special event and weekend parking needs. The results of the research showed how this particular village has approached the balance between the private obligation to provide parking and the perception that parking is a public service. Parking presents challenges and opportunities to older centers and its regulation can affect the built form, design and character of downtown centers.

William Whyte in *City: Rediscovering the Center* wrote that in some American cities, “so much of the center has been cleared to make way for parking that there is more parking than there is city”. Some cities, such as Topeka, Kansas have approached a crisis of identity of sorts, a veritable “tipping point” that the clearing away of any more of Topeka for parking would give fewer and fewer reasons to “go there and park”. (Whyte, 1988) Buffalo, New York has seen approximately 50% of the central historic downtown business district become parking lots. Jeff Speck wrote that “if our master plan is to demolish all of downtown, then we’re only halfway there! There will be lots of places to park. There just won’t be a whole lot to do there.” (Speck, 2015) Another city that has made this parking choice is Albuquerque, New Mexico, which now devotes more land to parking than all other land uses combined. Thirty percent of Houston, Texas’s total land area is devoted to surface parking. In Manchester, Vermont, parking lots occupy more
land than do buildings. The authors of *Above and Beyond -- Visualizing Change in Small Towns and Rural Areas* noted that aerial views of small towns clearly display the tell-tale disruptive gaps of parking lots inserted between buildings. (Campoli, Humstone, MacLean, 2002)

In *Suburban Nation*, Duany et al. coined the term “Pensacola Parking Syndrome” to describe the fate of so many traditional downtowns, like Pensacola, Florida, that had eventually managed to “satisfy” their perceived parking demand. They achieved this condition by replacing old buildings that made up the historic urban form and character with parking lots, creating “foreboding” spaces with such intensity that the downtowns lost their desirability. Suburban Nation summarizes the all too common scenario. “In many small, older American (business districts)...at mid-century, with automobile ownership on the rise, a charming old downtown with a wonderful pedestrian realm finds itself in need of more parking spaces. It tears down a few historic buildings and replaces them with surface parking lots, making the downtown both easier to park in and less pleasant to walk through. As more people drive, it tears down a few more buildings with the same result. Eventually, what remains of the old downtown becomes unpleasant enough to undermine the desire to visit, and the demand for parking is easily satisfied by the supply.” (Duany, Plater-Zyberk, Speck, 2000)

Our research of interviews with elected and appointed officials in Tarrytown suggested that minimum parking requirements were a result of a number of causes in the village including a need to protect existing business owners, satisfy engineering limits and be in line with those limits set in neighboring villages. Therefore, they are an anti-competition measure as opposed to being in place to protect health, safety and welfare.
Tarrytown’s Mayor Fixell maintained that many building uses were established long before there was a high demand for parking, and therefore ‘shouldn’t be as equally burdened financially as businesses adding new uses that generate higher demands for parking’. A potential problem, however, is that parking demand, and the minimum parking requirements associated with perceived demand, is often arbitrarily decided by professional planners. The Planning Advisory Service affirms that the “underlying assumptions in the calculation of minimum parking requirements are unknown” and that minimum parking requirements are often set by “absurd twists of logic.” (Planning Advisory Service, 1964)(PAS, 1991)

Minimum Parking Requirements are often calculated by a systematized method in downtowns based on ratios of parking spaces to floor areas and uses in different types of building uses, documented in the parking Handbook for Small Communities (Edwards, 1994) Often, minimum parking requirements are seemingly arbitrary, and do not take into account where businesses are located, how walkable the traditional downtown is, or the potential to share parking spaces elsewhere.

Another challenge to traditional downtowns is that a proposal to reduce or eliminate minimum parking requirements will result in visitors to businesses finding parking in the streets of neighboring communities. Such was the concern in Fayetteville, Arkansas, a municipality that completely eliminated minimum parking requirements in October, 2015. (Gill, 2015) This spillover effect could be already occurring whether there are parking requirements in place in the code or not. With the minimum parking requirements in Tarrytown, the public still perceives a “parking problem”, drivers still
circulate for spaces, and the minimum parking requirements only make goods more expensive and businesses more economically burdened.

The Hypo-Space study presented earlier in this work showed the marked non-compliance with the building stock in downtown Tarrytown and well as prompting the question, whether mandated in-lieu fees for parking achieve their objective without demolition of historic structures. The study demonstrated that compliance with calculated parking requirements would be particularly onerous for new businesses who may have no ability to provide in-lieu fees or benefit from direct frontage parking.

In older centers, the zoning codes containing parking requirements have often not been updated in years and may be out of step with recent trends. Updating codes to meet these changes and true needs is an alternative to granting zoning variances, requiring an in-lieu fee for provided parking, or at worst demolishing existing structures to accommodate codified required parking. Incremental variances and deviations of the code “undermine the integrity of the zoning code” according to Mark Wyckoff, AICP. (McElroy, 1995) Instead of regulating parking through requirements and fees, planners and elected officials must scrutinize the parking code to ascertain the intent behind the regulations. They must address the consequences of parking regulations to greater economic viability by adjusting parking regulations to reflect what can be realistically provided. Wyckoff writes that variances should be rarely granted and hard to get, and therefore a code must serve as a baseline for what is truly needed. As the literature has shown, parking requirements are often arbitrary, and it is therefore an unreasonable approach to punish new uses and threaten economic growth based on arbitrary, and un-quantified parking demand calculations. It is noted that perhaps the hesitancy to rezone or
rewrite parking requirements derives from a fear amongst elected officials that "If everything turns out great, somebody else will get the credit. But if it's a disaster, the elected officials and the public will come back and ask who … did the review." (McElroy, 1995)

Minimum parking requirements are an impediment to economic viability because the cost of providing parking, or in Tarrytown’s case, paying fees in-lieu of providing parking, bundles the cost of the parking spaces into the cost of running the businesses, or the rental costs. The concept of price bundling is well documented in literature. Shoup argued that because of the costs to businesses, free parking isn’t really free because prices are ultimately higher for the customers. (Shoup, 1999) In traditional downtowns, the costs of minimum parking requirements (and the fees land owners must pay in-lieu of providing it) have major distributional effects as costs are passed through to becoming additional charges on customers. Customers may have trouble accessing businesses because of the lack of parking space (assuming that walking is no preferred alternative). Customers can therefore expect higher prices of goods and additional economic burdens which further challenge the viability of a small Main Street businesses. Michael Burayiidi noted the public perception in Oshkosh, Wisconsin is that the downtown business center could not grow unless provided more parking.(Burayiidi, 2001 p.53) While the merits of this spatial constraint challenge may be valid, downtown business centers cannot grow if parking regulations serve as an unnecessary additional economic impediment for them.

National and international chain-institutions (e.g. Starbucks, Applebee’s, or Subway), can better tolerate substantive additional fees by distributing them over the costs and profits of its other establishments. For a traditional business district however,
which would inherently consist of non-franchised, ‘mom and pop’ stores, owners see in-lieu costs as detracting from the advantage of doing business in Tarrytown and that its demand for such fees as unrealistic. The amount of the fees levied on small businesses with the inability to pay them may prove unsustainable. These nearly punitive charges incurred upon businesses may make it less likely that future ‘mom and pop’ stores will open and thrive unless those fees are passed over as cost to patrons (e.g. food prices), suggested one business owner. Alternatively, as small businesses are gradually replaced with the big chains, the character of the town that attracts those very patrons would be lost. The current dependence on in lieu fee payments has also proved troubling for Tarrytown’s future economic viability. Tarrytown has only collected a total of $13,000 (from three small businesses) that is earmarked to finance and build more parking in the downtown. Such a modest amount will not realize any of the studies or construction required to improve the parking environment, and the village cannot, according to code, use the money for any other purpose. The businesses themselves have no value for the fee either, because the fund does not finance any new parking that would hypothetically increase access to their business, and cannot be used for any other purpose, which might improve their business.

In theory, if all 56 individual parcel owners in Tarrytown’s traditional downtown suddenly contributed their calculated in-lieu fee to the Parking Fund, the fund would swell to $2.5 million dollars. As an alternative to the razing of nearly 60% of the village to create surface parking lots, those monies could be used to defray, for example, the cost of a parking garage project. By then, however, one could argue that fees would have been so high that those small businesses that needed the parking may no longer be
economically viable. Current parking regulations in the downtown district is therefore an impediment to the flexibility that smaller towns need to develop and maintain the character that makes them unique. Minimum parking requirements have not only decimated the urban form in other cities, exacerbated vehicular traffic, prevented adaptive reuse of traditionally historic buildings and reinforced a sedentary suburban dependence on automobiles, but they have also placed a tremendous economic burden on small businesses in these kind of downtowns, threatening their own future economic viability with their own rules.

It is not without precedent for a city or village to eliminate their minimum parking requirements completely. In fact, Strong Towns generated an online interactive map showing that over 50 cities across the United States have either reduced or nullified their parking minimums in at least one area of the city, have transferred them to other areas more suited to them, or changed them to adapt to the usage in its current state (Strong Towns, 2015). Some that have partially or entirely eliminated their minimum parking requirements are Boulder, Colorado, which eliminated minimum parking requirements for non-residential uses. Petaluma, California set a specific date on which required parking minimums would expire. Eugene, Oregon exempted the Historic Commercial areas from the minimum off-street parking requirements that are outlined in Eugene’s municipal code. (Nelson Nygaard, Undated). Enforcing a policy for a policy’s sake and in hopes that such a policy may eventually do ‘some good’ may prove unproductive. The original incentive to economically develop the traditional Main Street business district may be lost because of the lack of fully understanding the impact of poorly construed measures designed to achieve that end.
Challenges and Opportunities for Older Centers

Property owners naturally recognize that their property’s value greatly depends on the quality of the surrounding environment. Villages that eye methods to create opportunity and sustainability could create districts where parking revenue is returned to the benefit of the surrounding environment. In Urban Planning literature, these systems are most well known as Parking Benefit Districts. Perhaps the best-known example of this system being realized has been in Old Pasadena, where there were no parking meters until 1993. Business owners feared that customers would be discouraged from shopping in their district with the added costs, but all meter revenue has been used to pay for public investments, improving the desirability and appeal of Old Pasadena.

To replace a high In-Lieu fee that acts as a punitive hardship for new businesses, a ‘Parking Credit Program’ could be created where businesses pay a modest fee in lieu of providing the required off-street parking spaces. The lower fees remove a financial barrier to the adaptive reuse of existing buildings and offer freedom from parking requirements – essentially freedom to create new businesses. In Old Pasadena, this fee was $115.00 per year per space in 2001. (Pasadena, 2016) This was a welcome policy to Old Pasadena Business owners because the buildings were constructed before the city required parking, and there was a more profitable return on investment for historic preservation and adaptive reuse of older buildings.

In Tarrytown, this current study used the model that a 2,500 square foot restaurant is required by the village to provide a maximum of 15 off-street spaces, charging $3,000 per space. As in Pasadena, an alternative would be for the business to pay the city $115
every year per space for a parking credit to be directly used for the improvement of the Main Street district or for financing an improved payment infrastructure. This would be a low annual fee instead of a prohibitively expensive up-front cost and could incentivize the continued possibility of restaurants to open in Tarrytown. Of course, for this system to work, the Village would need to be able to provide (just as Old Pasadena did) significantly more parking supply, in the form of a parking structure, so that the public spaces, not already credited to a specific use, would allow businesses to meet Minimum Parking Requirements with these spaces. Since these public parking spaces are shared, the credits could also be subscribed to by more than one business, unlike the concept of privately provided off-street spaces. The village could continue to keep its Minimum Parking Requirements in place and use these to obtain a more meaningful revenue stream that actually provides value to the community, that doesn’t bankrupt or dissuade businesses from opening. Additionally, a governing board would be created for the Parking District, comprised of merchants and residents of that district to have a say in how revenues are spent.

Scottsdale, Arizona uses such benefit districts and a system of parking credits called “P3 Parking Credits” in its Old Town/Downtown area. Businesses are assessed a fee to maintain free street parking, as well as public lots and garages in the downtown area. (Gately, 2014) Del Mar Garage in Old Pasadena calls this credit structure a ‘Zoning Parking Credit Program’. (Pasadena, 2011) Other notable traditional downtown districts that have tried these Parking Assessment Districts to manage their ‘parking problem’ are Stockton, California, the Palo Alto Special Parking Assessment District and Birmingham, Michigan.
In an older district such as Tarrytown, it is clear that a change in parking regulation is required to meeting the economic viability and traditional character challenges in Tarrytown. Changing in-lieu fees to parking credit fees is one way to deconstruct the impediments to small business success so that Tarrytown can maintain the viability of its traditional downtown.

Clearly one of the assets that make older districts desirable is the building density. Therefore to maintain the desirability and integrity of these main street districts, which plays a role in economic viability, it is imperative to preserve the traditional downtown form and building pattern that contributes to its character. At the same time, to maintain economic viability, both pedestrian and vehicular access must be addressed. While on-street parallel parking spaces on both sides of all commercial blocks can contribute towards access to some of the ground-floor retail, spatial allocations for additional parking must be addressed to increase access for businesses in these Main Street Districts. Additional parking should be regulated so that it is integrated into the fabric of these downtowns so the character is preserved.

Crankshaw studied 32 towns to analyze how small downtown districts have supplied additional parking with open space scarcities. The models for additional parking arrangements were: block interior, quadrant, alley, and perimeter. (See Figure 11) The block interior system uses the centers of blocks that have frontages on main commercial streets where individual properties are consolidated on the interior to utilize the center void for parking. The harbor town of New Berne, North Carolina utilizes the interiors of blocks, behind existing older retail buildings, to accommodate additional off-street parking close to the city center. Crankshaw notes that the parking lot close to the
Figure 11. Diagrams of four common parking distribution models in Historic Downtowns (Crankshaw, 2001)
center is often well utilized, where a “well-designed parking lot outside the 450 radius form the center is often virtually empty.” (Crankshaw, 2001, p. 86) The benefits of the block interior method are that they do not interrupt street corners, or require the demolition of any traditional street-walls. Therefore utilizing the center of a block to accommodate parking is a parking regulation that would maintain the character of the Main Street District because it does not disrupt the built urban fabric. This model is perhaps the best suited to a traditional downtown like Tarrytown where 20 percent of surface area is paved for parking, but where the space in the block interiors is underutilized and unregulated. (See Figure 12)

Figure 12. This map is a Nolli-Style Map of building footprints and major roads in the traditional business district of Tarrytown. Distance increments radiate outward from Tarrytown’s “Center of Gravity” (the intersection of Broadway and Main Street in the historic district) and show the potential for close proximity block interior usage.

The Quadrant model of parking distribution shows each block contributing a portion of the block’s parcels to of-street parking supply, adjacent to the street. Crankshaw notes that these corners are usually furthest from the town center. The Quadrant model is used in Lebanon, Ohio where dwellings had to be razed to create the
parking lots. The Alley slot model of parking distribution can be used in areas that have alleys parallel to the Main Street commercial district where parking is situated in these gaps between buildings. The Alley Slot model is used in Franklin, Tennessee to accommodate its off-street parking needs. The benefits to Alley parking is that they avoid building demolition due to the fact that the parking is placed in existing gaps that are part of the perceived character of the main street district.

Lastly, the Perimeter model of parking distribution shows parking lots placed behind the back edges of buildings that front the main commercial street, or are interspersed between buildings or are unbroken in the rear of the commercial district. This approach to parking is perhaps the most common in traditional downtown districts, as parking is often situated in the rear of buildings. Glenwood Springs, Colorado, Taos, New Mexico and Ames Iowa were three towns in Crankshaw’s study that fit this perimeter model. Near Tarrytown, the villages of Hastings-on-Hudson and Pleasantville both utilize this method. While this model, according to Crankshaw does enable the possibility to “achieve a good distribution of parking for convenience”, it also creates large interruptions in the street wall that contribute to the character of older downtown districts. If implemented as a solution, it could result in the demolition of urban fabric to achieve added parking. It is clear that some of these parking arrangement strategies work better than others in maintaining the character of traditional downtowns. While existing land on urban blocks can be reimagined to provide for greater parking efficiency, the question of added parking must be addressed as well.

There should be clear design guidelines for added parking so that the construction of parking does not diminish or destroy community character either. Parking should in
fact contribute to urban design and form and be a collective benefit for the community. There are a number of innovative design concepts from various urban contexts that negotiate the inherently functional use of a parking structure and its positive contribution to the city’s value. Some of these concepts include facades that contribute artistic value to the community: these can be seen in the Veranda Park House in Sheffield, UK, which features an angular façade constructed from identical elements oriented at different angles that give rise to light reflexes. Some can contribute natural features to the streetscape: The Garagenpaläste-Ballet Valet Parking in Miami USA is completely covered in vegetation, with a shopping mall on the first floor. The “15th and Pearl” development in Boulder, Colorado conceals the parking structure behind the façade of a mixed-use building. In addition, these parking garages can employ innovative car storage or circulation concepts. In Eureka Tower Park House, in Melbourne Australia, the garage is bright, friendly and comfortable and features large graphical and colorful pointers to help pedestrian and vehicular way finding throughout the complex. The architect of the Park House Plaza project in Casanovas Spain used an assemblage of colors, letters and lighting to contribute to improved vehicular navigation and pedestrian orientation. It is important especially in downtown centers that if parking infrastructure is created, it does not detract from a high quality pedestrian experience. Therefore, it must somehow contribute to the character of not only the sidewalk, but must incorporate design within as well. Len Tsupros, president of Carl Walker Construction, a design firm that specializes in parking garages wrote “people tend to feel vulnerable in and around parking garages...[so there must be] an effort to incorporate light and open space into the structure.” (Resnick, 2010) Parkhaus Engelenschanze in Stuttgart is an excellent
example of this concept as it features an all-glass exterior, glass curtains, a ramp design that ensures up traffic and down traffic never cross paths and an inner courtyard with a waterfall and creek.
Conclusion and Recommendations

Traditional downtowns and Main Street business centers consist of an assemblage of older buildings that have an intact building pattern forming a common street wall. However, such land use patterns do not specifically accommodate parking. The visual lack of readily available parking opportunities creates a perceived parking problem amongst visitors and residents alike. There are two decades of data demonstrating that elected and appointed officials, as well as residents and visitors to the village of Tarrytown perceive a ‘parking problem’ because finding a parking space is subjectively difficult. The building pattern and mix of uses that make up the traditional downtown however are precisely part of the appeal and desirability of these districts. In traditional downtowns, parking may be a spatial challenge, but it can not be identified as a ‘problem’ until all solutions for higher parking efficiency and more tenable solutions have been exhausted.

The truth is, the parking ‘problem’ is regulatory, managerial and political. Regulations in place about minimum required parking provisions have created an untenable situation and are an impediment to the future economic viability of these communities. Hypo-Space demonstrated that the minimum parking requirements are impossible for business owners to physically meet without destroying the very urban fabric that contributes to the traditional downtown desirability.

Interviews highlighted the intent behind the establishment of the minimum parking requirements in Tarrytown and possible alternatives that the village could approach in lieu of this regulation. An evaluation of administrative and legislative documentation concerning parking policy over the last twenty years illustrates years of
alternatives that the village has tried to ‘solve’ their parking problem. This data also demonstrates that time after time, these regulations have failed to address perceived parking needs, and have caused hardship for the small businesses in town.

By taking no further action with parking, it is not apparent that the public will change their parking behavior to reduce demand at this time. Therefore, the Village of Tarrytown should move forward with several approaches to addressing the regulation and management of their parking supply and parking policies. Tarrytown should consider replacing the mandatory in-lieu fee for required parking with a ‘zoning parking credit program’ for all businesses in the downtown district. Such an action would defray the prohibitively high up front cost to the small businesses that enhance the downtown’s character and desirability. The lower zoning parking credit fees would set a framework for an annual cash-flow from all businesses whose revenues would be used for community improvements in a designated Parking Benefit District. Alternatively, because the revenues would be higher with small annual contributions from all the businesses, the revenues could be used toward the financing of a new parking structure. The Village would not have to eliminate the politically perceived necessity for minimum parking requirements, and could set up a functional financing system that all economic beneficiaries contribute to equally. Parking credit programs have successfully replaced one time in-lieu fee and systems in other municipalities across the country, and the Village of Tarrytown could benefit from doing the same.

If a parking credit program is implemented, the Village would need to construct or allocated a greater supply for public parking, where parking spaces could be rented annually by businesses using parking credits as was seen in Old Pasadena. Each business
or landowner would fulfill their parking requirements by annually renting the number of spots in the structure that the Village requires for each use. The rentable spaces would be shared and therefore the Village would not overbuild additional parking supply. Mount Kisco’s shopper’s park is an example of a large lot that serves the needs of multiple businesses along the main business strip.

The Village should also adhere to design guidelines and standards so that the construction of parking does not diminish the visual character of the downtown area. Parking structures should be designed to use the topography of the area to minimize their visual impact. The design should aim to nestle a parking structure into the natural slopes of the area and utilize the facades of the garage to activate the streetscape either artistically, through sculptural or visually appealing contributions or economically, through added mixed use retail and residential opportunities. The Village should adopt a Design Requirement section into the off-street parking section of the code to address design guidelines for surface parking lots: this includes parking spaces, lots, drainage, grading surfacing and painting, as well as landscaping requirements for large lots, connections between abutting parking lots, and snow accumulation space. For parking structures, the planning board should require structures incorporate and achieve certain design objectives and consult with the village as to the suitability and acceptability of the proposed parking structure designs.

In conclusion, the traditional downtown business district of Tarrytown does have a parking challenge due to a lack of space for vehicular access to the downtown. Spatial constraints, after all, are realistic obstructions to vehicular access in suburban contexts. However, minimum parking requirements in areas where they could never possibly be
complied with are an unnecessary impediment to economic viability. The story of Tarrytown is similar to the stories in many other traditional downtown centers. The regulation of and practice of requiring unrealistic parking decreases the likelihood that the character and economic viability of ‘Main Street Districts’ can be maintained. Traditional downtown districts can embrace alternatives to in-lieu fees to provided parking and can approach the regulation of parking through shared parking mechanisms. These techniques should alleviate the regulatory ‘parking problems’ in traditional downtown commercial districts and make them economically desirable and competitive in the future.
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The Repercussions of Minimum Parking Requirements On The Economic Viability and Historic Character of Downtown Tarrytown, New York

BACKGROUND

Parking is often regulated in zoning codes by the establishment of minimum parking provisions for each land use. In historic downtowns, where the Main Street historic character is one of the defining appeals for the district, most buildings are out of compliance with the minimum parking laws. The historic character of these districts is a result of the density of buildings. Businesses utilizing store fronts in historic downtowns cannot physically provide parking because there is a scarcity of land for new parking. Instead, in lieu of providing parking, businesses offer low fees or no fees to parking spaces that they are unable to provide. There are challenges for historic districts, and the regulation of parking is at a critical nexus of preservation and economic viability. This work evaluates these questions as applied to Tarrytown, New York, a town on the bank of the Hudson River near NYC.

METHODOLOGY

- Choose a study area of a Historic District
- Examine and Document Parking Regulations of Study Area
- Determine Land Use and Dwelling Units in Study Area
- Display how much land would hypothetically be needed for 100% compliance in District

FINDINGS

- Village requires 1,700 projected parking spaces
- 60% of the market has no provision for parking
- Parking fund would have $2.5 million if all 56 parcel owners paid fees
- Parking fund only currently has $13,000 from three businesses. This is not allowed for adding parking

CONCLUSIONS and RECOMMENDATIONS

- Parking fund is a charge on businesses (and customers) that is ineffectual at alleviating "problem."
- Parking regulations are imposed to physically comply with.
- Parking "problem" is a regulatory one: impediment to economic viability, historic character.
- Minimum Parking Requirements appear not to benzlize the town or businesses, or achieve its goals.
- Minimum Parking Requirements appear to do more to worsen the chances of future economic viability.

Parking Credit Program Alternative

Parking Credit Program and Shared Parking
Hypo-Park Scenario
Case Study: Tarrytown, NY

The spatial consequences on the Historic Downtown if all buildings suddenly complied with the zoning code for minimum required parking requirements:

- 1 and 2 Family Dwelling
  - 2 spaces for each dwelling unit

- Multi-Family Dwelling
  - 2.5 spaces for each dwelling unit

- Office
  - 1 space per employee + 1 space for each 3 seats or 1 space for each 100 square feet of floor space

- Schools, Theaters and Place of Worship
  - 10 spaces + 5 spaces for each person in excess of 2 tellers

- Retail
  - 1 space per employee + 1 space for each 300 sf of area

- Bank
  - 1 space for each 5 seats or pews OR 1 space for each 100 square feet of floor space


The Historic form would need to be partly demolished to accommodate required parking.

Potential visual impact of demolition for added parking.

Tarrytown has already demolished part of the historic street wall to accommodate one parking lot.

Map Key
- Building Area Requiring Demolition to Accommodate Minimum Required Spaces
- Existing Downtown Public Parking Sites
- Historic Downtown Study Area
- Historic Downtown Built Form

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